



Insights from Businesses

How Digital Transformation Is Impacting Work and Skill Needs
August 2021

UpSkill**America**



Table of Contents

- Overview of COVID-19 Impact Study
 - Review of Earlier Findings
- Current Research Phase
- Economic & Labor Market Context
- Digital Transformation by Sector
- Implications for Digital Skill Needs
- Employer Approaches
- Looking Ahead

About UpSkill America

Upskill America is an initiative at the Aspen Institute Economic Opportunities Program. We are an employer-led movement that promotes training and advancement practices to help workers progress in their careers and attain better-paying jobs.

A key focus of the Upskill movement is on frontline and entry-level workers, who are disproportionately women and people of color.

Overview of COVID-19 Impact Study



Study Overview

- ▶ UpSkill America conducted a 12-month, 3-phase study to learn how the pandemic and heightened attention on racial inequities have influenced companies' employment plans for the months and years ahead.
 - ▶ Special focus on current context and employers' education and training programs
- ▶ We are grateful to Strada Education Network and Walmart.org for their support of this work.

Key Study Questions

- In today's rapidly changing business environment and economy, what **workforce skills** are increasingly important?
- In what ways do skill needs affect **employment practices**, including education and training programs for frontline workers?
- How has the **current context** influenced hiring practices and plans to support career advancement for frontline workers?
- What **concerns have employees surfaced** about workplace and home life? How are businesses supporting employees' needs?

We define **frontline workers** as hourly or salaried workers in production or customer-facing roles who earn less than \$60,000.

Project Timeline

Phase 1	Fall 2020	Employer Interviews
Phase 2	Winter 2020-21	Employer Survey
Phase 3	Spring-Summer 2021	Employer Interviews

Business Interviews (Phase 1)

Fall 2020:

- Interviews with 16 business and industry leaders
- Supplemented with public data to inform context
- Comprehensive findings from the fall interviews are located here: [click here](#)

Sector	# of Interviews
Health care	2
Hospitality	1
IT	3
Manufacturing	3
Professional Services	3
Retail & Food Service	4

Key Findings Related to Digital Adoption (Phase 1)

- Several employers reported that the pandemic accelerated urgency to incorporate **new digital approaches** into operations.
- Employers noted the **rise of remote work** required more workers to have digital skills, such as ability to use new technology platforms for communication and collaboration.
- **Foundational attributes**, including adaptability, resilience, and problem-solving, were identified as critical for workers to adapt to changes.

Business Survey (Phase 2)

- In January 2021, UpSkill America partnered with Training Industry, Inc. to field a national survey.
- 340 business representatives responded, including executive and senior leaders.
- Industries represented include: business services, education and training, health care, hospitality, IT, manufacturing, nonprofit sector, and retail and restaurants.
- Comprehensive findings from the survey are located here: [click here](#)

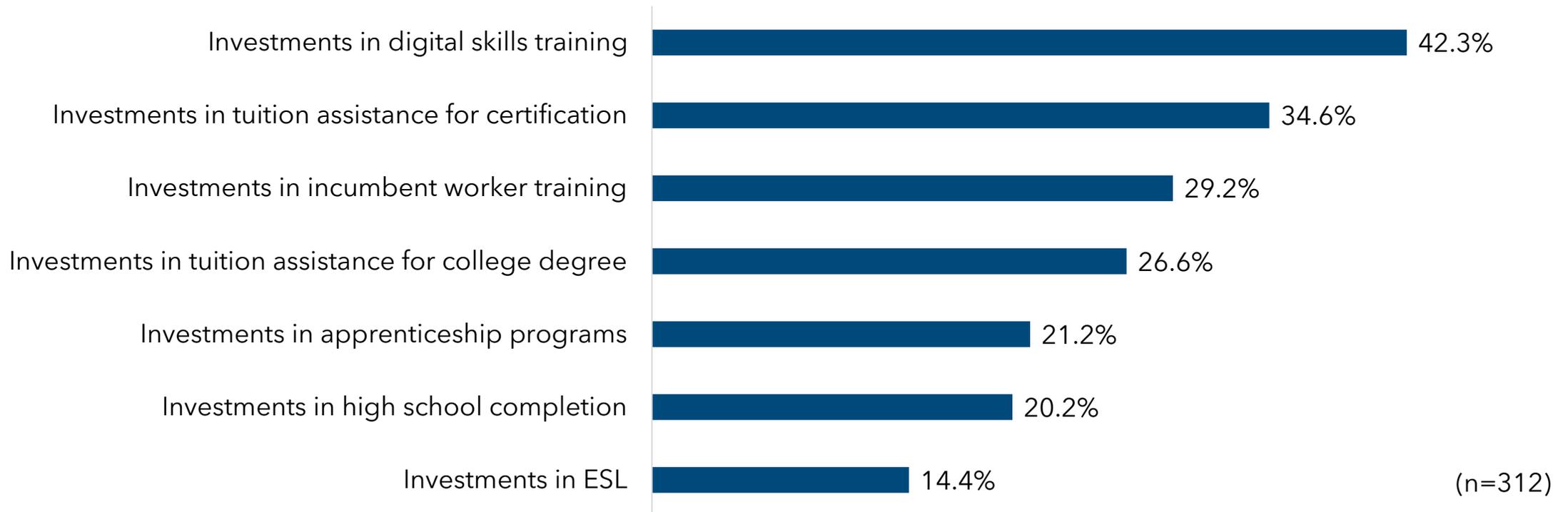
Findings on Digital Adoption (Phase 2)

