Supply Chain Risk Management at Cisco:  
*Embedding End-to-End Resiliency into the Supply Chain*

ISM 2012 Award for Excellence in Supply Management Submission  
Category: Process

**Contacts:**

John O’Connor  
Senior Director, Global Business Operations  
Customer Value Chain Management  
[johnocon@cisco.com](mailto:johnocon@cisco.com)  
408.424.3094

James B. Steele  
Program Director, Supply Chain Risk Management  
Customer Value Chain Management  
[jamsteel@cisco.com](mailto:jamsteel@cisco.com)  
408.853.1998

Kristina Scott  
Public Relations Manager,  
Customer Value Chain Management  
[kriscott@cisco.com](mailto:kriscott@cisco.com)  
650.678.9034
Cisco: Submission for ISM 2012 Award for Excellence in Supply Management / Category: Process

Executive Summary: Embedding End-to-End Resiliency into the Supply Chain

Description of Organization
Founded in 1984 and with annual sales of over $40 billion, Cisco Systems (CSCO) is the worldwide leader in networking - transforming how people connect, communicate and collaborate. The Customer Value Chain Management (CVCM) organization is responsible for the planning, design, manufacture, delivery and quality of the company’s products and solutions. Supply Chain Risk Management (SCRM) is a centralized team that resides within CVCM. It partners with stakeholders across CVCM and other Cisco functions such as Engineering, Sales and Marketing as well as with external partners to ensure the business continuity of Cisco’s global supply chain under any circumstances and to build the most resilient supply chain in the industry.

Rationale for the Initiative
With the proliferation of lean manufacturing, outsourcing and globally distributed operations, supply chains have become increasingly vulnerable to more types of incidents in more regions of the world – from natural disasters and line-downs to political unrest and financial volatility. According to a recent study from IBM titled “The Smarter Supply Chain of the Future,” supply chain risk management has emerged as the 2nd largest challenge for operations executives after supply chain visibility – placing even higher than increasing customer demands and higher costs. As a result, supply chains and the risks they face have gone from a back-office item to a prominent position on the boardroom agenda for many companies. With over 250 product families, 700+ direct suppliers, 5 manufacturing partners in 30+ locations, multiple distribution centers and customers across the globe, Cisco’s supply chain risk exposure is both broad and pervasive. As a result, in October 2007 CVCM formed a 3-person SCRM team. Until that time, supply chain risk was handled on an ad hoc basis by enterprise risk generalists at Cisco. In the spring of 2008 the SCRM team, with support from CVCM leadership, began to develop and implement a four-pronged approach with the objective of mitigating potential risks from product design through component selection, manufacture, test and delivery. The size of the SCRM team has since expanded to 9 employees and is managed by a Director reporting into CVCM’s Global Business Operations function. With roll-out completed by the fall of 2009 the approach, consisting of processes, metrics and tools, provides Cisco with a world class risk platform. This approach is utilized for sensing, managing and resolving any incident that threatens the business continuity of Cisco’s supply chain and builds proactive resiliency to improve our overall time-to-recovery during a disruption.

Embedding End-to-End Resiliency Through Four Key Processes: Product Resiliency, Supply Chain Resiliency, Business Continuity Planning and Supply Chain Incident Management

- **Product Resiliency**: Process for engaging with Cisco Engineering and Product Operations (CVCM’s new product introduction function) to identify risk trade-offs in the early design and development phases of Cisco products. Specifically, CVCM-designed resiliency scorecards were developed to, for instance, identify and “de-risk” single sourced and other risk components as well as drive resiliency upstream in the product development process. As a result of this CVCM-Engineering collaboration, as of December 2010, resiliency scores have become a mandatory criteria in Cisco’s product launch gating process.

- **Supply Chain Resiliency**: Process for working with CVCM’s Global Supplier Management (GSM) and Global Manufacturing Operations (GMO) functions to assess and improve resiliency across Cisco’s supply base, manufacturing and test equipment partners. SCRM targets the Top 100 products on a revenue basis each year for this process and works to identify and mitigate (as possible) any circumstances that could limit these products from recovering in X weeks from a major disruption.

