Upskilling for a post-pandemic economy

Why skills training is now more important than ever to build a resilient workforce

Accenture Authors:
Eva Sage-Gavin, Mary Kate Morley Ryan, Kelly Monahan, PhD

Accenture Lead Researchers:
Sarah Berger, Jenny Brodie, MPA, Cristian Foschiatti, Shital Sharma, PhD

Accenture Contributors:
Christine Pesout, Khai Thomas, Robin Boggs, Nahomie Louis

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The current health and economic crises resulting from COVID-19 are radically changing the way we work and live. They are also highlighting the likelihood of lasting changes on the type of work required and how it will be performed. As a business leader, designing new workforce strategies that include a focus on upskilling is essential for a company's continued success in a post-pandemic world.

Our research highlights that upskilling workers is a win-win for employees, companies, and the broader U.S. economy. In a report on the future of learning, we found that the United States could lose as much as **US$975 billion** between 2018-2028 in cumulative growth if upskilling does not catch up to the rate of change spurred by technology and other forces[1]. At the organizational level, **our research**[2] fielded during the pandemic, shows that digitally fluent companies who have workforces with strong digital skills are over five times more likely than peers to project high revenue growth for the upcoming three years. And at the individual level, this research report found that technical skills are the currency for individual future opportunity and are needed to make significant jumps in economic mobility.

The need for upskilling is not new. However, like many other things, the pandemic has highlighted the immediacy of need for it. Recently, for instance, the **American Workforce Policy Advisory** Board called for "immediate and unprecedented investments in American workers" for training and help in finding jobs. As governments and businesses seek to help American workers through the difficulties of COVID, upskilling presents itself as an integral part of the solution in rebuilding a resilient workforce.

[1] Accenture. It's learning. Just not as we know it; September, 2018.
[2] Accenture. Honing your digital edge; November, 2020.

Talent is poised to adapt

Given the growing importance of upskilling, the intent of this research is to provide insights into the magnitude of the opportunity that exists for upskilling as well as the skills of the future that will enable the greatest degree of economic mobility for workers.

Our findings show that one-third of American workers in the study population, with some training and new skills acquisition, have the potential to access higher income occupations that are forecasted to grow in the future. This includes 33 million low-income workers.[3] In some cases, these workers could double their income, with low-income workers achieving median salaries of $35/hour from their new positions. These potential occupations are what we term "opportunity jobs." Understanding the best ways to invest and assist workers to obtain opportunity jobs will help influence the ability of organizations and our economy to thrive in a post-COVID-19 world.[4]

> **1 in 3 working Americans with some training and new skills acquisition, have the potential to access higher income occupations that are forecasted to grow in the future, including 33 million low-income workers.**

We defined these jobs as having the following characteristics:

Increased income
Provides workers with a higher salary

Low risk for automation
No more than 31.1% of time devoted to tasks that could be automated or could see a significant skill shift due to changing technology

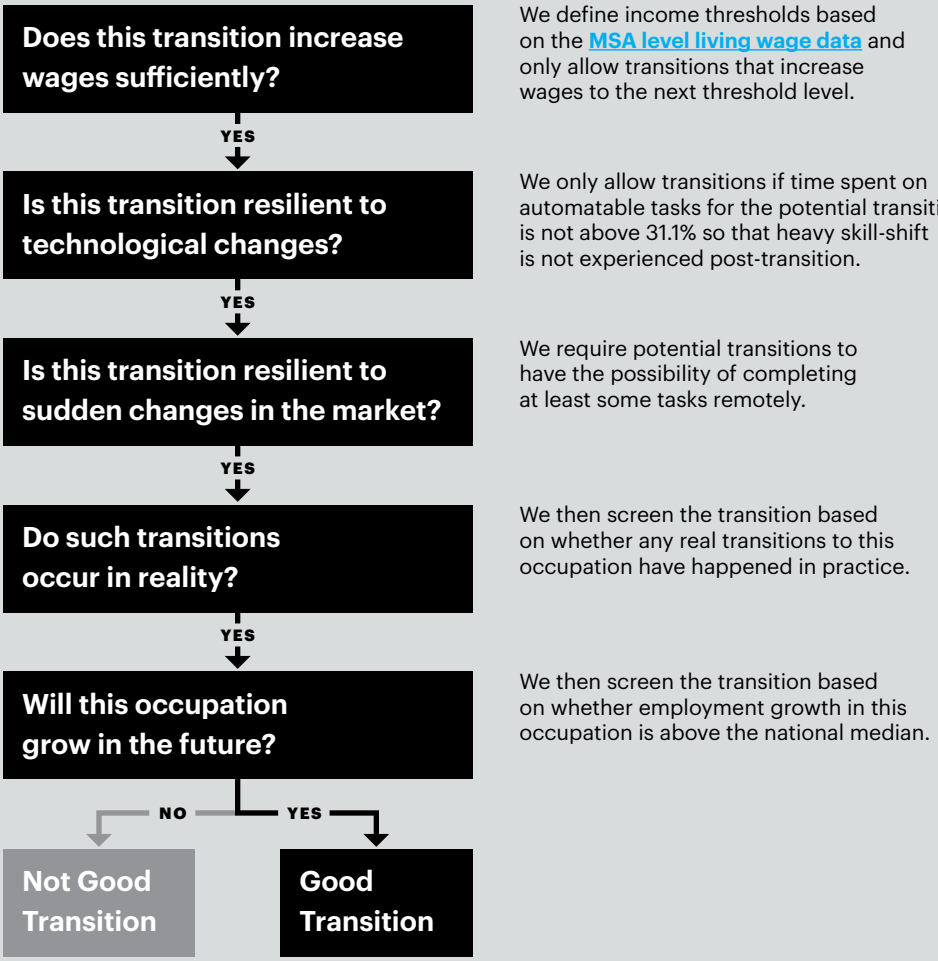
Expected growth in employment
Based in an industry sector forecasted to experience greater than the national median growth in employment

