PARSABLE

Survey: The State of Digital and Connected Work on the Manufacturing Frontlines

A 2021 research report examining the state of digital access and connectivity in the manufacturing industry, from the perspective of its frontline workers.

"The future of advanced manufacturing and production requires a re-imagination of what it means to work in manufacturing. New technologies that put operators and workers in the center are critical in order to bring true digital transformation to life. This new research from Parsable confirms the enormous opportunity for industrial companies to empower their workers, attract and retain younger generations, and ensure the wellbeing of their most important asset: their employees."

Francisco Betti
Head of Advanced Manufacturing and Production,
World Economic Forum

Digital Work in Manufacturing

With the onset of the global pandemic, going "digital" and modernizing manufacturing operations are now widely regarded as table stakes. Yet, digital transformation efforts often allude to more futuristic scenarios, like humanoid robots, wearable devices at scale, advanced machine learning and artificial intelligence. But the urgency of providing digital access for our current *human* workforce can't be overlooked.

Humans are still at the core of manufacturing and supply chain. Amazon alone added 427,300 employees in the first 10 months of 2020.[1] Elon Musk has acknowledged that, "Humans are underrated."[2]

Manufacturing has reached a tipping point in 2021. In four years, Millennials will comprise 75% of the workforce,[3] but the talent pipeline is shrinking for the industry, with nearly half ranking manufacturing as the second-to-last career choice.[4] With the pandemic and yet-unknown events to come, it's clear that companies need to be much more agile, from the shop floor to the top floor and across the entire value chain.

At the forefront of these considerations are human workers, and the need to empower them to be successful. But how?

Specifically, by putting intuitive technology and modern digital tools in the hands of frontline workers and operators — the people who report every day on-site, and who make the essential products and materials that keep our economies afloat. These workers have a much greater capacity to be efficient, productive and safe in their jobs by following digital, dynamic and data-driven processes over outdated, paper-based ones. Providing frontline workers with access to digital tools drives important "quick win" progress to improving operational performance — as well as talent recruitment and retention.

Parsable set out to find out how quickly these digital ways of working are being adopted on the factory floor. We surveyed 1,168 U.S. frontline manufacturing workers to understand the technologies they are being given to help them do their jobs, and gather their views on using digital tools in the workplace.
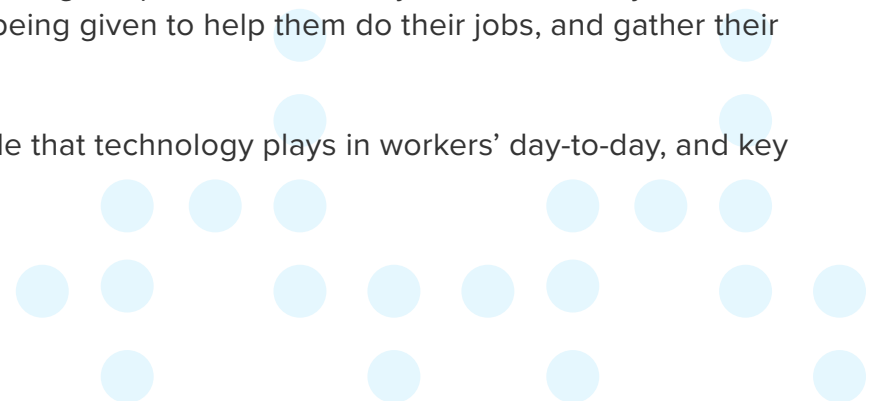
This industry report provides new data on the state of factory work, the role that technology plays in workers' day-to-day, and key opportunities for managers and executives to improve.

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[1] New York Times
[2] CNBC
[3] Ernst & Young, 2018
[4] The Manufacturing Institute

Key Findings

Frontline workers want access to digital technology to best perform in their jobs.

In the past, management might have hesitated to move from paper-based procedures to digitized workflows, because they thought that technology in general would create more work for workers or be difficult for them to use. Our research found that nearly three-quarters of today's frontline workers (72%) have no concerns using modern digital tools.

Companies that don't close the digital gap will lose frontline talent.