- **Business Continuity Planning (BCP)**: Semiannual process, enabled by a unique web-based tool (developed by SCRM in partnership with IT) to engage all critical supply chain partners in providing Cisco with over 36 resiliency data points such as emergency contact information, availability of alternate power supplies and estimated time-to-recover (TTR). This unique data set provides the backbone of the company’s Supply Chain Incident Mgmt process by creating resiliency visibility into more than 1000+ supply chain nodes (at the site level) in over 50 countries. Additionally, critical components are mapped to each supplier site, capturing key resiliency information such as 2nd sourcing status and validating partners’ compliance with Cisco’s BCP standards through audits and drills.

- **Supply Chain Incident Management**: Process for monitoring worldwide events on a 24/7 basis, identifying and escalating any incident of concern, assessing impact and organizing a cross-functional response team to mitigate the risk to resolution. To respond to any event within a 2-hour timeframe, SCRM utilizes the NC4 alert service, has developed a Crisis Mgmt Dashboard and a robust set of Crisis Playbooks that cover events such as tropical cyclones and pandemics. The Supply Chain Incident Mgmt team, organized by SCRM, is responsible for working an incident from alert to resolution. This process can last anywhere from a few hours for a minor incident to over 70 days in the case of the recent Japan earthquake incident. Proactive drills and incident post-mortems aim to ensure continuous improvement.

As a group, these processes ensure that Cisco can respond quickly and effectively to mitigate risk from any incident worldwide and that CVCM is making the right decisions and investments to ensure proactive resiliency is built into Cisco’s products and across the supply chain.

Initiative Impact
SCRM’s processes deliver two key outcomes during disruptive supply chain incidents. First, ensuring continuity of supply through a controlled, predictable response minimizes overall customer impact and allows Cisco to avoid potential revenue losses of millions of dollars. Additionally, proactive and targeted resiliency investments have resulted in significant cost avoidance from not having to mitigate suppliers and manufacturing nodes during a crisis through component buy-aheads, emergency 2nd sourcing and other costly actions. The recent Japan earthquake crisis was the largest global supply chain disruption in modern history and serves as a key proof-point for our capabilities. SCRM’s processes, as applied through the
Supply Chain Incident Mgmt War Room effort and in conjunction with Cisco’s supply and manufacturing partners delivered the following outcomes over the first 70 days of the Japan incident:

- **Incident Response Time**: SCRM incident awareness within 40 minutes of the earthquake and escalation to CVCM senior mgmt within 57 minutes.
- **Speed to Initial Impact Assessment**: Activation of the Supply Chain Incident Mgmt Team within 9 hours with initial assessment of Cisco’s impacted supplier footprint, critical components and preliminary revenue at risk within 12 hours.
- **Ability to Manage Complex Mitigation**: Over 1,100 unique components (Mfg Part #s) were impacted across 65 suppliers in Japan requiring 900+ new mfg qualifications that were executed at 3X the speed of the average time to qualify.
- **Effectiveness in Sub-Tier Mitigation**: Several critical points of failure in Cisco’s semiconductor and optical commodity sub-tiers were quickly identified and successfully mitigated through proactive part mapping and use of the BCP Resiliency Visualization capability.
- **Business Continuity and Customer Impact**: Virtually no impact to Cisco customers or revenue loss from the crisis.
- **Revenue Protection and Cost Avoidance**: Cisco estimates that it was able to mitigate over $100M in potential revenue losses stemming from the crisis as well as avoidance of over $20M in additional component mitigation costs.

These outcomes were important for Cisco’s Q3/Q4 FY11 financial results and were called out by Cisco’s CEO, John Chambers, during the May 2011 quarterly earnings call as a testament to CVCM’s effectiveness in managing the incident.

