

Strategic Sourcing 2.0

by John Brennan

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Executive Summary.

Global sourcing executives face more challenges than ever, and the global sourcing environment will only grow more complex. The firms that survive the next century will do so because they make key investments in building the next generation of strategic sourcing capabilities. Strategic Sourcing 2.0 is about automating networks and analysis that is more rigorous. Global sourcing executives can increase their effectiveness by automating many aspects of the sourcing lifecycle and by relying on a core group of analysts who focus on creating the information reporting and analysis necessary for “enterprise awareness.” Presented below are the lifecycle and capabilities for automating and analysis.

Source Discovery – Web crawling and crowdsourcing provide affordable, tailored information to constantly update the picture of risks, supplier status, new entrants and competitive intelligence.

Source Evaluation – Multi-cultural expert networks and a supplier evaluation methodology can improve the likelihood of successful supplier relationships.

Source Network Management – Multi-enterprise sourcing networks, a deliberate sensor network, and a command center can provide near real-time insight on all aspects of the sourcing network; hosted auction services can provide dynamic pricing for source acquisitions and asset disposal.

Sourcing Analytics – Near real-time insight into subordinate sourcing organizations and programs can only be achieved with a custom reporting capability. In general, a data mart may also be required to store, manipulate and manage the information necessary for sourcing analytics.

Sourcing Resilience – The capabilities and information to manage multiple issues like the acceptable levels of redundancy in the network, acceptable security, insight into business, network and supplier risks, rapid insight and response protocols for disruptions, and continuity of sourcing planning with rehearsals/exercises.

Sophisticated analysis and emerging technologies are integral to designing and implementing a global sourcing organization, whether for investments or key supplier relationships.

General Electric (GE) recently assigned a research scientist the full-time job of studying sources of materials that are critical to GE, which is investing heavily in battery technologies for transportation and grid storage. GE was caught "behind the curve" when one material used in its aircraft engines shot up in price, so it is now looking for other "pinch points," said Mark Little, director of GE's research labs. *Source: Electric-car race could strain lithium battery supply, by Martin LaMonica, October 31, 2008, CNet's Green Tech Web site.*

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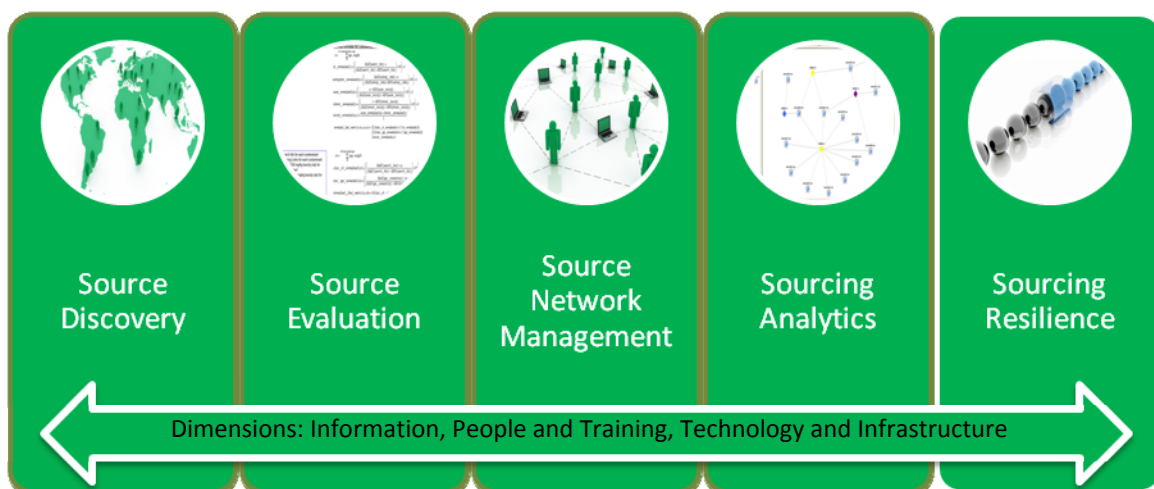
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Introduction. Today, with the emerging disciplines of outsourcing and strategic sourcing, companies have begun to view the inputs of their business model—the supplies and suppliers—as integral components. In fact, many companies are developing sourcing as a core competency. New methods in sourcing involve sophisticated analysis and emerging technologies like multi-enterprise supply chain management networks, reverse auctions and active data collection programs that automate the search for suppliers, products and partners. Sourcing also requires deliberate and prudent risk planning to ensure the resilience of the sourcing networks. This planning must rely on a constantly updated picture of the risks, the value and the location of supplies and products in the supply chain (to localize and quantify the potential risks).