Having a technology-forward workplace matters; more than half (52%) of respondents say that the opportunity to work in a more modern/digital environment would influence their decision to leave their current company. With 2.4 million manufacturing jobs predicted to be unfilled by 2028 due to skills shortages[5], companies urgently need to be an attractive employer to a limited talent pool.

Management is missing opportunities to digitally empower frontline workers.

Digital tools are being under-provided. Fewer than half (47%) of frontline workers surveyed are offered mobile technology (smartphone, tablet, wearable, etc.) to help them do their jobs better. Seventy nine percent still use paper to follow work instructions and track progress, resulting in lost visibility and lost opportunities to improve productivity, quality and safety at scale.

[5]Deloitte and The Manufacturing Institute Skills Gap and Future of Work Study, 2018

72%
have no concerns using modern digital tools

52%
would consider leaving their current jobs to work in a more digital environment

47%
are offered mobile technology to help them do their jobs

Parsable conducted a survey of frontline manufacturing workers based in the United States. The survey was fielded in December 2020, and received 1,168 completed responses.
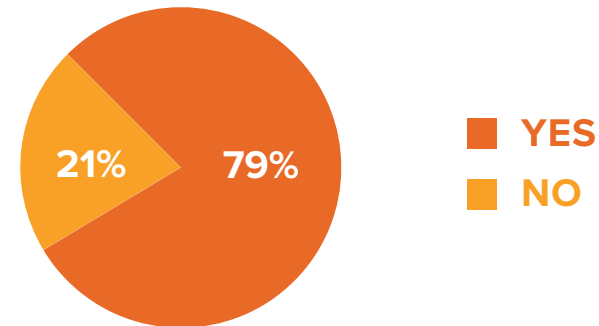
The Not So Digital State of Frontline Manufacturing Work

Despite COVID-19 accelerating the digitization of many areas of industrial operations, there remains a significant opportunity for companies to invest in and empower frontline workers through technology. Currently, fewer than half of frontline workers (47%) have been given mobile technology (smartphone, tablet, wearable, etc.) to help them do their jobs better. In fact, 16% of respondents say they have *never* leveraged digital tools to help them in their work.

How are these workers currently getting their jobs done? Over three-quarters (79%) report still using still using paper-based documentation. Almost a quarter (22%) primarily communicate with their team members by leaving notes on paper.

Relying on paper-based standard operating procedures (SOPs) and collaboration is ultimately detrimental to operational efficiency and productivity. Take checklists, for example. Unlike interactive digital checklists, paper checklists aren't easily portable or searchable, and are harder to keep up to date – an ongoing challenge for workers who need clear, current and easily consumable instructions at their fingertips.

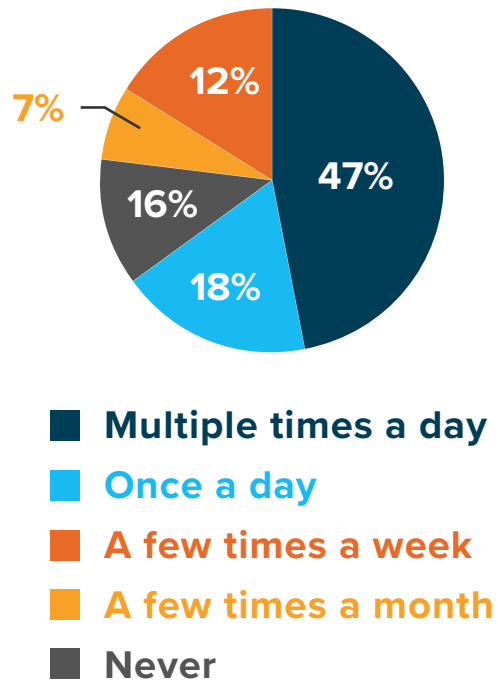**Do you use/rely on paper to follow work instructions and/or track your work?**

