

RESEARCH PAPER

# Supply Chain Risk and Resilience: Threats, Mitigation and Financial Impact

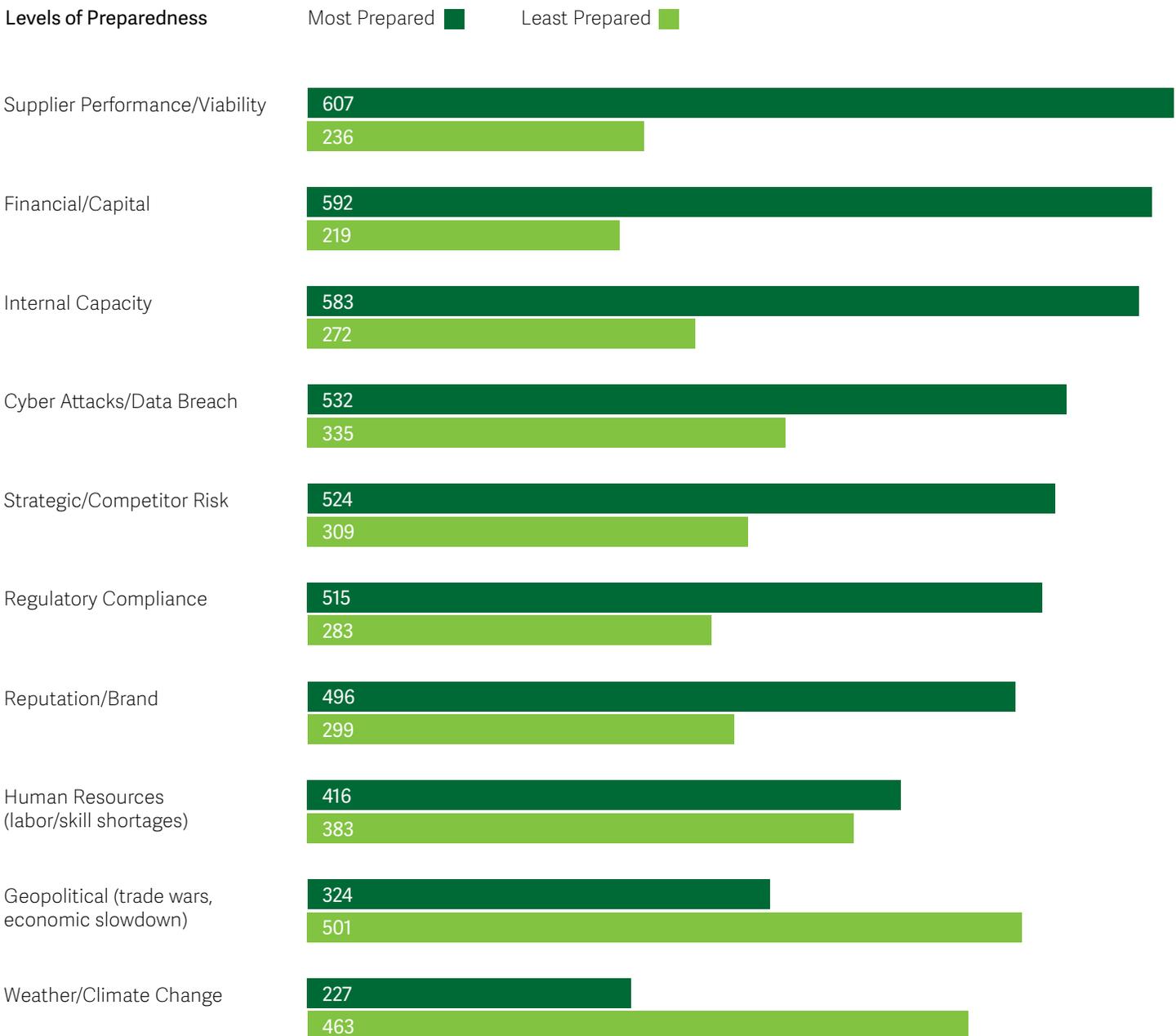
ASCM is currently on an endeavor to have a positive impact on supply chain risk management. ASCM recently conducted two joint surveys to explore this topic. The first was with the Quinlan School of Business at Loyola University Chicago, which focused on risk threats and level of preparedness. The second was a survey was done in conjunction with Supply Chain Management Review on the financial impacts of risk events, which includes a supplemental literature review.

