

OPTIMIZED TRAINING AND WORK INSTRUCTIONS

How Augmented Reality Enables Connected Frontline Employees

As industrial organizations seek ways to keep up with the increasing pace of innovation in today's business environment, quality of employees' skills are top-of-mind. Best-in-Class companies are already investing in technology solutions that provide employees with the support to complete tasks more efficiently — such as augmented reality (AR), which blends together physical and digital environments to upskill employees by aiding in training, knowledge transfer, and work instructions. As a result, companies utilizing AR and other tools for upskilling employees are seeing greater increases in employee engagement, productivity, and revenue.

Implementation of Augmented Reality in the Manufacturing Environment:

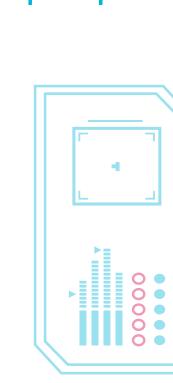
Best-in-Class: 63%

Industry Average: 40%

Laggard: 37%

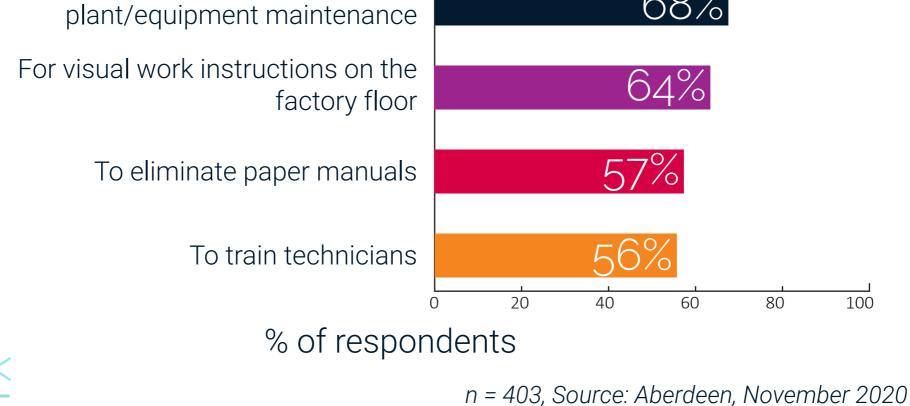
Use Cases for AR in Manufacturing There are many different use cases for AR in manufacturing, but

the most common are to upskill the workforce with virtual training curriculums and to supply visual work instructions to employees on the factory floor.



To upskill/extend workforce capability in

urposes for Using AR in the Manufacturing Environment



short with the expanding complexity of processes and products. The increasing pace of innovation in the industrial world requires factory workers to keep up with machinery updates, and retraining can help technicians gain

Benefits of AR Inside the Factory: Traditional training methods often fall

knowledge about new systems before they work directly on them. Benefits of AR Outside the Factory: AR-enabled work instructions help technicians problem solve while on-the-job. When employees have visual, easy-to-follow, step-by-step instructions at their fingertips, they can quickly

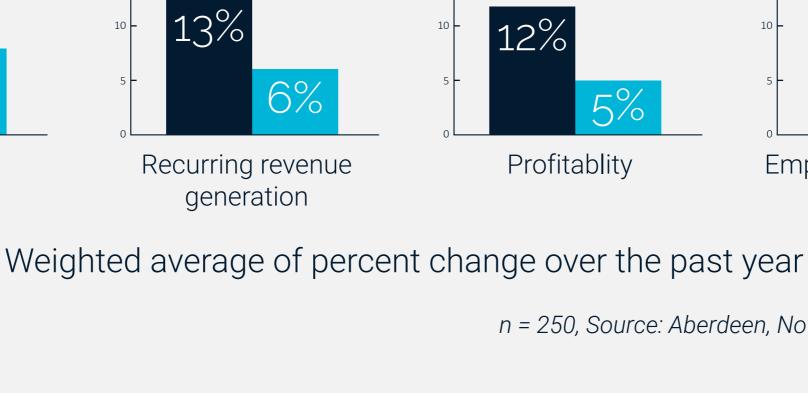
and accurately solve equipment issues.

Investments in tools such as AR that enhance the quality of skills generates significant returns. Knowledgeable frontline employees are able to solve

RESULTS FOR INVESTMENTS IN UPSKILLING

problems quickly, which leads to increases in productivity and decreases in downtime costs. Companies that are increasing spend for tools that help develop internal talent to fill skills gaps are seeing greater year-over-year improvements in general business metrics. Companies that are increasing spend for developing internal talent to fill skills gap Companies that are NOT increasing spend for developing internal talent to fill skills gap





FOR AUGMENTED REALITY





MANUFACTURING AND SERVICE OUTCOMES

In addition to greater improvements in general business metrics, AR has an impact on key manufacturing and service metrics. Improvements in efficiency, cost-effectiveness, and overall plant output are related to the advantages in employee and machine productivity.

augmented reality are seeing:

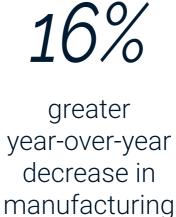
Compared to non-users, manufacturers currently using



renewals







cycle time



SUMMARY Whether companies are leveraging AR for upskilling their workforce or providing visual work instructions, AR can empower frontline employees to tackle complex tasks and magnify the quality of skills across manufacturing

operations. These connected employees are better equipped to address

challenges, thus making the skills gap that plagues many manufacturing and

Click here to learn how connected people, when working together with connected processes and products, can drive

service divisions a thing of the past.

Reality Solutions:

Learn about PTC's Augmented



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