21% 79%

■ **YES**
■ **NO**

Has your company given you any mobile technology (smartphone, tablet, wearable, etc.) to help you do your job better?
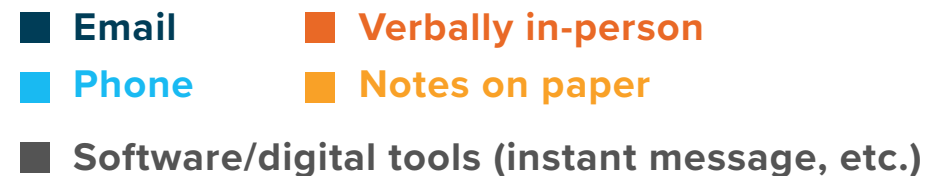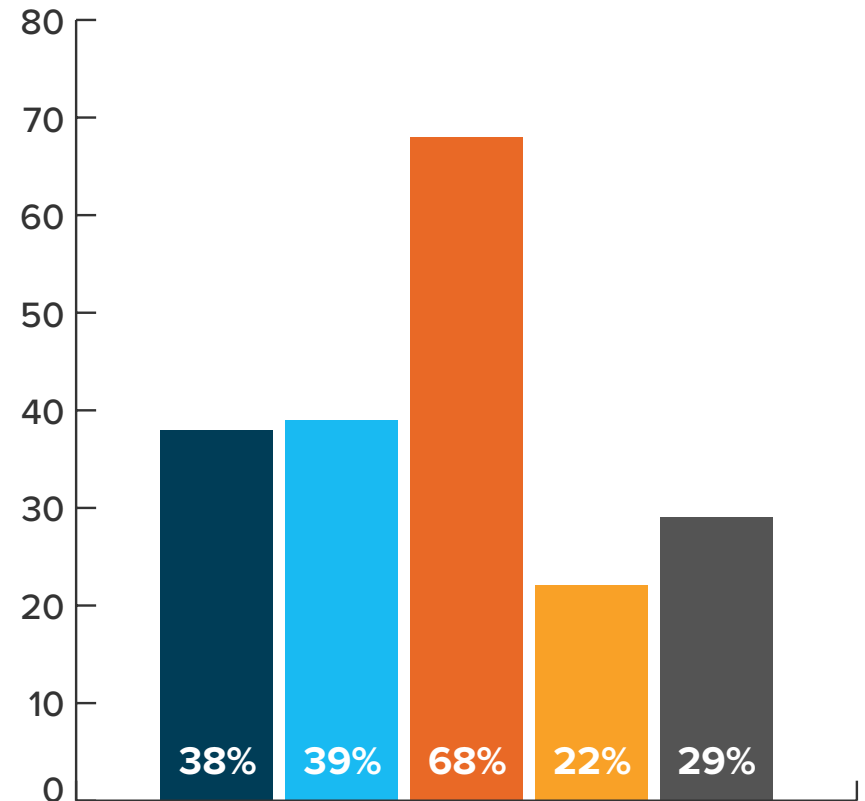
47% 53%

■ **NO**
■ **YES**
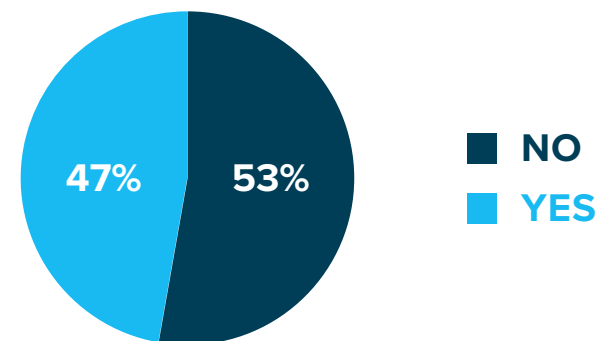
The Not So Digital State of Frontline Manufacturing Work

How often do you use digital tools (specifically software, applications, etc.) that help you do your job better?

