MIT CTL WHITE PAPER
GLOBAL SUPPLY CHAIN RISK MANAGEMENT PART 3: DIFFERENCES IN PRACTICES

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In the fall of 2009 MIT CTL conducted a global survey of supply chain risk experiences, attitudes, and risk management practices. Over 1400 supply chain professionals from 70 countries participated. Supply chain risk management, resilience and business continuity planning have been talked about for the last 10 years. Some progress is being made in terms of metrics, assessment tools, processes and templates. However, supply chain risk management involves a wide array of concepts such as facility security, product quality, counterfeiting and product tampering, regulatory compliance, supplier management, inventory management, and commodity hedging. Risks occur in every corporate and supply chain function. However, unlike financial reporting, there is no company-wide network of risk-aware people monitoring risks and collecting information about it. As a result, there is no overall high-level picture of supply chain risk across a company. Furthermore, as any risk manager will attest, senior management only shows interest in managing risk when there is a crisis. Such issues recede quickly when the crisis passes and normal service is resumed.

In terms of organizational readiness, 32% of respondents said their company has a risk manager or group that was effective. However, 18% said they had such a group but it was not effective, and 39% said they did not have such a group. A final 10% did not know or thought that such a resource did not apply to their company. Responses concerning business continuity planning were slightly worse. These results also varied significantly from country to country. When asked if their company worked on supply chain risk management, 46% of respondents from Switzerland and Spain said “yes and it is effective” while only 17% of Canadians said the same.

In short, slow progress is being made in terms of maturing supply chain risk management into a bona-fide function. This varies significantly from country to country. Supply chain managers who are serious about risk management need to be aware that this function will be much less developed and less supported within most of their trading partners’ organizations.

This white paper is part of a series of three papers that describe the results of the MIT CTL risk survey. Each paper is accompanied by a short video. The papers and videos are available at: http://ctl.mit.edu/research/global_scale_risk_initiative.
After some 10 years of discussion, supply chain risk management (SCRM) – including the discipline of business continuity planning (BCP) is evolving into a recognized corporate function. Progress is slow, since management attention rises during a crisis and fades quickly after the situation has been resolved. Also, organizations still lack the means to define the strategic picture of supply chain risk across the company and to communicate it effectively to the board. Nevertheless, work is under way on many fronts to develop best practices, define standard metrics, and create a standard vocabulary for managing supply chain risk.

In support of this effort and to provide new insights into how SCRM is developing globally, MIT CTL carried out a worldwide survey of supply chain risk management in the fall of 2009. Research teams in nine countries were assisted by 18 professional organizations (listed at the end of this paper). The survey was conducted in eight languages/dialects and yielded 1,461 valid responses from 70 countries. Supply chain, business, and financial managers from manufacturers, retailers, and distributors were the respondents.

In this white paper, we focus on how companies in multiple countries are organizing the SCRM function and what risk management practices they use. The survey findings show important differences in these efforts by country and region, industry, and size of company.

**ORGANIZATIONAL READINESS**

Although every corporate function spends money and deals with risks, the way they relate to the organization as a whole differs significantly. Take, for instance, the finance and risk management functions (see organizational structure in Figure 1).

Finance typically has representatives in other functions who collect and analyze spending data to create an overall financial picture of the company’s health. The Board of Directors understands the metrics and vocabulary used by this department.

By contrast, SCRM is not generally represented in other functions, and does not gather and analyze the data required to construct a general picture of the company’s risk exposure. Even though every department has some degree of vulnerability to disruptions, these threats are not integrated into a coherent risk management function. Moreover, there are no agreed-upon metrics for this discipline, and the Board of Directors does not understand its vocabulary.
Given the way the SCRM activity is often structured, this lack of awareness is not surprising. The SCRM function includes insurance-based risk management, enterprise risk management, BCP, supply chain management, compliance management, quality, and security. Relatively few individuals within companies understand process quality, facility security, and supplier management. If these functional components are not brought together in a single view, it will not be possible to establish a unified, strategic view of risk across the supply chain.

