Fuel50 **Capability** Trends Report™

Human-Machine Teaming Edition

At Fuel50, your future is our passion.

This Fuel50 Capability Trends Report™ brings you the latest capability trends from across the globe.

We encourage you to reflect on their relevance to your organization and hope that they inspire a vision for positive change within your people strategy and capability requirements.

Our dedicated team of Organizational Psychologists and HR Professionals is world-leading in capability design and research. Together, we have developed our own 'Fuel50 Talent Ontology™' to reflect the capabilities showcased in this report and many more. These capabilities are now available for use by all our clients.

For more information on any of the trending capabilities or to discuss how you could increase your organization's bench strength in these areas, please contact Fuel50.

Welcome to the future of work.

In this Fuel50 Capability Trends Report™, we explore recent world events and how those are informing crucial employee capabilities required in the workplace. This report is designed to help you harness the latest global capability trends to ensure that your organizational talent strategy is aligned to the current driving global forces.

What has been happening in the world? The Fourth Industrial Revolution

Over the last two years, the Covid-19 pandemic has fundamentally changed the way in which we live and work. Aside from major losses in economic activity and jobs, the global health crisis has accelerated the adoption of technologies that are automating, and possibly eliminating, several jobs[1]. Many refer to this acceleration of technologies as the Fourth Industrial Revolution, 4IR or Industry 4.0. The 4IR, which builds on the foundations of the first three Industrial Revolutions, can be described as "a fusion of advances in artificial intelligence (AI), robotics, the Internet of Things (IoT), genetic engineering, quantum computing, and more"[2]. To survive, organizations have had to (and continue to) restructure, reorganize and innovate to adapt to the post-pandemic economic environment, as well as leverage technology to reduce the number of human interactions[3].

Smart and connected machines, as well as advances in technology, are undeniably changing and shaping the way we live, work, and relate to each other[4]. It is therefore important to understand how these technologies are affecting organizations and to determine how to equip and empower employees and leaders to effectively navigate these changes.

How is technology impacting the world of work?

The 4IR is blurring the boundaries between the physical, biological, and digital worlds and is driving the development of many products and services that are quickly becoming indispensable in our modern lives[2]. Technologies such as AI, machine learning, cobots (context-aware robots), augmented and virtual reality, 3D and 4D printing are drastically impacting the world of work in a myriad of ways, both positive and negative[4].

Some of the positive impacts are:

- The rate of production and speed at which business occurs has exponentially increased . This requires organizations to be more agile and individuals to be technologically proficient and learn quickly.
- Technology helps to reduce costs by removing mundane, repeatable tasks, from employee's responsibilities, freeing them up for more valuable work such as problem-solving, thinking creatively and engaging meaningfully with customers[6].
- AI technologies improve the quality of processes and reduce human error[6].
- Online communication and collaboration tools, such as video-conferencing technology and cloud-based file-sharing tools, allow employees to work more closely, even with remote and hybrid work models becoming more prevalent since the start of the pandemic[7]. Employees, therefore, need to be upskilled and adept at using such tools.
- Organizations are using AI to improve many aspects of talent management, such as streamlining hiring processes and identifying and retaining top talent[5]. This is critical for two reasons: 1) organizations need to quickly hire, facilitate internal job moves, and develop and retain talent in response to changing business needs, and 2) employees expect an exceptional recruitment and employee experience now more than ever.

- AI and robotics have improved safety for employees by reducing jobs in dangerous environments[6].
- Decision-making and analysis are enhanced with data-based tools[8]. This requires organizations to gather and use data wisely and ethically.
- Leaders are using AI to expand business models and identify new revenue streams[5] (i.e., as technology allows for new products or services to be developed or improved).
- AI helps organization's deliver better customer service (i.e., using chatbots). In addition, products, such as cars, can be customized and personalized more easily with the assistance of technology, more fully satisfying customer's needs[4].
- AI improves monitoring of business risks and issues and can quickly recommend actions/solutions[5].

