



CEO Brief

# Global Risk Impact Report

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# Executive Summary

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Among war, record heat waves, gun violence, deadly weather patterns and civil unrest, the risk environment has never been more extreme or uncertain.

For businesses, a crisis is not a matter of *if* but *when*. Executives need to understand the complex web of threats they face so they can protect their organization and stakeholders in a world where unexpected crises happen every day. By anticipating and proactively planning for these threats, executives can save lives, keep their company and the broader economy running and make their business more agile.

This report provides an extensive analysis of physical threat data across 159 countries and geographies where mainstream businesses and governments operate. The report identifies concerning global trends that expose businesses to sustained, increased risk. OnSolve gathered critical event data from its risk intelligence platform over a 30-month period from January 2020 to July 2022.

**According to the data, the top rising global risks threatening businesses today are:**

## Weather

The number of large severe weather events has risen. For example, reports of blizzards (+197%) and avalanches (+202%) all tripled from 2020 to 2021, and tsunamis (+114%) more than doubled.

## Fire

Arson (+90%) and structure fires (+139%), and fires in general (+127%), all approximately doubled.

## Crime and Violence

Reports of local shootings have significantly increased — locally and globally. The global rate of shootings and violent crime increased dramatically between 2020 and 2021. Assault (+151%), homicide (+157%), and theft (+136%) all more than doubled, while reports of shootings (+196%) and mass shootings (+177%) involving more than one person each nearly tripled.

## Transportation and Logistics (Supply Chain)

The risk involved in getting people and goods from Point A to Point B was up 146% overall in 2021, led primarily by spikes in railway accidents (+91%) and road accidents (+168%).

While the data can't predict the next catastrophe, it can provide a clearer picture of potential threats and their impacts, giving business leaders the insight they need to steer a safer course in today's volatile economy.

Please see methodology for full details.

# Introduction

For nearly three years, most of the world has focused on fighting COVID-19 and the resulting damage it had on the economy. Now, as we shake off those effects — data shows that the perceived global pandemic threat is waning, with a 39% decrease in global pandemic threats from 2020 to 2021 — organizations must shift their attention to numerous other threats.

Executives and senior leadership have a fiduciary responsibility to ensure that their companies are prepared to respond to unfolding events in real time. CEOs can't afford to overlook how separate risks may combine to create unforeseen disasters.

For example, national security events related to terrorism and military action increased 48% during this timeframe. But the four biggest threats organizations face are rising at a much higher rate, especially in the United States.

39%

decrease in global pandemic threats from 2020-2021

48%

increase in national security events related to terrorism and military action

# Four Critical Rising Threats

We analyzed data from OnSolve Risk Intelligence stemming from 14 million global events from 2020 to mid-2022 to illustrate trends and identify emerging issues businesses face in terms of physical threats.

## Increasing Threats by Global Percentage

Risk Categories	Global Threats	United States Threats
Shooting Related Risks	+193%	+245%
Transportation Related Risk	+146%	+179%
Crime Risks	+141%	+185%
Fire Risks	+118%	+150%
Infrastructure and Technology	+111%	+142%
National Security	+48%	+108%
Extreme Weather	+47%	+61%
Civil Unrest	+9%	-29%
Public Health	-39%	-57%

### One of the trends that stands out involves shootings and crime.

Two of the three most common risk events in the United States are related to homicides and gun violence. The number of reported shootings increased by 250% from 2020 to 2021, and the number of reported mass shootings spiked 217%. Homicides were up 220% and the number of assaults increased 187%. Globally, more than 115,000 criminal reports had been filed by mid-2022 — more than half (65,000) are in the United States alone. Organizations must respond quickly when confronted by these types of events because there can be a direct impact on business, and to the safety of employees, customers or visitors.

More than **3X** the number of reported shootings in the U.S.

### The impact of climate change has clearly affected risk.

On June 14, 2022, OnSolve Risk Intelligence detected 7 notable extreme weather events in one day in North America alone. Extreme weather such as floods can impair operations and disrupt supply chains. Our data shows that global floods are becoming a greater threat, with a 28% year-over-year increase from 2020 to 2021.

This is a particularly significant issue in areas where these weather events have not traditionally occurred or where they are occurring more frequently or for which the region is unprepared. Floods detected in Brazil increased 400% from 2021 to the first three months of 2022. Floods detected in Germany increased by 500% from 2020 to 2021, and in Belgium they jumped 420%. Extreme weather and natural disasters as a whole were up 47% in 2021 — led by blizzard and avalanche activity — as well as tornados (+78%) and wildfires (+74%). Every category of extreme weather or natural disaster increased year-over-year.