Global sourcing executives face more challenges than ever, and the global sourcing environment will only grow more complex. The firms that survive the next century will do so because they make key investments in building the next generation of strategic sourcing capabilities. Strategic Sourcing 2.0 is about automating networks and analysis that is more rigorous. Global sourcing executives can increase their effectiveness by automating many aspects of the sourcing lifecycle and by relying on a core group of analysts who focus on creating the information reporting and analysis necessary for “enterprise awareness.”

It is time for companies to start building Strategic Sourcing 2.0. This means strategic sourcing leaders must integrate the core dimensions of sourcing (information, people and training, technology and infrastructure) across the lifecycle of sourcing (discovery, evaluation, management, analytics and resilience). Firms must begin to develop capabilities for multi-enterprise situations across a global scale. This paper details the capabilities needed to solve global sourcing challenges. The capabilities are identified in the Strategic Sourcing 2.0 Framework below.



Strategic Sourcing 2.0 Framework – The capabilities and dimensions of the next era in strategic sourcing.

Source Discovery. Identifying the right partners, vendors and suppliers is a dynamic and ever-growing challenge. Leading a portfolio of related businesses adds other variables to the challenge, as sourcing executives try to carefully balance the numerous internal and external relationships. Current, objective information about existing and potential suppliers arms sourcing executives with the data to support the innumerable decisions necessary each week and month. Global sourcing executives must begin implementing an information gathering, analysis and reporting program focused on identifying, qualifying and monitoring suppliers. There are two compelling techniques today to consider: Web-crawling programs and crowdsourcing.¹

Web Crawling. Web-crawling programs take advantage of the readily available information posted on the Internet, whether through official company Web sites, news outlets, or blogs and discussion forums managed by non-governmental organizations (NGO) and private citizens. Web-crawling programs involve the following steps:

- Identifying target sites
- Designing and setting content targets and thresholds
- Filtering and scoring sites and content
- Human review and confirmation of the content
- Reporting and monitoring

Two examples illustrate the utility of Web crawling:

A Fortune 100 consumer packaged goods company was concerned about public perceptions surrounding food additives and sweeteners used in or attributed to their product. Analysts used Web crawling, link and geospatial analysis tools and techniques to identify and rank-order the public perception surrounding food additives and sweeteners of interest. Now the client has a Web-crawling and monitoring program that surveys a series of NGO Web sites and blogs to determine when they begin discussing known or potential contaminants. The system is flagged to warn the company if the content relates to the ingredients and sources used in its manufacturing operations. A company like Mattel would have this capability useful before the public furor over lead paint used in the production of its toys.

A Fortune 100, multi-national petrochemical company has integrated Web crawling into its global risk assessment centers. Specifically, the program continuously monitors and harvests information from the open Internet to assist in the due diligence assessment process surrounding new business deals and to identify early indicators and warnings of events of interest in countries and locations where the company conducts business.

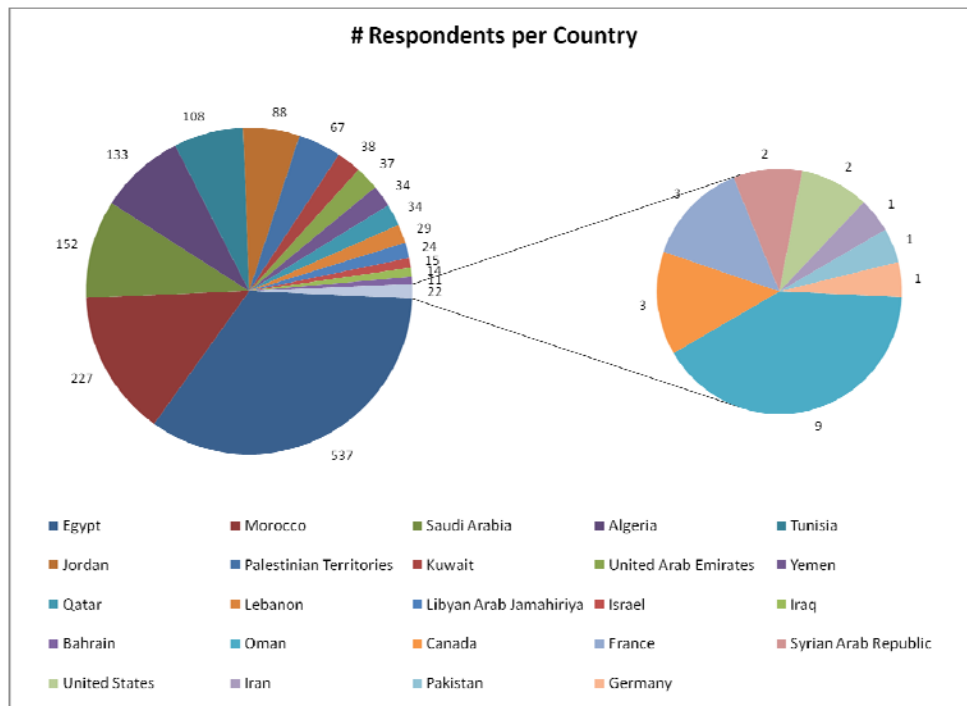
These examples demonstrate the power of Web crawling in its ability to systematically monitor the information and reporting about a) a company, b) its suppliers and partners, c) its products and key employees, d) the regions the company operates in and e) potential new suppliers, partners and products. The key is to identify content thresholds and to use a scoring algorithm in order to properly tune the crawling and monitoring program to reduce false positives. The beneficial result is it extends the awareness of a company to a global dimension.

