RISK AT WORK

Trends Report
Data, Analytics and Risk

Geocoding

Synthesizing

Virtual Reality

Crisis Mapping

Machine Analytics

RISK AT WORK

The risk landscape is evolving. As a risk manager, you must also evolve, staying in tune with business trends and technology to ensure your organization is protected.

Many industries are already using data and analytics to identify and manage risk, streamline processes and advance organizational goals. For example, manufacturers are using technology to improve system efficiency,[1] the legal industry is using pattern recognition to review large volumes of records[2] and healthcare professionals are using data to improve diagnosis success rates.[3] To help keep you in front of new and evolving exposures, Travelers created this Trends Report, looking at three Risk at Work trends worth watching in 2019:

- **Geospatial Intelligence**
- **Human/Machine Collaboration**
- **Smart Fleet Telematics**

You can use the knowledge found in this report to enhance your understanding of these key trends and as conversation starters to address these important topics at your organization.

Exoskeletons

Haptic Feedback

Wearables

[1]https://www.cio.com/article/3309058/manufacturing-industry/5-ways-industrial-ai-is-revolutionizing-manufacturing.html
[2]http://www.abajournal.com/magazine/article/how_artificial_intelligence_is_transforming_the_legal_profession
[3]https://www.dermengine.com/blog/dermatology-top-ai-statistics

Trend:
Geospatial Intelligence

Geospatial intelligence collects, synthesizes, compares and displays data from satellite imagery, aerial photographs, and weather and traffic to provide business insight and understanding.

How It Is Used:

FEMA Responds to a Flood in Baton Rouge

When flood waters rose in Central, Louisiana, the Federal Emergency Management Agency (FEMA) arrived with its Geospatial Information Unit.[4] This single incident showcased the agency's geospatial capabilities in three distinct ways:

Crisis Mapping: Combining aerial imagery, weather data, street closures and local terrain, FEMA personnel were able to monitor conditions and plan the agency's response based on where help was needed most.

Disaster Response: With a clear understanding of where help was needed, and knowledge that emergency personnel could safely get there, aid could be dispatched, and zones cleared.

Improved Planning: The same geospatial assets were used after the water receded to analyze watersheds and drainage basins to improve management of water flow and reduce the likelihood of future floods.

As geospatial technology evolves and becomes more customizable and accurate, risk managers are empowered to make decisions and to adjust response plans as situations change.

CONSIDERATIONS

START GEOCODING YOUR FACILITIES: Converting your location's street address into geographic coordinates, or geocoding, is a critical first step to implementing a geospatial plan. The U.S. Census Bureau offers a free geocoding service (search "Census Geocoder"), or you can utilize a paid service provider for more detailed results.

MAP YOUR SUPPLY CHAIN IN ADDITION TO YOUR LOCATIONS: There may be single points of failure in your supply chain that face significantly different risks than your owned locations. Add those points to your geospatial program to develop a comprehensive picture of your organization's risk.

FIND FOUNDATIONAL DATA RESOURCES RELEVANT TO YOUR ORGANIZATION: There are several free mapping resources you can utilize based on the type of data relevant to your initiative:

- The National Weather service offers multiple weather, precipitation and air quality resources at weather.gov/gis.

- More than 300,000 other data sets are available to review and use at data.gov/geospatial. Many states also produce high-quality geospatial resources.

Trend:
Human/Machine Collaboration

Human/Machine collaboration involves humans partnering and co-working with artificial intelligence systems and machines, like industrial robots, so that each party complements the other's strengths. The result is collaborations that improve operational efficiency, increase worker safety and performance, and reduce downtime.

How It Is Used:
Examples Across Industries

Manufacturing: At its factory in South Carolina, auto-maker BMW noticed assembly line workers were suffering wrist injuries at a specific station. Adding cobots, or collaborative robots, to work with humans reduced the injury risk, and station productivity increased.[5]

Warehouse: Wearable FUSE sensors from StrongArm Technologies measure motion and activity as employees work, helping management identify which individuals are at risk for musculoskeletal or repetitive stress injuries.[6] Training programs for these employees can then be tailored to the specific risks they face to help reduce the exposure and injury rate.

Healthcare: Researchers from Beth Israel Deaconess Medical Center and Harvard Medical School discovered that successful breast cancer diagnoses by machines was 92%, by humans it was 96%. However, when combined, humans and machines could make successful diagnoses 99.5% of the time.[7] More precise diagnoses equal less risk from inaccurate treatment decisions.

Injuries at work can happen, even when machines are utilized. If an injured worker develops chronic pain, it can lead to opioid use and, possibly, addiction.