In the United States, weather-related disasters caused an estimated [\\$145 billion](#) in damages in 2021. According to our data, there were more than 50,000 weather-related risks last year. This indicates that the average weather event could lead to damages on average of \$2.5 million, highlighting the scale of how impactful even one event can be.

Every category of extreme weather or natural disaster increased year over year, leading to a possible **\$2.5M in damages on average.**

### Increasing Extreme Weather Event by Global Percentage

Type of Extreme Weather Event	Global Increase from 2020 to 2021	U.S. Increase from 2020 to 2021
Avalanche	+202%	+262%
Winter storm/Blizzard	+197%	+203%
Volcano	+115%	+53%
Tsunami	+114%	+45%
Tornado	+78%	+79%
Wildfire	+74%	+74%
Severe storm	+54%	+63%
Flash flood	+52%	+83%
Landslide	+36%	+123%
Earthquake	+30%	+55%
Flood	+28%	+36%
Cyclone	+10%	+9%

**Global infrastructure is weakening.** Transportation accidents and fire events both increased worldwide by more than 100% from 2020 to 2021 as well. Road (+168%), railway (+91%), aircraft (+52%), and maritime (+30%) accidents all rose in frequency year-over-year. The same is true for global fire (+127%), arson (+90%) and other fire-related physical threats. Global infrastructure and technology incidents, like power outages and technical disasters, rose +111% from 2020 to 2021.

**Protests and civil unrest can be threats to business operations.**

Civil unrest affects traffic and transportation and has a potential impact on both employee and customer sentiment and safety. While global protests increased only slightly from 2020 to 2021 (+4%) after skyrocketing in 2020, polarizing events such as controversial Supreme Court decisions, political elections and the consistent pace of horrific mass shootings across the United States, continue to occur and drive public protest.

**Increase in Protest Related Risks from 2020 to 2021**

United States	-59%
India	+33%
Nigeria	-37%
Canada	+17%
United Kingdom	+76%

## 2020 Context in the United States

2020 was a highly unusual year, with a surge in public protests related to unique events (such as the Black Lives Matter movement). Therefore, it is recommended that the negative percentage change reflected in the data for the U.S. from 2020-2021 should be viewed in this context. The global incidence of protests and civil unrest continues to trend upwards.

# The Cost of Rising Threats

Multiple organizations have sought to quantify the aggregate costs of these increased risks. For example, the National Centers for Environmental Information (NCEI) at the National Oceanic Atmospheric Administration (NOAA) analyzes the increasing cost of large-scale natural disasters, in part by aggregating insurance data. In fact, in 2020 and 2021, there were more financially impacting (\$B) natural events than any other [year on record since 1980](#), according to NOAA.

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**OnSolve measures the loss associated with physical threats based on their impact to key business outcomes. The typical key business impacts include:**






- Unplanned operational downtime (revenue, customer satisfaction)
- Physical asset protection (facilities, manufacturing work in progress, etc.)
- Customer churn (particularly for infrastructure-as-a-service, BPO, etc.)
- Compliance
- Brand reputation
- Investor confidence
- Product loss
- Partner / vendor / supplier relationships

These impacts clearly vary by industry, shareholder multiples, etc. For the purpose of this report, we will highlight the *direct* impact to unplanned operational downtime. This analysis includes a hypothetical Fortune 1000 company (\$2 billion in revenue), a Fortune 100 company (\$30 billion in revenue), and a Fortune 10 company (\$500 billion in revenue).



As an example, imagine a Fortune 1000 (\$2 billion in revenue) company has 20 machines that produce revenue at \$100 million per year. The below analysis shows what would happen if just one machine were taken out by a physical incident – in the case of a tornado, an estimated 20 days of downtime.

