



The threat climate change poses to global supply chains



Introduction

Climate change is a pressing issue that poses significant challenges for organizations worldwide. One area that is particularly vulnerable to the impact of climate change is global supply chains. Climate-related events such as natural disasters, extreme weather conditions, and other environmental disruptions can severely disrupt supply chains, leading to significant financial and operational losses. Supply chain risk is a significant concern for businesses, and climate change is making this risk even more challenging to manage.



The effects of climate change on supply chains are a major cause for concern among organizations. According to the [2022 Navigating Climate Threats and Proactive Mechanisms to Achieve Business Climate Resilience](#) report commissioned by Everbridge, “When evaluating the consequences of extreme weather events, organizations consider business disruption and supply chain disruption as having the greatest impact (see Figure 8).”

With the increasing frequency and severity of extreme weather events, such as hurricanes, floods, and wildfires, supply chains are becoming increasingly vulnerable to disruptions. These disruptions can lead to delayed shipments, increased costs, and even production shutdowns, all of which can negatively impact the financial performance and equity risk of an organization.

Figure 8. Business and supply chain disruptions are the two leading consequences of critical climate change.

How would you rank the impact of the following events as a consequence of critical change?

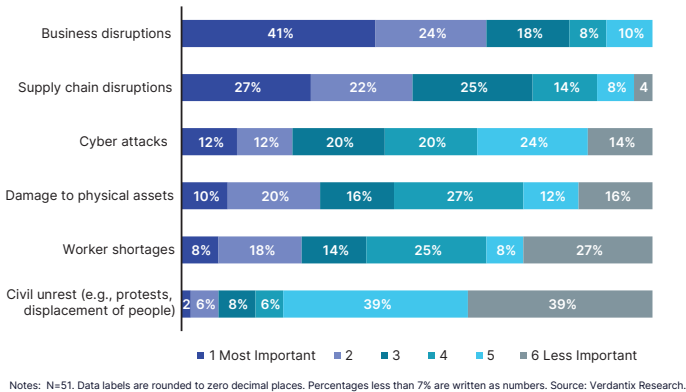
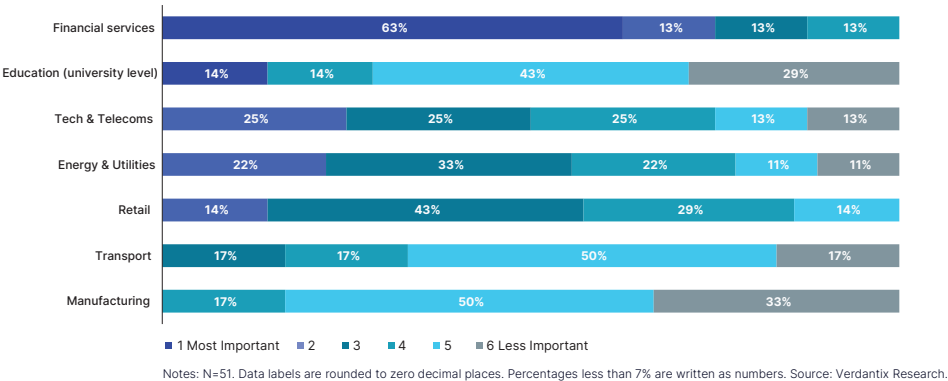


Figure 8a. Business and supply chain disruptions are the two leading consequences of critical climate change.

Significance given to cyberattacks because of critical climate change per industry.



It is crucial for organizations to understand the impact of climate change on supply chains and the risks that it poses. Increasing climate resilience and preparedness can help mitigate the impact of climate-related events.



Read on to learn strategies for building climate resilience and managing supply chain risks, as well as how the right technology can help create a resilient and sustainable supply chain.

Supply chain disruptions among B2C organizations

B2C (business-to-consumer) organizations such as retail companies have multiple stages in their supply chains that are vulnerable to weather events and other climate-related disruptions, threatening production and increasing costs. Here we'll look at the example of an apparel company and the stages they go through. But these stages and risks are similar for nearly all B2C organizations. Each stage faces specific challenges when it comes to climate change.