**Leadership and Innovation**

SCRM, in collaboration with its stakeholders across CVCM and IT, continuously seeks improvements in the tools and methodologies needed for measuring, visualizing and assessing supply chain risk. Since 2008, the team has developed various innovations in pursuit of this goal which are seen as leading practices in the industry. Key innovations include:

- **Resiliency Index**, which is a unique, single metric that captures how resilient a product is to a major disruption. The metric considers a product’s current components, suppliers, mfg and testing models and can be used for a single product or a group of related products (e.g. a Business Unit, Top 100 products by revenue, etc.) The Resiliency Index for Cisco’s Top 100 products by revenue resides on the CVCM executive dashboard and allows the SCRM team, CVCM stakeholders and its leadership team to understand and track progress towards making various products more resilient.
- **BCP Resiliency Visualization** that allows CVCM to visualize all of CVCM’s critical supply chain nodes (1000+ including direct supplier sites, mfg/distribution sites) in any region of the world, updated with any changes to our extensive BCP database. This allows for a rapid understanding of the scope and extent of a potential disruption or actual event and is critical for accelerating any mitigation efforts during an incident.
- **SCRM Integrated Analytics and Reporting Tool**, which went live in July 2011, brings Cisco’s previously disparate analytics tools under a single integrated platform utilizing data virtualization and a Business Objects front end. This investment will pay-off with automation of manual processes (such as Resiliency Index scorecarding), lower support costs and CVCM stakeholder access to our capabilities.

**Results**

SCRM’s approach and processes have delivered results consistently and effectively across a number of highly visible incidents since 2008. In addition to the recent Japan earthquake incident response, key examples include:

- **Chengdu Earthquake (May 2008)**: To mitigate the impact of this 7.8 magnitude earthquake in central China, SCRM processes and leadership were utilized to avoid any business disruption as a result of over 20 impacted suppliers. Over 50% of these suppliers also had alternative sites/2nd sources based upon the SCRM Product Resiliency processes. This incident was mitigated through the Supply Chain Incident Mgmt process with minimal impact to customers.
- **Financial Crisis (late 2008 to mid-2010)**: After SCRM analytics revealed that 5 critical suppliers faced a high risk of disruption, CVCM instituted “last-time buys” as well as other options such as 2nd sourcing. Cisco was not impacted when all 5 of these suppliers ended up filing for bankruptcy. The SCRM financial assessment process developed during this incident has since become the template for our Financial Risk Assessment methodology, which is now applied to all Cisco supply chain partners.
- **Iceland Volcano Eruption (April - May 2010)**: The eruption and ensuing ash cloud that disrupted UK and Northern Europe air lanes placed both inbound order fulfillment (100+ major customers) and materials flow (50+ suppliers) and 2 critical mfg/distribution nodes at risk. SCRM leveraged its Supply Chain Incident Mgmt and BCP processes to develop effective logistics workarounds to mitigate all major customer impacts from this highly volatile event.

**Sustainability and Future Direction**

Based on very positive internal and external feedback on the effectiveness of our processes across multiple crises, Cisco’s SCRM program continues to be a highly visible and supported element of CVCM. Given its leadership mandate, the SCRM team is committed to continually improving its processes. Future development directions include:

- **Continue to champion within the risk community the development of a more consistent and standardized set of BCP standards across the electronics and high tech supplier base.** Adoption of BCP standards (similar to SCRM’s approach) will lower the time and expense and increase the effectiveness of multiple OEMs requesting similar data from the same supplier community.
- **Refine our overall Crisis Mgmt Workflow** as part of the Japan crisis post-mortem. This will entail further refining our process for assessing how impacted components flow through to impacts on customer orders during an incident. This will further improve SCRM’s speed to risk mitigation during an incident.
- **Renewed focus on moving resiliency upstream into the product design and development process through increasing the partnership with Cisco’s engineering community.** Our goal is to have all new product launches meet designated resiliency goals (based on product type and longevity) that are set jointly between Engineering, Product Ops and SCRM.
Cisco: Submission for ISM 2012 Award for Excellence in Supply Management / Category: Process
Supporting Documentation: Embedding End-to-End Resiliency into the Supply Chain

Description of Organization

Cisco’s Customer Value Chain Mgmt (CVCM) organization was conceived from its previous incarnation, the Global Supply Chain Management group, as a way to extend the scope and the impact of the operations function. Beyond the traditional SCOR-based supply chain functions for planning, sourcing, manufacturing management and fulfillment, CVCM also includes several other functions that broaden the organization’s mandate to include responsibility for value creation, quality management and the total customer experience.