Through our **Early Severity Predictor**® model, Travelers can identify when an injured employee is at increased risk of developing chronic pain and then adjust healthcare resources to help the injured employee avoid opioid use and dependency. This approach can lead to up to 50% total savings on workers compensation claims involving chronic pain.[8]

CONSIDERATIONS

WEARABLES are a great way to integrate technology and machines with your workforce. Below are several ways in which wearables can be utilized.

Proximity sensors can notify workers when they enter unsafe areas, helping to avoid injury.

Lumbar motion monitors can measure the motion of the back in real time to identify high-risk behaviors.

Exoskeletons make it possible for workers to hold and operate heavy tools in awkward positions with greatly reduced effort.

Haptic feedback sensors may be able to detect levels of consciousness and generate alerts when the operator of a vehicle becomes drowsy.

[5]https://www.insurancejournal.com/news/national/2015/08/25/379514.htm
[6]http://constructionexec.com/article/wearables-for-construction
[7]https://futurism.com/this-artificial-intelligence-was-92-accurate-in-breast-cancer-detection-contest
[8]https://www.travelers.com/business-insights/topics/medical/preventing-chronic-pain-and-opioid-abuse-in-the-workplace

Trend:
Smart Fleet Telematics

By 2020, 80% of new vehicles sold in the U.S. will have telematic sensors as a standard feature.[9] With such a profusion of vehicle data available, fleet managers need to take advantage of every opportunity to understand their risks on the road.

Vehicle telematics systems provide fleet managers with valuable data to help improve operational efficiencies and fleet safety. Using data to provide safe driving feedback as part of a coaching program can help reduce the potential for accidents and help keep drivers and the public safe.

How It Is Used:
Examples From the Road

Rewarding drivers for good driving behavior: Scottish road-haulage company John Mitchell Haulage implemented a fleet telematics program to reduce fuel consumption, but then realized that tracking driver performance and rewarding high performers with bonuses was more effective. The organization's telematics program resulted in reduced maintenance costs, a lower accident rate and better driver engagement.[10]

Customized training leads to claim reductions: Canada-based JTI-Macdonald used vehicle telematics to identify the 20% of its drivers contributing to 80% of fleet accidents.[11] With this knowledge, the company was able to tailor its training program to address specific driver performance, resulting in a 65% reduction in preventable claims and a 35% reduction in average cost per claim.

CONSIDERATIONS

Driver buy-in is key when starting a telematics program. Inform your vehicle operators about the data that is collected. Let them know that there may be circumstances that are not explained by the data alone and that data may offer evidence that a driver was operating safely.

Talk to them about the operational benefits of telematics and their role in helping to reinforce driving safety by providing:

Positive reinforcement – The program is designed to acknowledge safe driving as well as identify opportunities for operator improvement.

Feedback – You will be providing feedback to, and seeking feedback from, drivers.

Auto vehicle claim severity is on the rise. According to the National Law Journal's Top 100 Verdicts publication, auto accidents are consistently a "top 5" verdicts category, with individual judgments often exceeding $30 million.

One large verdict can have a devastating impact on your organization. Commercial umbrella and excess liability solutions from Travelers can provide the extra protection you need for big, unexpected events with your fleet.

[9]https://www.statista.com/statistics/753681/global-oem-telematics-attach-rate-in-new-vehicles-by-region/
[10]https://www.microlise.com/case-studies/focus-on-driving-style-and-the-rest-will-follow/
[11]https://www.arifleet.com/case-studies/careless-drivers-become-cautious-drivers-reducing-preventable-accident-rates-by-65-percent/

Is your risk management program keeping pace?

Harnessing data and advanced analytics to help understand and minimize exposures is quickly becoming a required component of modern risk mitigation strategies. Is your risk management program keeping pace? Travelers understands the importance of data when analyzing risk and the value of getting the right data at the right time to make the right decision.

Check out these examples:

Trend:

Human/Machine Collaboration

Travelers' proprietary *Early Severity Predictor* uses machine analytics combined with human insight to help identify employees at risk for developing chronic pain. Alternative pain management approaches, including virtual reality, can then be utilized for those employees to help them avoid opioid addiction. This helps them recover faster, return to work sooner and reduce the chances that they'll experience chronic pain.

Trend:

Geospatial Intelligence

The team at the Travelers National Catastrophe Command Center aggregates millions of data points from weather services, satellite imagery, geospatial and location information. The team then turns that data into actionable intelligence to help reduce the severity of losses, shorten claim processing time and gain a better understanding of the exposure. As a member of the National Insurance Crime Bureau, Travelers also has access to the same high-resolution satellite imagery used by FEMA for disaster recovery planning.