Stage 1: Design

The supply chain for such operations typically begins with the design phase, where designers develop their ideas for new apparel. To make these designs a reality, they require samples of fabrics, trims, and other materials, which must be sourced and delivered to the textile creation facility.

Climate change can impact the design stage of the supply chain by affecting the availability of certain raw materials. For example, if cotton crops are damaged due to droughts, floods, or pests, then the price of cotton can increase. This can lead to higher costs for designers who use cotton in their designs. Furthermore, climate change can lead to shorter or longer growing seasons, which can affect the timing of raw material availability.

Stage 2: Textile creation facility

The textile creation facility is the next step, where the raw materials are transformed into fabrics and textiles that are suitable for production.

Textile creation can be impacted by climate change in various ways. For example, water scarcity can affect the availability of water needed for textile creation. Droughts can also affect the quality and yield of crops used in textile creation, such as cotton. Climate change can also lead to increased frequency and severity of extreme weather events, such as hurricanes, which can disrupt operations and cause damage to textile creation facilities.

Stage 3: Production facility

In this phase, the clothes are made and prepared for shipping to various warehouses and distribution centers. These centers handle the logistics of getting the finished products to individual retail outlets, which can be located in different parts of the world.

Climate change can impact the production facility stage of the supply chain in several ways. For instance, extreme weather events, such as storms or floods, can damage production facilities or disrupt operations. Moreover, increased temperatures can lead to health and safety risks for workers, which can affect productivity and overall performance.



Stage 4: Warehouses and distribution

This stage is when the products are packaged and shipped out. It involves tracking and transporting along various routes as the products make their way to warehouses or retailers.

Warehouses and distribution centers can be impacted by climate change in multiple ways. Extreme weather events can damage warehouses or cause power outages, which can lead to delays in shipments or damage to products. Power outages can also affect production facilities, causing further delays and even damage to equipment. Moreover, natural disasters like forest fires can affect transportation infrastructure, such as roads, bridges and ports, leading to increased transportation costs and delays.

Stage 5: Individual retail outlets

This final step is when a customer purchases the item. This could be from a brick-and-mortar store or an ecommerce site. With the increasing use

of online retail, the supply chain becomes even more complex, as goods must be transported from distribution centers to end-users.

Climate change can impact individual retail outlets by affecting consumer behavior. For example, changes in weather patterns can lead to different buying patterns and demand for certain products. Climate change can also lead to supply chain disruptions, which can result in stock shortages, and therefore, a loss of sales.

The disruption of the supply chain can lead to increased costs, lower revenues, and damage to the reputation of the organization. Moreover, these impacts can also affect the ability of organizations to meet customer demand and to comply with regulatory requirements. As climate change continues to disrupt traditional weather patterns, it is more important than ever for organizations to assess and address their supply chain vulnerabilities to build resilience and ensure continuity of operations.





Supply chain disruptions among B2B organizations

Supply chains are essential for any business to function, and B2B (business-to-business) supply chains are no exception. However, they differ from B2C supply chains in their structure, as they are shorter and more unique to each business. Despite this, there are general steps that a typical B2B supply chain would follow, and climate change can impact each stage in significant ways.

B2B supply chains typically involve multiple stages, from sourcing raw materials to delivering finished products to the end customer. At each of these stages, climate change can have significant impacts on the supply chain.



Stage 1: Planning, setup, and sourcing

The first step in their supply chain is to engage with various suppliers such as internet companies, software and hardware providers, and cloud storage vendors. Climate change can affect this stage by disrupting power and electricity supply. Severe weather events like hurricanes and tornadoes can damage power lines, causing power outages that can impact service providers' operations. This can lead to communication breakdowns and disruptions in the supply chain, causing significant business losses.

Stage 2: Product development

The next stage in the B2B supply chain is product development. Climate change can impact this stage in several ways. Extreme weather events like droughts, floods, and wildfires can damage crops, leading to supply chain disruptions, especially for businesses that rely on natural resources. Extreme weather events can also threaten life safety for employees living in impacted areas, which can lead to more absenteeism and slower product development overall. In addition, rising temperatures can impact the quality of raw materials used in product development, affecting the overall quality of the finished product.