In response to questions about the impact of COVID-19:

- **77.1%** of respondents said the **need for digital skills** increased either a lot or a moderate amount during 2020.
- For respondents with > 51% of the workforce composed of frontline workers, this number was **78.8%**.
- **68.9%** of respondents said that “**skills to use technology in the workplace**” were impacted by recent events either a lot or a moderate amount.

Investments in Skills Training (Phase 2)

From a national policy perspective, employers said investments in digital skills training would most help frontline workers grow within their company:



In Employers' Own Words (March 2021 Webinar)

"Our digital health platform grew exponentially, by more than 2500% in a single month.... For our leaders, it was learning not only the digital fluency needs of their team, but also as leaders how to lead with empathy, how to grow the ability to lead a remote team."

- Missy Sparks, Ochsner Health

"When you're introducing new devices, like ways for people to pay quickly and speed up that process and touchless pay options, you need an opportunity to really get that education on how to utilize that technology in the hands of your frontline workers very quickly."

- Julius Ridgley, Eat'n Park

Current Research Phase



Research Questions (Phase 3)

- In what ways are businesses **adopting technology in the workplace**, and has COVID-19 accelerated these efforts?
- How is digital transformation impacting **skill needs** for frontline workers?
- What approaches are businesses taking to support **development of digital skills** for frontline workers?

Business Interviews (Phase 3)

Summer 2021:

- › Interviews with business and industry leaders
- › Business leaders' roles: operations, human resources, learning and development

Sector	# of Interviews
Health care	2
Manufacturing	3
Food Service & Hospitality	2
Logistics & Distribution	2
Food Production	1
Retail	1
E-Commerce	1

Business Characteristics (Phase 3)

- ▶ 60% operate globally; 40% domestically
- ▶ Size range: a few thousand employees to more than 100,000
- ▶ Representative geographic diversity: Large cities, medium cities, and rural areas
- ▶ Some companies compete with other local businesses for talent, while others are the sole large employers in an area.
- ▶ The day-to-day responsibilities of frontline workers across companies varied. Almost all frontline workers were onsite (not remote). Exceptions: workers in e-commerce and some health care workers

Economic & Labor Market Context

- ▶ January 2020: COVID-19 first diagnosed in US
- ▶ March 2020: California issued stay at home order
 - ▶ Other states or local jurisdictions soon followed
- ▶ April 2020: Unemployment rate reached peak of 14.8% and labor force participation rate fell to low of 60.2%
- ▶ By fall 2020, most of the economy had been affected
 - ▶ Schools, bars, restaurants, hotels, shops, and other businesses closed; sports cancelled; office buildings vacated

Source: Bureau of Labor Statistics

Economic & Labor Market Context

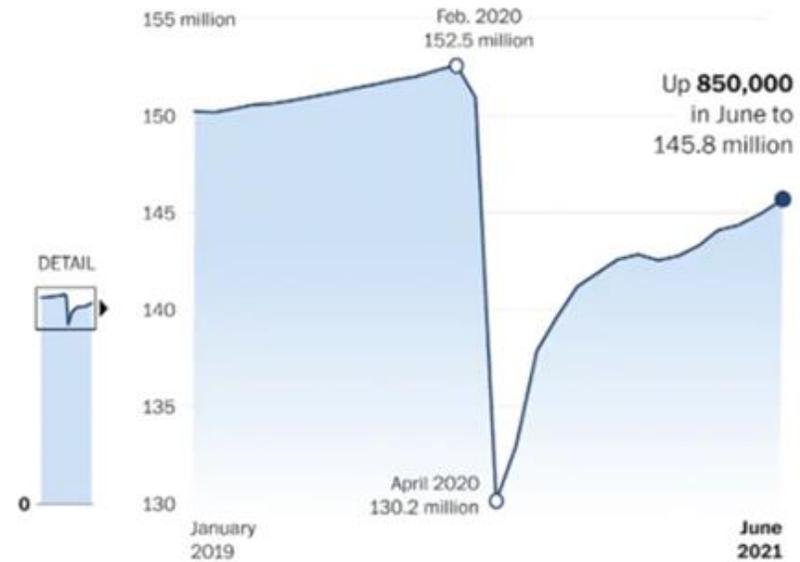
- ▶ December 2020: Vaccine rollout begins in US
- ▶ February 2021:
 - ▶ A net 2.4 million women had left labor force in first year of pandemic compared to 1.8 million men.
 - ▶ Women's labor force participation had dropped 2.2% since February 2020 (4.2% for Black women and 4.1 % for Latinas)
- ▶ June 2021:
 - ▶ Approximately half of US population had received at least one vaccine dose.
 - ▶ US unemployment rate was 5.9% (2.4% above pre-pandemic rate); Hispanic/Latinx and Black workers continued to experience higher unemployment.
 - ▶ Labor force participation was 61.6% (1.7% below pre-pandemic rate); Women's rate was 57.5%, a low not seen since June 1989.