Resilience
Resilient to sudden disruption, with some ability to complete tasks remotely if necessary

Realistic
Based in reality—a significant amount of transition to these jobs must have taken place in the recent past

[3] Earning below living wage for 2 adults and 1 child within a specific Metropolitan Statistical Area (MSA). Glasmeier, A. (2016). Massachusetts Institute of Technology (2014). The living wage calculator.
[4] Brookings: Our employment system has failed low wage workers. How can we rebuild? April, 2020

Figure 1: Identifying opportunity jobs



As business leaders look to the future and begin to develop greater workforce resilience and enhance their upskilling programs, they must consider the following:

1. What skills best prepare American workers for tomorrow's jobs?
2. How should skill pathways be structured to guide individuals to 'opportunity jobs', and what must businesses and individuals consider as they pursue upskilling?
3. What are the barriers that need to be overcome to enable upskilling programs to scale?

Skills with promise

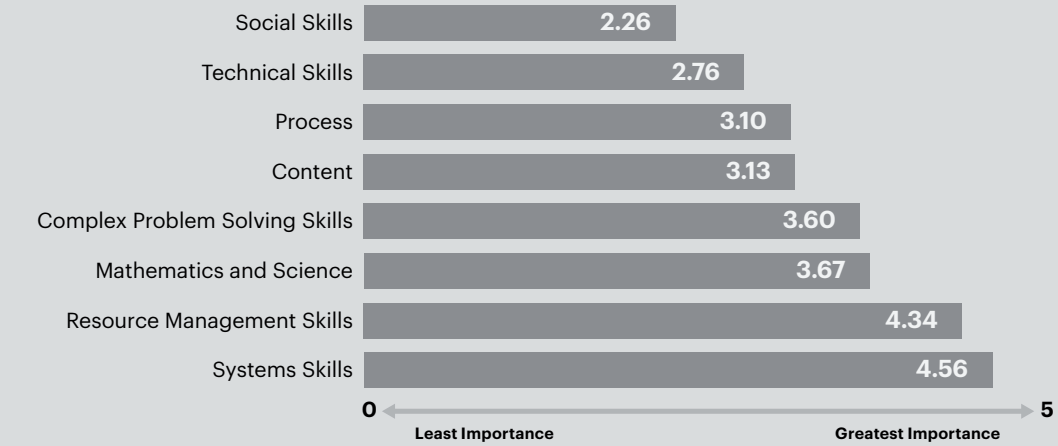
Our data revealed that skills previously deemed important for job transitions aren't enough to address economic mobility in the future. Based on analysis of skills of people currently employed across wage thresholds, technical skills appear to be the currency for employability, and future opportunity; in other words, they are needed to make significant jumps in economic mobility. Our research indicates that technical skills are twice as likely to be associated with high-income occupations compared to other skills.

Across middle and high-income occupations, systems skills; resource management; math and science; and complex problem-solving skills are all of significant importance. However, technical skills—which includes capabilities such as operations analysis, quality control analysis, programming and technology design—change from the second least important skill group required by middle-income jobs to the second most important skill group required by high-income jobs (Figure 2).