We asked companies if they employed an SCR or a BCP manager (see Figure 2). Globally, only about 32% and 28% of respondents, respectively, claimed to have effective SCR and BCP managers. Some countries, such as South Africa, are more likely than average to have an effective manager in these positions. Other countries, including Canada and Italy, are less likely than average to employ people in these roles or to have relevant functional groups.
Figure 2. Do You Have an SC Risk Manager or a Business Continuity Planning Manager?

WE HAVE A “RISK” MANAGER OR GROUP

PERCENT RESPONDING “YES, AND ITS EFFECTIVE”

WE HAVE A “BUSINESS CONTINUITY” MANAGER OR GROUP

PERCENT RESPONDING “YES, AND ITS EFFECTIVE”
**CENTRAL OR LOCAL CONTROL?**

Respondents were asked where the best place in their company is to perform such SCRM activities as planning risk prevention measures and performing event response actions (see Figure 3).

![Diagram showing responses to the question of central or local control for planning risk prevention and performing event response.](image)

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**Figure 3. Where to Plan Prevention and Perform Responses**

**PLANNING RISK PREVENTION**

- **Should be directed centrally:** 29.1%
- **Should be mostly directed centrally:** 47.7%
- **Should be mostly directed at each site (locally):** 17.4%
- **Should be directed at each site (locally):** 5.8%

**PERFORMING EVENT RESPONSE**

- **Should be directed centrally:** 7.1%
- **Should be mostly directed centrally:** 13.8%
- **Should be mostly directed at each site (locally):** 44.5%
- **Should be directed at each site (locally):** 34.7%
The results are generally in line with where these activities might be expected to take place. Respondents believed that planning risk prevention should be directed centrally and at headquarters, and that performing event response (responding to a crisis) should be controlled by the local site.

However, some countries made different choices on this question. Brazil and Australia are outliers here, preferring more input from headquarters than was the case in other countries (see Figure 4). When compared to respondents in China who strongly favored local control of disasters, Brazil's bent toward central control is striking. In a crisis, a local plant in Brazil or Australia can be expected to wait for and defer to orders from headquarters much more than plants in other countries.

**Figure 4. Brazil and China Response Preferences**

![Gráfico de barras comparando la preferencia de respuesta a eventos entre Brasil y China](image)

**OVERALL RESULTS**

We asked respondents to tell us the prevalence and effectiveness of 13 different types of SCRM activities in their companies (see Figure 5). Some telling statistics emerged from the data:

- About 36% to 39% of companies are working effectively on SCRM or have a BCP initiative.
- Between 50% and 54% of respondents say that they are not working or not working effectively on SCRM or BCP.
- About 50% of companies have a person or group to organize work on SCRM or BCP; but about one-third of these respondents indicated that the organizing person or group is not effective.
- Attempts to work with suppliers and customers are effective only about half of the time, according to respondents.
- Overall about 10% of respondents don’t know what their company is doing about SCRM.
Looking at global averages can mask dramatic regional and national differences in the MIT CTL survey data. There is also a large divergence in some regions between the prevalence of SCRM versus BCP (see Figure 6). This may be real, or perhaps one nomenclature is more popular in some countries than in others.

- South Africa and Australia report above-average activity in both SCRM and BCP.
- Spain and Switzerland report high levels of SCRM, but low levels of BCP.
- Brazil and the Middle East report high levels of BCP, but low levels of SCRM.
- West Africa and Other Latin America report high levels of BCP.

Note that only Canada, Italy, and Mexico report low levels of both SCRM and BCP.
Successful SCRM requires managers to work closely with suppliers and customers. However, this practice is not given the same priority in all industries (see Figure 7).

- Chemical companies were alone in reporting high SCRM activity with both suppliers and customers.
- Pharmaceuticals & Medical Devices companies were leaders in working with suppliers.
- Primary Metals and Supply Chain Service Providers were leaders in working with customers.
- Apparel companies rated working with suppliers highly, but were less enthusiastic about working with customers.
- Petroleum, Rubber & Plastics, and Fabricated Metal companies gave low scores to working with both suppliers and customers.

