Preparing Workers for Anything: Human + Machine

Technology is fundamentally remaking work, as advances in artificial intelligence and other computing capabilities make it possible to automate work previously thought untouchable. Artificial intelligence not only can process bank deposits or recommend books one might like but also, increasingly, can give quality feedback on writing or determine whether someone has cancer.

Many of these jobs—bank teller, bookstore clerk, writing instructor, radiologist—were, not too long ago, the exclusive domain of humans. And they demonstrate that even a high level of knowledge and skill can’t insulate today’s workers from being automated out of a job. Nevertheless, we know that jobs featuring repetitive, routine tasks in fields like manufacturing, retail, and finance are prime candidates for automation. This evolution will disproportionately impact low-income and otherwise disadvantaged Americans, the ones who can least afford it.

There is disagreement, however, among technologists, economists, and futurists about the exact impacts that artificial intelligence will have on society and work. And as George Siemens wrote to kick off the New Horizons department for 2020: “We should not expect accurate forecasts or even consensus about the longer-term development of AI and how it may intersect with, and impact, humans.” The future of work is far from certain.

Against that backdrop, learners and workers must prepare for a future of work that could be just about anything. That, of course, means learning to be agile and adaptive, to seek out new opportunities, and to continuously learn. Workers—like institutions—will be most successful if they know how to craft plans and careers that accommodate diverse futures, rather than a single version of the future. This means the capabilities that will set workers up for long-term success are not necessarily fixed skills but are ones like creativity, problem-solving, and social awareness. Moreover, while skills will be critically important, alone they won’t be enough.

In fact, a recent analysis from Entangled Solutions, drawing on both research and practice focused on career navigation, revealed three critical career pillars that individuals will need in order to be successful in the modern economy: occupational identity, social capital, skills. Understanding the different, but deeply interrelated, roles that the three pillars play in career development is essential to helping workers navigate the machine-powered economy of the future.

**Occupational Identity**

Occupational identity is what you believe you can be: what you like to do, what you are good at doing, and where you perceive you belong. It is a critical piece of career navigation. As noted by the authors of a report reviewing research on youth occupational identity: “Occupational identity development is an underexplored piece of the puzzle in improving pathways to occupations.” Children are especially open to trying out different career identities, but identity continues to evolve over time as people enter the workforce and accrue experience. Thus, schools, colleges, and employers all have an important role to play in helping opportunity seekers develop a strong sense of self as it relates to career.

Developing an occupational identity is less about choosing a specific career field or aligning oneself with O*NET job descriptions and more about understanding what one likes to do. This is what Diane Tavenner, a charter school founder, calls discovering the “ings” that people like and are good at—things like coding, writing, managing, and inventing. Opportunity seekers of all ages, from a middle-schooler to a recently laid-off cashier in her fifties, can be helped to understand how their preferences and skills can transfer across different jobs and careers.

Career navigation coaches and tools can be instrumental in walking people through this process. And as millions of people are automated out of their jobs now and in coming years, employer-provided “outskilling” and other navigation supports can help them translate their skills to new roles or understand what skills they need to develop. Employers play an especially critical role in helping people see how they might move within the company.

As technology transforms the way we work and the jobs humans are asked to do, opportunity seekers need support in developing an occupational identity that is both adaptable and enduring.
Social Capital
Social capital—who you know—is the breadth and depth of your relationships and is an important career asset. Early in life, these relationships expose learners to career pathways and enable exploration. As students advance through education and enter the workforce, these relationships are critical to understanding different pathways, finding opportunities, and ultimately landing jobs.

Eight out of ten jobs are never publicly advertised, creating a “hidden market.” Referrals make up 40 percent of new hires, even though only 7 percent of job applicants get a personal referral from someone at the hiring company. This distorts what we understand as the skills market and, all too often, reinforces socioeconomic disparities. People may, in fact, have the necessary skills but lack the social capital to leverage them into jobs. The hiring system may also reward people who lack important skills but have social capital.

Employers’ efforts to move toward skills-based hiring—using digital screening tools and skills assessments—should, in theory, reduce the role of social capital in hiring. But a growing body of research shows that social capital actually plays a critical role in understanding how to navigate such screening systems. Employers should work hard to apply transparency to this process and, more broadly, to put workforce systems in place that help workers naturally develop useful relationships and networks.

Mario Luis Small, a sociologist at Harvard, has shown that the range and the usefulness of people’s networks have far less to do with deliberate networking than with conditions in the institutions they frequent, including schools, colleges, and workplaces. A growing number of researchers, including Julia Freeland Fisher, director of education at the Clayton Christensen Institute, are thus exploring how both schools and postsecondary institutions can help level the playing field. Freeland Fisher noted: “If we’re trying to create a set of educational institutions and programs that fuel upward mobility, we need to start thinking about how to deliberately integrate social components into learning environments. ‘We need to be explicit about training students how to build, grow, and maintain social capital and creating more channels to accessing new networks.’”

Meanwhile, digital technology makes it far easier for people to connect meaningfully across geographies: career navigation tools like Handshake and PeopleGrove are focused on helping opportunity seekers develop their networks. This work is critical to building equity.

Skills
Skills—what you know how to do—form the most-talked-about career pillar. And of course, a well-formed occupational identity and even social capital can get someone only so far if they haven’t developed the skills necessary to start, restart, or grow in their career.

And as it stands, our K-12, postsecondary, and workforce and hiring systems are disjointed and aren’t well-designed to help learners both develop in-demand skills and translate them to the world of work. But a number of efforts, such as the T3 Innovation Network at the US Chamber of Commerce Foundation, are underway to reimagine education, training, and hiring in ways that will put career skills front and center. In fact, many employers are at least exploring ways to deemphasize proxies such as a degree and focus on skills-based hiring.

This shift could open jobs to a wider range of workers, but opportunity seekers will have to be able to develop, demonstrate, and clearly articulate skills. This need is particularly acute around soft skills—such as communication, critical thinking, and creativity—which are more complicated to measure and are of increasing importance as automation renders more routine skills obsolete. “The skills that matter most now and into the future are ‘human’ skills that can’t be performed by machines,” says Michelle Weise, chief innovation officer at the Strada Institute for the Future of Work. “We need better ways for students to understand, develop, and translate those skills into the language of the labor market.” And we must also do a better job of helping opportunity seekers understand where the market for skills is heading.

Taken together, occupational identity, social capital, and skills—the three career pillars—provide a base from which individuals can continue to explore, develop, and consider new opportunities as the demands of work and the contours of career continue to shift around them. That kind of agility will be not only advantageous but essential in our new human + machine reality.

Notes

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