¹ Jeff Howe coined crowdsourcing in a 2006 *WIRED* magazine article. The original article is located online at <http://www.wired.com/wired/archive/14.06/crowds.html>.

Crowdsourcing. Crowdsourcing involves taking a function or activity that has been traditionally performed by one or more designated people or employees and outsourcing it via an open call to a narrowly targeted or an undefined group of people. Again, the Internet extends the reach and power of crowdsourcing because it enables a person or company to extend the call for help to anyone around the world. Companies searching for new investments, acquisition targets and competitive intelligence are already using crowdsourcing campaigns. Once more, an example best illustrates the power of crowdsourcing.

A private United States (U.S.) company wanted to find a specific set of acquisition targets among all the companies in the U.S. that own large cranes used in construction. Using a Web service, analysts enlisted hundreds of individuals around the world who used public information sources to identify the crane companies. These individuals performed thousands of parallel searches; even contacting the companies with detailed questions about their ownership status, crane types and capabilities. While this sounds like a routine data collection task, the difference is the Web service. With it, thousands of tasks are performed simultaneously and the workers are paid pennies for the individual tasks. The result is high-quality data, provided very quickly (hours to days), at very affordable rates. The Web service allows for quality control measures like screening participants, rejecting inadequate data submissions and having multiple participants perform a sample of similar jobs to confirm quality and accuracy.

To ensure the process works in other languages one company used online advertisements to call Arabic-speaking Internet users into a “work from your computer” opportunity. The call resulted in 4,300 visits that led to 1,560 individuals signing up in 24 hours. The respondents were from diverse countries and provided an email address during the registration process. A different “crowd” (based in the U.S.) performed Internet protocol (IP) number look-ups to validate the user locations. That crowd processed the IP data in one hour. The respondents came from the countries and territories outlined in the following chart. The respondents are available to perform online and offline (e.g., go visit Company C’s stores and fill out this questionnaire regarding service quality) research tasks.



Source Evaluation. Evaluating a supplier or partner is an essential step that should not be rushed. Too often, because companies have inefficient, human-intensive source discovery activities, they run out of organizational patience and rigor when they get to the evaluation step. Dealing with imperfect information, tight deadlines, stressful negotiations and the pressures of internal or executive politics (e.g., one of the potential suppliers is a friend of the CEO), sourcing organizations end up making sub-optimal decisions. To mitigate these risks, global sourcing organizations need access to a multi-cultural expert network and a rigorous evaluation methodology.

Multi-cultural expert networks enable a company to tap the experience, expertise and knowledge of known, trusted professionals who can objectively evaluate a potential partner or supplier. Like a peer review or dissertation panel, they can focus exclusively on whether the information about a potential supplier is sufficient, reliable and compelling. They can also provide an independent recommendation on the suppliers who meet a company's evaluation criteria. By using experts from multiple cultures, a company ensures that it does not inadvertently introduce bias into the evaluation. A multi-cultural expert network also can help global sourcing organizations understand the local or cultural context applicable to a business operation or global supply chain.

Global sourcing executives must begin organizing standing or ad hoc multi-cultural networks that can focus on specific, large-scale sourcing decisions or perform a quarterly or semi-annual due diligence of pending sourcing decisions. Expert networks can include consultants, but do not traditionally include consultancies, as they bring inherent conflicts of interest. Before using expert networks, global sourcing organizations must tier their supplier relationships into those that are commodity, key operational and strategic. Expert networks should be focused on select key operational and strategic relationships, as the commodity relationships focus primarily on the price and timing of non-strategic production inputs. For instance, you do not need an expert network to advise you on selecting an office supplies vendor, but might you use one for selecting a global transportation partner.