Sources: Bureau of Labor Statistics, National Women's Law Center, Pew Research Center

Economic & Labor Market Context

Job growth accelerates in June

U.S. nonfarm payrolls, seasonally adjusted

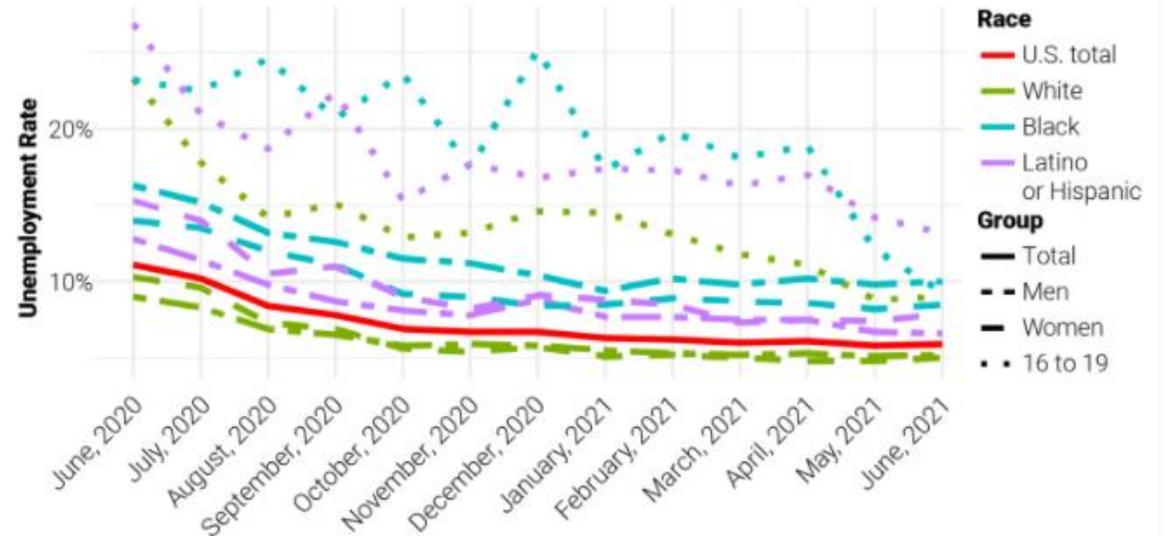


Source: Bureau of Labor Statistics

THE WASHINGTON POST

Figure 2. Young people and Black men continue to struggle in labor market

Unemployment rate by race, age, and gender

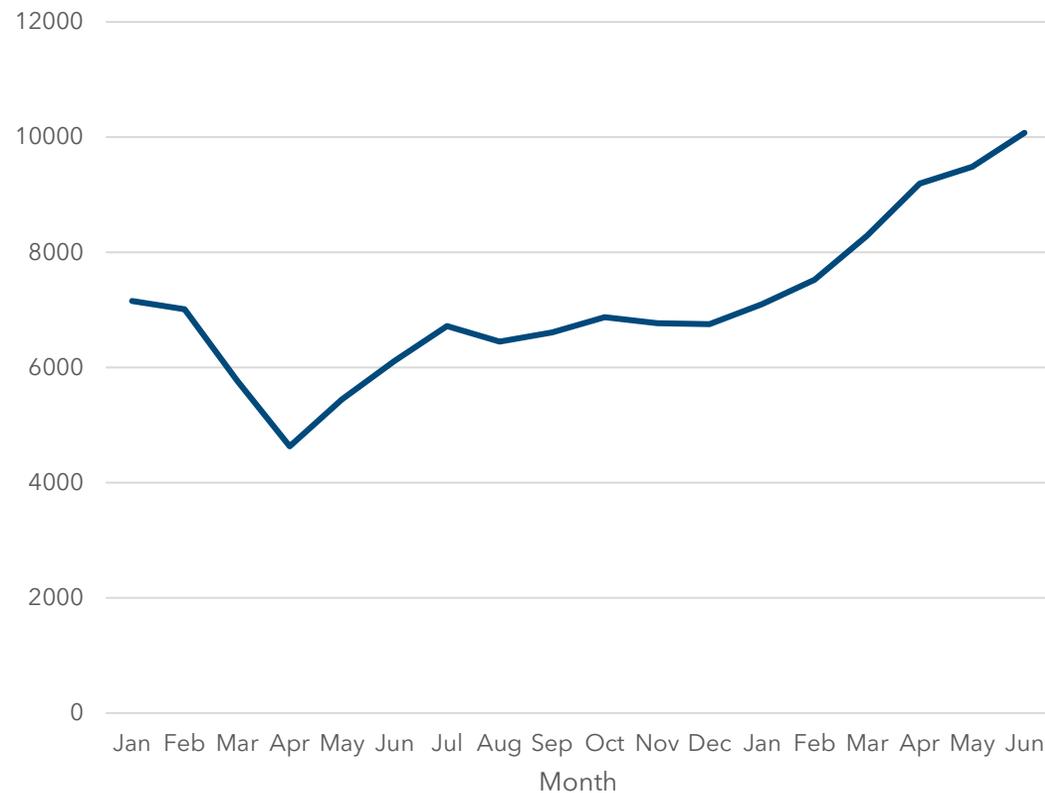


Source: U.S. Bureau of Labor Statistics.

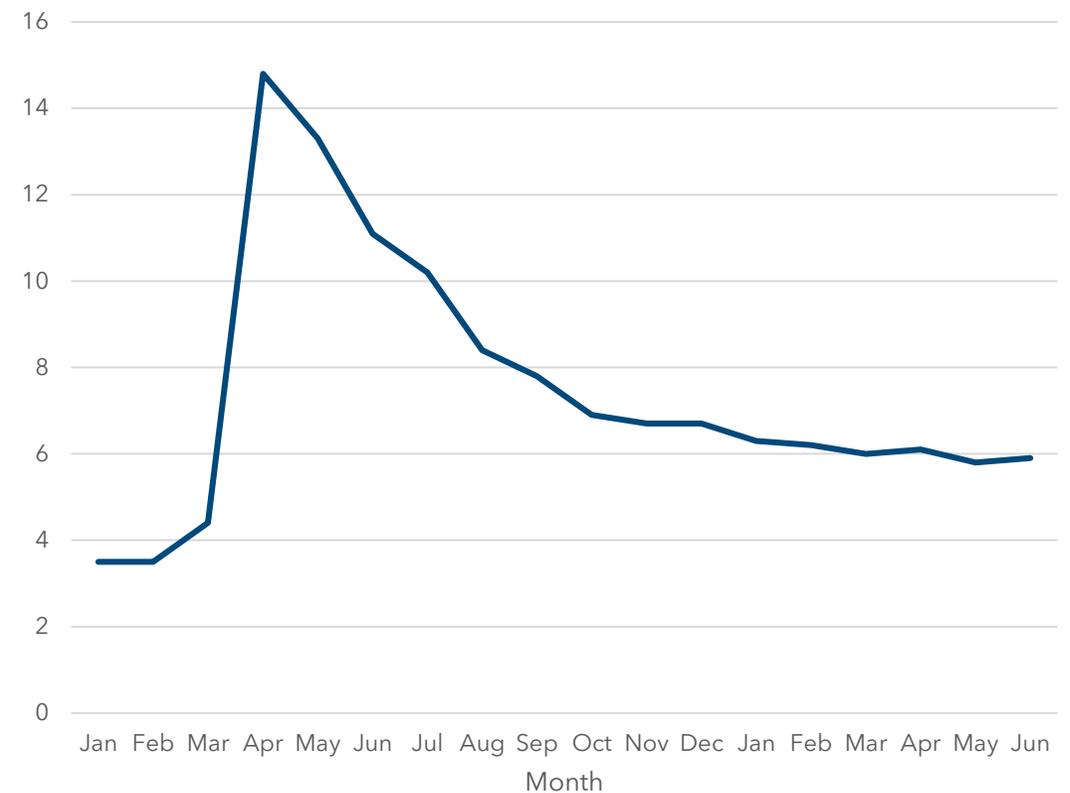
B Metropolitan Policy Program
at BROOKINGS

Employment & Labor Market Context

Job Openings (in thousands), Jan 2020 - Jun 2021



Unemployment Rate, Jan 2020 - Jun 2021



Source: Bureau of Labor Statistics

Digital Transformation: Key Themes & Takeaways

- ▶ Regardless of where on digital continuum businesses were before the pandemic, almost all employers we spoke with said the pandemic accelerated digital transformation within their company.
- ▶ Employers noted plans to sustain or build on digital changes adopted during the pandemic.
- ▶ Factors related to how businesses approached changes in technology include:
 - ▶ Industry; Business size; Product/services offered; Customer demand; and Leadership and culture

Digital Transformation: Key Themes & Takeaways

“There’s no going back. The great acceleration in the use of technology, digitization, and new forms of working is going to be sustained.”

