THE FUTURE OF WORK IN RURAL AMERICA

HOW TECHNOLOGY IS CHANGING THE NATURE OF WORK



INTRODUCTION

For the past 30 years, information and digital technologies have reshaped the U.S. economy. The rise of the digital economy has created new and unimaginable economic opportunities by driving innovation. New industrial giants like Amazon, Google, and Facebook emerged with this new digital economy, transforming their industries and creating new, high-paying jobs. Yet, the true impact of the rise of the digital economy extends far beyond just the tech companies that dominate the headlines and our smartphones. Even in rural areas, technology has already transformed sectors like agriculture, mining and oil drilling, manufacturing, and tourism. Technology is now pervasive in nearly every business and industry, and three-fourths of jobs now require a moderate level of specialized skills that are able to use technology to automate routine tasks (<u>Munro et. al., 2017</u>).

This digital transformation has also created new challenges. One of the most common concerns revolves around the impact that technology has on employment and work. Since the 1980s, the U.S. economy has experienced rising employment among low- and high-skilled jobs, and a large decline in middle-skills jobs. These changes have resulted in rising inequality, both in terms of the earnings of workers, and the economic prosperity of communities and regions. This change has been felt strongly in rural America, where middle-skilled jobs in mining, manufacturing, and agriculture had served as the foundation of the middle class for many rural communities. As a result, rural America has fallen behind the rest of the country in both employment and income growth, contributing to a growing opportunity gap between rural and metropolitan areas of the U.S.

Underlying this broad economic evolution is a change in the way we work: the jobs people do, the skills workers need to be successful, the structure of work arrangements, and the way workers engage with technology. We are still in the first stages of this evolution, and the impact of technology on the future of work is still emerging.

While the tech industry has historically been concentrated in urban centers, technological change has been impacting rural economies and jobs for decades. Technology is creating new opportunities for rural workers, businesses, and entrepreneurs to prosper, while simultaneously creating risks that can create economic headwinds. For rural economic development leaders, understanding the trends that are shaping the future of work will be critical to seizing new opportunities and ensuring that rural areas are home to the jobs of the future. To make sense of these trends and rural economic development strategies that are adaptable to the changing nature of work, we have to shift the way we think about work.

Over a series of briefs, we aim to equip rural economic and workforce development leaders with the latest research and thinking on the future of work to help inform strategy, programs, and planning work. In this first brief we address the question of how technology is changing the nature of work. Subsequent briefs will delve into the question of how technology is changing working arrangements, including remote and freelance work.



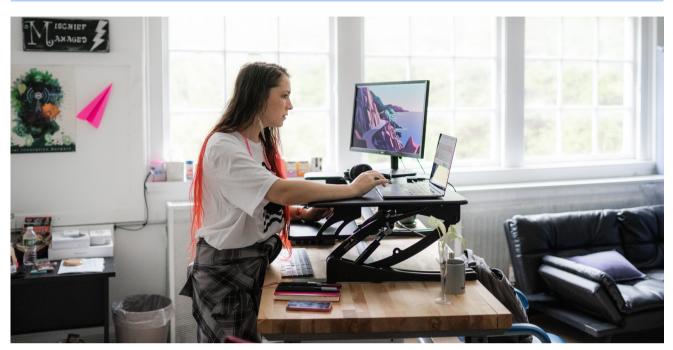
The following brief explores how technology is changing the nature of work with four key insights:

- Technology is forcing us to change the way we think about work, shifting from a
 job-based perspective to a task- and skill-based perspective. Rural leaders should
 consider how the task and skills composition of jobs in their region are changing to
 mitigate the risks posed by automation and stay ahead of employer needs.
- Technology is increasingly automating routine tasks. This has led to a reduction in employment in middle-income routine jobs — those predominantly composed of routine tasks. Rural leaders could consider adapting their workforce development strategies to help workers transition to new careers, and align training programs with the skills that prepare workers for high demand tech enabled skills that cut across industries and occupations.
- The automation of routine tasks has benefited workers with specialized skills, increasing employment and wages for skilled workers. Rural leaders should consider developing programs that help employers and workers to adopt productivity enhancing technologies, while focusing training efforts on helping workers develop specialized skills.
- Technology is creating new types of digitals tasks, which primarily leverage technology. While digital tasks are typically considered as part of "digital jobs" like software developers or data scientists, digital tasks are increasingly embedded in a wide range of non-digital jobs. Rural leaders should consider developing digital skills training ecosystems that connect and support workers as they develop digital skills through local postsecondary and training providers and online training programs.