Some of the negative impacts are:

- Organizations and humans are becoming highly dependent on technology. From a human perspective, technology dependence and addiction negatively affect sleep, causes distractions from work and relationships, and diminishes creativity and the ability to think and process information[9]. From an organizational perspective, a network outage for example, can bring business to a standstill[10] resulting in loss of productivity and income.
- Increasing risks of cyber-attacks are forcing organizations to ramp up cybersecurity measures. Organizations face great costs, not only to ensure their critical systems and sensitive personal information is protected, but also if their data is breached (financially and reputationally)[11].
- As technology advances, it is challenging to find employees skilled to work with and alongside these new technologies[4].
- There are concerns that many jobs will disappear due to automation[4].

Advances in technology bring benefits and opportunities, but for many, it brings uncertainties and fears around job losses and an unknown future. According to a Harvard Business Review article[12], artificial intelligence is transforming all areas of the economy but suggests that we should not worry that robots or machines will replace all employees. The article goes on to state that organizations that automate their operations mainly to reduce their workforce numbers will see only short-term productivity gains. Rather, when humans and smart machines work together (human-machine teaming), enhancing each other's strengths, the biggest performance gains are seen. Furthermore, a McKinsey Global report[13] indicated that up to 800 million jobs will have disappeared by 2030 due to automation. Although this sounds terrifying, it is framed as an opportunity because as new technologies emerge, so will many new professions and millions of jobs. This sentiment is echoed by Phillpott[14] who's research suggested that

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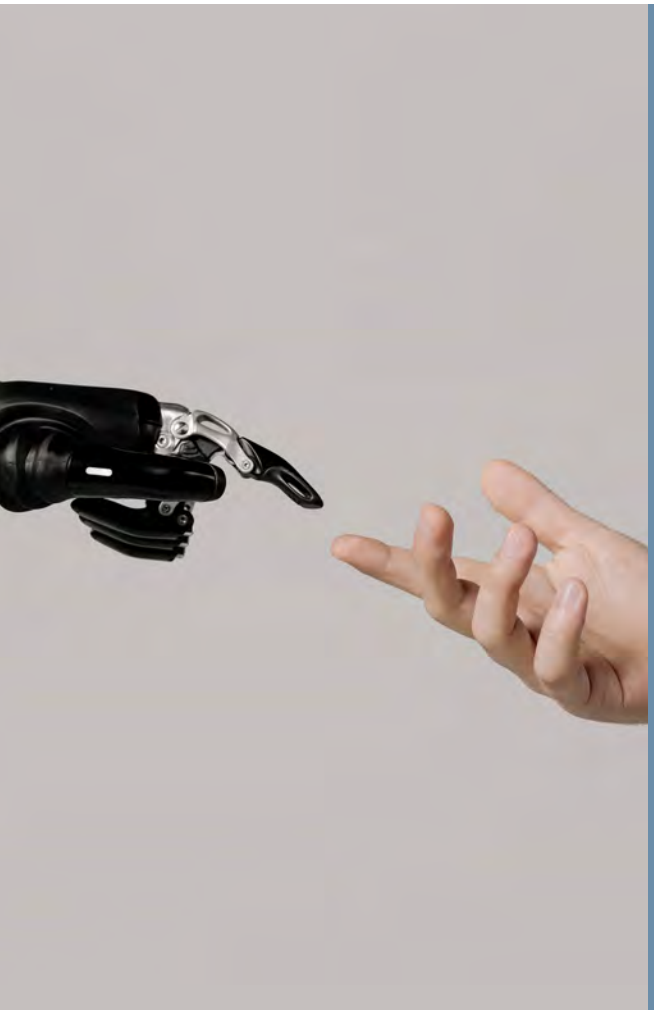
although several routine jobs may become obsolete (or redefined) due to technological advances, 85% of the jobs that will be available in 2030 have not yet been created or even thought of yet[15]. This means there are many opportunities for people to upskill and reskill to take advantage of new careers and occupations in the future.

The importance of amplifying the right capabilities to minimize or embrace these world events

As Michele Parmelee[16], Deloitte Global Chief People and Purpose Officer succinctly said: "Companies are starting to understand that if they want to succeed in Industry 4.0, they must create agile work environments and modernized workplace cultures where employees can continuously acquire new skills to keep up with the changing nature of work". Fuel50's research has identified some transformational capabilities to support organizations in creating sustainable change as they shift from using basic technology purely to get routine work done, to collaborating and teaming with technology to remain competitive, profitable and thriving. These capabilities need to be embedded into three levels – Individual, Leadership, and Organizational.



