

**IBM Services**



# IBM Worker Insights

Build a smarter workplace  
with intelligent workflows



The COVID-19 global pandemic revealed a need to build smarter workplaces. Now, employers require real-time insights to support a return to work plan for their employees. To help ensure the well-being of employees and clients, organizations are moving beyond crisis management to proactive action planning by using different technology capabilities and new ways of working.

High traffic areas, like manufacturing shops, warehouses, distribution centers, commercial office spaces, airports, retail banks, schools and universities, require distinct capabilities before returning to work. By building intelligent workflows, your teams gain access to data and insights that can increase resiliency and empower employees, helping you not only navigate return to work now, but build a smarter workplace.

Workflows are how things get done in an organization, while intelligent workflows are automated, agile and transparent, bringing a new efficiency to your everyday processes. This innovative approach changes the very nature of work by providing greater visibility, real-time insights and the power to remediate problems across multiple business functions. Our solution, IBM® Worker Insights, is the key to building intelligent workflows that leverage emerging technologies to automate processes and equip you with real-time data for crucial decision-making to ultimately build a smarter, insight-driven workplace. By combining the latest IoT sensor technologies with analytics to build a foundation of intelligent workflows, IBM Worker Insights helps deliver greater value internally and externally.

Using emerging technologies like IoT, AI, machine learning (ML) and edge computing, IBM Worker Insights aids contextual incident detection in near real-time. This solution also helps you enforce social guidelines that support employees, clients and organizations by monitoring crowd density, location occupancy and potential risks to employee or student well-being. As a result, you can take advantage of this opportunity to build smarter environments that help you emerge stronger from disruption.

**IBM Worker Insights helps provide the following benefits:**

- Speed time to reopen sites at a low cost per worker.
- Achieve compliance with worksite plans, policies and procedures.
- Monitor operations across locations and geographies using a scalable solution.
- Provide insights that help you analyze performance against targets.
- Enable teams to conform to workplace policies and plans with insights.
- Protect employees with anonymized data.
- Enhance worker efficiency and operations for future use case deployments with a flexible solution.





## Our approach

To help you implement a return-to-work or return-to-school plan built upon a lasting smart work environment, we believe that emerging technologies, scalable, data-driven insights and empowered users are essential to your success. Once engaged, we quickly use IBM Worker Insights to help provide a seamless support model for monitoring employee well-being. There's also a tool within the solution that can anonymize employee data. This capability helps protect employee privacy without limiting the insights your employees and supervisors use to ensure return-to-work policy compliance across locations.

With IBM Worker Insights, you use data from IoT devices, such as optical cameras, to help identify increases in the crowd density of certain areas. This solution also harnesses Bluetooth beacons and tags to detect employees' proximity to one another based on social distancing norms. With these benefits, you'll gain insights that can reveal your strengths and weaknesses across locations, helping to create best practices along the way.

Before you launch IBM Worker Insights, IBM Services® can put together a strategy, solution design, reference architecture, implementation and roll-out plan while providing solution lifecycle management based on your unique needs. Our trusted technology integrates with trained analytic models to support various use cases, such as face mask detection, social distance tracking, contact event tracing and occupancy monitoring. We can bring the following capabilities into your solution design to help deliver maximum results.



**IBM Maximo® Safety**, the central application of IBM Worker Insights, collects and analyzes data from various sources, such as IoT data from wearables, environmental sensors and cameras. The solution offers interactive reporting tools that allow you to view and export visualizations and key performance indicators (KPIs). The insights from these reports help you quickly assess current or historical trends. Maximo Safety also delivers notifications to supervisors or managers when a noncompliant event is detected. Ultimately, this application functions as a primary system of record that provides the end-user interface to IBM Worker Insights through applications and dashboards.

Maximo Safety is a part of IBM Watson Works™, a curated set of solutions that embed Watson AI models and applications into daily operations to help companies navigate their return to the workplace.

**IBM Video Analytics** is a flexible video analytics solution with many capabilities and uses, including inspections of infrastructure and buildings, crowd and queue management, unattended object detection, customer flow analysis, tailgating detection, vehicle counting, license plate recognition, and identification of hazardous or faulty materials or parts.

**IBM Maximo® Visual Inspection** helps computer vision with deep learning more accessible to business users. This solution includes an intuitive toolset that can empower subject matter experts to label, train and deploy deep learning vision models, without coding or expertise.