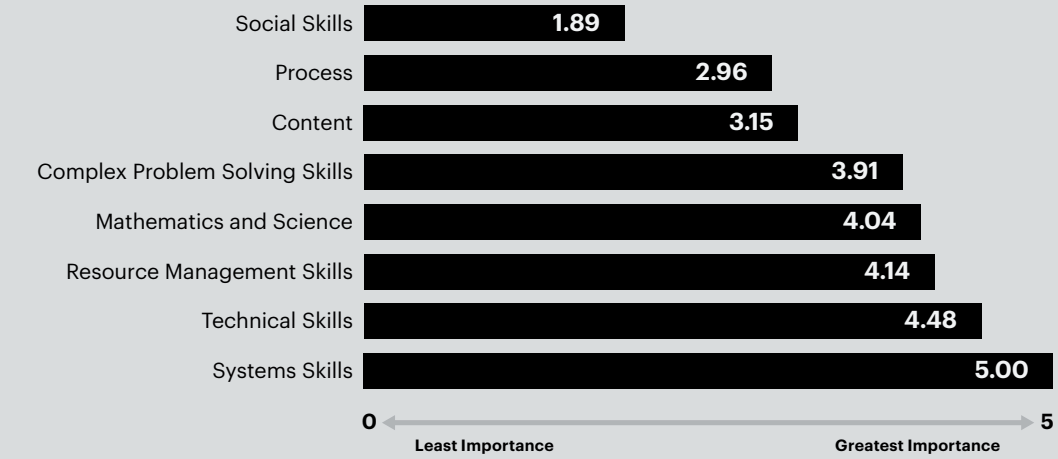
Methodology: In order to identify the skills of greatest importance for enabling occupational transitions, we analyzed 35 standard skills across 450+ occupations from current population survey (CPS) data. We considered occupations across low, middle and high-income living wage thresholds and analyzed the skills needed to move across these three groups. We then categorized these skills into eight major skill groups in order to identify patterns and trends. Our research revealed several skill groups as key to economic mobility.

Figure 2: Skill importance for middle and high-income occupations[5] by skill grouping