**Figure 7. Practices by Industry**

**WE WORK WITH SUPPLIERS ON SUPPLY CHAIN RISK MANAGEMENT**

- Grand average: 37%
- Percent responding "yes, and it's effective" increase as we move from West Africa to China & Asia and Australia & NZ.

**WE WORK WITH CUSTOMERS ON SUPPLY CHAIN RISK MANAGEMENT**

- Grand average: 28%
- Percent responding "yes, and it's effective" increase as we move from West Africa to China & Asia and Australia & NZ.
Organizationally, the differences among industries were quite significant.

- Industries most likely to have an effective SCR manager are: Utilities (58%), Supply Chain Service Providers (47%), Food Products (40%), and Pharmaceuticals/Medical Devices (39%).
- Industries least likely to have an effective SCR manager are: Rubber & Plastics (16%), Apparel (18%), Petroleum (20%), and Fabricated Metal (20%).

### PRACTICES BY COMPANY SIZE

Size does appear to matter when it comes to most SCRM practices. Below are the percentages of respondents who checked the “Yes, and it is effective” question).

- Have an SCR manager: Small firms, 16%  Large firms, 47%
- Have a BCP manager: Small firms, 12%  Large firms, 40%
- Have a BCP: Small firms, 25%  Large firms, 50%
- Work with suppliers: Small firms, 30%  Large firms, 42%

The only SCRM practice that does not seem to be affected by size is “Works with customers,” which varies randomly from 19% to 40% for companies of different sizes.

### TAKE THE INITIATIVE

SCRM is gradually developing into a recognized function in many companies. However, progress is impeded by two factors: (1) the wide variety of risk types and the broad range of experts needed to deal with them; and (2) the human propensity to focus on risk management only when there is an imminent crisis.

After a disruption, interest in SCRM fades quickly. The organizational components of risk management come from many diverse subgroups within a company that normally do not interact with one another. For example, security, quality, finance, and transportation staff rarely cross paths in a company.

Overall, most people in the survey believe that planning and prevention activities are best controlled mainly at headquarters. Conversely, they prefer more local control when it comes to the implementation of risk management measures and responses. However, there are wide differences between countries and regions as to the extent of this centralization or localization. For example, in a crisis involving trading partners in Brazil and China, an organization is likely to discover that the local Chinese plant management is empowered to act to address the problem, while managers at the Brazilian plant need to defer to headquarters for direction.

Although roughly half of all the companies polled reported that they have an SCRM function, only about one-third of these enterprises indicated that it was not effective. In other words, about 30% of the companies surveyed consider themselves to have an effective SCRM function. Working with suppliers is crucial to SCRM, and 75% of the companies reported that they engage with trading
partners in this way. However, half of these organizations believed the strategy to be effective, while the other half characterized it as ineffective.

Beyond the global averages, there are marked differences in SCRM practices among countries and regions, industries, and even the size of companies. South Africa and Australia are leaders in SCRM, while Italy and Canada trail the pack. Chemical companies lead the way in working with suppliers and customers, while Petroleum, Rubber & Plastics, and Fabricated Metals companies are hanging back.

How can managers anticipate these disparities when dealing with trading partners in other countries? They have to talk about it. Not everyone can persuade their trading partners to fill out a large survey form, but at least SCRM should be discussed. It is important that managers are proactive in this sense, because the likelihood of risk management topics coming up in day-to-day conversations is not high. Waiting for the next crisis to trigger such discussions might be a career-ending strategy.

