



# SKILLS TO DRIVE ECONOMIC RECOVERY, MOBILITY, AND EQUITY

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As communities and regions across the nation strive to recover from the social and economic impacts of the pandemic, they are also confronting the new realities of emerging technologies, remote work and learning, inequality and inequity, and persistent worker and skills shortages. All of these challenges hold back both community and individual economic prosperity. New paradigms for how and where we work, as well as an infusion of resources through the economic stimulus, are combining in ways that will make our post-pandemic economic and community realities quite different from what existed prior to 2020.

Even in “normal” times, talent needs can be volatile. Communities’ unique mix of industries and areas of focus can and do evolve, requiring new workers with new capabilities as consumers express new preferences and technologies that change how products and services are developed, delivered, and consumed. The economic disruptions caused by the recent pandemic have resulted in rapid changes that have reverberated throughout the country and across local and regional economies, including changes in customer behavior, demand for new services, and the adoption of remote work practices. Just as dramatically, the period after vaccines became readily available has brought spikes in demand for **some occupations and industries**, while others **may never reach** their pre-pandemic levels of demand.

Amidst these changes, the nation’s workforce faces an unpredictable future where their jobs, their employers, and the industries in which they work **may also change dramatically**. The ability for workers to pivot rapidly and develop their careers in a flexible and varied manner will enable them to retain employment and be drivers – not victims – of the next economy. The current dynamic environment where the structures for work, advancement, and education have been weakened requires that workers become adaptable and undertake learning as a lifelong process no longer confined to one’s “school years.” Learning that happens in real-time over the course of one’s working life requires an understanding of skills needs that are similarly current and granular.

Refocusing on skills allows new ways of understanding the nature of jobs, industries, opportunity, and growth. Individuals’

greater awareness of their skills profiles can help them consider a broader range of career options, repurpose skills for new and emerging opportunities, and become more resilient during times of crisis. Companies facing workforce shortages can orient around skills in order to identify and access new sources of talent, both internally and externally. A skills orientation can allow educators, civic leaders, and economic developers to more efficiently invest in skills development and promote skills as a formidable asset for business attraction, retention, and expansion. The following brief will explore how a focus on skills, skills transferability, and skills similarity across occupations and industries can help to support innovation, address historic inequities, help communities weather economic change, and build long-term resilience.

## SUPPORTING EMERGING INDUSTRIES

By their very definition, **new and emerging industries** do not carry a legacy and can be mysterious or even foreboding to local workers and students. Relationships with education and training providers can be immature, and worker pipelines underdeveloped. Prospective workers may not have personal or professional relationships with others who have worked in the new industry and can offer perspective or encouragement. Workers don’t pursue jobs or training programs for opportunities that they don’t understand or are not aware of, and companies in turn may perceive that communities cannot supply the talent that they need. In the Biotechnology sector, for example, the **demand for new workers** exceeds the available workforce and individuals often assume incorrectly that roles in this field require advanced degrees and high levels of scientific understanding. Biotechnology manufacturing operations that produce pharmaceuticals, medical devices, and testing materials employ large numbers of workers who are not scientists, and therefore require skills that may actually be in abundance in the local area.

Workers from traditional manufacturing environments have skills in tool use, measurement, quality control, safety, and Lean manufacturing techniques – skills that are highly valued by Biotechnology manufacturing firms. Workers in food production

environments also bring an understanding of and experience with FDA regulations, sterile environments, documentation, and compliance. Shipping, Receiving, and Traffic Clerks from manufacturing, warehousing, and transportation industries handle packaging, quality assurance and control, process improvement, and are used to working within quality control frameworks such as [ISO 9001](#). All of these skills are also commonly required of biotechnology, pharmaceutical, and medical device technicians. While additional specific skills and knowledge may be required to use specialized machinery, adhere to particular regulatory standards, or work with different types of manufactured items, traditional manufacturing and transportation/distribution/warehousing workers are far closer to becoming skilled bio-manufacturing workers than workers or companies may understand. Even workers in administration or hospitality environments can leverage their scheduling, sequencing, documentation, and compliance capabilities which are critical for effective Bio-manufacturing operations.

These skills overlaps can also be used in economic development marketing and business attraction and retention efforts. When communities promote the presence of manufacturing, compliance, quality assurance, and other critical skills, they not only show prospective firms that they can find a workforce in the community, but they also demonstrate that community institutions have done their homework and are knowledgeable about target industry needs, even before the industry has established a local presence. Demonstrating an understanding of skills and workers across industry and subsector lines builds prospective companies' confidence in the workers, leaders, and the community.