- ■ **Multiple times a day**
- ■ **Once a day**
- ■ **A few times a week**
- ■ **A few times a month**
- ■ **Never**

How do you primarily communicate with other team members?[6]

- ■ **Email**
- ■ **Phone**
- ■ **Verbally in-person**
- ■ **Notes on paper**
- ■ **Software/digital tools (instant message, etc.)**

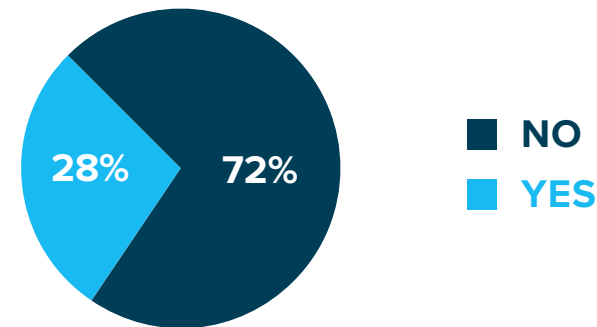[6]Respondents were asked to check all that apply

Frontline Workers Welcome a Shift to Mobile and Digital Tools

For years, management held onto inefficient paper-based checklists and SOPs to track procedural adherence and compliance, thinking that it would require too much training or create even more work if they changed the status quo. This is no longer the case. Digital technology is now ubiquitous in our everyday consumer lives; 81% of Americans own an Internet-enabled smartphone.[7] Additionally, enterprise software has become significantly more user-friendly over the years, with user interfaces (UI) that are easy, intuitive and purpose-designed to fit into the everyday workflows of end users.
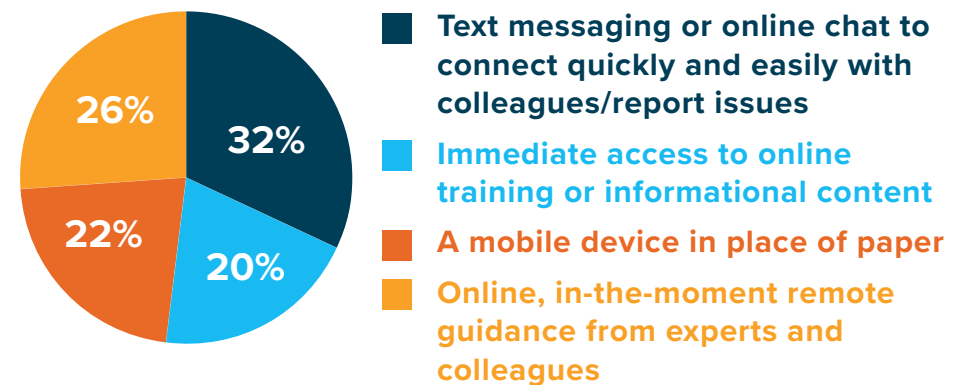
Our research confirms that frontline workers are ready to embrace technology on the factory floor. The majority of frontline workers (72%) express no concerns about using digital tools in the workplace. This sentiment carries across all generations of the workforce – including Baby Boomers, with 69% of those over 54 years old having no concerns.

Additionally, respondents say texting or online chat is the most important type of digital solution that would help them work better, while 22% say having a mobile device in place of paper binders is the most important.

Do you have any concerns about using digital tools (specifically software, applications, etc.) in the workplace?

28% 72%

■ **NO**
■ **YES**

What type of digital solution would help you work better the most?

26% 32% 22% 20%

■ **Text messaging or online chat to connect quickly and easily with colleagues/report issues**

■ **Immediate access to online training or informational content**

■ **A mobile device in place of paper**

■ **Online, in-the-moment remote guidance from experts and colleagues**

Employee Recruitment, Onboarding and Retention: Technology Matters

Beyond the impact on day-to-day operational efficiency, the existing digital gap impacts companies' ability to attract and keep frontline talent. In our survey, frontline workers are sending a clear message that they want a workplace that provides digital technology for employees, and that this improves their overall work satisfaction, productivity and safety.

More than half (52%) say the opportunity to work in a more modern, digital environment would be part of a decision to leave their current employer; this sentiment stands true across Baby Boomers, Generation X, Millennials and Generation Z. In addition, nearly one-third (30%) of respondents believe that management does not listen to employee recommendations for improvements in the work environment – a red flag for both plant managers and human resources departments.

Our research also confirms that digital-native Millennials and Gen Z are the most likely to have short tenures; over half (56%) of these younger workers have been in their current manufacturing jobs for less than two years, and 27% intend to move on to a different company within two years. Unless companies improve accessibility to digital tools for their frontline workers and show that they value their feedback, we can expect employee turnover to rise.

