How AI and Connected Worker Technology Solve the Big 3 Challenges for the Industrial Workforce

The way we work has changed forever.

The global pandemic has disrupted the manufacturing and service industry, and companies of all sizes are turning to AI-powered connected worker technology to remotely connect and empower their workforces with the tools and knowledge needed to perform at higher levels of safety, quality, and productivity.

Augmentir™

How Artificial Intelligence and Connected Worker Technology Solves the Big 3 Challenges in Today's Industrial Workforce

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The Big 3 Challenges for the Frontline Workforce

The growing skills gap in the manufacturing and service industry, combined with a tight labor market, is creating increased challenges for companies of all sizes. Industrial companies face pressure to improve productivity while maintaining the safety and quality within industry's frontline workforce.

What's behind this workforce problem?

Skills Gap

A well-known problem in the industrial sector, the skills gap is being exacerbated by a tight labor market and the changing nature of jobs requiring frequent re-skilling.

Tribal Knowledge

It's estimated that 30-40% of the manufacturing and service workforce are retiring over the next 5 years with knowledge that is not easily shared in a scalable way.

Continuous Improvement

Continually improving the performance of frontline workforces has been difficult with limited connectivity and software tools.

With more than 95% of manufacturing businesses still using paper instructions, or older, "paper-on-glass" Electronic Work Instruction systems, it has become clear that companies are not in a position to address to these challenges.

The Early Promise, and Failure, of Enterprise AR

In recent years, manufacturers have attempted to turn to emerging digital technologies to equip and train their workforces with the tools and knowledge needed to be productive.

Failed First Wave

The first wave of technology adoption started around five years ago when the hype cycle for enterprise Augmented Reality (AR) and smart glasses was at its peak. Vendors emerged providing software products that made it possible to deliver Augmented Reality-based instructions through smart glasses like Microsoft HoloLens, Google Glass, RealWear, etc. This combination was promoted as the solution to the three challenges facing industrial companies: skills gap, tribal knowledge and continuous improvement.

After years of pilots with spotty results, attempts to use enterprise augmented reality as the solution has failed. The reason is simple: smart glasses combined with Augmented Reality did nothing to address the tribal knowledge problem that many manufacturing companies face, nor did it help with continuous improvement efforts within these companies.

These solutions only marginally addressed the skills gap issue and did so at great cost and complication, resulting in most companies failing to emerge out of pilots or early proof-of-concept projects.

> The first wave of Enterprise AR technology did little to help improve the productivity, quality, and safety of the frontline workforce, and came at a high cost.

> Artificial Intelligence is increasingly being used to augment, not replace, the human workforce. AI is uniquely able to address the fundamental macrotrends of growing skills gaps and the loss of tribal knowledge.

Emergence of Artificial Intelligence

In the last 2-3 years, Artificial Intelligence (AI) has crossed the chasm from an expensive, difficult to scale technology only approachable by data scientists, to scalable service that can be cost effectively embedded in products designed to assist humans in their everyday activities.

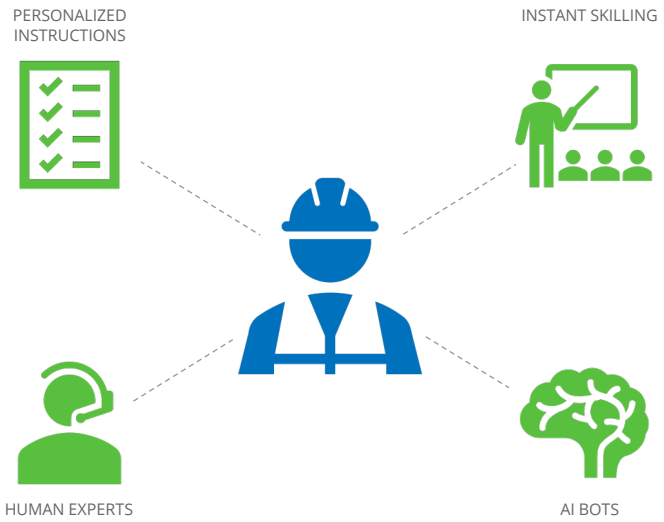
In parallel to this technology change, Industrial organizations are now shifting to a more holistic view of their operations that digitally integrates frontline workers into the overall operational management system – the Connected Worker. With the focus now on the connected workforce, AI, with its ability to recognize patterns in noisy data sets generated by human activity, has emerged as a critical link delivering in the connected worker value proposition.