In this report, we identify 27 of our trending capabilities associated with human-machine teaming. These capabilities have been categorized under the following headings:

Individual Enablers: Technologically Savvy, Contextualized Intelligence, Entrepreneurship, Critical Thinking, Problem Solving, Growth Mindset, Empathy, Trust in Technology, Innovation, Self-Awareness

Leadership Capabilities: Emotional Intelligence (EQ), Leading Others, Human-Computer Relationships, Entrepreneurship, Futurist, Agility, Developing Others, Optimizing People Productivity, Performance Measurement, Resource Planning

Organizational Strategic Imperatives: Disruptive Innovation, Strategic Reinvention, Agile Business Strategy, IT Strategy, Emerging Technologies, Ethical Data Usage, Learning Culture

We have included some reflection questions to help you evaluate the importance of each capability for your organization.

Individual Enablers

As organizations are becoming more automated and jobs are evolving, employees can add value by remaining adaptable, resilient, and empowered through the development of several unique "human skills"[16]. These skills and capabilities will assist employees to specialize in areas where machines and technology are less likely to excel, as well as to successfully collaborate with and work alongside machines[12]:

Contextualized Intelligence

Takes an interest in and develops a nuanced understanding of society, business, culture, and people.

Entrepreneurship

Proactively identifies opportunities or develops ideas to grow the organization. Weighs the related risks and rewards effectively. Overcomes and learns from setbacks.

Technologically Savvy

Develops proficiency in the technology tools that allow the facilitation of one's work. Understands the importance of and is willing to adapt to emerging technologies to perform one's job more efficiently.

Problem Solving

Leverages knowledge, previous experience, and skills to identify the crux of an issue and creates a workable solution to resolve problems. Understands verbal or numerical information and how to make reasoned decisions based on this analysis. (Employees will gradually be able to enhance their performance in these areas using virtual assistants powered by AI).

Critical Thinking

Makes correct inferences on tasks that need critical evaluation of complex problems. Understands a situation or problem by identifying patterns or connections and addressing key underlying issues. Sees the bigger picture and connects the dots.

Growth Mindset

Shows a commitment to ongoing learning and development that is individually owned. Acquires new knowledge and skills to remain current with and/or grow beyond job requirements.

Empathy

Understands the perspective and feelings of others. Participates in meaningful communication and builds trust with employees, colleagues, partners, and customers to leverage increased sales, productivity, innovation, and competitive advantage.

Trust in Technology

Understands that trust is an essential part of establishing effective human-machine teams. Sees Artificial Intelligence (AI) not only as a tool to facilitate human action but as trusted partner to human operators.

Innovation

Questions orthodox approaches. Is imaginative and inventive. Produces creative solutions to situations and problems. Generates new ideas.

Self-Awareness

Awareness of own strengths and weaknesses / development needs as well as the impact of own behavior on others. Adjusts behavior to be more successful.

Reflection Questions

- Do employees have access to soft-skills training (formal and informal) and are they provided with opportunities to practice their newly learned skills on-the-job or through participating in stretch-projects?
- Are mechanisms or forums in place to encourage employees to keep abreast of industry and technology trends in the market? Are employees upskilled to use relevant technologies to effectively perform their roles?
- Do processes and procedures enable individuals to problem-solve and generate new ideas that are then thoughtfully evaluated by relevant stakeholders and implemented when appropriate?
- Are (virtual or face-to-face) networking events/conferences held where employees can connect with colleagues, partners, and customers and develop their interpersonal skills, share ideas, as well as expand their contextualized intelligence?

Leadership Capabilities

Leaders are mindful that they need to change the way they think about their workforce to stay ahead of the curve of technological (and sociological changes)[17]. The speed of innovation and velocity of disruption often make changes difficult to comprehend or predict, or to even know what to focus on to make a tangible difference[18]. Considering the available literature on the topic, the following capabilities are highlighted for leaders to focus on to successfully navigate the future world of work as it pertains to human-machine teaming:

Emotional Intelligence (EQ)

Understands how own emotions can affect other people. Controls emotions effectively in interactions with others. Perceives, evaluates, and responds to own emotions and the emotions of others. (EQ can be developed over time, particularly through behavioral modeling, thus leaders can improve their EQ as well as model the behavior to their teams.)