Middle Income



High Income

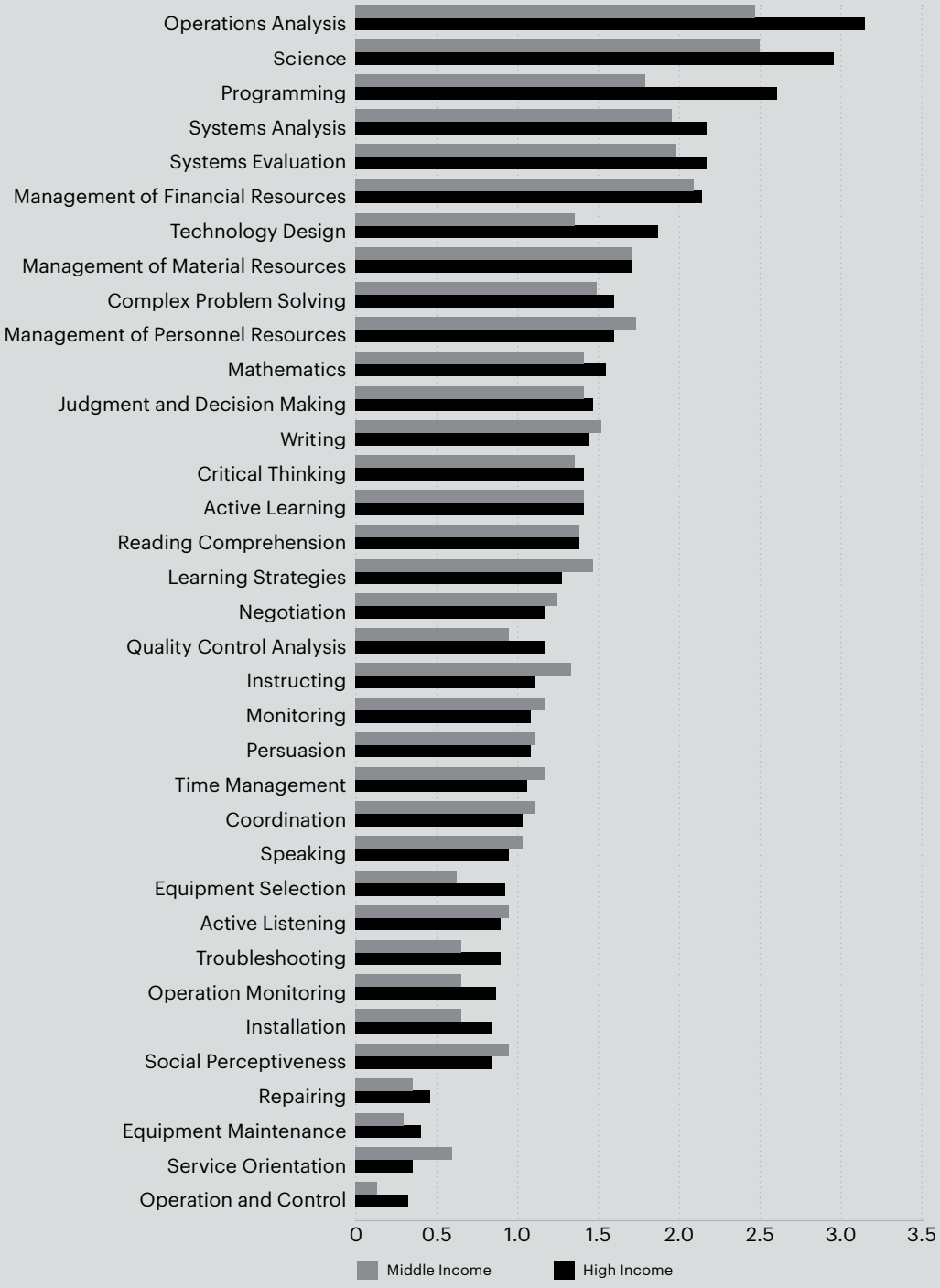


**The scale used to measure the importance of skills is between 1 and 5, where 5 represents the greatest importance and 1 represents the least importance.*

Our research also looked at skills correlated with the highest increase in median wages. It found that among technical skills, programming; operations analysis; science; and judgement and decision making skills were all tied to a higher increase in wages (Figure 3). Similarly, occupations in which these skills are most important pay wages 2.5x higher compared to occupations in which those skills are less relevant.

[5] **Income Levels are defined based on Living Wage at the Metropolitan Statistical Area (MSA) level:**
- Low Income: Income below living wage for 2 adults and 1 child within the MSA
- Middle Income: Income between living wage for 2 adults and 1 child AND twice the living wage for 2 adults and 1 child within the MSA
- High Income: Income above twice the living wage for 2 adults and 1 child within the MSA

Figure 3: Relative skill importance for middle- and high-income occupations[6]



The x axis measures the relative importance of skills, where 1 signifies the importance of the skill for the low-income group and 3 signifies that same skill to be 3 times more important for other income groups.

[6] The skill importance for low income across all skills was standardized to be 1. The length of bars in this graph shows the relative importance of each skill compared to the importance it holds for the low-income group.

Those insights make upskilling guidance seem fairly straightforward, yet there are additional considerations. First, opportunities vary greatly by location—both in terms of feasibility to obtain certain occupations, as well as skills in demand. Below (Figure 4) is a snapshot of the top 15 opportunity jobs across the most highly populated geographical regions (Metropolitan Statistical Areas).[7]

Figure 4: Top 15 occupations across major U.S. metropolitan areas

Tech-Oriented

Information Security Analysts

Software Developers, Applications & Systems Software

Computer Hardware Engineers

Civil Engineers

Business and Management

Real Estate Brokers & Sales Agents

Financial Managers

Personal Finance Advisors

Chief Executives & Legislators/ Public Administration

Education

Education Administrators

School Teachers

Special Education Teachers

Others

Air Traffic Controllers & Airfield Operations Specialists

Architects (Except Naval)

Producers & Directors

Broadcast/Sound Engineering Technicians & Radio Operators, and Media and Communication Equipment Workers

[7] Note these opportunity jobs were identified using our definition and factors as outlined on p.2 of this report. Top jobs were then selected based on those with the largest growth and income potential

However, below is a snapshot of the top 5 opportunity jobs based on a sample of the most highly populated cities (Figure 5). This helps to demonstrate why strategies for upskilling are more effective when tailored to relevant skills and regions.