The SCRM team’s four key processes extend across the CVCM organizational and capability structure. Both the Supply Chain Incident Mgmt and the BCP process extend end-to-end representing their coverage of the entire supply chain. Product Resiliency is focused primarily upstream in product development, new product introduction, component sourcing and quality. Supply Chain Resiliency processes focuses primarily downstream on our current manufacturing and logistics network, supplier base and existing product portfolio.

These four processes are coordinated and aligned to create the end-to-end resiliency that is the subject of this submission.

Rationale for the Initiative

CVCM operates an extensive and entirely outsourced global supply chain consisting of Printed Circuit Board Assembly (PCBA) sites, Box Build/Final Assembly & Test sites, distribution centers and component suppliers. Beyond the scope and scale of this supply chain, several key attributes of Cisco’s business and operations model increase the overall challenge and complexity of risk management including:

- **Wide Range of Products:** CVCM manufactures products from simple consumer and small business targeted switches to highly complex and configurable internet routers used by global communications services providers as their backbone infrastructure.
- **Manufacturing Model:** CVCM utilizes a primarily CTO (Configure-to-Order) build model in which products are only built based on a confirmed customer order. This severely constrains the ability to build an inventory of finished goods as a resiliency strategy.
- **Wide Range of Customers:** With customers across the spectrum of consumers, enterprises, distributors and large service providers, CVCM must service vastly different expectations and fulfillment requirements.
- **Constant Acquisition Integration:** Cisco has made over 130 acquisitions since 1993. Many of these acquisitions bring their own supply chain, partner ecosystems and processes that need to be integrated into the Cisco core. Integrating each of these acquisitions into SCRM processes requires time, effort and entails additional attention for risk mitigation during an incident.
Recognizing the acceleration of both the scale and complexity of Cisco’s supply chain as well as the number and scope of global risk exposures, the CVCM organization has made concerted investments in developing its supply chain risk management capabilities and processes. Since 2008, the focus has shifted from simply reacting to supply chain incidents towards more proactive and end-to-end resiliency development.

This focus is best reflected in the SCRM team’s four key processes:

**BCP (Business Continuity Planning):** BCP is a semiannual process to assess critical supply chain partners. The SCRM team utilizes a 5 step process that consists of:

- **Identifying key nodes with high impact potential:** All direct suppliers, manufacturing and distribution partners are included as part of the BCP process. Special attention is paid to those that are single sourced, provide critical components that touch a large part of the Cisco product portfolio and thus have high potential revenue impact implications in the event of a disruptive incident.
- **Evaluating preparedness based on an objective formal:** SCRM in partnership with CVCM IT has developed a web-based tool that enables the query of its extended supply base and other critical partners for key BCP data. This standard includes compliance with key safety and resiliency infrastructure as well collection of key data such as emergency contact information (over 36 data points/query areas).
- **Mapping critical components to supplier sites:** This is a key process based on Cisco’s mfg part # system and is key for understanding potential impacts during a crisis as well as the starting point for mitigation.
- **Identifying time-to-recover (TTR) at the supplier site and component level:** Time-to-recover is measured against multiple factors at either the manufacturing, test or component level. It can be improved through proactive actions such as 2nd sourcing, building strategic inventory positions (of both materials or critical test equipment, for instance). Time-to-recover is a key element in defining overall resiliency in the SCRM program.
- **Validation through audits and drills:** During this process, supplier and partner time-to-recover and infrastructure requirements (among other BCP elements) are tested and claims are validated against BCP data of record. In many instances, a supplier that does not meet standards during an audit is placed on a performance improvement program or has some of its volume shifted to other suppliers (as an incentive for compliance and/or gap closure).