### THREATS AND PREPAREDNESS

There were some clear risks that are currently on top of mind and will continue to be when looking ahead to the year 2020.

1. Cyber attacks and data breaches
2. Reputational or brand incidents
3. Geopolitical events, trade wars and tariffs

When asked about preparedness for risk events, respondents felt most prepared for supplier performance issues, financial or capital losses, and events related to internal supply chain capacity. A little over half of the respondents have a supply chain that is properly aligned with cyber-security systems. Respondents felt the least prepared for a risk event related to weather or climate change in addition to geopolitical events. Given the high-risk concern surrounding geopolitical events and the lack of preparedness, geopolitics could be an area of angst in terms of supply chain risk management.

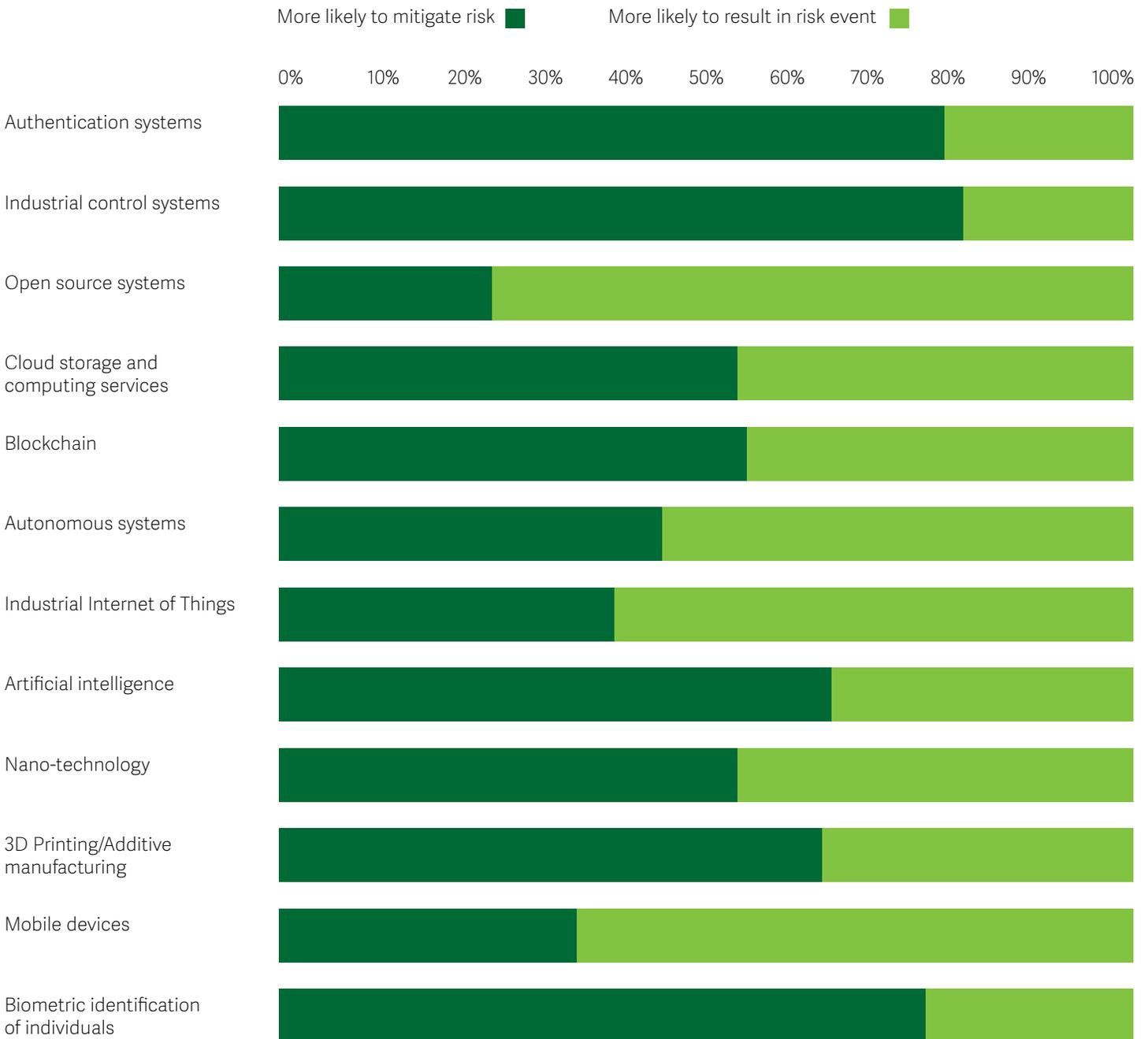


More than 70% of the sample felt prepared or somewhat prepared for a risk event. This is a marked improvement from a study conducted by the Supply Chain Risk Management Consortium in 2013, when only 30% of organizations implemented risk mitigation strategies.