Figure 5: Top 5 occupations by metropolitan city

Seattle

- Chief Executives & Legislators/ Public Administration
- Software Developers, Applications & Systems Hardware
- Musicians, Singers, & Related Workers
- Sales Reps, Services, All Other
- Management Analytics

D.C./Arlington

- Personal Finance Advisors
- Air Traffic Controllers & Airfield Operations Specialists
- Computer Hardware Engineers
- Civil Engineers
- Budget Analysts

Charlotte

- Education Administrators
- Real Estate Brokers & Sales Agents
- Financial Managers
- Chief Executives & Legislators/ Public Administration
- Software Developers, Applications & Systems Software

Phoenix

- School Teachers
- Education Administrators
- Construction Managers
- Chief Executives & Legislators/ Public Administration
- Computer Information Systems Managers

Houston

- Personal Finance Advisors
- Engineers
- Chief Executives & Legislators/ Public Administration
- Securities, Commodities & Financial Service Sales Agents
- General & Operations Managers

Miami

- Information Securities Analysts
- Architects (Except Naval)
- School Teachers
- Market Research Analysts & Marketing Specialists
- Education Administrators

Another confounding finding from our analysis is that skills most prevalent among workers at different levels of income are different than the skills that have helped individuals to transition to higher-income jobs.

Our analysis, based on 2018 job transitions across 188 million American workers, shows that the average importance of social skills—such as listening, speaking, critical thinking, and writing—has been more important for job *transitions* as compared to other skills. This holds true for transitions from low-income as well as from middle-income occupations. However, this contrast with the high and middle-income skills prevalence previously identified suggests most transitions may be taking place between jobs with low skill gaps and higher skill similarities. It also indicates most workers are seeking transitions that do not require a high level of technical training.

> **Our research points to a new reality: Although content, process, and social skills have helped individuals to transition to other jobs in the past, relying on such will generally be insufficient to transition to high-income jobs in the future.**

This phenomenon will not spur economic growth or enable individuals to work to the top of their abilities. In summary, our research points to a new reality: Although content, process, and social skills have helped individuals to transition to other jobs in the past, relying on such will be insufficient to transition to high-income jobs in the future. The bottom line—social skills will only get one so far.

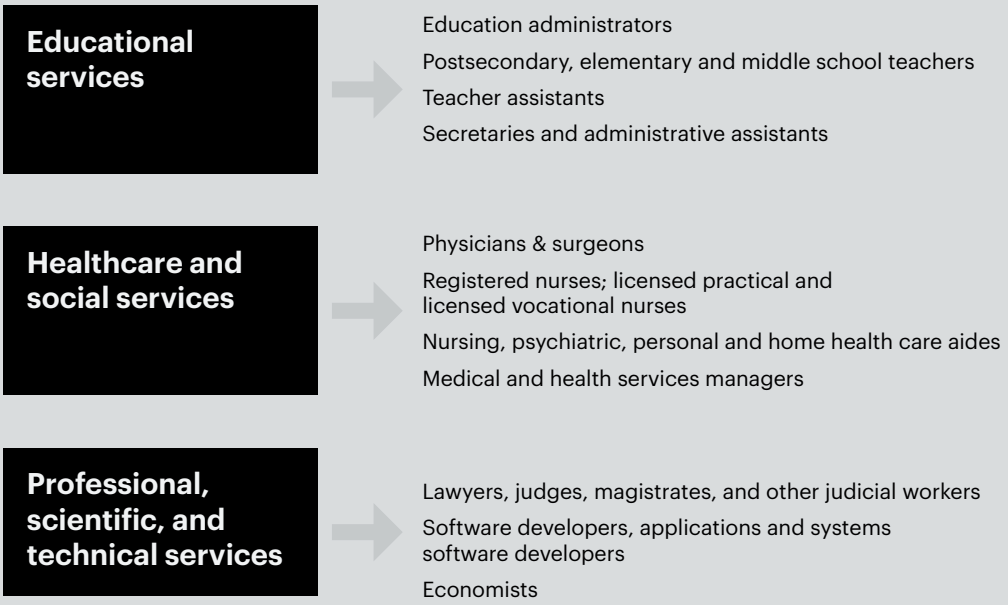
Research from the World Economic Forum supports this—its **Future of Jobs Survey**[8] anticipated "technology design and programming" and "systems analysis and evaluation" to emerge as new skills in demand for 2022. Similarly, **a recent study from Pew Research**[9] found that the average rating of the importance of analytical skills—including science, math and programming—in "new and emerging" jobs is 21% greater than the average rating in existing jobs—and higher than social and managerial skills. As the demand for technical skills continues to rise, we expect such skills will enable more individuals to transition occupations.

[8] World Economic Forum. The future of jobs report; 2018
[9] Pew Research Center. New, emerging jobs and the green economy are boosting demand for analytical skills; March, 2020.