In each section, we reflect on the implication that each topic has for rural America, and share recommendations that we hope rural leaders will consider when developing economic and workforce development programs and strategies. These recommendations are suggestive, not prescriptive. As we noted above, the future is still unknown, which means strategies need to be adaptable, and leaders need to be focused on recognizing trends on the horizon so that they are in a position to proactively respond.



TECHNOLOGY AND TASKS



(Black River Innovation Campus; Springfield, Vermont; courtesy of the Center on Rural Innovation)

In order to understand how technology affects the future of work, we first have to change the way we think about work. When people think of work, we typically think of jobs. Employers post jobs on forums like hiring boards, and workers apply to do a job. Jobs are what we count through data collection, and thus, what we care most about.

Yet, thinking in terms of jobs can be misleading, because while job titles often stay the same, the content of the jobs change. Imagine taking a teacher from 80 years ago and asking them to serve as a substitute teacher today. While certain aspects of the job would certainly be familiar — classroom management, instruction of subject matter — our substitute teacher from the 1940s would certainly struggle with other aspects of the job today — using a smart board to lead a lesson, recording attendance and grades in a software system, administering tests on a laptop. You might think about your own job, and consider whether someone with the same job 80 years ago could do your job the way you do it without any additional training. Probably not.

The reason that our teacher from the 1940s would be ill-equipped to do the work of a teacher today is because the tasks have changed, even though the job title has stayed the same. Jobs are not fixed, but instead represent a constantly evolving set of tasks. Tasks are the building blocks of work, and we bundle tasks together into jobs. While there are many factors that shape the task content of jobs, technology has been at the heart of many of these changes. Technology is constantly reshaping how we get work done. Even if all technological progress stopped tomorrow, the way people do their job would continue to evolve as workers and organizations experiment with new ways of using technology to balance the tasks completed by a person and the tasks completed by a machine.



Technology forces us to think of our work in terms of tasks if we are to understand the way humans and machines interact to get work done. Technology is neither built nor programmed to do jobs. It's built to complete tasks. Sometimes, technology is used to do many tasks simultaneously or in an order that resembles a job, but at its core, it's always working at the level of tasks. To get a clearer picture of the future of work and how it will be impacted by technology, we have to shift our perspective. Instead of thinking about jobs, we have to think about tasks. In the sections that follow, we build upon this task-based perspective of work to explore how technology is shaping the future of work.

We can think of a task as having three features (Fernández-Macías & Bisello, 2021):

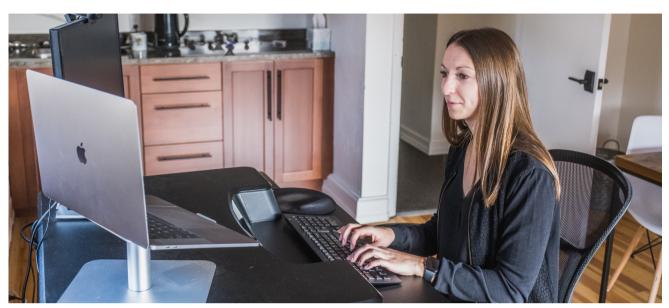
- The content of a task, which describes the purpose of the task. Most tasks can be categorized into three types: physical tasks which act upon objects, such as lifting a load onto a conveyor belt, or driving a truck; intellectual tasks which act upon ideas, such processing information, writing reports, or designing solutions to problems; and social tasks which act upon people, such as teaching, responding to the needs of customers or the public, or caring for others.
- The method of completing the task. This includes whether a task is completed autonomously or with a team, and extent to which a task can be codified into a set of steps or rules.
- The tools required to complete a task. This includes both non-digital machines or tools, such as the tools required to build a house, and digitally enabled machines and tools such as robots and computers.