**Supply Chain Incident Management:** The SCRM incident management process is designed to allow CVCM to monitor global events on a 24/7 basis, be alerted to any incident that is either disruptive or has the potential to be disruptive to supply chain business continuity, organize an assessment and (if needed) a mitigation action and manage an incident through to resolution. This process consists of a set of capabilities (e.g. NC4 alert service), leverage of other SCRM capabilities (e.g. BCP data to understand impacted nodes and inherent resiliency), reference collateral (e.g. multiple playbooks defining key contacts, processes outlines and templates) as well as organizational “muscle memory” developed from proactive training of the extended CVCM organization through drills and working sessions. Additionally, SCRM has developed a Crisis Management Dashboard which provides visibility to the CVCM organization as to what incidents are open and being
managed, alignment to SCRM’s extensive BCP data base as well as links to key collateral such as Crisis Playbooks.

Each of these capabilities are leveraged during an actual incident to great effect. Through the overall Supply Chain Incident Management process, CVCM is able to identify a disruption, alert senior management, organize a cross-functional response team and qualify the magnitude of the disruption at the supplier/critical node site level as well as develop a preliminary estimate of revenue at risk within a 12 hour period. Given the timing and scale of the disruption, this is possible within an even shorter timeframe (2 – 3 hours). This controlled and rapid response provides Cisco with a key competitive advantage given the need to compete for sometimes constrained materials for mitigation and when customers need quick visibility into any impact on order fulfillment.

**Supply Chain Resiliency:** Through the Supply Chain Resiliency development process, the SCRM team works closely with CVCM’s Global Manufacturing Operations (GMO) group and its manufacturing, logistics and transportation partners to identify and execute actions and programs that increase overall resiliency in the supply chain for existing products. This includes developing resiliency plans to include alternate site qualification, capacity reservations and inventory buffers. The Supply Chain Resiliency process also extends to Cisco’s critical test equipment infrastructure that resides at its manufacturing partners sites. The SCRM team works with Cisco test engineering group as well as with critical test equipment providers to ensure, for instance, that long lead time parts and equipment are secured to improve the overall time-to-recover for products where this is a critical path for recovery. SCRM focuses its efforts during the year on the Top 100 products by revenue. Focusing on the Top 100 allows CVCM to achieve improved resiliency for over 50% of its total revenue and targets its time and resource investments where they provide the highest payback.

**Product Resiliency:** Through the Product Resiliency process, SCRM works with CVCM’s Global Supply Mgmt (GSM) team to identify components with recovery times (TTR) that are outside of established TTR tolerances. For these components, SCRM and the relevant Commodity Mgmt teams develop resiliency plans that include 2nd sourcing options, alternate site qualification, component risk buffers and other mitigation strategies such as manufacturing rights and escrow agreements. The SCRM team has also been moving upstream working in collaboration with CVCM’s Product Operations teams that are responsible for the new product introduction process across Cisco’s various products. Towards this end, SCRM leverages is Resiliency Index as a scoring mechanism for all new product introductions. The team has had success since December of 2010 in embedding this resiliency scoring into the new product introduction process. Achievement of a targeted resiliency score (set through both the Product Operations teams and Cisco Engineering) has since become a key element of achieving a “Perfect Product Launch” (PPL). Achieving PPL is a key success factor for a new product launch. SCRM will be focusing in the future on continuing to drive adoption of proactive resiliency through advocacy in the Cisco Engineering organization.