Industry growth during & post-pandemic

In order to design an upskilling program and guide workers, companies need to understand more than just in-demand skills. Helping workers develop skills to transition to fast-growing industries is also key to talent planning. Based on occupation and employment growth forecasts between 2018-2026 and on COVID-19 impact scenarios, we identified the three leading fields for industry growth as Educational services; Healthcare and social services; and Professional, scientific and technical services (Figure 6). At a time when many Americans are seeking more stable employment or new paths back into the labor market, these areas may serve as "safe" bets for enterprises supporting workers with job transitions.

Figure 6: Growing fields and sample occupations



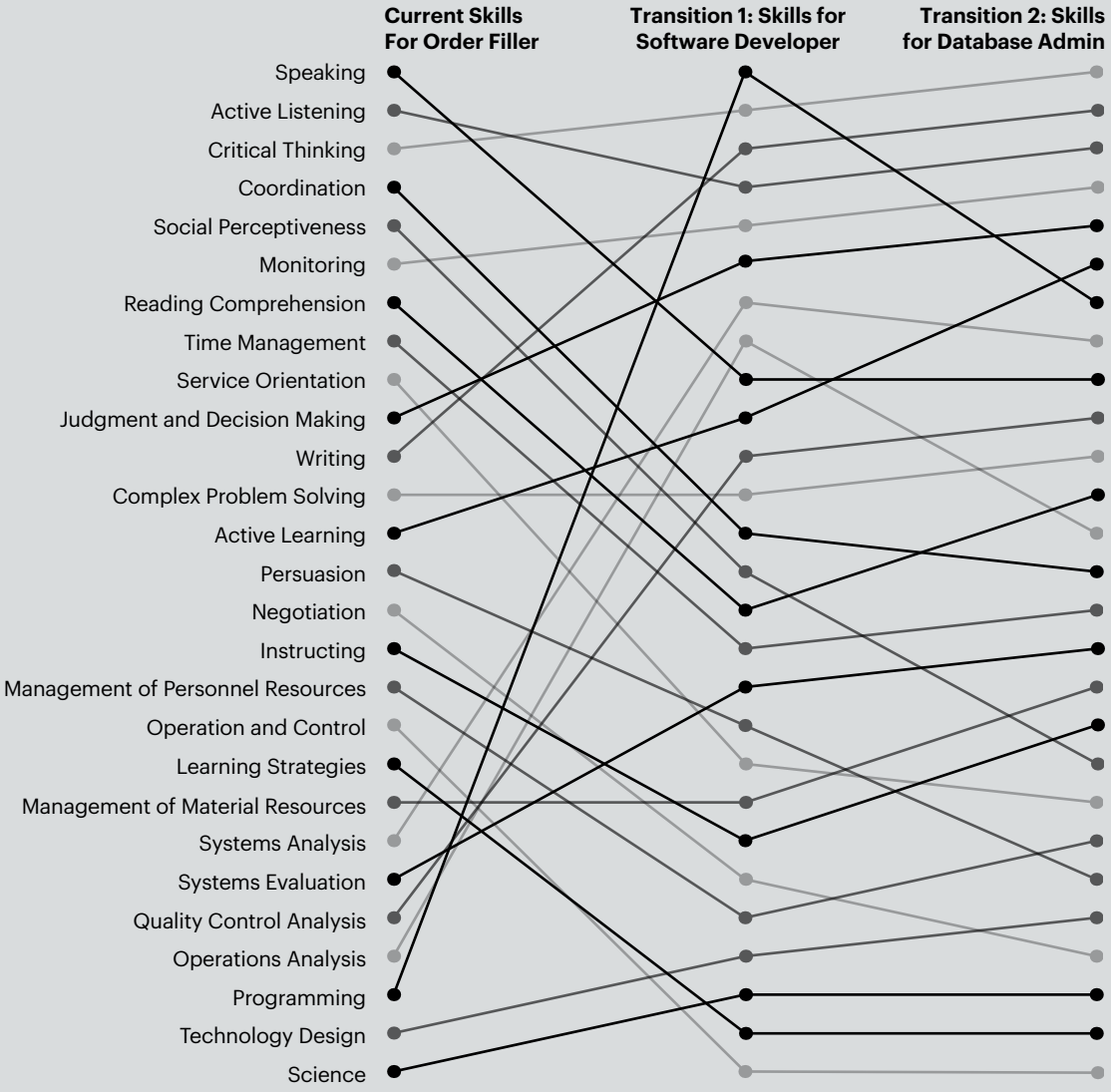
Upskilling pathways toward a better future

Once employers and their ecosystem partners have a strong understanding of in-demand skills and growth areas, it is necessary to define what a "good" job transition looks like for individuals. Designing new skilling pathways that qualify workers for opportunity jobs can be done by mapping skills required for a source occupation to skills required for opportunity jobs.