As mentioned earlier, top-tier global sourcing organizations also need a rigorous evaluation methodology that considers a supplier's capabilities, economics, resilience risks, responsiveness, strategic alignment and any other merits or demerits. There can and should be a relationship between the evaluation methodology and the content targets and thresholds used in the Web crawling or crowdsourcing programs used in source discovery. In fact, these programs extend through the lifecycle of source relationship, becoming monitoring tools to determine when a supplier may be taking on risks that could affect the relationship or their performance.

Source Network Management. Yes, we have evolved from supply chain management to source network management. Sourcing executives manage processes that have experienced rapid growth in both their impact to the business and the pace of change. Legacy IT systems are architecturally inadequate and unable to provide multi-company visibility, collaboration and flawless transaction execution across an ever-growing network of customers, suppliers, outsourcing providers and employees. The state of the art includes multi-enterprise sourcing networks with active and passive sensors that provide all parties near real-time insight into the network's performance. Ideally, a multi-national enterprise with global sourcing responsibilities needs:

- An open architecture delivered as software-as-a-service that allows for multi-enterprise integration (e.g., all your suppliers, partners and customers) on one sourcing network

- A hosted (e.g., application service provider) reverse and forward auction platform to create dynamic pricing for new supplies/suppliers and the disposal/divestiture of non-strategic assets, respectively
- A deliberate sensor network and command center that provides near real-time insight on all aspects of the sourcing network

These turn-key capabilities can be implemented in months, and again there are opportunities for synergy between these technologies and the Web crawling and crowdsourcing programs. Assume a company needs land surveyors across North Africa. The Web crawling and crowdsourcing programs can identify many or all of the potential vendors. Following rigorous evaluation, thirty or forty of the firms can be loaded into the reverse auction vendor database (with the data entry performed via crowdsourcing). The vendors can then be invited to take control of their accounts and review the requests for quote (RFQ) posted in the auction. The RFQs might ask for any or all of the following:

- Blended hourly rates for all projects in the coming fiscal year
- Best price for Projects A, B, C and D (based on detailed project descriptions)
- Price per mile of surveying for a new pipeline or transmission line
- Best fixed price for medium- and large-scale projects

As the surveyors execute the project, their personnel or equipment can be outfitted with new sensor networks that are not Radio Frequency Identification (RFID)-based. These new sensors have three redundant communication methods including digital telephony, mesh networks and satellite communications to provide numerous readings of security, temperature, acoustics and other measures. Now the global sourcing executive knows when the teams are working and can estimate when the project will be completed. These non-RFID sensors have other merits. For instance, if a company uses RFID to monitor pharmaceuticals shipped from Hong Kong to Dubai it will get five readings during the trip. If the company uses the newer sensors, it receives more than 160 readings (dependent on power). This allows plenty of insight and time to re-order and deliver (by air) replacements for lots that do not remain within approved temperature ranges. Whether you are sourcing paperclips or airplanes, global sourcing organizations need transparency in the network to sense, to respond and to protect.

Sourcing Analytics. The metaphor for this approach is the book *Competing on Analytics*, which argues that competitive advantage can be sustained in the future by advancing the quality of one's insight and decisions—the outcomes of analysis. Sourcing analytics is the emerging analytic discipline focused on strategic sourcing. It must be a core competency of a global sourcing organization. Analysis is only feasible when you have the sources of data, the methods of analysis and the analysts who understand the mission or business context. Assuming a sourcing network and data collection programs have been implemented across the operation, it is possible to develop robust metrics for the monitoring and ongoing evaluation of the performance of the overall system. Large enterprises cannot have a homogeneous sourcing approach, but they can develop and track benchmark information for comparing the various sourcing approaches within different companies or business units.