**IBM Edge Application Manager** can automate and manage the deployment of a solution across all workplaces and remote sites. This solution publishes containerized workloads from a central hub, which is where deployment policies are managed.



IDC predicts that by 2025 there will be 55.9 billion connected devices worldwide. There will be 41.4 billion connected IoT devices, and they will generate 73.1 zettabytes of data, with security and video surveillance comprising a significant portion of that data.<sup>1</sup> Have you gotten started yet?



One-third of enterprises are planning to implement AI and ML within the next year, and an additional 43% within the next one to three years.<sup>2</sup>

IBM Worker Insights uses out-of-the-box and custom analytics to process sensor events, detect situations that are important to retain and sends relevant data to the cloud. The solution’s edge component then creates so called “hazard events.” If appropriate, hazard events can be configured to frequently provide location updates about users or assets to the cloud for anonymous tracking purposes.

To aid rapid implementation, IBM Worker Insights is offered through a hybrid “as-a-service” model with flexible pricing options for your immediate needs. Approved for public use in places, such as airports, shopping centers, universities and more, this solution can: Deploy globally using the power of IBM Maximo Safety.

- Extend over time to protect employees from other types of workplace hazards if you choose, such as collision avoidance, detection of lethal gases or excessive radiation.
- Harness a solution designed to protect individual integrity through anonymized employee data.
- Keep data captured by cameras, beacons and wearables within your architecture, without using facial recognition.<sup>3</sup>

## IBM Worker Insights uses advanced sensor technologies to monitor potential risks



### Social distance monitoring

Track the relative distance between people and receive alerts if people are too close.



### Vital signs monitoring

Monitor biometric employee data and receive alerts for deviations.



### Occupancy monitoring

Track the number of individuals in a configurable area and receive alerts if there are too many people.



### No-go zone monitoring

Create and monitor zones that are off-limits with alerts.



### Crowd density monitoring

Monitor the motion in a set area and receive alerts as needed.



### Elevated body temperature monitoring

Track the skin or body temperature of employees and generate alerts as needed.



### Face mask monitoring

Monitor face mask use in a set area and receive alerts as needed.



### Contact event tracing

Receive a report on social distancing violations at a site to help limit workforce infections.



Solutions based on:

● Thermal cameras

● People counting sensor

● Optical cameras

● Bluetooth beacons and smartphones

● Wearables



### Face mask detection

Wearing face masks can substantially reduce the transmission of COVID-19, but sometimes people forget to wear them properly—or at all. IBM Worker Insights uses near real-time, AI-based video analytics to help determine whether individuals are wearing their face masks properly when in your facilities, and to help you conform to evolving local regulatory guidelines.



### Social distancing scoring

Working closely to someone can also increase the risk of COVID-19 transmission, but sometimes co-workers don't even realize they've shifted too close to others. To help mitigate this risk, IBM Worker Insights uses wearable beacons to determine whether people are potentially crowding each other. With these insights, employers can measure the relative distance between any two employees, be alerted of social distance violations across locations and take action on these findings.



### Vital signs monitoring

This solution can monitor the biometric data of employees, such as heart rate and blood oxygen levels for deviations. This capability helps identify stress level conditions and low energy indicators in the body, generating an alert if the thresholds are breached. This capability can also alert for potentially asymptomatic carriers of the COVID-19 virus.



### Elevated body temperature monitoring

An elevated body temperature may be a sign of a symptomatic response to the virus. But sometimes an individual doesn't notice and unintentionally infects others. To help mediate risk, you can use elevated body temperature scanning. By analyzing information provided by thermal cameras at entrances, this solution can alert you when someone's body temperature is higher than normal upon entry.



### Occupancy monitoring

This solution can monitor the number of people in an area and generate an alert if the threshold number of people is breached. By detecting the number of individuals inside a predefined space or zone, this capability validates these numbers against set permissible limits. If this limit is exceeded, your supervisors will receive a near real-time alert if this limit is exceeded.



### Crowd density management

Spending too much time in the same small area increases the risk of transmission and contaminates the surfaces in that area. To help combat this issue, you can use near real-time AI-based video analytics to help detect how much time people spend in one area and how often. You can also track the number of people that are in or have been to an area. Based on these insights, you can rearrange foot-traffic patterns in your facilities and highlight areas that may need more frequent cleaning.