This exercise will highlight skill gaps and provide a high level indication of time, training and investment required. For some transitions, especially those that are cross-functional and cross-industry, skill gaps could be large and require very intentional and well-directed investment. For others, it may be a natural progression to an occupation within the same function or industry, requiring minimal investment. Below (Figure 7) is a sample skill pathway.

Figure 7: Skills mapping in action

Skills Pathway for an Order Filler[10] to Become an Applications Software Developer and subsequently a Database Administrator (by level of importance)



[10]Based on O*NET Data, Order Fillers—grouped together with Stock Clerks—performed the following tasks: receive, store, and issue sales floor merchandise, materials, equipment, and other items from stockroom, warehouse, or storage yard to fill shelves, racks, tables, or customers' orders. May mark prices on merchandise and set up sales displays.

This pathway illustrates how the initial skill transition from Order Filler to Applications Software Developer requires significant skills acquisition around programming, systems analysis and operations analysis. By comparison, the subsequent transition from Applications Software Developer to Database Administrator is much smoother, indicating a potentially lower level of time and financial investment from all parties.

This skilling pathway also sheds light on how individuals may build stackable credentials. With some on-the-job training offering certificates and education credits, individuals can incrementally work towards specific occupations or can obtain credentials which support their transitions from one opportunity job to another.

As robust upskilling programs may enable more order fillers to become database administrators, some individuals may choose to pursue transition paths requiring less skilling, such as becoming an administrative support worker. Choosing between paths depends on significant considerations, not only for the individual, but also for the employer. Most often, the larger the earning potential gap, the more factors there are to consider. Below (Figure 8) are several illustrative scenarios of alternative futures for individuals supported by upskilling:

Figure 8: Sample transitions to opportunity jobs and related trade-offs:

MSA: Albuquerque, NM

Current Job:

Stock Clerk
$10.35/hr

Current top skills:

Speaking
Active Listening
Critical Thinking
Coordination
Social Perceptiveness

Path Option 1: High returns but requires high investment

Transition 1:

Software Developer
$54.11/hr

Steep technical learning in areas of programming, systems analysis, operations analysis and systems evaluation.

Trade-off Type

Path Option 2: Smoother transition with lower earning potential and requiring lower investment

Transition 1:

Admin Support
$26.25/hr

Less technical skills required to complete the new job and more current skillsets transferring to new role.

Trade-off Type

Due to current high rates of underemployment and unemployment, we expect immediate upskilling trends to bend more toward shorter timeline and smaller investment transition scenarios. However, based on the magnitude of upskilling need and recent large investments by a handful of Fortune 500 companies, we believe that long-term, we will see more meaningful investments to support upskilling leaps.

Upskilling obstacles

Research has shown that workers embrace opportunities to grow and expand their skills. For instance, in a **recent Accenture study** of 5400 global workers[11], we found that workers' enthusiasm for and value perception of 10 digital skills was significantly greater than their capabilities across those skill areas. However, another Accenture survey, which canvassed 700+ at risk workers[12] highlights that there are obstacles getting in the way of that enthusiasm for upskilling. For example, although 66% of at-risk workers feel broadly supported by their employer, only half agree that their employer is providing training/skilling opportunities, and even fewer-one one in four-report that their employer sponsors educational or outside training opportunities that they want to pursue.

Other major barriers cited by workers in that survey include:

The basics of daily life. Lack of access to transportation and childcare as well as constrained schedules—all of which are statistically correlated. They often overlap, creating a trifecta of daily life difficulties for workers.

Breaking new ground. People who have already participated in apprenticeships or job shadowing are more likely to experience support for their skills development than those who haven't. Yet, our survey of at-risk workers showed that roughly one in four respondents are aware of work-based learnings but do not participate in them.

Race disparity. Survey findings showed that race was a strong predictor of whether someone felt they had the skills required to get the job they wanted. Two-thirds of those who said they did not have the experience needed to get the job they wanted were non-white.

Income disparity. Workforce outreach and skilling programs aren't always administered equitably. 80% of people who earned US$60,000 to $90,000 agreed that their employer supported them in their career development and growth within the company, versus 57% of those who earned US$30,000 or less.

