

The Society of Actuaries (SOA) has brought together several leading enterprise risk management (ERM) actuaries to identify the top concentrated areas of risk in 2012 and provide insight on how ERM programs can be used to hedge against those systemic risks. With rigorous training in identifying, managing and mitigating risk, actuaries are well-equipped to discuss the areas of risk that need attention as we work to rebuild the financial system post-crisis.

## Preparing to Deal with Digital's Looming Dark Side

Extraordinary online business benefits have revolutionized business and, as digital interconnectedness continues growing daily around the globe, so too do the implications of its power. Managing assets and financial risk in business today relies heavily on the speed and ubiquity of computer connections and networks globally. As Microsoft founder Bill Gates noted, "Information technology and business are becoming inextricably interwoven. I don't think anybody can talk meaningfully about one without the talking about the other."

But, for the nation's risk managers, it's clear that cyber risk has become the revolution's menacing dark side. Increasingly, headlines spotlight massive credit card privacy breaches, allegations of sovereign espionage, and "hacktivists" penetrating the firewalls at the Department of Justice and other federal agencies, sending shudders through risk officers charged with protecting corporate assets, regardless whether those assets are intellectual property, financial transactions, customer data, supply chains, or infrastructure. Adding new urgency to the cyber security topic are increasingly commonplace – and alarming – headlines on news stories, such as the Wall Street Journal's recent story, "U.S. outgunned in Hacker War."

In the 2011 Emerging Risk Survey Report of 2,500 members of the Joint Risk Management Section of the Society of Actuaries, the Canadian Institute of Actuaries and the Casualty Actuarial Society, cyber security/interconnectedness emerged as the risk likely to have the greatest impact over the next few years, rising from 23 percent in 2010 to 38 percent in 2011. Only "financial volatility" at 69 percent and "failed/failing states" at 42 percent ranked ahead of cyber security in the current survey, which was conducted by Max Rudolph, a Fellow and Chartered Enterprise Risk Analyst of the Society of Actuaries. "Chinese hard landing" and "oil price shock" round out the top five risks, though oil price shock is viewed as more important in combination with various other risks.

Even after acknowledging cognitive bias that encroaches on almost all surveys and prompts respondents to "anchor in" or be influenced by recent events, cyber security concerns and cyber risk fears have emerged as high-priority concerns across a broad spectrum of influentials and decision makers. For example, at the 2012 World Economic Forum (WEF) in Davos, Switzerland the topic was top of mind with global CEOs, who ranked cyber attacks among the top five events in terms of "likelihood," noting that increasing connectivity (Internet users per 100 people globally) was expected to grow from 17 percent in 2005 to 40 percent by 2015. Further, the WEF report suggested a key axiom for the Cyber Age:



*Any device connected to a network of any sort, in any way, can be compromised by an external party. Many such compromises have not yet been detected.*

Clearly, the axiom focuses on the heart of the risk – the pervasiveness of the potential ignition points for an intentional or accidental significant cyber event. Of greatest concern is a major disruption of critical information infrastructure caused by cyber crime, terrorist attack or technical failure that results in a failure of a critical-service infrastructure, such as power distribution, water supply, transportation, telecommunication, emergency services or finance.

For the entire enterprise risk management field, accurately assessing the potential impact of cyber events for organizations is a task well-suited to actuarial expertise. As they always have, actuaries assess risk, bringing specialty skills related to modeling, statistics and probabilities to the task. But, potentially even more important today is the actuary's ability to integrate disparate information from diverse sources – external sources as well internal functions such as IT, Finance, Business Continuity, etc. By building meaningful, coherent risk scenarios that integrate a broad range of relevant factors, actuaries generate predictive models that can weigh complex risks and opportunities and communicate these issues to inform strategic decision making within an organization. The newest actuarial credential, Chartered Enterprise Risk Analyst, or CERA, exemplifies this distinctive combination of capabilities.

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### About Actuaries

Actuaries bring a complex future into focus by applying unique insight to risk and opportunity. Known for their comprehensive approach, actuaries enable smart, more confident decisions.

### About the Society of Actuaries

The Society of Actuaries is an educational, research and professional organization dedicated to serving the public, its members and its candidates. The SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business and societal problems. The SOA's vision is for actuaries to be the leading professionals in the measurement and management of risk. To learn more, visit [www.soa.org](http://www.soa.org).