For a given task described by its content, method, and tools, there is a corresponding skill or set of skills required of the worker to perform the task well. Just as tasks are bundled together to define a job, workers bundle skills together in their work. Instead of thinking of the skills required for a job, it is more useful to think of the skills required to complete the core tasks of a given job.

Some tasks require simple skills that can be learned easily and are commonly found among workers. These are skills that a person is likely to learn in K-12 education, such as reading, writing, foundational mathematics, information processing, and interpersonal communication. Other tasks require advanced or specialized skills that are less common, including creative thinking, problem solving, understanding the needs of another person, and deep knowledge of specific domains like engineering, medicine, or law. These specialized skills are typically developed through extensive work experience, career technical training, micro-credential and certification programs, or postsecondary education.

As we will discuss in the next section, there are certain skills that technology can replicate well, allowing them to complete tasks faster and more accurately than humans. Yet, there are many skills that technology cannot easily replicate, such as processing large amounts of unpredictable visual information while driving, developing creative solutions to problems, and reading and responding to the emotions of another person. For that reason, it is unlikely that technology will replace all human work.

TECHNOLOGY AUTOMATES ROUTINE TASKS



(MUNIRevs; Durango, Colorado; courtesy of the Center on Rural Innovation)

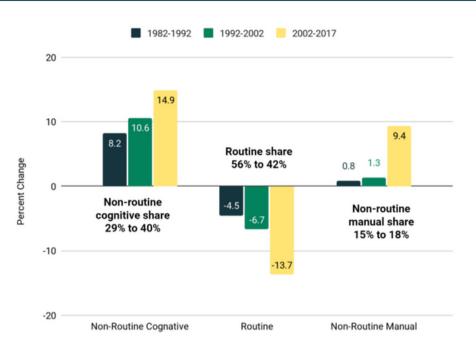
At its core, technology functions based on a defined set of rules. A mechanical technology functions based on a set of physical rules defined in its engineering, while digital technology functions based on a set of computational rules defined in its software. As a result, technology is very effective at automating tasks that are "routine" and can be specified as a series of rules or instructions that can be executed by a machine or a computer.

Over the past 100 years, technology has become more and more sophisticated in automating routine activities. First, this automation focused on automating physical tasks like manufacturing production lines, planting in farming, or excavation in mining. More recently, the digital revolution has produced technology that is more and more effective at automating intellectual and social tasks as well. For example, software has automated routine intellectual bookkeeping tasks that were previously completed by office staff or accountants, and payment processing systems have automated the social task of completing a transaction between customer and salesperson.

The automation of routine tasks has had a profound effect on the economy. Between 1982 and 2017, the share of U.S. employment in occupations made up of predominantly routine tasks fell from 56% to 42% (Figure 1) (Jaimovich & Siu, 2018). These routine jobs were predominantly middle-income jobs, and their disappearance primarily impacted young and prime-aged men with lower levels of education (those with no more than a college degree) in occupations like machine operators and production workers, and young and prime-aged women with intermediate education (non-degree post secondary training) in occupations like secretaries and administrative support workers (Jaimovich & Siu, 2019). Many of these impacted workers did not transition into other occupations that are less susceptible to automation, and instead, left the labor force entirely, driving the decline in labor force participation (Cortes et. al., 2020).



FIGURE 1: PERCENT CHANGE IN EMPLOYMENT SHARES BY OCCUPATION GROUP



(Source: Jaimovich & Siu, 2018)

Looking to the future, these trends are expected to continue, as advancements in technology continue to reduce demand for workers in occupations which are predominately made up of routine tasks. It is predicted that the office support, food service, and production work occupations will continue to see high levels of displacement through this decade (Lund et. al., 2019).