> AI helps intelligently guide and support new workers to increase safety, quality and improve performance.

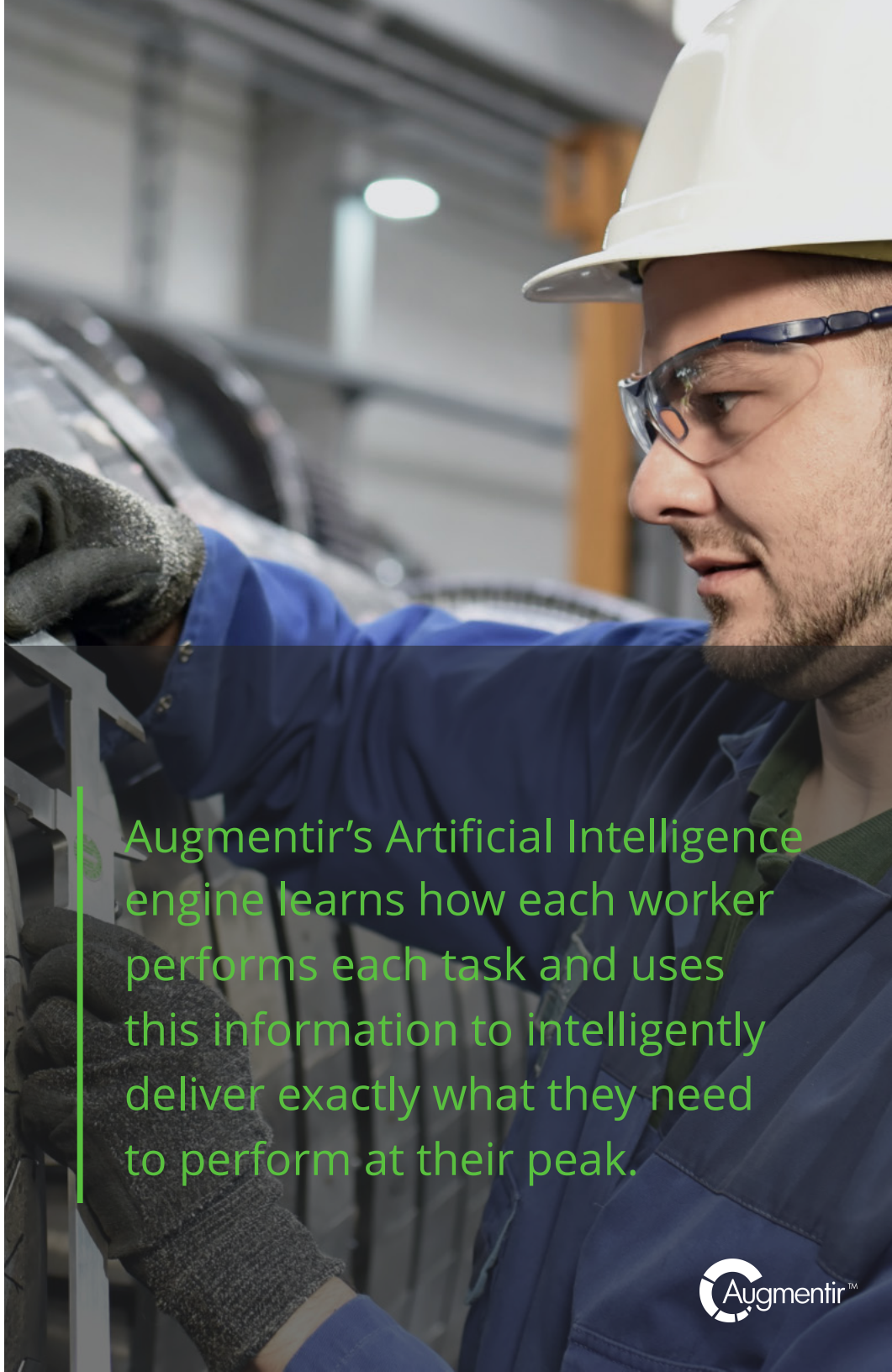
While AI has been branded as a threat to replace human workers in the past, leading manufacturing companies are turning to AI to help onboard new workers and to intelligently guide and support them in operations to increase safety, quality and improve performance.