**Initiative Impact (2011 Japan Earthquake Incident Response Example)**

The 9.0 magnitude earthquake that struck the Northeastern coast of Japan on March 11th, 2011 (JST) was the most significant disruption that the global supply chain has experienced in modern times. This was based on the scope, scale and velocity of the evolution of the risk exposure and circumstances. What started as an extremely powerful earthquake quickly became a deadly tsunami that triggered an unprecedented nuclear facility disaster. This, in turn, further compromised key elements of Japan’s infrastructure such as roadways, power transmission and electrical capacity for large portions of the impacted region. The crisis was a key test of the SCRM Supply Chain Incident Mgmt team as well as the overall end-to-end resiliency that the team and CVCM drives.

*Key points highlighting SCRM’s resiliency processes to mitigate the extensive risk exposures resulting from this incident:*

**Supply Chain Incident Mgmt Activation:** Within 30 minutes of the initial NC4 alert of the 9.0 magnitude earthquake (NC4 is CVCM’s 3rd party notification service that sends alerts based on a mapping of all CVCM critical nodes) the Supply Chain Incident Manager (on the SCRM team) was aware of the event, alerted both the SCRM team lead, team members and the CVCM senior leadership team. Within 12 hours the primary Supply Chain Incident Mgmt team was activated. This team consists of an extended group of CVCM functional leaders that represent their functional organizations during an incident.

**BCP (Business Continuity Planning) Leverage:** Utilizing SCRM’s BCP data and processes, the SCRM BCP program manager was able to identify all direct suppliers, their associated sites and components (Mfg Part #s) and other critical supply chain nodes in the impacted area within 12 hours of the initial earthquake. The manager was also able to profile each supplier site from various resiliency perspectives. These included the expected time-to-recover (TTR) for the site, back-up power generation capabilities,
whether the supplier’s components were single sourced or had alternate sites available. Leveraging the BCP emergency contact information at the supplier site level, the Incident Mgmt team was able to quickly establish (over the course of the first few days of the incident) contact with suppliers to assess the impact of the incident on site capacity, prognosis and ability to continue to produce and distribute components. Utilizing the BCP Resiliency Visualization capability, the Incident Mgmt Team was able to develop a snapshot of the supplier impact and status over the entire region. This snapshot was refreshed on a daily basis based on the evolution of the crisis circumstances (e.g. addition of the nuclear exclusion zone around the Fukushima nuclear facility, changing electrical power capacity projections, etc.) and facilitated faster, more informed executive decision making on mitigation activities and prioritization.

Supply Chain Incident Mgmt Team War Room: Within 2 days of the initial earthquake, a formal War Room was established to provide a central management point and decision making forum for all CVCM personnel involved in the mitigation effort. The War Room approach, structure and operations were based on the SCRM Crisis Management playbooks. These playbooks create a predefined reference for bringing together the CVCM organizational leaders to assess, mitigate and resolve a disruptive supply chain incident. The playbook defines a functional track structure, key contacts related to various types of incidents, templates and other collateral to assist in running and managing an incident response. Through this playbook and the overall SCRM Incident Management process, CVCM was able to very quickly mobilize and get out ahead of the crisis from a mitigation and customer communication standpoint.

While leadership and hard work from across the extended CVCM organization (over 100+ resources involved in the extended War Room effort for 70+ days) as well as the efforts and partnership of our supplier base was responsible for the ultimate success of CVCM’s Japan response, the SCRM process provided the starting point, organizing principles and underlying data needed for this success.

Quotes Regarding the Impact of CVCM’s Japan Earthquake Response (Driven through SCRM’s Incident Mgmt Process)

“During the aftermath of the earthquake/tsunami/nuclear plant breakdown in Japan, Cisco distinguished themselves from other suppliers by being completely transparent and by being capable of identifying challenges not only two, but four levels down into their Supply Chain. They treated the threat seriously and took every action required to minimize supply chain disruption for AT&T. This response combined with other process improvements they invested in to guarantee on time delivery over the last year, have helped them recover from significant issues born during the economic crises to become the supplier I consider has the most robust capability to deliver on time.”