## FILLING NICHE OCCUPATIONS

Innovative companies and economies generate not only new products and services, but new types of jobs as well. Advanced and specialized equipment requires workers skilled in operation and maintenance – often requiring not only mechanical skills but also software and programming capabilities. Data science skills enable deeper understanding of markets, efficiencies, and safety concerns. Cybersecurity skills ensure that transactions, intellectual property, and personal information is secure. New programming languages advance more rapidly than the educational programs that teach them.

Recruiting for these roles is difficult, because by their very definition there are few people qualified to do them. This presents a conundrum for employers and workforce development programs alike. The novel nature of such jobs makes it difficult for education and training organizations to create new programs, as the demand for graduates may be too small to justify the expense, and the jobs and technologies may be too esoteric to enable recruitment of sufficient numbers of students. When there are not enough skilled workers to meet even modest employer needs, companies need to find the most similarly-skilled workers, and then either provide or facilitate [upskilling](#) opportunities to bridge remaining skills gaps.

Robotics technicians are among the newer occupations and are often difficult to recruit for. There are just not enough skilled robotics technicians available for work. Without a sufficient supply of qualified workers or recent graduates, workers in other disciplines become the most important recruits. Employees from other manufacturing environments, including Electrical Assemblers, Production Technicians, Production Workers, and HVAC Mechanics and Installers have the baseline skills needed to succeed in Robotics Technician training programs. Employers or employer consortia can work to fill those “last mile” skills to enable these workers to apply their capabilities in this newer arena.

## MEETING INFRASTRUCTURE NEEDS

Like the interstate highway system in the twentieth century and the railroad infrastructure in the century before that, today's business environment relies on infrastructure that connects people, companies, marketplaces, and business services. Access to reliable, high-speed internet is critical infrastructure for modern companies, communities, schools, and individuals. Remote learning that took place over the course of 2020-2021 revealed deep inadequacies and inequities in the [US broadband infrastructure](#). Based on estimates developed by the [Brookings Institute](#), deployment of a high-speed broadband network across the US would create more than 200,000 jobs – the largest share of them in various installation and maintenance occupations that pay a living wage, and do not require four years of higher education.

While it is easy to get excited about the number and quality of these jobs (not to mention the work, education, health, and other services that so many Americans will be able to access with improved broadband), the needed investment and resulting benefits will not be realized quickly under current conditions. The Brookings' analysis further estimates that the number of available and skilled workers falls far short of the need. There are only about 14,000 Broadband/Satellite Technicians available to work, while the estimated need for those workers exceeds 26,000 nationwide. The worker gap is likely to be even more severe in rural America where much of this work will need to be done.

Drawing upon workers with similar skills and investing in reducing the skills gaps provides a way to tap into a broader pool of workers who can relatively easily prepare for Broadband/Satellite Technician jobs and experience a significant wage gain once they do. Some similarly-skilled workers include Insulation Workers, Audio/Video Installers, and Telemarketers.

While we would not expect (or want) all the workers in these three skills-adjacent occupations to leave their jobs for the Broadband/Satellite Technician jobs needing to be filled, these groups of workers represent an important source of talent that has the skills to be considered at least partially ready to satisfy these particular infrastructure workforce needs and can become sufficiently prepared in a shorter amount of time than those without relevant skills and experience.



## Broadband/Satellite Technician Jobs – Similar Skills/Occupation

Skills-Similar Occupation	Number of Available Workers	Average Wage Gain	Skills in Common	Skills Gaps to Address
Insulation Worker	1,354	\$13,566	Repair Power and Hand Tools Wiring	Troubleshooting Customer Service Scheduling
Television Installer	5,304	\$10,679	Telecommunications Scheduling Customer Service Repair Wiring Power and Hand Tools	Broadband Site Surveys Routers
Telemarketer	8,448	\$29,932	Telecommunications Scheduling Customer Service Sales	Repair Broadband Troubleshooting Routers

## EQUITY AND INCLUSION

Lingering legacies of exclusion, inequity, and bias have hampered advancement of underrepresented populations and have deprived our communities’ economies of the full range of skills available. Workplaces are too often as segregated as neighborhoods, schools, cultural, and religious institutions. People learn about, prepare for, and achieve employment and career advancement through their own personal and professional networks that may also be limited in scope and access.

Many **recovery initiatives** not only strive to bring back jobs, industries, and economies, but aim to do so in a way that corrects historical inequities and enables the contemporary workforce to better reflect the diversity of our nation. Skills, and their transferability between occupations, can be used as a tool to break these cycles and facilitate companies’ and communities’ access to deeper and more diverse talent pools and reduce or even eliminate entrenched practices that have disproportionately sorted women and employees of color into jobs with **lower pay, more instability, and less economic mobility**.