Implications for Rural America

Rural America has historically had a large share of employment in sectors that are dominated by physical routine tasks, such as agriculture, manufacturing, mining, and forestry. This continues to be the case: The top four sectors with the most task-automation potential – accommodation and food services, manufacturing, agriculture, and transportation and warehousing – account for more than 30% of rural employment (BEA) (<u>Chui, Manyika & Miremadi, 2016</u>).

We recommend that rural leaders consider the following when developing economic and workforce development programs and strategies:

• Incorporate automation trends into your regional economic planning. Understanding how automation could impact employment in your region can serve as a foundation for developing strategies that mitigate risks and create new opportunities. Researchers at Ball State University have <u>published estimates</u> of automation vulnerability for every U.S. county that can serve as a resource.



- Adopt a task/skill-based perspective when scrutinizing economic development incentive deals. Understanding the task composition of jobs that are promised by a new employer is critical to determining the long-term return on investment from offering incentives. If an employer is promising to create jobs that have a high degree of routine tasks, then it is less likely that the promised employment will be sustained in the long term. It would be best to scrutinize the opportunity to determine whether public incentives are viable. Rural economic development leaders can use <u>O*NET</u> to better understand the task and skills requirements for jobs that would be created in a proposed incentive package.
- Take a more aggressive approach to helping workers make career transitions. Workers who are displaced from routine jobs by automation are more likely to exit the workforce and experience large drops in earning potential. Targeted strategies are needed to help workers gain the skills and experience required to transition to new jobs. Research shows that rural regions, where it is easier for workers to move between industries and occupations, experience faster economic growth (<u>Partridge & Tsvetkova, 2018</u>). Customized training programs that target career transitions can be an effective way to support this process (<u>Bartik, 2018</u>).

TECHNOLOGY BOOSTS HIGH-SKILLED, HIGH-VALUE TASKS

There are still many tasks that cannot be codified and automated by a machine or computer. While the impact of technology on reducing demand for certain occupations tends to grab the most attention, technology has also reshaped the work of people in non-routine occupations. If we return to the idea of a job as a bundle of tasks, a given job is going to have a mix of routine and non-routine tasks.

When routine tasks are automated, time and attention can be reallocated to other nonroutine tasks. In this case, technology boosts the productivity of workers, allowing them to shift time away from routine tasks, and invest more time in higher-value tasks that aren't easily automated. This shift benefits workers that have specialized skills that allow them to invest more time in completing complex tasks with greater economic value. Instead of eliminating their work, as in the case of routine jobs, it makes their work more valuable.

For example, occupations such as lawyers and accountants have benefited greatly from the task optimization effect of technological change. Historically, these occupations required a wide range of routine tasks to operate, including project management, processing huge volumes of written and numerical information, recording time, billing, and planning staff utilization.

As technology has increasingly automated routine tasks that are required for operations, it has produced two effects:

- First, it enabled professionals in these fields to shift their focus from completing these routine tasks to more specialized tasks like developing solutions to complex problems, providing customized advice to clients, and managing client relationships. These activities increased the value of their work, and as a result, increased the earnings of these professionals. It is important to note that most of these specialized tasks often have nothing to do with technology, and instead leverage innately human skills like creative thinking, problem solving, and understanding the needs of another person, which today are not easily replicated by technology.
- Second, it enabled firms that specialize in these professional services to shift their staffing structure. Before automation, all of the routine tasks of the firm had to be completed by workers. These roles were often filled by middle-skill workers that we noted in the previous section. As more of this routine work was automated, these firms shifted their demand from middle-skilled workers, to workers with more specialized skills.

Similar trends can be seen in other occupations. For example, when the ATM was introduced there was an expectation that bank tellers would disappear. Instead, ATMs automate the process of money handling, allowing for tellers to engage in higher-value tasks like working with customers to answer their questions and address their challenges. This shift led to an expansion of small bank branches which could provide more personalized support, and even the redesign of bank lobbies to create spaces for tellers and customers to sit and engage in an office-like environment. Contrary to the original fears, bank teller employment actually grew as ATM locations increased, and so did the educational and skill requirements for the position (Bessen, 2015).