RECOMMENDED ACTIONS
The study shows that a number of countries and industries are behind the SCRM curve. What should supply chain managers do about these risk management shortcomings? Here are some possible actions:
1. Be aware that most companies do not have effective SCRM programs.
2. Identify key suppliers and customers that are located in weak SCRM countries and industries.
3. Make your senior management aware of this potential lack of concern for SCRM by key suppliers and customers.
4. Involve selected suppliers and customers in your SCRM and business continuity plans.
5. Work with vendors to define supplier scorecards that can be used to measure their performance, including risk mitigation and response preparations.
6. Review supplier risk mitigation performance at quarterly review meetings.
7. Involve suppliers and customers in periodic risk awareness scenario-planning sessions; use role playing to define mitigation and response measures.
NEXT STEPS

Feedback from supply chain risk managers indicates that their biggest need is to "efficiently identify and visually display the weakest links in the supply chain." With minor crises happening daily, they never get a chance to assemble the "big picture" of supply chain risks across the network. MIT is continuing its work in supply chain risk management by launching a new research project with several leading companies to create "automated strategic displays" of the supply chain. The ASD project will work on creating the methods and tools to visually display a risk heat map that shows how critical risks propagate across the end-to-end supply chain. For further information, please contact Dr. Bruce Arntzen, Director, MIT Global SCALE Risk Initiative, at: barntzen@mit.edu, or telephone +1-617-252-6965.

Also, see the series of papers – including this one – and videos describing the results of the MIT Global Survey of Supply Chain Risk Management at http://ctl.mit.edu/research/global_scale_risk_initiative.

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- Association for Operations Management (APICS)
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- BWI Center for Industrial Management (ETH Zürich)
- Center for Latin-American Logistics Innovation (CLI, MIT affiliate, Colombia)
- Center for Transportation & Logistics (CTL-MIT)
- Council of Supply Chain Management Professionals (CSCMP)
- Expologistica (Mexico)
- Fudan University School of Management (China)
- Global Supply Chain Council (China)
- Imperial Logistics (S. Africa)
- Institute for Supply Management (ISM)
- Instituto de Empresa Business School (IE, Spain)
- LOGyCA (Latin America)
- Spanish Logistics Center (CEL-Logística)
- Supply Chain Council (SCC)
- Synergia (India)
- University of Bergamo (Italy)
- Zaragoza Logistics Center (ZLC, MIT affiliate, Spain)
APPENDIX: ADDITIONAL TABLES, CHARTS, AND GRAPHS

Each of the white papers in this series is accompanied by a video presentation on the same topic. This appendix contains the other tables, charts, and graphs which are presented in the video but are not included in the white paper.

- A TOTAL OF 2,434 PEOPLE STARTED THE SURVEY
- 1,461 PEOPLE FROM OVER 70 COUNTRIES COMPLETED THE SURVEY
- SIGNIFICANT RESPONSES (10+) FROM 17 COUNTRIES SHOWN BELOW
- MIXTURE OF “SUPPLIER COUNTRIES” AND “CONSUMER COUNTRIES”

**Geographic coverage of the survey.**

**JOB FUNCTION**

- OTHER
- FINANCIAL MGT.
- GENERAL BUS. MGT.
- SUPPLY CHAIN MGT.

**LEVEL OF EDUCATION**

- NO COLLEGE DEGREE
- COLLEGE DEGREE
- MASTER’S DEGREE
- DOCTOR’S DEGREE

**COMPANY SIZE (REVENUES)**

- OVER 20B
- 1B TO 20B
- 100M TO 1B
- 10M TO 100M
- UNDER 10M

**TYPE OF INDUSTRY**

- OTHER
- UTILITY
- RETAILING
- WHOLESALER
- SERVICE PROVIDER
- MANUFACT.

**Description of “who took the survey.” Global results.**
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<th>WEAK ON BUSINESS CONTINUITY PLANNING OR GROUP</th>
<th>MORE CENTRAL OR EVENT RESPONSE</th>
<th>WEAK ON WORKING ON SUPPLY CHAIN RISK MANAGEMENT</th>
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Listing of countries that are weak in certain aspects of SCRM.

**SUPPLY CHAIN RISK MANAGEMENT PRACTICES**

![Bar chart showing comparison of small companies versus big companies on different supply chain risk management practices.](chart.png)

SCR=SUPPLY CHAIN RISK, BC=BUSINESS CONTINUITY, BCP=BUSINESS CONTINUITY PLAN
SMALL = UNDER 500 EMPLOYEES WORLDWIDE

Comparison of small firms versus large firms according to SCRM practices.
ABOUT US
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