Designing a sourcing analytics program requires an eye towards optimization. The global sourcing executive must ensure that information is available to identify when sourcing programs are not meeting their economic or quality goals. Having near real-time insight into subordinate sourcing organizations and programs can only be achieved with a custom reporting capability. In general, a data mart may also

be required to store, manipulate and manage the information necessary for sourcing analytics. To begin with, key metrics within the global sourcing executive’s dashboard include those available in the Supply Chain Council’s Supply Chain Operating Model² benchmark program. It benchmarks more than 50 items to generate the following core sourcing metrics:

Attribute	Metric	Definition
Reliability	Perfect Order Fulfillment	The percentage of orders 1) delivered “on time and in full” to request date AND/OR to commit date, 2) that meet the customer’s three-way match (invoice, P.O. and receipt) and 3) have no product quality issues.
Responsiveness	Order Fulfillment Cycle Time	The amount of time from customer authorization of a sales order to the customer receipt of product.
Flexibility	Upside Supply Chain Flexibility	The amount of time it takes a supply chain to respond to an unplanned 20 percent increase in demand without service or cost penalty.
Cost	Supply Chain Management Cost	The fixed and operational costs associated with the Plan, Source, Make and Deliver supply chain processes.
Assets	Cash-to-Cash Cycle Time	Adding the number of days of inventory to the number of days of receivables outstanding and then subtracting the number of days of payables outstanding. The result is the number of days of working capital your organization has tied up in managing your supply chain.

Today’s global sourcing executive needs to understand these metrics for each component business, for each region and for the entire enterprise. While these benchmarks are useful for discrete supply chains,

² Available online at <http://www.supply-chain.org>

one must adapt the measures for the unique scenario of a global enterprise. Below are some of the global and local considerations³ the global sourcing executive must manage, monitor and measure:

- | Global | Local |
|--|---|
| <ul style="list-style-type: none">• Network structuring for production and transportation optimization | <ul style="list-style-type: none">• Customer service management |
| <ul style="list-style-type: none">• Information systems deployment and control | <ul style="list-style-type: none">• Gathering market intelligence |
| <ul style="list-style-type: none">• Inventory positioning | <ul style="list-style-type: none">• Warehouse management and local delivery |
| <ul style="list-style-type: none">• Sourcing decisions | <ul style="list-style-type: none">• Customer profitability analysis |
| <ul style="list-style-type: none">• International transport mode and sourcing decisions | <ul style="list-style-type: none">• Liaison with local sales and marketing management |
| <ul style="list-style-type: none">• Trade-off analyses and supply chain cost control | <ul style="list-style-type: none">• Operating profit |
| <ul style="list-style-type: none">• Sourcing talent management | <ul style="list-style-type: none">• Human resource management |

Sourcing Resilience. Maintaining a resilient sourcing network requires the global sourcing executive to manage multiple issues, including:

- Acceptable levels of redundancy in the network
- Acceptable security
- Insight into business, network and supplier risks
- Rapid insight and response protocols for disruptions
- Continuity of sourcing planning with rehearsals/exercises

³ Christopher, Martin. Logistics and Supply Chain Management, 3rd Edition, (Harlow, England: Financial Times, Prentice Hall, 2005), pp. 225, with amendments.

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Many aspects of this resilience rely on appropriate insight available from a well-tuned monitoring activity. The automation/IT components outlined in previous sections of this paper are the building blocks for such insight, but they require analysts who understand the nature of today's threats. Companies, non-governmental organizations (NGOs) and even quasi-governmental organizations like sovereign wealth funds will not be immune to the foreign policy interests of competing nations, just as the East India Trading Company was not immune to the wars between France and Britain. There are a host of old and new concerns in these modern times: health risks, competition for commodities, security impacts degrading global transportation networks, cyber warfare between state and non-state actors, violent and non-violent actions by micro-populations within a state, etc. Additionally, there are plenty of media and information outlets that provide information on these topics.

Companies need access to personnel with competencies in research and analysis to address geopolitical and regional risks, information/cyber assurance, brand integrity/resilience and physical security—whether global sourcing executives choose to establish in-house analytic units or outsource it in a managed analytic service format. However, the outsourcing route ensures companies do not have to worry about training, certification and career progression of these analysts.

Summary. This paper summarizes the role that sophisticated analysis and emerging technologies can play in designing and implementing a global sourcing organization, whether for investments or key supplier relationships. It addressed the different dimensions of sourcing—information, people and training, technology and infrastructure—as well as the lifecycle of challenges for a global sourcing executive. Well-capitalized organizations are breaking new ground in global sourcing because of the speed, scope and sophistication of their investment and supply needs. They will also break new ground in the management and decision processes necessary to operate at their global scale. Strategic Sourcing 2.0 is within sight.

John Brennan is a partner at Innovative Analytics & Training, LLC and serves as a strategy consultant to the US government and several companies. Mr. Brennan develops approaches to strategic sourcing, including major studies to redesign sourcing organizations or the methods for acquiring key assets. He is a graduate of the US Military Academy at West Point and has an MBA from the Johns Hopkins Carey Business School.