– Sneader & Singhal,
McKinsey & Company,
January 2021

A photograph of a worker in a warehouse, wearing a high-visibility vest, handling boxes on a pallet. The worker is looking up at the boxes. The background shows high industrial shelving filled with boxes.

Insights on Digital Transformation by Sector

Manufacturing, Food Processing, Logistics & Distribution

Manufacturing Interviews

Two global manufacturers

One Manufacturing Extension
Partnership

Food Processing Interview

One global food processor

Logistics & Distribution Interviews

One global company

One US company with national
presence

Manufacturing

- ▶ Increased product demand is a driver of increased digital transformation:
 - ▶ Smart factories
 - ▶ “Lights out” manufacturing shifts
 - ▶ “Cobots” (collaborative robots)
- ▶ Large-scale adoption has been slower for smaller manufacturers given up-front capital and implementation costs.
- ▶ Increased use of digital communications, collaborative platforms, and data management software

Examples from Manufacturing Interviews

- ▶ One manufacturer we spoke with is investing in cobots to work alongside production staff.
- ▶ While one cobot can perform the tasks of 2 to 3 workers, this employer projects that they will not substantially replace humans within the company.

“We expect plants will get much more automated but will not replace our workforce. We need humans to manage the level of complexity and large variation in the products we create.”

- Manufacturing employer

Examples from Manufacturing Interviews

- ▶ Another manufacturer is converting all US factories to smart factories.
 - ▶ Projects threefold production increase, half the workforce needed
 - ▶ The employer is exploring how to provide transitional workforce training (“outskilling”) to workers replaced by technology.

“We began the shift to smart factories prior to the pandemic, but COVID-19 accelerated this process.”

- Manufacturing employer

Food Processing

- Frontline entry-level production work with the food processing employer we interviewed continues to require minimal interaction with digital technologies.
- At the same time, the company has increased use of digital platforms to manage general communications, benefits enrollment, and workforce training.
- Other frontline occupations in the plants (e.g., machine operators, industrial maintenance workers) require workers to use digital technologies, including data management systems.

Logistics & Distribution

- Increased customer demand and market competition are drivers of digital transformation, including:
 - Goods-to-person robotics
 - Voice-picking software (used pre-pandemic)
- Increased use of tablets for training and access to benefits; QR codes for employee communications and surveys

Logistics & Distribution

“The future of the industry will be more robotics. The need for speed is always there as we compete with major distributors that deliver products the same day. We see robots as increasing volume, rather than replacing workers. What we do is so dependent on people.”

- Logistics & distribution employer

“Our digital business is growing rapidly, impacting the volume and mix of products that flow through our distribution centers.... We had a three-year digital growth plan, which we achieved in one year.”

- Logistics & distribution employer

Implications for Skill Needs

Manufacturing, Food Processing, Logistics & Distribution

- ▶ Need for frontline workers who can:
 - ▶ Monitor product and process; input results on digital platforms
 - ▶ Use data to solve problems
 - ▶ Program, operate, and troubleshoot equipment (by industrial maintenance workers, technicians, etc.)
 - ▶ Work alongside robots
- ▶ However, a Manufacturing Extension Partnership representative noted advancements in digital technology may lead to decline in demand for quality assurance skills over time.
 - ▶ Noted a growing demand for workers who can program robots, including software and computer engineers



Insights on Digital Transformation by Sector

Health Care

Health Care Interviews

One state health system

One sectoral training provider

Health Care

- ▶ COVID-19 pandemic and advances in technology are drivers of increases in:
 - ▶ Remote care (telehealth)
 - ▶ Use of “smart” wearable devices to monitor patients’ vitals (onsite and remote)
 - ▶ “Smart” hospital rooms linked to iPad monitoring systems
 - ▶ Use of robotics (e.g., to clean operating rooms)

Implications for Skill Needs

Health Care

Need for frontline workers who can:

- Coordinate virtual care (by telehealth coordinators)
 - Use digital platforms to:
 - Collect and monitor patient vitals
 - Conduct community outreach and assessments (by Community Health Workers)
- Monitor and test robots

Implications for Skill Needs

Health Care

“Technology and digitization of health care were heating up pre-pandemic. Now change is accelerating at lightning speed. Technology is affecting our frontline workers, patients, physicians, participants, and workforce programs.... For those who are not digital natives, there is a huge divide. We need to keep workers current so they don't run the risk of being left behind.”

- Health care employer



Insights on Digital Transformation by Sector

Retail, Restaurant & Hospitality

Retail Interview

One global retailer

Restaurant & Hospitality Interviews

One global restaurant chain

One US regional restaurant chain

Retail

- Advances in technology and heightened customer expectations are drivers of:
 - Increased use of electronic devices for tasks (e.g., to check out customers, track inventory)
 - Expansion of artificial intelligence in inventory management
 - The retailer we spoke with shared that algorithms powered by AI now alerts associates to restock shelves before robots can.