Leading Others

Guides others in the successful execution of their assigned responsibilities and help them to achieve organizational outcomes. Gains support and commitment from others and mobilizes them to act. Reassures in times of fear and change. (Supports and empowers employees rather than managing them like machines, thereby enhancing their employee experience).

Human-Computer Relationships

Optimizes the working relationship between employees and digital workers and artificial intelligence. Helps employees understand the benefits of these technologies in the workplace.

Futurist

Takes a long-range perspective in one's thinking; anticipates future needs, problems, obstacles, eventualities, and outcomes. Visualizes outcomes and conveys forward thinking ideas to others. Thinks in a holistic manner; considering all variables that will affect future events.

Entrepreneurship

Encourages a spirit of ownership among employees by allowing them to identify opportunities, make decisions and take calculated risks.

Agility

Response to new circumstances and challenges are quick and effective. Adjusts response to the situation/ interaction based on the evolving nature of it. Makes on-the-spot decisions.

Optimizing People Productivity

Prioritizes people in the work environment and identifies barriers to productivity (inbox overflow, interruptions, insufficient time for training, etc.). Approaches productivity issues from the employee's perspective and find solutions that enable them to flourish.

Developing Others

Provides ongoing feedback and creates learning and development opportunities, formal and informal to unlock the full potential of each team member.

Performance Management

Measures the success of a strategy/activity/ plan that was implemented against agreed upon standards/KPI's to determine its impact on organizational profitability.

Resource Planning

Coordinates internal resources in the most optimal way to enable the organization to achieve its business strategy and desired outcomes.

Reflection Questions

- Are leaders putting their people first and empowering them to adapt and remain relevant as technology and AI changes the way we work? Do leaders recognize individuals for their technological proficiency and encourage them to assist and develop their fellow team members in this regard?
- Do leaders allow employees to make suggestions regarding technologies that could improve efficiencies, as well as encouraging them to experiment without fear of failure and negative consequences? Are employees encouraged to problem-solve and think out of the box?
- Are leaders building their own EQ and modelling the behavior they want to see from their teams?
- Do leaders talk about technology/AI as an important part of the business strategy publicly and privately?

Organizational Strategic Imperatives

There are several strategic imperatives that, when adopted and focused on, can help organizations benefit from human-machine teaming and remain successful in the current climate[12]:

Disruptive Innovation

Predicts and adapts business model to benefit from the introduction of technology that significantly could affect the way the market/industry functions.

Strategic Reinvention

Identifies and captures opportunities in fast-changing global markets. Ensures the organization adapts its strategies, operations, and product/service offerings to stay relevant and ahead of the curve and a leader in the industry.

Agile Business Strategy

Drives organizational agility by aligning effort and resources, bringing value to the activity, reducing churn, and producing strategic and operational results. Democratizes strategy through setting visionary targets, but empowering employees to find innovative ways to solve the problems and contribute towards the vision.

IT Strategy

Creates and manages a comprehensive plan that details of how technology should be used to meet IT and business goals.

Emerging Technologies

Researches, designs, applies, and evaluates new information technologies for business environments.

Ethical Data Usage

Uses data in a responsible, honest, transparent, and sustainable manner. Does the right thing for people and society. Refers and adheres to the principles and values on which human rights and personal data protection laws are based.

Learning Culture

Drives a culture of learning to maximize employee potential, attract talented employees and extend length of stay within an organization. Ensures the investment into learning programs achieves the outcomes as expected.

Reflection Questions

- Business operations need to be redesigned to gain the most value from AI. Which operational area can be improved? Which stakeholders should be involved in co-creating a solution where AI systems are used to improve a process? How can the organization scale and then sustain the suggested solution?
- Does technology have strategic importance in the organization (as opposed to being seen just as a source of cost efficiency)? If not, how can AI/digitization/automation become more of a focus and incorporated as a strategic driver?
- When reimagining a business process, determine whether an improvement in flexibility, speed, scale, decision making, or personalization is critical to the desired change. How could intelligent collaboration be harnessed to create the desired improvement? What alignments and trade-offs with other process characteristics will be required?
- What learning programs or offerings are available to employees? How is the ROI of learning programs measured?