Risk evaluation is key when trying to mitigate a risk event. The following are strategies implemented by organizations to evaluation risk.

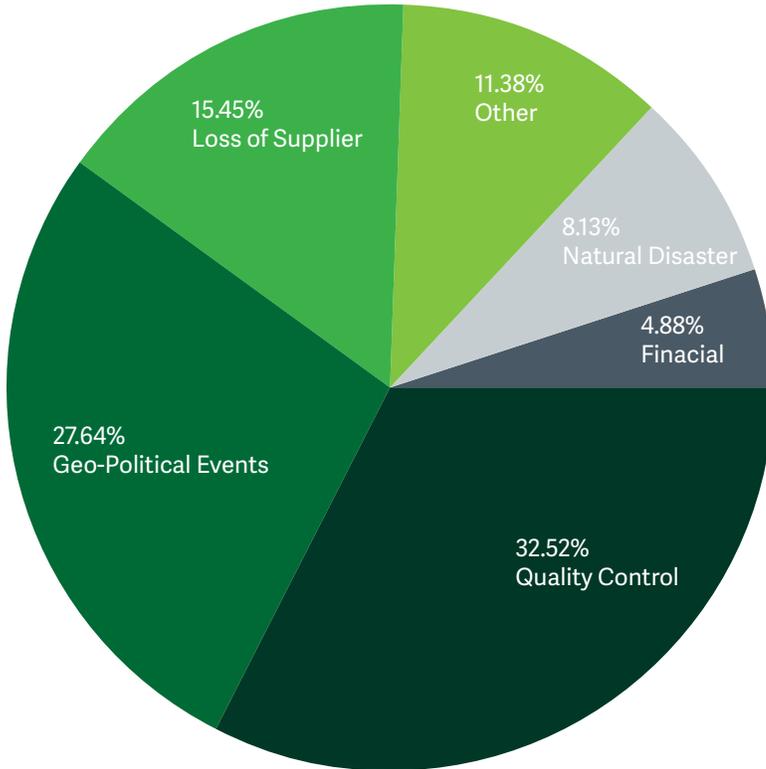
- Compare Historical to current costs from risk events – 31%
- Evaluate the extent to which risk concepts are integrated into investment and planning – 40%
- Identify the return on investment from a risk management program – 20%

Technologies in the supply chain can both mitigate and result in a risk event. Given the array of technologies and their ability to mitigate risks or open the way for them, we asked respondents which technologies fall into one category or the other. Authentication systems and industrial control systems were most likely to mitigate risk, while open source systems and mobile devices were more likely to make way for a risk event. The sample was split regarding autonomous systems and industrial internet of things.

