



# Improving Teamwork on the Factory Floor

**It took about a century** each time to advance from the first Industrial Revolution (steam and mechanical) to the second (electricity and manufacturing) and then to the third, which was characterized by IT, advanced automation, and robotics. It's taken less than half a century to embark on [Industry 4.0](#) (aka "Smart Manufacturing"), which likely will rely heavily on the convergence of collaborative technologies.

Digitization is now reaching deep into machinery in both consumer and business settings, as manufacturers extract data from product usage with which they can improve product quality, enhance predictive maintenance, and create new revenue-generating services.

Through video collaboration platforms, manufacturers can bring virtual experts to the plant floor to help reduce equipment downtime, accelerate production issue resolution, and enable distributed teams to address problems in real-time.

Knapp/ivii, a logistics solutions provider, is using collaborative technologies to [transform warehouse maintenance and repair](#), speeding and lowering the costs of problem resolution. The company's *ivii assist* headset provides workers with a headphone, microphone, camera, and see-through display that connects them to a remote warehouse engineer, who can then guide them through the troubleshooting process. Other experts around the world can join a virtual team room on their mobile devices to provide additional input and advice.

## Multiple disruptions

[McKinsey analysts](#) say Industry 4.0 is "driven by four: the astonishing rise in data volumes, computational power, and connectivity, especially new low-power wide-area networks; the emergence of analytics and business-intelligence capabilities; new forms of human-machine interaction such as touch interfaces and augmented-reality systems; and improvements in transferring digital instructions to the physical world, such as advanced robotics and 3-D printing."

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Collaboration technology, says technology writer [Jon Evans](#), is going hand-in-hand with those disruptions to potentially “boost company understanding of customer preferences and trends; improve knowledge management and product innovation; and boost revenues through improved business efficiency.”

### Collaborating on new products

In recent decades, success in collaborating across supply, partner, development, and distribution chains has revolutionized the delivery of finished products. But bringing new products to market is still often a manually intensive process that means managing multiple documents in multiple locations across multiple teams.

Collaboration technology can help transform what is often a rigid, linear process to one that is flexible and engages multiple experts across several locations using videoconferencing and electronic whiteboarding to share documents.

### Real-time connections

Connecting workers is also increasingly important as manufacturers try to fill job openings. According to a 2017 survey by the [National Association of Manufacturers](#), almost 80% of respondents were struggling to fill job openings with qualified applicants. About two-thirds said they are compensating by creating or expanding internal training programs, and more than half are collaborating with educators on skills certification.

Many manufacturers are also confronting the trend of an aging workforce, and they're [losing workers with in-depth knowledge](#) to retirement even as they need to support more geographically dispersed facilities. This reality can mean that institutional knowledge is not available on-site. Video conferencing and messaging can remotely bring expert knowledge to bear on a problem, leveraging expertise located throughout the organization and providing ready access to archived documents on common troubleshooting steps.

Collaborative tools make it easy to deliver highly effective, live instruction to anyone, anywhere, without sacrificing effectiveness. Mobile meeting tools make it possible for anyone to join in a training session, rather than having to gather in large groups. Trainers can avoid having to travel for face-to-face meetings and thus reach more workers.

### Insights into machine performance

Looking ahead, Internet of Things (IoT) technology will enable more communication with and insight into machine performance. Manufacturers will be able to use these connections to collaborate with customers on issues such as machine health, preventative maintenance, and product performance.

For example, if a machine can send out an alert to a messaging platform or interactive whiteboard when a problem occurs, that could trigger key personnel to gather in a virtual designated incident response team room. They could then then communicate via calls, video conferencing, and chat to collaborate on how to mitigate the issue.

Collaborative technologies will also lean heavily on cognitive technologies, artificial intelligence, and natural language processing to make user interfaces even more natural, intuitive, and intelligent. This will help manufacturing organizations make better use of automation and be more adaptive to changing customer needs.

Rather than replacing humans, it is increasingly likely that workers and cognitive technologies will augment each other to produce new ways of working. The [Deloitte 2018 Human Capital Trends report](#) contends that “true pioneers are radically rethinking work architecture to maximize the value of both humans and machines—creating new opportunities to organize work more effectively and to redefine the human workforce’s skills and careers.”

Consider Ava Robotics, which has developed an [autonomous video collaboration robot](#) that functions as an avatar for remote users and integrates a range of remote applications. Ava allows remote workers to use video to see and be seen while collaborating in environments that would otherwise be difficult or impossible from remote locations, including event spaces, manufacturing floors, and office hallways.

### Collaboration payoff

Collaboration technology will play a vital role as manufacturers embark on Industry 4.0 initiatives. Teams that make things happen will be bigger, more diverse, and more distributed than ever. They'll need a complete set of tools that allow them to connect anytime, anywhere, and on any device. Collaboration solutions such as video conferencing and easy-to-use virtual work spaces can help keep teams connected so they can create, share, and move work forward.

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