Using AI to Intelligently Close the Skills Gap

Augmentir's vision is that with our AI-based Connected Worker Platform we can provide *each* worker with exactly what they need, when they need it, and how they need it to perform each job at their peak.



Augmentir does this by providing digital, augmented work instructions that are personalized based on worker proficiency, instant skilling using dynamic content with inline rich media for on-the-job-training, live access to remote experts, and AI-bots to automate knowledge sharing and improve decision support in the field.

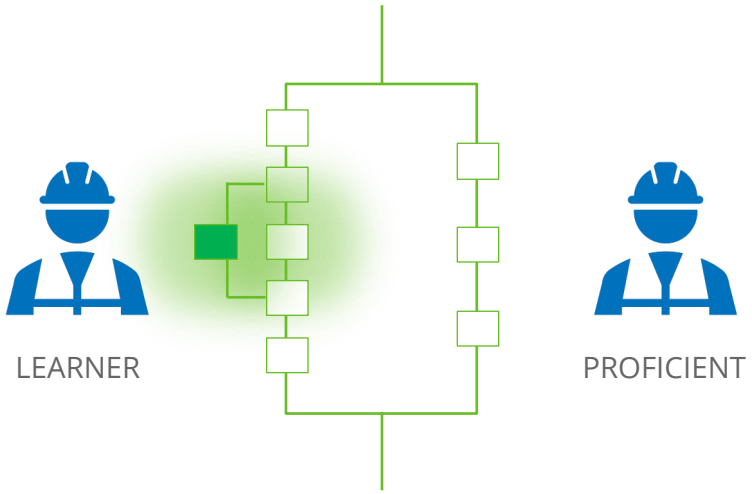


Augmentir's Artificial Intelligence engine learns how each worker performs each task and uses this information to intelligently deliver exactly what they need to perform at their peak.

Using AI to Personalize Work Instructions

One example of how AI is being used to intelligently close the skills gap is by providing personalized guidance where instructions are matched to the proficiency of each worker.

For example, a worker that is new to an assembly job may need an escalation to a shop supervisor for sign-off, whereas a senior worker may not need that step. With AI matching instructions and support to each worker's proficiency, each worker can perform at the highest levels of safety, quality, and productivity.



This allows customers to take a standard set of instructions and augment them with personalized assistance for individual workers, so they can perform their tasks at optimal safety, quality, and productivity.

CASE STUDY

Using AI to Close the Skills Gap

STRONGARM, a Pennsylvania-based manufacturer, recently dealt with skills gap issues. STRONGARM designs and builds ergonomic and environmentally protected workstations for companies in a wide range of markets. In recent years, the company faced growing challenges within its operation – an aging and retiring workforce, talent shortage, and increased competition – which increased pressures to produce high quality products at lower costs.

> "When one of our senior and most experienced technicians retired recently, we were able to onboard a new technician and trust Augmentir's AI engine to guide him during the learning curve to get product out the door at 100% quality so that we didn't miss shipments."

Steve Thorne, General Manager at STRONGARM

STRONGARM's initial focus was on the assembly and final quality control processes for the company's most complex workstation and industrial display unit. Augmentir's rapid authoring environment allowed STRONGARM to quickly migrate their existing paper-based instructions to digital, augmented instructions that incorporated rich media, checklists, verifications, and several other features that were central to their assembly and QC processes.

DOWNLOAD CASE STUDY

Using AI to Capture and Share Tribal Knowledge

The benefits that AI can bring to industrial companies are not limited simply to standard operating procedures, work instructions, or training. Companies are also turning to AI to intelligently guide and support frontline workers with real-time decision support.

Connected workers are increasingly relying on remote collaboration to leverage the expertise of senior colleagues and subject matter experts for on-the-job troubleshooting and problem solving.

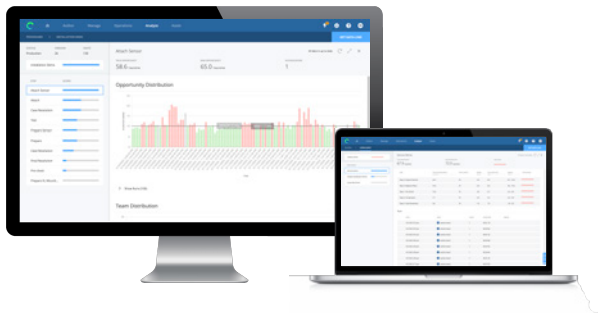
- Remote Expert Assistance allows for live video and audio sharing, annotations, and file sharing.
- Chat allows one expert to support multiple workers simultaneously.
- Multi-level Escalation between workers, SMEs and OEMs help connected workers solve problems faster.
- AI-bots can capture tribal knowledge of these SMEs and convert it into a sharable corporate asset.