In this context, technology has two effects. First, it raises the productivity and earnings of workers with specialized skills who are able to use technology to automate routine tasks. Second, it leads to an increased demand for workers with specialized skills who are able to complete high-value, complex tasks. Together, these two technology-driven shifts help to explain the divergence in wages for those with and without a college degree, which is used to proxy for differences in workers with general skills versus workers with advanced or specialized skills that are not easily replicated by technology. In 1979, a worker with a bachelor's degree earned 48% more than a worker with a high school education or less. By 2019, a worker with a bachelor's degree earned 75% more on average than a worker with a high school degree or less (Donovan & Bradley, 2020). This dynamic is often referred to as "skill-biased technological change," as it describes the way in which technology favors workers with specialized skills.



Implications for Rural America

This dynamic presents both an opportunity and a challenge for rural areas. Many rural areas lagged behind urban areas in the deployment of broadband infrastructure, and many people living in rural areas still do not have access to reliable broadband. The slow deployment of broadband infrastructure means that rural workers and rural businesses have had less experience and fewer opportunities to utilize automation technologies to boost productivity and focus on specialized skills. Thus, efforts to help businesses and skilled workers more effectively leverage these technologies—beginning with ensuring broadband access for all rural Americas—offers an opportunity for growing wages and productivity.

This dynamic also underscores the need for making investments in rural areas that help to attract and retain highly skilled workers. Technology favors workers with specialized skills, helping them to earn more, and making firms that employ them more productive. While education isn't the only measure of specialized skill, it is the most accessible measure, and it speaks to the critical need for rural areas to focus on the attraction and retention of skilled workers: In 2019, just 21% of rural residents had a bachelor's degree or higher, compared to 35% in metropolitan areas (ACS). As rural firms adopt technology to automate routine tasks, their demand for workers with advanced and specialized skills will likely increase. While postsecondary degrees are not the only way that workers develop advanced and specialized skills, rural areas have fallen behind in this area. This poses a growing risk of mismatch between the supply and demand of specialized skills in rural areas, which can reduce firm productivity and competitiveness, increase turnover, and increase the costs of hiring.

We recommend that rural leaders consider the following when developing economic and workforce development programs and strategies:

- Ensure access to high-speed broadband. Businesses and workers cannot fully benefit from the productivity enhancing effects of technology if they do not have access to high-speed internet.
- Develop targeted programs to provide customized services that help businesses and workers adopt existing and emerging technologies that boost productivity. Programs like the Manufacturing Extension Partnership (MEP) serve this role by helping small- and medium-sized manufacturing businesses improve productivity by adopting new technologies. They have been shown to have a 14-to-1 return on investment (<u>Robey et. al., 2019</u>).
- Work with local employers and postsecondary institutions like community colleges to connect workers with programs that build specialized skills. Training programs that only train workers in commonly found skills are unlikely to generate economic returns through employment and higher wages. Rural workforce development and post-secondary leaders should understand the current and emerging needs for specialized skills among regional employers, and align training programs that are focused on specialized skills that are complemented by technology.

 Invest in quality of life assets that aim to attract and retain high-skilled workers. These workers are likely to continue to benefit from advances in technology, and will be in high demand among employers. High-skilled workers are more mobile than ever — even more so with the growth in remote work — and rural communities need a focused strategy for attracting and retaining these workers. We recommend starting with young people from your community. Every year, young people leave rural communities to attend college, or graduate from rural colleges to seek employment in metropolitan areas, motivated by a range of factors including access to a broader set of employment opportunities and access to amenities. Focusing on students and young people who already have a connection to your community, providing customized support to connect them with local employment and entrepreneurship opportunities, helping young workers build social networks, and developing local amenities are the best ways to start building a talent pipeline.