Restaurant & Hospitality

- Employers noted the pandemic accelerated use of digital platforms for curbside pick-up/delivery.
- One employer is using digital devices for contactless payment within restaurants.
- Another employer expanded self-service kiosks and suggestive selling in drive-throughs.

Retail, Restaurant, and Hospitality

- ▶ Need for workers who can provide customer service in digital environment, including:
 - ▶ Helping customers use digital technologies and applications
 - ▶ Providing personalized contactless experiences (e.g., putting smiley face on delivery orders)
 - ▶ Using company platforms to serve customers in real-time (e.g., searching inventory; watching micro-lesson on how to perform specific tasks)



Insights on Digital Transformation by Sector

E-Commerce

E-Commerce Interview

One US national e-commerce company

- › Interview focused on telesales workforce

E-Commerce

- › Covid-19 pandemic and shifts in customer preferences are leading to:
 - › Declining use of telesales services
 - › Shift to remote telesales work (may become permanent)

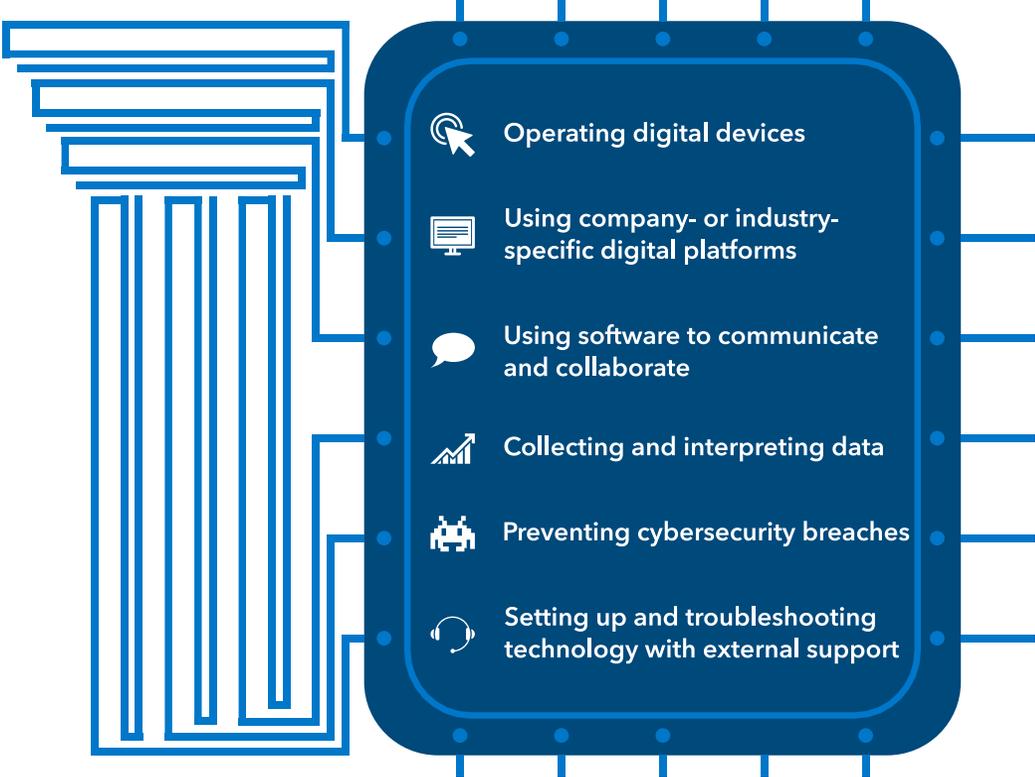
Implications for Skill Needs

E-Commerce

- Need for telesales staff to set up their company computers and work with IT to troubleshoot digital challenges remotely
- Potential reskilling opportunities for telesales staff interested in technology roles such as software engineers (limited take-up)