Additionally, in a service environment, each technician can perform each task right, the first time, without requiring senior technician to ride along during an onboarding period. This is especially important in an era of social distancing and travel restrictions.

Using AI for Continuous Improvement

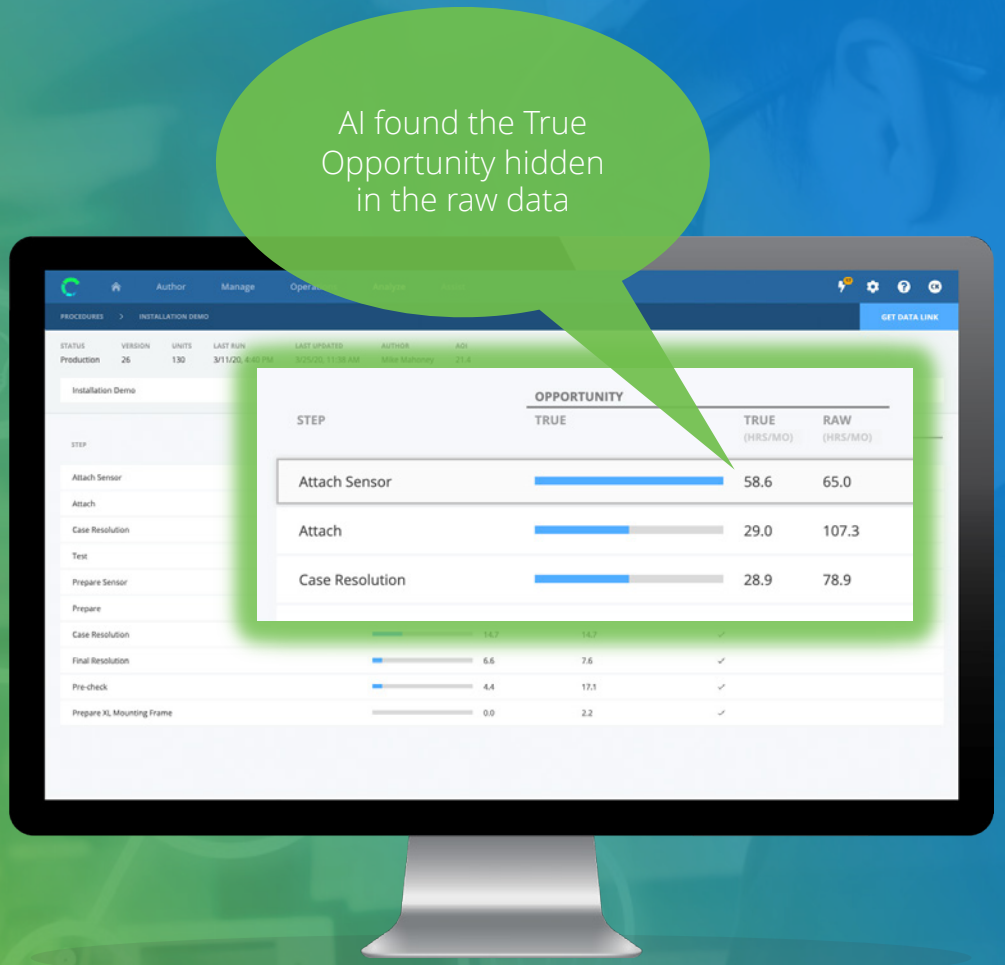
AI is uniquely suited to identifying capturable opportunities from the massive, noisy data set generated by frontline workers, and therefore to serve as the foundation of an organization's continuous improvement initiatives.

AI algorithms are ideal for analyzing large amounts of data collected from a connected workforce. AI can detect patterns, find outliers, cleanse data and find correlations and patterns that can be used to identify opportunities for improvement in areas like targeted training, operations, or content management.



For instance, AI can identify specific individuals that would benefit from targeted training on a specific tool or procedure as well as improvements to content and instructions directed at the author.