### Lost Revenue from Direct Impact

	Description of Event	Estimated Downtime (Days)	F1000 (\$2B)	F100 (\$30B+)	Largest Members of F10 (\$500B+)
 <b>Tornado</b>	A severe tornado destroys a key node or distribution center, impacting the company's ability to earn revenue by 5%	20	~\$5.5M	~\$82.2M	~\$1.4B
 <b>Fire</b>	Assumes large fire destroys facility; facility produces 5% of revenue; this does not include cost to repair, customer impact, etc.	5	~\$1.4M	~\$20.5M	~\$342.5M
 <b>Shooting</b>	Shooting at owned location; does not include PR/reputational impact and cost	2	~\$548K	~\$8.2M	~\$137M
 <b>Protest</b>	A single, large 2-day protest occurring on the block of the HQ location	2	~\$548K	~\$8.2M	~\$137M
 <b>Rail Accident</b>	A single rail accident or port throughput accident affecting 5% of just 1 day of revenue for F1000, and 1% for F100+	1	~\$274K	~\$822K	~\$13.7M

\* **Average Lost Revenue** from direct impact is calculated by the average revenue from business operations per day times the number of days lost due to incident impact. This analysis assumes that the above companies are revenue producing systems, with evenly distributed “revenue production” across time, geography, and facilities and operate on a 365-day calendar year.

\* It does not include the cost of physical damage (fire damage), loss of physical assets, products or customers (churn), employee loss (turnover, distraction or counseling), the cost to shift labor or resources in response, or brand / reputational impact and the cost to address.

\* 365 days operational per year

\* For large companies, a 5% impact to revenue production would typically imply the event destroys the assets in question.

# The Butterfly Effect

The dramatic rise in the volume and intensity of many of these physical threats is alarming but may seem irrelevant at face value for many organizations.

However, every risk ripples throughout an organization's operations and can affect the broader supply chain and market ecosystem. The world is interconnected, and there are cascading dependencies and contingencies that play into the broader "butterfly effect" of understanding and managing risk.

The incident in the Suez Canal is a prime example. A ship ran aground and [blocked the Suez Canal](#) for six days in the summer of 2021. That is obviously an issue for the ship itself and for the Suez Canal, but that incident had repercussions around the world from which some companies and economic markets are still recovering over a year later.

Russian hostilities in Ukraine also illustrate the point. Risk across Ukraine itself skyrocketed by 3900% on the day of the Russian invasion. The ongoing hostilities are relevant to Ukraine and Russia, but the effects of Russian aggression can be felt globally. Beyond the humanitarian crisis in the region, the world continues to experience sustainability, logistical and operational disruptions — particularly with Ukrainian grain exports and Russian oil and gas.

## Dynamic Risk: A Case Study

**Venerable, a private company that owns and manages legacy variable annuity business acquired from other entities, depends on the ability to move funds for the policies they manage, and any disruption could be catastrophic.**

In December 2021, Typhoon Rai ravaged the Philippines and destroyed the homes of many of their customer experience team members. Many businesses in the area had only a few hours' notice, but Venerable was aware of the oncoming Typhoon days in advance thanks to the OnSolve Platform.

Their call center partners gave advance notice to affected team members, mobilized supplies and provided temporary housing for those impacted.

The customer experience center maintained structural integrity, never lost power, and critical services were transferred to associates in Manila — enabling Venerable to continue normal business operations. Without this warning, they risked not being able to transact, which could have led to lost revenue and financial loss for their customers.

While these risks are the ones that make top news headlines, there are many threats that don't, yet have similar cascading effects on businesses. China is facing [record-breaking rain and the worst flooding](#) in its history, causing direct economic losses of nearly \$10 billion and disrupting manufacturing and supply chains. In India, [farmers reached an agreement with the government](#) over controversial agriculture reforms after a year of mass protests that impacted agriculture production and resulted in the deaths of many protesting farmers.

# Risk Management is a Competitive Advantage

Organizations that manage risk effectively have a distinct advantage over competitors that don't. That is why companies need to shift their thinking on what is "unexpected."

The idea that it can't happen just because it hasn't happened before is a recipe for disaster. Major catastrophes are occurring more frequently and with greater impact than ever before. The "unthinkable" is becoming the "norm" and businesses that ignore the trend do so at their own peril.

**The "unthinkable" is becoming the "norm" and businesses that ignore the trend do so at their own peril.**

It is ultimately the responsibility of the CEO to ensure their business and teams are prepared to handle the next disaster. While CEOs can't predict every crisis, they can mitigate the effects by ending internal siloes of how risk is monitored, and subsequently, how they can proactively prepare. This means involving security and risk professionals in Board-level conversations, insisting upon cross-functional planning and utilizing big data and artificial intelligence (AI) to drive better, quicker decisions once a threat is detected. Just as risk is more interconnected than in the past, CEOs must also ensure their ability to manage this risk is synergistic and collaborative.