References

[1] Karr, J., Loh, K. & San Andres, E.A. (2020). *COVID-19, 4IR and the future of work.* https://www.apec.org/docs/default-source/publications/2020/6/covid-19-4ir-and-the-future-of-work/220_psu_covid-19-4ir-and-the-future-of-work.pdf?sfvrsn=7723ac16_1

[2] McGinnis, D. (2020). *What is the Fourth Industrial Revolution?* Salesforce. https://www.salesforce.com/blog/what-is-the-fourth-industrial-revolution-4ir/

[3] LaBerge, L., O'Toole, C., Schneider, J., & Smaje, K. (2020). *How COVID-19 has pushed companies over the technology tipping point—and transformed business forever.* McKinsey & Company. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever

[4] Iberdrola. (2022). *Industry 4.0: which technologies will mark the Fourth Industrial Revolution?* https://www.iberdrola.com/innovation/fourth-industrial-revolution#:~:text=In%20the%20case%20of%20the,-by%20developing%20customised%20products%20that

[5] Pratt, M.K. (2021). *7 key benefits of AI for business.* TechTarget. https://www.techtarget.com/searchenterpriseai/feature/6-key-benefits-of-AI-for-business

[6] Du Plessis, C. (2021). *It's proven that automation in the workplace leads to job reshaping not employee replacing.* Fuel50. https://www.fuel50.com/2021/06/automation-in-workplace-job-reshaping/

[7] Glossop, A. (2021). *5 benefits of online collaboration tools.* Ideagen. https://www.ideagen.com/thought-leadership/blog/5-benefits-of-online-collaboration-tools

[8] Workflow. (2020). *Best examples of human-machine teaming.* https://www.servicenow.com/workflow/customer-experience/roundtable-human-machine-teaming/

[9] Arora, S. (2021). *Humans becoming excessively dependent on technology – and it could harm future.* The Print. https://theprint.in/campus-voice/humans-becoming-excessively-dependent-on-technology-and-it-could-harm-future/686799/

[10] Brown, T. (2020). *Are we too dependent on technology?* IT Chronicles. https://itchronicles.com/technology/are-we-too-dependent-on-technology/

[11] IBM. (2022). *What is cybersecurity.* https://www.ibm.com/topics/cybersecurity#:~:text=Cybersecurity%20is%20the%20practice%20of,sensitive%20information%20from%20digital%20attacks.&text=Security%20system%20complexity%2C%20created%20by,expertise%2C%20can%20amplify%20these%20costs

[12] Wilson, H.J. & Daugherty, P.R. (2018). *Collaborative intelligence: Humans and AI are joining forces.* Harvard Business Review. https://hbr.org/2018/07/collaborative-intelligence-humans-and-ai-are-joining-forces

[13] McKinsey Global Institute. (2017). *Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages.* McKinsey & Company. https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages

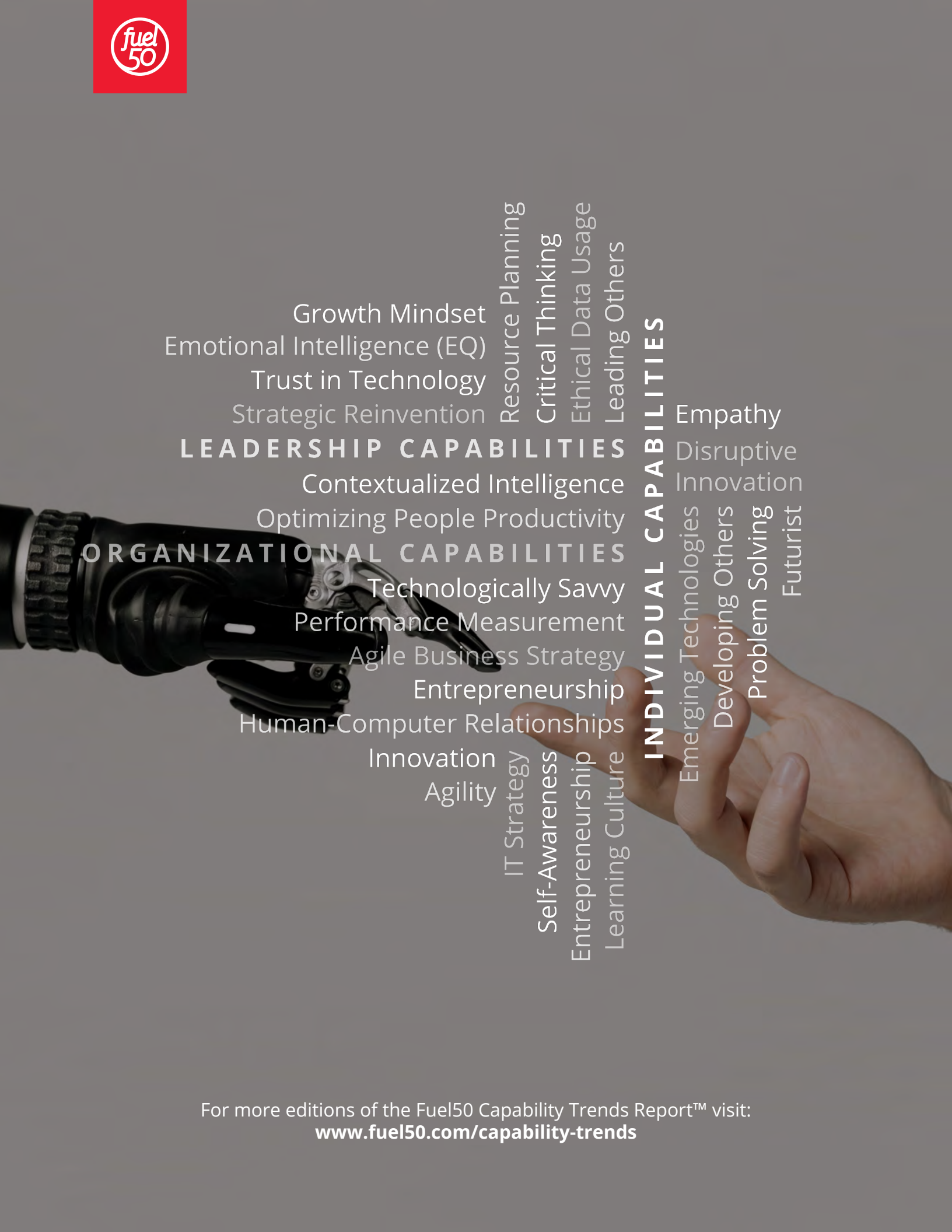
[14] McKinsey Global Institute. (2017). *Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages.* McKinsey & Company. https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages

[15] Phillpott, S. (2021). *15 disappearing jobs that won't exist in 2030.* Career Addict. https://www.careeraddict.com/disappearing-jobs

[16] Forbes. (2020). *The best job skills for the future are inherently human.* https://www.forbes.com/sites/deloitte/2020/01/24/the-best-job-skills-for-the-future-are-inherently-human/?sh=15f8e5661c67

[17] Schwedel, A., Root, J., Allen, J., Hazan, J., Almquist, E. & Devlin, T. (2022). *The working future: More human, not less.* Bain & Company. https://www.bain.com/contentassets/d620202718c146359acb05c02d9060db/bain-report_the-working-future.pdf

[18] Ramirez, J.C. (2020). *Fourth Industrial Revolution brings challenge and opportunity.* https://hrexecutive.com/fourth-industrial-revolution-brings-challenge-and-opportunity/



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Fuel50 is the AI Talent Marketplace solution that delivers internal talent mobility and workforce reskilling.

With hyper-personalized AI and a deeply embedded commitment to diversity and inclusion, Fuel50 mobilizes your talent. Fuel50's ethical AI matches your people to opportunities in real-time, automatically maps your workforce architecture, and provides deep data insights for predictive talent and workforce planning.

We believe that a deep commitment to inclusive talent practices is needed and it must start with a charter that is built into your skills architecture & organizational DNA.

Using the Fuel50 Talent Ontology™ drives more inclusive working cultures through:

- Incorporating critical D&I capabilities in all executive and manager level roles, supporting a shift of mindset from the top down
- Amplifying behavioral standards around D&I and holding leaders accountable for driving positive change
- Putting a spotlight on unconscious bias throughout the organization
- Ensuring D&I practices are present in recruitment, performance management and leadership development

The trending capabilities showcased in this report are now available for use by all our clients.

Over 80 organizations around the globe saw immediate impact since deploying Fuel50, with up to 65% increase in lateral movement, 35% increase in internal recruitment, and 60% reduction in employee churn.

Learn more: **www.fuel50.com**