With an ecosystem of content authors, frontline workers, subject matter experts, operations managers, continuous improvement engineers, and quality specialists, there are dozens of opportunities to continually address the skills gap, improve quality, and improve performance.

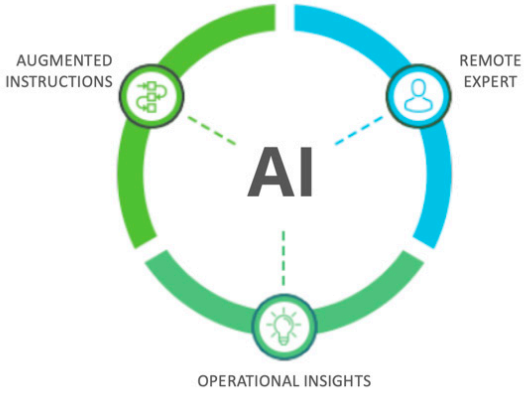


> "Augmentir's AI-based True Opportunity™ system enables us to gain insight into how our technicians are performing, and autonomously identifies our largest capturable opportunities across our entire operation."
>
> *Steve Thorne, General Manager at STRONGARM*

Augmentir™

AI-Powered Connected Worker Platform

Augmentir is helping manufacturing and service companies address industry's "big 3 workforce challenges" using its AI-Powered Connected Worker Platform.



Augmentir collects granular job data coming back from connected workers, and uses AI to cleanse the data, find outliers, and identify and stack rank opportunities to **drive continuous improvement** efforts within an organization. As a result of doing that, our AI engine learns a lot about worker proficiency, and with that understanding our AI is able to dynamically adjust the guidance based on the proficiency of each individual worker, which helps to **intelligently close the skills gap**.

Additionally, Augmentir's AI-bot infrastructure, which front-ends our Remote Assist capability, captures and **accumulates tribal knowledge** from SMEs and turns it into scalable and sharable corporate asset.

Augmentir™

The Augmentir platform combines augmented, guided work instructions and remote expert capability with Artificial Intelligence (AI) to intelligently close the skills gap, capture and convert tribal knowledge, and enable continuous improvement of the frontline workforce.

AUGMENTED WORK INSTRUCTIONS

Digital Work Instructions help guide connected workers with visual aids and contextual information. AI is used to personalize the instructions to each worker's proficiency level, which helps intelligently close the skills gap and enable workers to perform at their best.

REMOTE ASSIST

Integrated Remote Expert assistance helps workers resolve issues faster using insights from Augmentir's AI and information from the guided instructions. Integrated chat allows one expert to support multiple workers. Multi-level escalation helps connected workers solve problems faster.

OPERATIONAL INSIGHTS

Augmentir's AI-based True Opportunity™ system uses granular data to identify the largest opportunities in improving the skills of the frontline workforce and helps to drive continuous improvement throughout the organization.

Augmentir™

CASE STUDY

Using AI to Reduce Training Time

In another example, Bio-Chem Fluidics, a manufacturer of high-performance pumps and valves for clinical diagnostics and analytical chemistry applications, is using AI combined with digital work instructions to improve the onboarding and training process for their new technicians and operators and improve worker self-sufficiency.

According to Bio-Chem, the company's training and onboarding time for temp workers has been reduced by over 80%.

> "Augmentir has made our complex procedures very repeatable for operators of all skill levels. **As a result, our training time for new operators has been reduced by over 80%**. The flexibility and ease-of-use of the Augmentir platform have made it painless to implement across our company."
>
> *Linsey Holden-Downes, Vice President of Operations at Bio-Chem*

The company uses Augmentir's AI-powered connected worker platform to digitize and standardize their work instruction library and leverages Augmentir's AI to deliver insights that are helping them optimize their training efforts.

After adopting Augmentir, it now takes their team lead roughly two weeks to fully train a new hire whereas prior to Augmentir, it would have taken three months of supervision. Additionally, the time spent monitoring new hires is dramatically reduced from an estimated 50% of a team lead's time to just 10%.

Get Started with Augmentir

Connect with us and experience first-hand how Augmentir can help you identify more ways to continuously improve productivity, training, and quality within your operation.

- Create and run digital, augmented work instructions on any iOS or Android mobile device or AR-enabled smart glasses.
- Virtually communicate and collaborate with remote teams using chat, live video, audio, file sharing, and annotations.
- Identify opportunities for improving worker skills and driving continuous improvement throughout the organization.

GET STARTED