TECHNOLOGY CREATES NEW DIGITAL TASKS AND DIGITAL JOBS



(Naresh Juneja; Ada, Oklahoma; courtesy of the Center on Rural Innovation)

So far, we've focused on the impact of automation on work, but technology has an additional effect: It creates new tasks which require more advanced skills in using technology. These new technology-enabled tasks have been bundled together to create new digital jobs, such as software developers, data scientists, IT support specialists, and cybersecurity analysts. These jobs are among the fastest-growing and highest-paying jobs in the economy (Table 1), even in rural America. Between 2011 and 2019, employment in computer and math occupations grew by 17% in rural America, the third-fastest growing rural occupation (ACS). Yet, even with this growth, rural America lags behind the rest of the country in digital job employment, accounting for just 5% of the digital jobs while representing 15% of the national workforce (ACS).

Occupation	Median Annual Wage	Projected Employment Growth 2020 - 2030
Digital marketing managers	\$133,460	10%
Data science	\$126,830	22%
Software engineering	\$110,140	22%
Cybersecurity analyst	\$103,590	33%
Database administrator	\$98,860	8%
Web development	\$77,200	13%
IT specialist	\$55,510	9%
All occupations	\$41,950	8%

Source: Bureau of Labor Statistics

Increasingly, technology is leading to digital tasks being embedded in non-digital jobs. For example, the rise of social media has led to the creation of new digital marketing manager jobs, which combine some aspects of traditional marketing jobs with a new set of digital tasks like using social media to market a product and engage with customers. At the same time, this same set of digital tasks around leveraging social media to market a business and engage with customers are starting to appear in completely unrelated customer-focused jobs like restaurant managers, baristas, and bartenders. Workers who use a moderate level of digital skills in non-digital jobs earn an average of 17% more than workers in the same jobs who do not use digital skills (Bradley et. al., 2017).

This process of digital upskilling is already pervasive across the economy, and is happening more within jobs and occupations, as opposed to the creation of new types of digital jobs highlighted above. Research exploring upskilling during the Great Recession found that jobs posted after the initial economic downturn required higher levels of education, experience, and technological skills than jobs postings for the exact same position before the recession (<u>Hershbein & Kahn, 2018</u>). As digital tasks that leverage technology become more pervasive following the pandemic, the demand for digital skills will only grow.

Implications for Rural America

As we noted previously, nearly 75% of jobs already include tasks that require a moderate level of digital skill. That means that millions of rural workers are already using digital skills, and these skills are critical for finding stable, good-paying employment. Yet, many rural workers lack access to local training to develop these high-demand digital skills. One reason that this is the case is that rural economic development and workforce leaders use a job-based lens to establish workforce development programs and plans. If we look just at digitals jobs listed above — jobs that bundle a large share of digital tasks — we might conclude that digital skills are unnecessary for rural workers. These jobs account for just 1.2% of rural employment (although as we noted, it's among the fastest-growing occupational groups).



Yet, from a task-based perspective, we observe digital tasks expanding rapidly through commonly found "non-digital" jobs. Even restaurant managers can expand their job opportunities and earn higher salaries by being proficient in social media platforms. This process of upskilling jobs to require more digital skills is even more prevalent during economic downturns, and is especially relevant now as rural communities develop strategies to recover from the impact of the COVID-19 pandemic.

There is one critical feature to digital tasks and digital jobs that distinguish them from other jobs and tasks: They are among the most easily outsourced jobs (<u>Blinder, 2009</u>). This creates both opportunities and risks for rural areas. It creates opportunities through remote work and freelance work which expands employment opportunities for rural workers with in-demand digital skills. It creates risks because employers in rural areas can easily outsource their needs for tasks and digital jobs to firms located in metro areas or overseas. We estimate that there are as many as 150,000 tech jobs that are currently being outsourced from rural areas, more than 50% of current rural tech employment.