[11] Accenture. Honing your digital edge; November, 2020

[12] At-risk workers were defined as those who were currently or had prior experience with jobs that had a high potential for automation. They had income <$90,000, were between 25-64 years of age, and had no Bachelor's degree.

Steps for getting started

The call to action for businesses to upskill workers has never been greater—upskilling programs hold the promise of not only kick-starting our economy again and supporting corporate growth, but also of being a new equalizer to help individuals move to more stable, higher-paying jobs. Conversely, if companies and government fail to support upskilling, the lack of workers without appropriate skills may increase, individuals who can't adapt may see their wages stagnate, and those unemployed by the crisis may struggle to re-enter the workforce.

As companies are reinventing themselves and redesigning their workforces in the wake of COVID-19, upskilling should be placed at the core of their growth strategies.

Key considerations for executives as they build or expand successful upskilling programs for workers include:

Center on digital and technical skills. Our research shows that technical skills will help to drive the greatest economic mobility for workers. And at a broader level, digital fluency can help drive organizational success in a post-pandemic era. Yet, only around 60% of senior leaders today are prioritizing investments in targeted digital education and training for all employees[13]. This is a huge opportunity that must be further tapped by organizations.

Make it personal. Tailor transition pathways to be distinct to your business and workers. Mapping skills needed within and outside of the organization to multiple roles allows for greater corporate agility and a more "future-proof" workforce.

Remove barriers. Skilling programs need to meet workers where they are. That means developing a range of development and training opportunities, such as on-site job shadowing, virtual peer coaching, digital classrooms and skill academies, and self-directed learning. A variety of training formats can help to reduce structural barriers.

Use data. Evidence-based data should inform any skilling strategy—from outlining feasible transitions to aligning program structure and delivery with how people learn best. For instance, a study from the Organization for Economic Co-operation and Development highlights how learning-to-work transfer is driven by the practice, application, and feedback people receive in repeated ways over time. Integrating evidence-based approaches like that help ensure program success.

Make skilling a team sport. Skilling is a competitive advantage, but it's not a zero-sum game. In an environment where workers have been furloughed and industries have been impacted unequally by the crisis, it is critical to share information and partner with other companies as well as government and academia. Doing so will create shared workforce resilience for individuals, families and companies across the country.

In today's turbulent environment, we are at risk of leaving some of our most vulnerable workers behind if we do not level up our skills development investments. As our research shows, there is a clear path forward that can help to unlock the potential of people—companies need to make it central to their mission.

[13] Accenture. Honing your digital edge; November, 2020.

Appendix

Research methodology: Unless otherwise noted, all research in this paper is from Accenture Research. Several study approaches were employed to identify data gathered for this report. They were as follows:

Analyzing Transitions: Wages and demographic characteristics for years 2015-2018 were sourced from Annual Social and Economic Supplements (ASEC) and the Current Population Survey (CPS) from the U.S. Census Bureau. Skills adjacency used to identify potential occupation transitions were computed based on skills listed for each occupation in the O*NET Database. O*NET is one of the most comprehensive public data source for occupational information. It provides a periodically updated and standardized Content Model for 974 occupations. Index for technology impact on occupations was developed with input from Accenture Research experts using data from O*NET database. Index on occupation resiliency based on ability to complete tasks remotely was developed using O*NET database and the American Community Survey (ACS). Living wage thresholds at the MSA level were sourced from the MIT Living Wage Calculator.

Measuring Industry Growth: Occupation growth between years 2018 and 2026 was computed using data from Bureau of Labor Statistics—Occupational Employment Statistics (BLS-OES), American Community Survey (ACS) and employment growth forecasts based on COVID-19 impact scenario at the Metropolitan Statistical Area (MSA) level from Oxford Economics.

Estimating economic impact from sub-optimal skilling: This research was conducted in 2018 by Accenture Research and was based on 330+ work activities for 900+ occupations derived from the Occupational Information Network (O*NET). Employment supply in 2028 was calculated using population projections from the UN, labor participation rates from the ILO and unemployment rates from the ILO. In order to calculate GDP growth figures, baseline labor productivity growth by industry and country was sourced from Oxford Economics. Further details on this methodology can be found in our report, **It's Learning. Just Not As We Know It**.

Measuring worker sentiment: Accenture engaged a third party to conduct a survey in March, 2020 to better understand employee sentiment among vulnerable workers. 724 at-risk workers across the United States were canvassed. Respondents were required to have current and/or prior experience with jobs that have a high potential of automation with income <$90K, be between 25-64 years old, and have no bachelor degree or other degree in higher education.

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