Insights Across Businesses: Digital Skill Needs for Frontline Workers

FOUNDATIONAL DIGITAL SKILLS



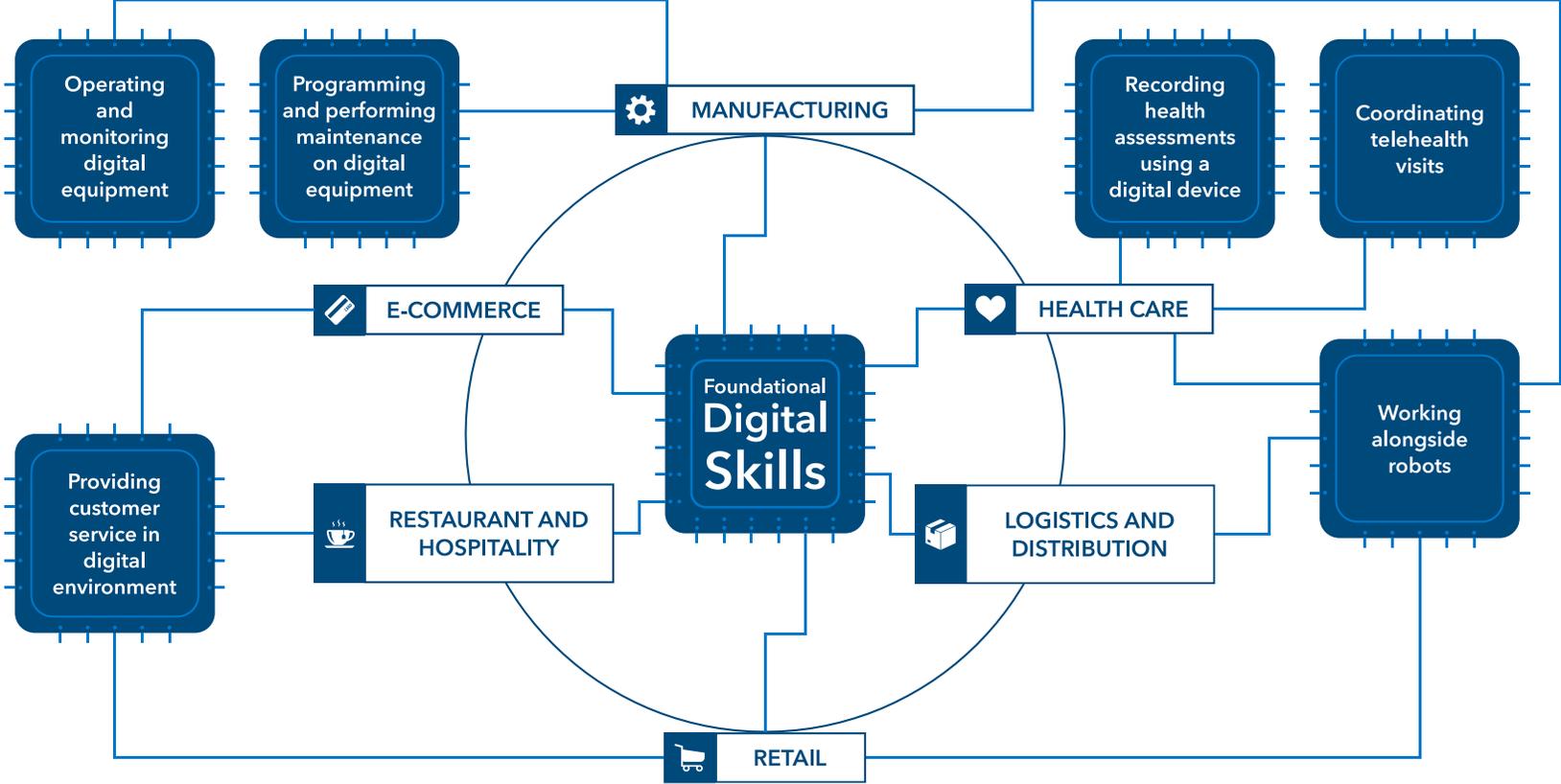
EXAMPLES

- Using touch screen to open app;
Using mobile device for contactless restaurant payment
- Using a learning app for guidance on work tasks;
Navigating information management systems
- Communicating with colleagues via email;
Using Microsoft Teams to share updates across work shifts
- Recording product inspection results and identifying product or process issues (Manufacturing);
Monitoring patient vitals from wearable devices (Health care)
- Recognizing and avoiding suspicious links or attachments
- Following written instructions to set up PC for remote work;
Troubleshooting software with remote IT support

Insights Across Businesses: Digital Skill Needs for Frontline Workers

FOUNDATIONAL DIGITAL SKILLS

-  Operating digital devices
-  Using company- or industry-specific digital platforms
-  Using software to communicate and collaborate
-  Collecting and interpreting data
-  Preventing cybersecurity breaches
-  Setting up and troubleshooting technology with external support



Adapting to Digital Transformation

- Employers described the importance of worker attributes such as flexibility and adaptability as technology changes.
- Some employers used the language of **digital resilience**:
 - Defined by Digital US as “having the awareness, skills, agility, and confidence to be empowered users of new technologies and adapt to changing digital skill demands.”

Adapting to Digital Transformation: Employer Perspectives

“The digital transformation that began during the pandemic has not subsided - instead, it has evolved, shifted.... For our frontline workforce, we’re thinking about digital resilience. Can you take a piece of technology, learn it, and teach a customer how to use it?”

- Restaurant & hospitality employer

“From a digital perspective, technology is changing faster and faster. Workers need to be comfortable being uncomfortable with technology.... So, how do you teach someone who may not [regularly] deal with technology to be comfortable with constantly changing technologies?”