Efforts to drive towards a more inclusive recovery can:

- Reimagine jobs as evolving collections of skills rather than job titles or occupations.
- Recognize that a college degree is only one way to signal skill attainment, and seek other signals of skill validation that people of color, immigrants, and other underrepresented groups may be more likely to display.
- Treat incumbent worker training as a strategic investment, not an optional benefit. Workers who are underrepresented in high-level roles may be over-represented in more entry level roles whose skills can take them further. Existing tuition and training programs can help bridge modest skills gaps and help satisfy higher-level skills needs.

For example, people of color are **over-represented** as modestly-paid Shipping Clerks. They share important skills with Inventory Specialists who are less diverse and earn a bit more, but also require skills in Inventory Management, Bills of Lading, and Excel analysis. Operations Coordinators earn even more and are even less representative of our diverse population. By adding Worker Management, Planning Analysis, and Project Management skills, Inventory Specialists can gain a more substantial raise and help to diversify that occupation. Making strategic investments in Shipping Clerks’ skills can activate advancement for more underrepresented populations and bring diversity to occupations that are currently majority-dominated.

## MITIGATING AUTOMATION RISK

As the economy continues to recover, employers may not hire those who were furloughed or laid off amidst the downturn. Rather, employers may look to rebuild their teams based on anticipated skills needs for the future rather than the skills that they needed in the past. Prior recessions have accelerated investment in automation, and the dangers of physical proximity associated with COVID-19 may **accelerate the use of automation** for both efficiency and public health issues. Workers whose tasks can be performed by robots and computers are at risk of automation-driven displacement and represent human capital that can be applied in new ways.

With a deeper understanding of the mix of skills that comprise job roles, communities concerned with increased unemployment can instead make better use of the available talent pool and redistribute that skills surplus in more productive ways. For example, as technology and robotics makes fast food ordering and delivery more efficient and predictable, the workers formerly in those occupations face a difficult future. Many of the tasks that Food Preparation and Serving Workers, Cooks, and Waiters perform can be automated, making these workers increasingly vulnerable to displacement. Already



considered “lower skilled” and paid below a living wage, they will also be challenged to find family-sustaining employment. Workers performing clerical, retail banking, material handling, warehousing, and assembly tasks also face elevated risk of automation and displacement. Self-driving cars and trucks are expected to displace those workers in the coming years.

A skills analysis shows that cooks and waiters are capable of performing jobs that are both better-paid and at far lower risk of automation-driven displacement. Cooks and Servers can draw upon skills associated with the restaurant work that they have done, but also leverage skills such as people management, judgement, customer service, and other capabilities that are much more difficult to automate to become Food Service Managers. While these vulnerable Cooks and Servers are typically found in restaurants, their skills can contribute to other areas of the hospitality sector and elsewhere. Their procedural, customer service, and safety skills are valued at venues as varied as hotels and distribution environments, and those workers are competitive for Stock Clerk and Concierge roles where automation displacement is much less likely and also offer a modest wage increase. None of these transitions can necessarily occur automatically. However, with deliberate investment in developing skills in specialized equipment operation or organization, workers can insulate themselves from displacement risks.

Such skills investments will benefit both workers and employers who need skills that cannot be performed by robots or computers. This investment can help maintain a dynamic economy across a community, unencumbered by the economic drag caused by underutilized human capital and social assistance expenditures.

## LOOKING TO THE FUTURE

New questions will inevitably arise as we move further from crisis to economic recovery, and as impacted workers prepare for what lies ahead. As communities prepare for the future and invest in skills that will spur a faster and stronger recovery, they will confront a range of hiring and talent questions, including:

- Which skills will prove most durable and valued across industries and occupations, and serve as anchors of stability as volatility continues or returns?

- How can communication, planning, technology, and security skills support new supply chain and distribution channels that have been enhanced? How will reshoring efforts impact skills needs and talent supply, and how can workforce systems support and prepare for these efforts?
- How will healthcare and disease transmission dangers change how healthcare is consumed and delivered? Will patients and doctors continue the telehealth patterns established during the pandemic? What new skills will healthcare providers and administrative personnel need, such as new communication techniques and privacy/security protocols? Given the severe impact on nursing home residents, will we experience a shift towards in-home care, which will have implications for demand for home health aides? What skills-adjacent roles will be better positioned to support healthcare practices?
- Will proposed investments in broadband infrastructure and increased broadband access call for new types of soft skills as well as technology skills? How will human skills that cannot be automated – empathy, creativity, strategy – change and evolve in increasingly digital and distance interactions?
- Can skills portfolios provide more specific, efficient, and direct means of communicating capability instead of or in addition to traditional degrees or certifications?

Regardless of the specific challenge – increased unemployment, automation-driven dislocation, equity concerns, or the ability to serve emerging industries’ new roles – skills retain value even when jobs and industries are volatile. As with so many other disruptions, a focus on skills and skills transferability may live beyond the current crisis. That shift may ultimately benefit workers, companies, and communities who can then make better use of skills, regardless of how they were developed, combined, or validated.



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