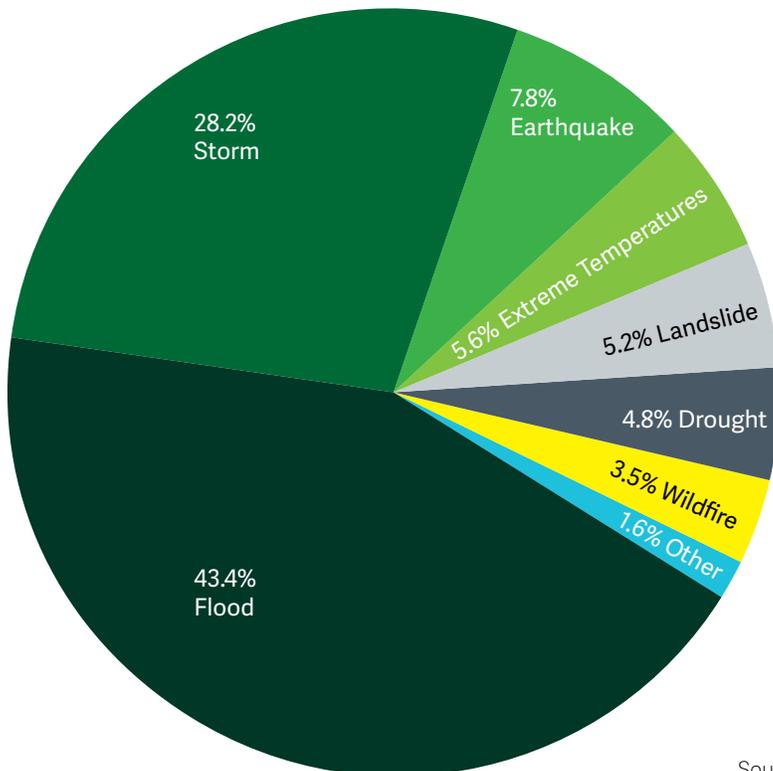


## WHAT KINDS OF RISK EVENTS OCCUR?

In a recent survey of ASCM and Supply Chain Management Review readers, respondents were asked what the most recent risk event was they experienced. Issues pertaining to quality control was the most common. Given today's political climate, it was no surprise that Geo-political events was very common as well.



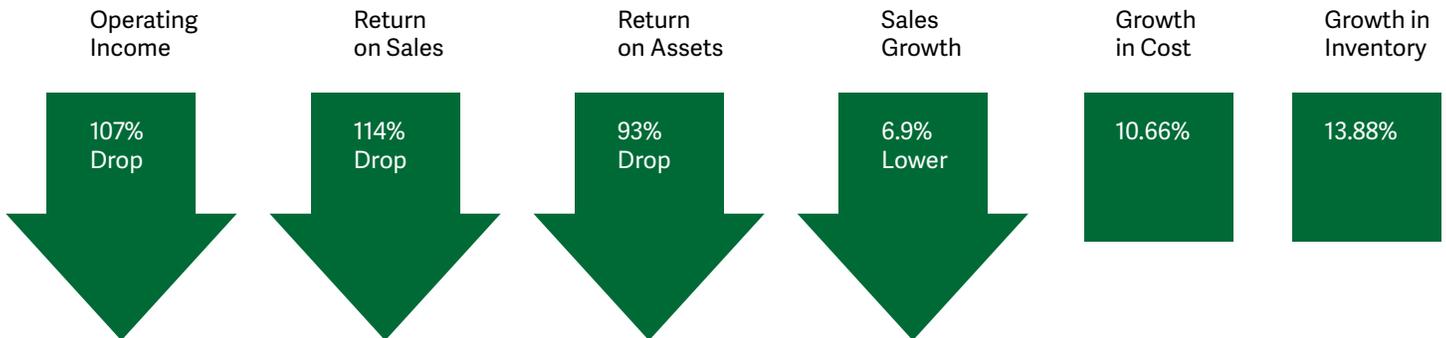
Unfortunately, some risks are simply unavoidable. No matter the level of preparedness, natural disasters will occur and result in financial damage. Since 1998, there have been various natural disasters reported, with floods and storms being the most common to occur. Since 2011, the average revenue loss per natural disaster event has been around \$65.6 Billion USD.