- Retail employer



Employer Approaches

Hiring and Assessment, Supporting Digital Skill Development and Access to Technology, and Managing Change

Digital Approaches to Hiring and Assessing Workers

Employers described:

- ▶ Phasing out use of paper job applications
- ▶ Use of technology to automatically schedule interviews with applicants
- ▶ Use of artificial intelligence for hiring assessments
 - ▶ Experimenting with virtual reality simulations
- ▶ Video conferencing for job interviews
- ▶ Exploring use of learning systems to identify workers for possible promotion (e.g., employees that have earned specific credentials/badges)

Employer Approaches to Support Development of Digital Skills: Internal Training Strategies

Employers described:

- › Providing ongoing training for frontline staff
- › Providing occupation-specific training (e.g., apprenticeship programs)
- › Using on-site simulation centers to introduce new technologies
- › Deploying managers and high performers to provide individual/small-group training
- › Integrating digital skills training with ESL instruction
- › Aligning training with individualized staff development and promotion plans

Internal Training Strategies: Employer Examples

- One Logistics & Distribution employer provides over 100 hours of training to frontline workers. Training is:
 - Conducted on digital tablets
 - Aligned with standard operating procedures that begin at “ground zero,” teaching workers to power-on digital tablets
 - Led by employees who are high performers, respected by their peers, and often bilingual
- One health care employer uses an on-site simulation center for staff to practice and build comfort using digital tools.

Employer Approaches to Support Development of Digital Skills: Digital Platforms

- ▶ Multiple employers described using digital learning systems.
 - ▶ One employer emphasized importance of “teaching digital with digital.”
- ▶ Example: One retailer has deployed a learning application through company-provided mobile devices:
 - ▶ App provides customized training workers need for their roles.
 - ▶ Search capabilities allow workers to watch micro-lessons while helping customers.
 - ▶ Digital skills training is integrated into task-specific training (e.g., how to check out customers using mobile devices)

Employer Approaches to Support Development of Digital Skills: Partnerships

Interviewees described working with the following partners:

- › Community colleges and universities
- › Community-based education and training providers
- › Online education and training providers
- › Industry experts

Partnerships: Examples

- › One Logistics & Distribution employer described a new partnership with two technical schools. The training will:
 - › Prepare entry-level workers for positions as maintenance workers
 - › Combine self-paced learning with hands-on instruction at the school site
 - › Provide opportunities for job shadowing within the business
 - › Provide access to tuition support

Partnerships: Examples

- One Food Processing employer described building partnerships with community-based organizations across local communities where plants are located:
 - Local partners provide digital skills training integrated with ESL instruction onsite at plants.
 - Employer noted local partners are important due to their knowledge of local communities, including the business's large immigrant and refugee population.

Employer Approaches to Support Access to Digital Technology

Employers described:

- Purchasing computers or mobile devices for frontline staff
- Providing onsite access to computers or mobile devices
- Providing discounts on broadband subscriptions (for remote workers)
- Developing instructions for hardware setup and troubleshooting (for remote workers)

Employer Approaches to Manage Digital Transformation

Employers described:

- Communicating changes to workers with honesty and empathy, including:
 - How changes will improve work processes
 - How changes will impact workers
- Expanding management positions and management training:
 - To support workers to adapt to change
 - To provide individualized support to workers to develop new skills

Employer Approaches to Manage Digital Transformation

“Any time we introduce a technology, we sit everyone down and explain what we’re doing. We explain how the work is changing and the impacts and benefits the technology will have. We try to make it meaningful, open, and honest. At the end of the day, if your workers are not buying into what you’re saying as a leader, you won’t be successful.”

- Logistics & distribution employer

“Our leaders need to understand principles of leading through change. There are team members who are facing fear and uncertainty. If we want to remain a relevant organization and not replaced by a disruptor, then we need to help our team members remain relevant through the change.”

- Health care employer

Key Questions: Hiring and Assessment

- What can be done to identify and address bias in digital hiring and assessment strategies?
- What can be done to ensure the shift to remote hiring does not exacerbate inequities for workers with limited access to technology and broadband?

Looking Ahead

Key Questions: Workplace Automation

- What responsibilities do employers have for workers whose jobs are displaced by automation?
- If workers are slow to return to the workforce, could that further accelerate digital transformation in the workplace?

Looking Ahead

Key Questions: Job Quality

- How can businesses build new advancement pathways for emerging occupations?
- What say should workers have in how technology affects the workplace (e.g., work processes, health and safety, etc.)?

Acknowledgments

- Thank you to Strada Education Network and Walmart.org for their generous support of this study.
- We would also like to thank the employers and industry experts who informed our research.
- Additionally, thank you to Digital US and the Markle Foundation for helpful resources related to digital skills.