We recommend that rural leaders consider the following when creating economic and workforce development program and strategies:

- Adopt a task/skill-based perspective to recognize the growth in digital tasks and digital skills when assessing the needs of your local economy. If you're only paying attention to jobs, then you are likely missing the growth of digital tasks among jobs commonly found in your local economy. This can lead to an underinvestment in digital skills training, reducing economic opportunities for workers and the productivity of local businesses. It can be difficult to identify tasks, but it is easier to understand the skills required for jobs in your local economy. Tools like <u>O*NET</u> can give insights into the in-demand technology skills required for different occupations. Rural leaders should focus on identifying transferable digital skills that align with emerging digital tasks, and develop training and on-ramp programs that focus on helping individuals to access existing hidden opportunities.
- Build digital skills training ecosystems. As technology evolves, new and experienced workers will need to continually develop new skills and update existing skills. Because digital skills are so pervasive and technology is constantly evolving, training is more effective when it is skills-based rather than job-based. Given the vast array of digital skills, it is impossible for one institution or even one community to cover all of the needs. Connecting local workers with the training that they need requires an ecosystem approach, linking together micro-credential programs offered by libraries, nonprofits, and online training providers, with certification and degree programs offered by regional postsecondary institutions.



- Align training with local employer demand, but don't stop there. Think deep and broad. All training programs should start by aligning with local employer demand, but the nature of digital taks and digital jobs require workforce strategies that go deep and broad to understand demand. Digital tasks are easily outsourceable, and workforce strategies should take that into account in two ways. First, workforce leaders should not rely on job postings alone to assess the digital demand of local employers. As we noted, digital tasks and digital jobs are highly outsourceable, and many rural employers already outsource their digital demand. Thus, it might not be apparent from job listings alone that this demand exists, and employers might not even see it as a need if they are outsourcing their digital work. This requires rural workforce leaders to go deeper in understanding the digital needs of local employers by working closely with employers to understand how digital tasks that are being outsourced could be brought back to the local market to create opportunities for local workers. Second, workforce strategies should consider the broader context of demand beyond the region, especially skills that are in high demand for remote work and freelance work. Increasing opportunities for remote work and freelance work means that training programs can prepare workers for jobs outside of the local market, while allowing them to stay in the area.
- Support entrepreneurship programs that create digital jobs. Digital jobs that bundle a high degree of digital tasks are some of the fastest-growing and highest-paying jobs in the economy. Yet, rural America lags behind the rest of the country in employment in these critical digital economy jobs. Rural communities are starting to focus on supporting the formation and growth of scalable tech startups to reverse this trend. These companies have the potential to create significant rural employment in the jobs that serve as the foundation of the digital economy.

CONCLUSION

The future of work is really the future of how humans and technology work together. Technological advancements over the past 40 years have already had a profound impact on our economy. Yet, rural America has largely borne the costs of these changes, without sharing fully in its benefits.

The future of work is already here, and the trends that we have outlined in this brief will continue to reshape jobs and the economy. Aligning economic and workforce development strategies is a necessity for rural communities to thrive. Rural areas that are slow to respond risk being left behind.



Rural leaders still have time to capitalize on technological trends and prepare themselves for the future of work. We have shared a wide range of recommendations for rural leaders. Central to these recommendations is adopting a new framework for thinking about work, shifting from a jobs-based perspective to a task-based perspective. This shift is critical to understanding the changes that have already occurred, and to anticipate how changes will impact rural economies in the future.

As we noted at the beginning, our recommendations are suggestive, and not prescriptive. We believe that the best strategy is one that is bottom-up, adaptive, forward-looking, and able to respond to trends on the horizon. Many of our suggestions underscore the need to change the way we think about rural economies and rural jobs, the assets in the community, and the approaches used to promote economic development and employment opportunities. Others focus more specifically on the need for targeted efforts that help businesses and workers leverage technology in productive ways.

This is the first brief in our series on the future of work in rural America. In this brief, we explored how technology is changing the nature of work. In the next brief, we will explore how technology is changing work arrangements, and what that means for rural communities.

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(Cover image: Black River Innovation Campus; Springfield, Vermont; courtesy of the Center on Rural Innovation)

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