By the numbers: Digital-Native Millennials and Gen Z

56%
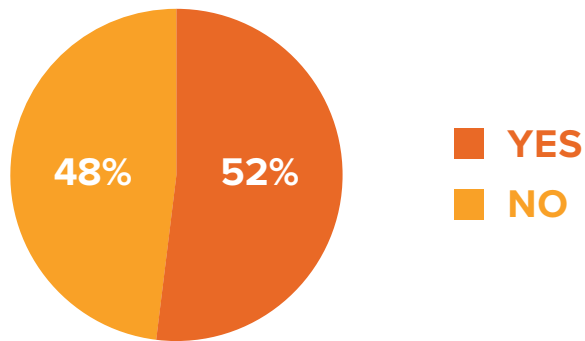of these younger workers have been in their current manufacturing jobs for less than two years

27%
intend to move on to a different company within two years

# Employee Recruitment, Onboarding and Retention: Technology Matters

Would the opportunity to work in a more modern, digital environment be part of your decision to leave your current employer?

48% 52%

■ YES
■ NO

How long have you been at your current job? (Millennials and Gen Z respondents)

16% 28% 56%

■ Less than 2 years
■ 2-5 years
■ More than 5 years
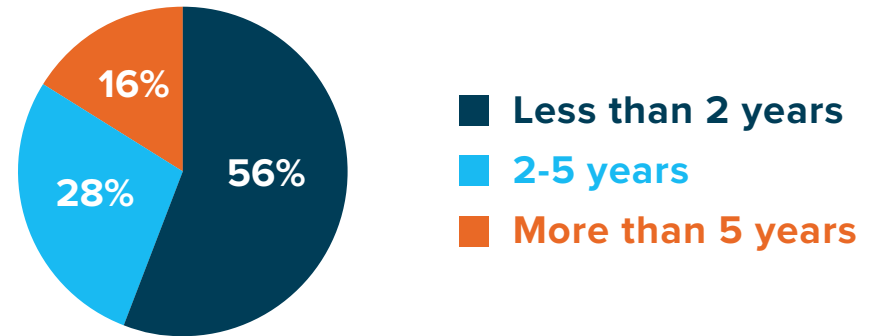
Do you believe management listens to recommendations that employees make for improvements in your work environment?

30% 70%

■ YES
■ NO
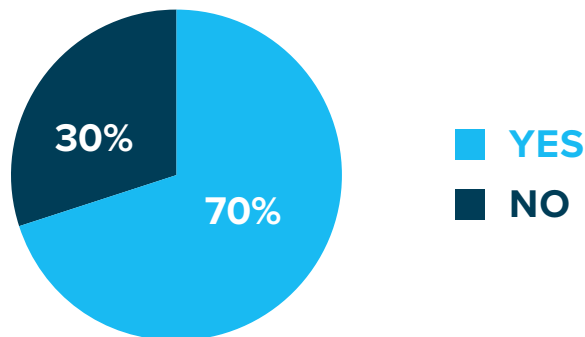
Has your employer given you digital tools (specifically software, applications, etc.) to help you stay safer at work?

49% 51%

■ YES
■ NO
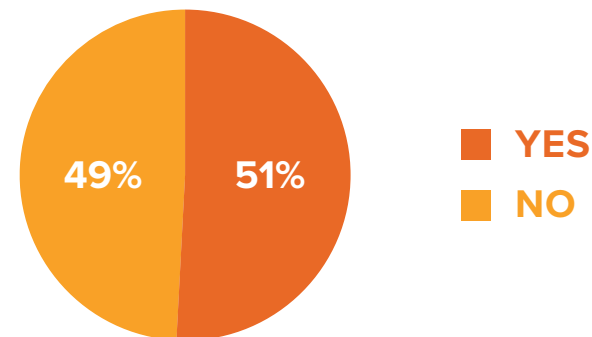
A Practical Path to Improve Frontline Operations Starts with Technology

It's clear that frontline manufacturing workers want and deserve digital technology that helps them perform their jobs better. The old, paper-based ways of working are not only hampering their abilities to be efficient, productive and safe, but are preventing operations from being agile at a time when flexibility is paramount.