Trend:

Smart Fleet Telematics

It is estimated that a fleet of 20 trucks can save $25,000 per year by reducing idling time.[12] For day-to-day operations, telematics can help ensure drivers follow schedules, routes and track driving behavior. Over time, stored data can help make vehicles more reliable by predicting failures and determining a predictive maintenance schedule to keep drivers on the road without unexpected downtime.

[12]https://www.nasdaq.com/article/the-rise-of-the-global-telematics-market-cm772652
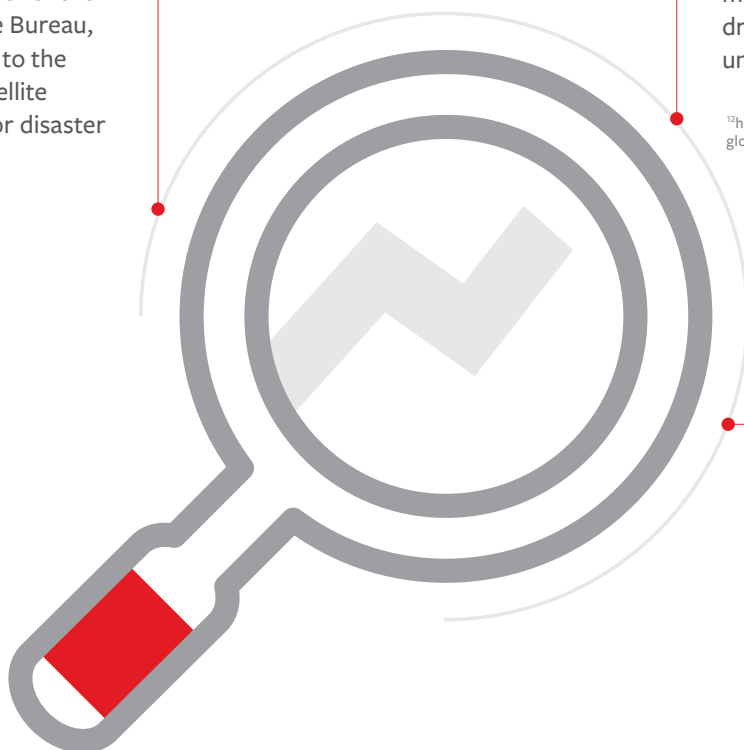
Travelers offers its insureds multiple tools to help manage and reduce risk.

e-CARMA® – This custom-built suite of products is an all-encompassing, single platform that provides timely and comprehensive loss information, now including property loss information in addition to liability and workers compensation. These reports and analytics help our customers meet their risk management goals.

*Risk Toolworks*SM – This new Risk Control mobile app, enables risk mitigation data collection by putting checklists and other risk mitigation tools on mobile devices, empowering employees and safety managers to perform safety checks, with the data immediately available to risk managers.

MyTravelers® **for Injured Employees** – This web-based portal provides information to increase engagement and help injured employees return to work as soon as medically appropriate. The portal also enables them to independently access information important for their return to work, including jurisdictional, claim and payment details. It also provides them with the ability to upload pertinent claim documents. Injured employees can even securely message their Claim team and receive answers to specific questions they have.

Travelers' *Early Severity Predictor* – Timely and appropriate intervention is critical in providing superior claim services to our customers. Travelers' *Early Severity Predictor* helps forecast which injured employees are at higher risk of developing chronic pain, a condition that can lead to opioid dependency. The *Early Severity Predictor* model is truly predictive, with interventions occurring before opioid dependency can take hold.

Liability Limits Profile by Industry – Use this tool to compare your limits to coverage limits that businesses in your industry are purchasing. Your business may fall above or below the average, but knowing where you are on the scale can help you determine the level of coverage you may need.

How you collect, analyze, interpret and use data can make a difference in how your organization works and manages risk. Travelers is leading the insurance industry by applying data and analytics for multiple lines of coverage, resulting in better customer experiences and outcomes.

Discover how Travelers' broad range of insurance lines combines with leading-edge data analytics capabilities to benefit your risk management initiatives.

Connect with your Travelers agent or broker today.

A note about data security:

As data sources proliferate, be sure your data privacy and cybersecurity risks are up to date, especially if the data you're collecting is personally identifiable.

Cybersecurity

Breach Response

Data Privacy

This 2019 Trends Report contains critical risk management insights on data and analytics relative to:

Geospatial Intelligence

Human/Machine Collaboration

Smart Fleet Telematics

Read this report to gain the knowledge you need to optimize risk at your organization, then visit travelers.com/business-insurance/events/RIMS for more information.

RISK AT WORK

TRAVELERS

RIMS 2019