## Four takeaways for CEOs and their teams

- 1 You can't avoid all risk.** You can, however, be aware of the risks that might impact your business and think through how you reduce your exposure to those risks. You should also have plans in place for how to respond in the event these risks occur — to have organizational resilience and continue operating regardless of external factors.
- 2 Organizations should have an operational risk plan in place.** Identify your operation's most critical areas and what risks threaten them, as well as how they have been threatened in the past. Then you can create a framework to address the top 3 or 4 risks which most likely would impact your business. Consider the worst-case scenario and work backwards to develop a "Plan B." Be thorough in weighing the impact of the event and consider how long "Plan B" might need to be in place so you can ensure you have the resources to sustain it.
- 3 It's a good idea to conduct a periodic formal risk mitigation exercise to test and validate your plan.** Running through the exercise allows you to verify the key components of risk mitigation, who should be involved, and the roles and responsibilities required. It will also enable you to identify gaps or misalignment in implementing the risk mitigation plan.
- 4 It is a CEO's job to protect their business and their people.** While technology is not often the focal point of what's missing for most business continuity, risk and security management professionals, data-rich risk intelligence and critical communications technologies, fortified by artificial intelligence, can play a vital role in ensuring organizational resilience. Aggregating data from a variety of sources and applying AI enables organizations to anticipate, detect and respond to events quickly, and keep employees, customers, facilities and assets safe.

# Appendix

## Methodology

This research paper outlines the top risks that have occurred as a percentage of all events OnSolve detected from January 1, 2020 – July 1, 2022, that had the potential to impact its customers worldwide. The data in this report was gathered using OnSolve Risk Intelligence, an AI-powered technology that monitors over 50 risk categories of physical threats across 159 countries in real time. OnSolve Risk Intelligence detected more than 14 million global events, or physical threats, from 2020 to 2022, using AI and analyst-vetted information pulled from data sources that include local fire, police or emergency medical services departments, weather reports and alerts from government and non-government, verified sources, federal government agencies such as the Federal Bureau Investigation, Department of Homeland Security and other crisis management entities, local, national and international news, and critical event reports from verified social media feeds.

OnSolve Risk Intelligence monitors global physical threats that have an impact on its 30,000-customer base, which consists of half of the Fortune 100, 40% of the Fortune 500, and 10,000 communities in the US, including state, regional, local and federal entities. OnSolve programmatically maps events to locations worldwide, determining which part of an organization might be at risk. This report aggregates to a country-level view year over year of the physical threats specific to our customers’ people and operations across their offices, plants, warehouses and office locations, and while traveling worldwide. It highlights the most significant risks impacting businesses and governments today compared to 2020 and 2021.

The “threats” term includes warnings of the event. OnSolve technology reduces the duplication of the threats reported across multiple data sources.

The incidents detected by OnSolve Risk Intelligence are grouped into categories called “risk categories.” These risk categories are defined below.

Risk Category	Incidents Included in Category
<b>Transportation Accidents</b>	Aircraft accident, maritime accident, rail accident, road accident
<b>Crime</b>	Arson, assault, bombing, hijacking, homicide, hostage taking, mass shooting, sexual assault, shooting, theft
<b>Fire</b>	Property fire
<b>Infrastructure and Technology</b>	Explosion, power outage, structure collapse, structure fire, technical disaster
<b>National Security</b>	Military action, terrorism
<b>Extreme Weather</b>	Avalanche, cyclone, earthquake, flash flood, flood, landslide, severe storm, tornado, tsunami, volcano, wildfire, winter storm/blizzard
<b>Civil Unrest</b>	Labor strike, protest, riot
<b>Public Health</b>	Air pollution, chemical spill, gas leak, oil spill, NBC (weapons that disperse biological, chemical, or radioactive agents to inflict injury or cause contamination or damage)



## About OnSolve

OnSolve is a leading critical event management provider that proactively mitigates physical threats, allowing organizations to remain agile when a crisis strikes. Using the most trusted expertise and reliable AI-powered risk intelligence, critical communications and incident management technology, the OnSolve Platform enables enterprises, SMB organizations and all levels of government to detect, anticipate and mitigate physical threats that impact their people, places and property.

With billions of alerts sent annually and proven support for both the public and private sectors, OnSolve is used by thousands of entities to save lives, protect communities, safeguard critical infrastructure and enable agility for the organizations that power our economy.

**For more information, please visit [www.onsolve.com](http://www.onsolve.com).**