Going "digital" doesn't need to be a complicated process requiring big teams and big budgets. A plan that focuses on small, incremental improvements on the frontlines – and showcasing wins, backed by data – can make your company the star for others to follow. Here's how.

1. Find advocates.

Success is more likely to happen if you have buy-in from stakeholders within your plant or organization who share your vision that technology for frontline workers will improve productivity, quality and safety. Advocates can include workers themselves, operations and crew managers, and your EHS (environment, health and safety) colleagues. They will help amplify the value of digitizing SOPs and getting them off paper-based and verbal instructions. More importantly, they can increase awareness and grow the enthusiasm around achievements for subsequent digital projects.

2. Start small.

Think about which processes could be the easiest and quickest to digitize, perhaps for a few production lines to begin. Maybe it's a safety walk, CIL (clean/inspect/lubricate) procedure, or pre-trip truck inspection. Also think about scalability: Are there simple processes that are similarly carried out in multiple plants or sites? This way, once you can prove initial success at one site, you can make the case to digitize the process in multiple locations – while also capturing the data points and trends that enable you to continuously improve the process across plants.

A Practical Path to Improve Frontline Operations Starts with Technology

3. Set baseline metrics.

You don't want to rally your advocates and initiate this digitization project only to realize you don't have a starting point to track improvement over time. Data will be your friend. Setting baselines helps you measure the impact of digital-versus paper-based processes once your frontline workers have been given the right digital tools. Metrics could be as simple as time spent on a specific procedure, production output on a specific line, or number of calls/notifications for assistance.

4. Regularly evaluate performance.

To measure the improvement that digital processes have on efficiency and productivity in your plant over time, regularly gather feedback from your frontline workers. The more visibility and data that can be analyzed, the easier and more accurate it will be to find the inefficiencies or bottlenecks, enabling you to continuously improve the process.

By digitizing its CIL procedure and measuring improvements with Connected Worker® from Parsable, a global brewery was able to:

» **Increase OEE by 5%**

» **Reduce unplanned stoppages**

» **Identify additional machine hot spots**

A Practical Path to Improve Frontline Operations Starts with Technology

5. Celebrate champions and wins.

It's important to recognize your advocates and reward them for adopting and leading from the front. Recognition makes your employees feel valued as contributors, and that the work they're doing is making a difference. According to a recent study by the Workforce Institute,[8] Gen Z, particularly, is keen on receiving recognition from their managers. Recognizing everything from small achievements to big wins can make a huge impact on employee morale and help drive retention.

6. Have a plan to scale.

It's critical to measure and highlight the value of mobile-based software and digital tools for frontline workers early on, but also have a plan to roll out your program to additional sites and use cases. Bring in your software partner's customer success and implementation teams for support and direction; they've done this countless times at other similar organizations. Reach out to your peers at other plants or factories, and share your success and learnings. Your biggest impact might very well be how you help show others in your company or network the path to a more digitally empowered workforce — and to happier frontline employees.

GRUPO BIMBO®

Grupo Bimbo, the largest bakery in the world with brands including **Sara Lee, Oroweat, Entenmann's and Ball Park**, understands the importance of celebrating its champions. The global manufacturer had a goal to recognize team members, to help increase the number of use cases and drive usage of *Connected Worker*. Workers are rewarded with a personalized note from the Vice President of Global Digital Transformation and Data & Analytics, and certificates of recognition that are printed and posted in their offices.

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[8]"Meet Gen Z," Workforce Institute @Kronos study, 2019

About Parsable

Parsable empowers industrial workers with modern digital tools to improve productivity, quality and safety. Connected Worker® by Parsable transforms static, paper-based procedures into mobile and interactive work instructions, enabling workers to leverage multimedia formats and collaborate in real time. With Parsable, companies gain unprecedented insight into human work by capturing essential data to improve their operations. A member of the World Economic Forum's Centre for the Fourth Industrial Revolution, Parsable is trusted by top global companies in the manufacturing, energy, consumer packaged goods, chemical, aerospace, industrial equipment, automotive and packaging industries. Learn more at parsable.com.

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