Diana Jones, Vice President- Global Business Sourcing, AT&T

“In an increasingly networked world, supply chain risk management is top of mind in global organizations as well as a key differentiator for leading value chain organizations. Cisco’s proactive approach and leading supply chain risk management capabilities were key to ensuring minimal impact to our customers during the recent Japan earthquake crisis.”

John Chambers, Chairman and CEO, Cisco

Leadership and Innovation

External Quotes Regarding Cisco SCRM’s Leadership and Innovation

“Cisco’s Value Chain team has taken the lead on many areas of innovation, but among its most important contributions is the emerging discipline of supply chain risk management. With high-impact supply and market disruption now the norm rather than the exception, Cisco’s efforts to anticipate and mitigate risks offer an example for professionals across industries. In helping to found the Supply Chain Risk Leadership Council in 2006 Cisco has also spent time and money sharing their lessons with the rest of us.”  

Kevin O’Marah, Head of Faculty- SCM World (Previously Group VP, Supply Chain, Gartner and Chief Strategy Officer, AMR Research)
"Cisco must be given generous helpings of credit and kudos for having the vision to form the Supply Chain Risk Leadership Council (SCRLC). This cross-industry forum is a thought-leader in the supply chain risk management space, balanced by the needs of pragmatic risk management practitioners. The work that has been accomplished over the nearly three years that I have been involved with the SCRLC is incredible, culminating in the creation of a Best Practices Document for Supply Chain Risk Management (SCRM). The SCRLC is an all-volunteer Council, so we don’t have much in the way of an operating budget. Cisco continues to fund large portions of the Council’s needs, without which we would not have been able to create and publish the Best Practices document. I would be remiss if I did not also say that Cisco has been generous in sharing its wealth of knowledge and practical application of supply chain risk management with the Council. I consider Cisco a primary driving force in the advancement of supply chain risk management.” John Brown, Director- Risk Management, The Coca-Cola Company (Current SCRLC Chairman)

"Many areas of supply chain innovation have borne Cisco’s mark, including supply chain risk management.” (The Gartner Supply Chain Top 25 for 2010, June 2010)

"Cisco leads the way with . . . it sophisticated risk management capabilities.” (The Gartner Supply Chain Top 25 for 2011, June 2011)

"In a June 2009 Perspective, “Supply Chain Risk Management: A Best Practice Case Study of Cisco Systems,” I wrote that IDC Manufacturing Insights considered Cisco’s supply chain risk management function one of the most systematic approaches we’d seen to date for dealing with an increasingly strategic challenge facing businesses of all stripes: how to identify and mitigate the growing diversity of potential supply chain risks. And today Cisco’s four-pronged supply chain risk management strategy – which encompasses product resiliency, business continuity planning, supply chain resiliency and crisis management – continues to be a best-practices model, in my opinion, on the far right of IDC’s risk management continuum: a sophisticated assessment and mitigation methodology grounded on supply chain risk management being recognized as a core competency in the company’s overall supply chain management philosophy.” Simon Ellis, Practice Director- Supply Chain Strategies, IDC Manufacturing Insights

"In the increasingly complex, networked and flat business world of today, the ability of an organization to manage risk in their global end-to-end supply chains will be a critical competitive differentiator. Cisco’s supply chain risk management (SCRM) program is best-in-class across industry sectors. A high level of visibility from a comprehensive set of risk factors in the extended supply chain, and transparency in its business process coupled with smart analytics in its SCRM platform provides Cisco the agility for effective risk mitigation. Cisco’s SCRM system incorporates a pro-active approach to process and organizational level resiliency moving the organization closer to a real-time enterprise."