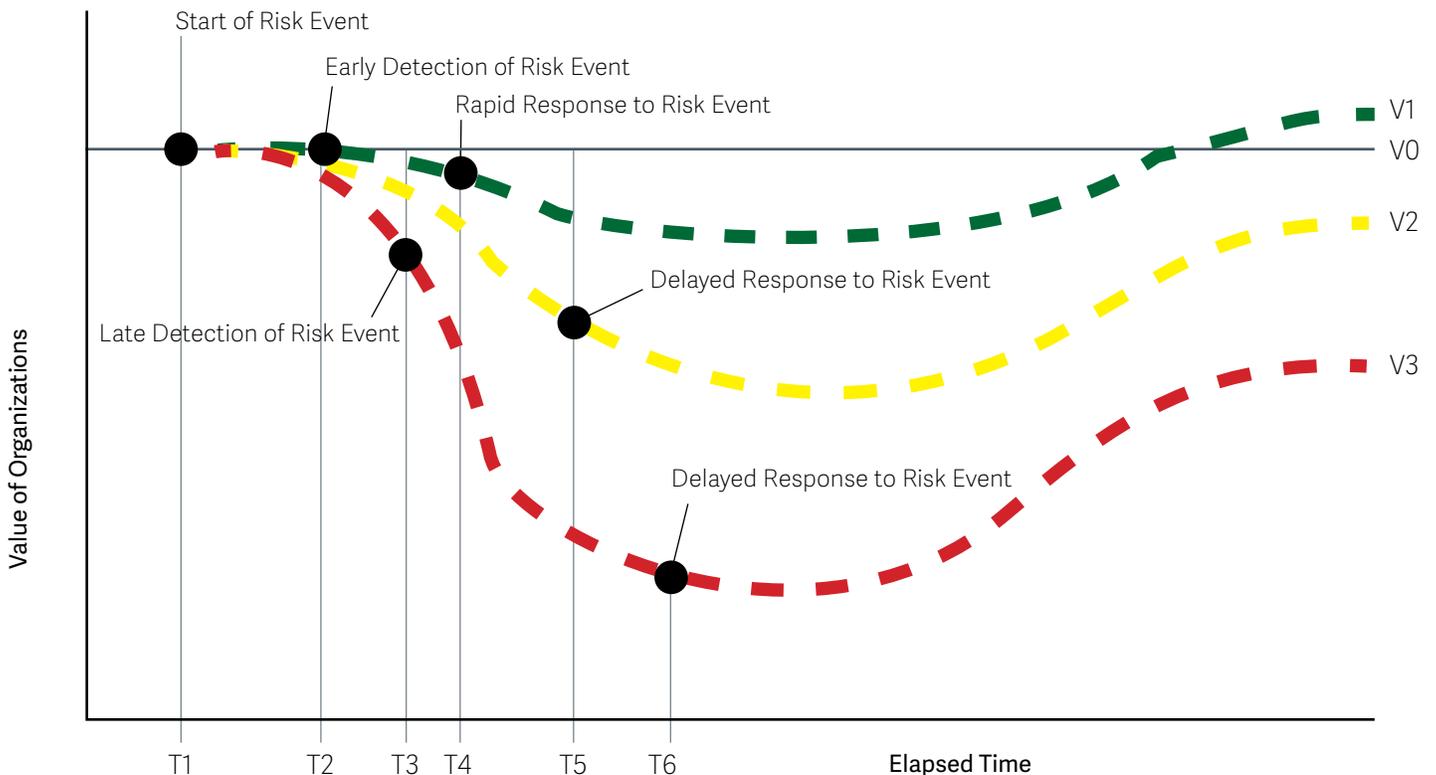
## FINANCIAL IMPACTS AND SHAREHOLDER VALUE

In addition to joint research with Loyal University, ASCM studied the impact of a supply chain risk event on finances and shareholder value. The data and results of this study come from two research methods. Literature review by a group of ASCM supply chain risk subject matter experts. Additionally, a brief survey on the financial impacts of risk was conducted in conjunction with Supply Chain Management Review

Existing studies have shown the obvious impact of a supply chain risk event on the financial health of an organization. A study by Hendrick and Singhal titled, "The Effect of Supply Chain Disruptions on Long-Term Shareholder Value, Profitability, and Share Price Volatility" found that operating income and are significantly impacted by a risk event, among other financial indicators. Additionally, this study showed that companies can expect a 7-10% reduction of their shareholder value.



Early detection and response are key, as those who can do so can actually benefit from a risk event. According to a study conducted by the MIT Center for Transportation and Logistics, there is a clear correlation between response time and the value of the organization. Those who respond to a risk event have shown a less financial loss than others in their industry. Some organizations may observe an increase in value after an event has past due to an ability to garner additional market share over competitors who detect and respond to risk events when it's too late.



## ABOUT ASCM

The Association for Supply Chain Management (ASCM) is the global leader in supply chain organizational transformation, innovation and leadership. As the largest nonprofit association for supply chain, ASCM is an unbiased partner, connecting companies around the world to the newest thought leadership on all aspects of supply chain. ASCM is built on a foundation of APICS certification and training spanning 60 years. Now, ASCM is driving innovation in the industry with new products, services and partnerships that enable companies to further optimize their supply chains, secure their competitive advantage and positively influence their bottom lines.

For more information, visit [ascm.org](http://ascm.org).