Stage 3: Sales

The sales stage is where B2B companies sell their products to other businesses. Climate change can impact this stage by increasing shipping costs due to the impact of extreme weather events on transportation. For example, heavy rains can cause road closures and damage to infrastructure, leading to delays and increased shipping costs.

This can impact a company's profitability and reputation, as businesses may look for alternative suppliers who can guarantee timely delivery of products.

In cases where the sales process is done entirely online, climate change can also have a negative impact. Extreme weather events that affect employees in various parts of the globe can inhibit an employee's ability to work; for instance, an extreme heat wave could lead to overworked power grids, causing blackouts that prevent employees from working. Or, a regional drought could force employees to leave their home office to a temporary shelter, where accessible WiFi and a comfortable working environment aren't available.

Stage 4: Delivery

Finally, the customer delivery stage is where B2B companies deliver products to their customers. Climate change can impact this stage by disrupting the transportation of goods due to extreme weather events, leading to delays and lost sales. In addition, rising sea levels can increase the risk of port closures, making it difficult for companies to deliver products to customers in coastal areas.

Climate change can impact every stage of a B2B supply chain, from engaging with service providers to delivering products to customers. It is important for businesses to take proactive measures to mitigate these risks by identifying potential threats and developing effective strategies to manage them. Failure to do so can lead to significant business losses and even business closures, making it essential for B2B companies to adapt to the changing climate.



Everbridge solutions to reduce the impact on supply chains

Everbridge offers five solutions that can help organizations avoid supply chain disruptions caused by climate change and related threats, including operational and financial risks to international supply chains.



People resilience: This solution focuses on protecting employees and ensuring their safety during climate-related events. It can help organizations track and communicate with their workforce, keep them informed of potential threats, and quickly respond to any emergencies that arise.



Smart security: This solution uses advanced analytics and machine learning to detect potential threats to supply chain security, such as cyberattacks or physical breaches. By identifying these risks early, organizations can take proactive steps to prevent disruptions and protect their assets.



Digital operations: This solution helps organizations optimize their operations and supply chains by leveraging data and technology. It can provide real-time visibility into supply chain performance and allow organizations to quickly respond to disruptions or changes in demand.



Public safety: This solution helps organizations prepare for and respond to climate-related events that could impact public safety, such as natural disasters. It can provide real-time alerts and notifications to employees and stakeholders, allowing organizations to quickly coordinate their response and minimize disruption.



Business operations: This solution focuses on ensuring business continuity during climate-related events. It can help organizations develop and implement comprehensive risk management plans, including contingency planning and crisis response, to minimize the impact of disruptions on their operations and financial performance.

Conclusion

The impacts of climate change on supply chains for both B2C and B2B organizations are significant and cannot be ignored. Extreme weather conditions, natural disasters, and disruptions in transportation and energy infrastructures can disrupt the global supply chain, causing delays, increased costs, and reputational damage for organizations. Moreover, “climate events threaten the operability of global supply chains, which can have a severe impact on an organization’s short and long-term performance and equity risk” (Navigating Climate Threats and Proactive Mechanisms to Achieve Business Climate Resilience, 2022).

It is essential for organizations to be proactive in implementing mechanisms to achieve business climate resilience. By adopting a proactive approach and leveraging Everbridge solutions, organizations can successfully avoid supply chain disruptions and mitigate the impact of climate change on their operations and bottom line.



About Everbridge

Everbridge, Inc. (NASDAQ: EVBG) empowers enterprises and government organizations to anticipate, mitigate, respond to, and recover stronger from critical events. In today's unpredictable world, resilient organizations minimize impact to people and operations, absorb stress, and return to productivity faster when deploying critical event management (CEM) technology. Everbridge digitizes organizational resilience by combining intelligent automation with the industry's most comprehensive risk data to Keep People Safe and Organizations Running™.

For more information, visit [Everbridge.com](https://everbridge.com), read the company [blog](#), and follow us on [LinkedIn](#) and [Twitter](#).