I chose to document Cisco’s SCRM approach with applications to recent incidences of H1N1 and Japan tsunami to illustrate the importance of risk management in general and demonstrate the robustness of the platform in mitigating and managing a diverse set of risks. Learning Cisco’s approach provides invaluable lessons to organizations, business executives, and students of business in development of this critical organizational capability.” Professor Ravi Anupindi, Program Director- Master of Supply Chain Mgmt (MSCM) / Michael R. and Mary Kay Hallman Fellow & Professor of Operations Management, Ross School of Business, University of Michigan, Ann Arbor

Resiliency Index Metric

SCRM's Resiliency Index measures the ability of a product, a product family, a Business Unit, or a set of related products (e.g. Top 100 products by revenue) to recover from a major supply chain disruption. This metric is innovative in that, prior to its conception, there was no standard quantitative measurement for resiliency. In its initial conception, there was no standard quantitative measurement for resiliency that encompassed all major elements from across the supply chain or that had the flexibility to be applied at different levels.

The Resiliency Index is a composite metric comprised of four key categories- Component Resiliency, Supplier Resiliency, Manufacturing Resiliency and Test Resiliency. It is on a simple scale of 1 – 10, with 10 being highly resilient. Each category is weighted based on its contribution/importance for overall resiliency. Each of these categories has a set of scoring metrics that measure elements of resiliency related to the category. For instance, Component Resiliency (which is weighed 30% of the overall score), scores the components of a specific product (or set of products) in terms of their overall risk profile- the extent of single vs dual sourcing, whether the components are going end of life, for instance. Supplier Resiliency focuses on the overall financial health and stability of the actual supplier providing the components. Both Manufacturing Resiliency and Test Resiliency categories focus on measuring time-to-recover (TTR) as well as other indicators.

Taken as a whole, the metric provides a solid reference point for the state of resiliency for the product or group of products that it is scoring. This allows for a more concrete executive discussion around what should the appropriate level of resiliency be given the trade-off of cost, where in the product lifecycle a product is, and what the Resiliency Index score is.
for similar products. The Index also helps track the impact of proactive resiliency investments driven through the Supply Chain and Product Resiliency processes and through standard business decisions made by product designers, commodity managers and the architects of Cisco’s global operations network.

**BCP Resiliency Visualization**

A key challenge for enabling and accelerating executive decision making during an incident is the ability to understand the scope and scale of risk exposures in an impacted area. Through our rigorous and extensive BCP program, SCRM creates a large database of resiliency information for the majority of our direct suppliers and all critical manufacturing and distribution nodes. Our BCP Resiliency Visualization process allows the SCRM team to quickly convert a “flat file” of BCP information into a visualization illustrating geographic location of critical nodes (e.g. supplier sites, distribution centers) and geographic features and highlight resiliency-related attributes specific to a node, such as a single-sourced component or BCP non-compliance. In an event with an impact as large and as fast moving as the recent Japan earthquake, this visualization (shown in example below) proved invaluable as a reference point in our War Room.

**SCRM Integrated Tool (Go Live in July 2011)**

Over the course of 2010 and 2011, CVCM invested in bringing its formerly disparate set of SCRM analytic and reporting tools under a single platform. Innovation is demonstrated in the very conception of an “integrated toolset” supporting SCRM- essentially creating a one-stop-shop for analytics, reporting and visualization through dashboards. The first release of this application creates an industry leading capability for supply chain risk management and provides a number of value points. The SCRM Integrated Tool creates a single-source-of-truth for all supply chain risk related data aligned to key Cisco enterprise systems. The platform is built upon a Teradata database utilizing the latest data virtualization technology to allow future scalability and flexibility. It also employs a Business Objects front-end that recreates SCRM’s standard dashboards as well as allowing for customized and ad-hoc reporting.

This new SCRM analytics platform automates several operations that were previously very manual and time consuming (e.g. the development of product resiliency scorecards and calculation of the overall Product Resiliency metric). This will result in freeing up time that the SCRM team can utilize on further innovation as well as engagement with our stakeholders across CVCM and Cisco. We have also extended access to the integrated SCRM Tool to a variety of user communities across CVCM. With ongoing training in place, we anticipate that these stakeholders will be able to “self serve” in the creation of key risk analytics for decision making and to support their programs. This capability will be very important as the SCRM team continues to work upstream in the CVCM Product Operations function and with Cisco Engineering. Finally, the new platform significantly lowers overall application and infrastructure support costs.