### **Manufacturing: Increase compliance and productivity**

**Problem:** Federal, state and local governments have issued return-to-work guidelines, but the distance between workers on assembly and production lines is minimal due to traditional factory layouts and processes.

**Solution:** To help mitigate the risk of exposure for workers and supervisors, we build enhanced worker environments that can establish new and sustainable operational norms as facilities begin to open.

**Business benefit:** These new environments and processes help ensure employee well-being, productivity and business continuity.

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### **Warehouses and distribution centers: Create a contactless workplace**

**Problem:** Warehouse operations, including food service, retail, storage, packaging, cargo, baggage handling and more, are quickly shifting towards a low-touch, low-contact model. The workplace needs to reflect that change.

**Solution:** We implement bold technologies and automation solutions, such as edge computing, AI, ML, 5G and IoT to help increase workplace insights. With these tools, fatigue and other vital signs can be monitored. The wearing and correct positioning of face masks and other personal protective equipment is also monitored. These insights help enable teams to take corrective action as needed.

**Business benefit:** These tools help warehouse workers conform to return-to-work standards and be more socially responsible. In the long term, the solution can also be used to avoid incidents, such as collisions and to detect dangerous substances or spillages.



An estimated 37% of jobs can be done from home, a recent 2020 survey shows. For the remaining 63%, a return to work plan is necessary.<sup>2</sup>

## 03

### **Retail: Empower shoppers and store managers**

**Problem:** Retailers must rapidly establish new operational policies and procedures to bring back shoppers' confidence, reassure store managers, monitor situations and take immediate actions to mitigate risks.

**Solution:** We provide the local store managers with solutions that can monitor situations and enable them to mitigate risks with immediate action. Capabilities, such as license plate number recognition, can help speed up curbside collections, minimize interactions and increase flexibility.

**Business benefit:** This solution can help resume operations quickly and effectively, minimize business risk through new and sustainable operational norms, and instill confidence in returning shoppers. In the long term, retailers can mine and enhance the people flow data to help improve their understanding of consumer behavior and launch targeted marketing promotions.

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### **Education: Protect staff and students**

**Problem:** The current environment leaves staff and students afraid to return to the classroom, affecting enrollment, budget and the ability of post-secondary institutions to provide a rich campus experience.

**Solution:** We bring technology solutions to your campus that help monitor exposure across locations, such as building entrances, cafeterias, meeting rooms, auditoriums, libraries, classrooms, offices and more.

**Business benefit:** With a proper plan and enabling technologies in place, campuses can help protect the well-being of students and staff during return to school.



“Whilst manual measures may be sufficient to manage the return of smaller numbers of employees to the workplace, the successful management of the return to work of significant quantities of people requires tools and technologies. Our Worker Insights solution is the most comprehensive available to help organizations to manage the challenges of returning to work at scale. It also provides exponential capabilities that organizations can leverage for future gains in productivity and effectiveness.”

— Louise Skordby,  
IBM Global Offering Lead

### Why IBM?

Recently named as a Leader in Everest Group’s IoT Services PEAK Matrix®-2020, IBM Services is a global leader in IoT-enabled transformation that provides a comprehensive “concept-to-operate” strategy and solutions.<sup>4</sup> Designed to integrate with almost any IoT platform, network ecosystem partners, consulting services and research, these solutions help improve your return-to-workplace initiative.

Having delivered over 750 IoT patents, our deep expertise and IoT-enabled connected solutions experience help hundreds of clients across manufacturing, automotive, electronics, industrial, retail, financial, smarter cities and other industries.<sup>5</sup> To help clients rapidly innovate, clients use insights from IBM Research® and collaborate at our IoT centers in Munich, Dallas, South Carolina and Singapore.

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- 1 IDC, Worldwide Global DataSphere IoT Device and Data Forecast, 2020–2024, Doc # US46718220, July 2020.
- 2 What Percentage of Workers can Realistically Work from Home? New Data from Norway Offer Clues, *Forbes*, 24 April 2020.
- 3 Used in North America, Europe, Japan, Australia, India, Singapore, Malaysia, Thailand, Indonesia, Vietnam, South Korea, Mexico and the Philippines.
- 4 Everest Group PEAK Matrix® for IoT Service Providers 2020, *Everest Group*, June 2020.
- 5 IBM Watson® Internet of Things (IoT), *IBM*, 2020.

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