

: What is involved in providing decision support for global enterprises?

by Dan Power

The theme for the upcoming 9th International Conference for AIS SIG DSS: the International Society for Decision Support Systems (ICDSS2007.org) is "Decision Support for Global Enterprises". The conference will be held in Kolkata, India, January 2-4, 2007. Papers for the published conference book must be submitted by May 10, 2006 to info@icdss2007.org. Abstracts and papers for presentation should be submitted by September 18, 2006.

Those of us involved with the conference are interested in leading edge decision support systems and interesting research related to the theme. The emphasis is on emerging enterprise decision making processes and DSS, new infrastructure for decision making in organizations and society, the role of Web technologies in decision making, and emerging theories and practices for Web-based knowledge management.

When one hears the term global enterprise, companies like IBM, Microsoft, Coca Cola and Procter & Gamble come to mind. My local newspaper, The Courier (www.wcfcourier.com), published its Annual Progress Edition focused on the "Global Marketplace" Sunday, January 29, 2006. So over morning coffee I reexamined my ideas for this Ask Dan!

Saul Shapiro, a neighbor and Courier Editor, summarized the special feature by noting "our quest was to find businesses in the Cedar Valley adapting to the changes in the global marketplace." Various feature articles focused on Wayne Engineering a manufacturer of garbage trucks, Engineered Products a manufacturer of engine filters, Fox River Mills a manufacturer of athletic socks, Doefer Companies a manufacturer of custom automation equipment, Delta Industries a manufacturer of archery targets, Deere a manufacturer of farm equipment, and Bertch Cabinet a manufacturer of custom kitchen cabinets. The orientation was clearly on products versus services and that reflects the historical economic orientation here in the Cedar Valley. In one way or another all of these enterprises can be viewed as global enterprises. Managers in each company seem to view markets and operations from a global perspective. Some of the companies are

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also culturally diverse or are moving in that direction. Managers in all of these companies need to communicate with peers, partners, suppliers and customers in various countries many miles from Cedar Falls, Iowa. Chief Executive Officers of these firms located in the Cedar Valley are at the center of economic networks that may be more or less organized and coherent.

Shapiro writes "In his best-selling book, 'The World Is Flat: A Brief History of the 21st Century,' New York Times columnist Thomas Friedman contends new technology has leveled the global economic playing field." Friedman visited the Cedar Valley in Fall 2005, but I chose to turn down the invitation to his speech and a reception. Why? His message seems simplistic and I didn't want to be one more face in the crowd.

Friedman is correct that major economic and cultural changes are occurring on a global scale and perhaps these changes are more important in the long run than the upheaval in Islamic nations and global terrorism, BUT the world is still ROUND! Because of improved communications technologies and the Internet perceptually the world seems smaller and more homogeneous, but it is still a medium-sized planet with diverse flora and fauna circling the sun. Globalization refers to the increasingly world-wide integration of markets for goods and services and does not necessarily imply political change or an increasing domination of global economic institutions. Whether you agree with me or Friedman improving decision support for global enterprises is important if they are to remain competitive. Also, the focus needs to be on much more than communications-driven DSS.

Let's examine what makes a global enterprise different from most other organizations and then examine how those characteristics impact the provisioning of DSS.

A major difference between global enterprises and localized enterprises is geographically distributed employees and facilities. The more globally distributed the enterprise, the more complex the potential range of interconnections and information needs. A corporation, a non-governmental organization, a global organization like the World Bank or a nation state, may have a central headquarters, but decision making may be more or less decentralized.

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The more centralized the decision making that is desired or required the more sophisticated the decision support of ALL types that is needed.

Another major difference between global enterprises and localized enterprises is the diversity in the composition of the workforce and cultural differences among decision makers. Diversity and cultural differences can impact decision making in both positive and negative ways and computerized decision support systems need to reinforce the positive impacts such as more diverse views on issues and mitigate negative impacts associated with cultural stereotypes.

Finally, managers of global enterprise have perceived a need to provide their goods and services in many diverse markets and source their inputs of raw materials, labor and services based upon cost, quality and availability rather than proximity. This globalization of production has become a core value in the firm and a driver of strategy. Hence DSS need to be designed and built to support the strategy.

Communications-driven DSS

In a global enterprise it is especially important to use technology to facilitate collaboration and communication. Communications technologies are central to supporting decision-making. Technologies include: LANs, WANs, Internet, ISDN, Virtual Private Networks. Tools used include groupware, chat, Videoconferencing, and Bulletin Boards.

Data-driven DSS

Global enterprises generate data in many operational systems and the only way to gain a "single version" of the truth is to create an integrated decision support data store that is accessible to all decision makers no matter where they happen to be physically located.

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Document-driven DSS

Friedman argued one of the "flatteners" is workflow software. In an earlier Ask Dan, the discussion was about BPM and DSS. Business process management (BPM) is another name for workflow software. Such software can computerize the flow of work in business processes. We can create survey software, web-based forms, and build document-driven DSS for requests and approvals. A web-based workflow system can potentially help global enterprises manage and improve decision processes. At e-workflow.org, a workflow is defined as "automation of a business process, in whole or part, during which documents, information or tasks are passed from one participant to another for action, according to a set of procedural rules." They cite the following key benefits: improved efficiency, better process control, improved customer service, more flexible re-design, and streamlining and simplification of business processes. When documents are a key part of a decision making process, paperless is "best" and the only practical alternative in a global enterprise.

Knowledge-driven DSS

Knowledge refers to what one knows and understands. In a global enterprise, knowledge can be especially hard to share and maintain. Knowledge-driven DSS can expand the base of explicit knowledge in global enterprises and facilitate distribution, access and retrieval of such knowledge.

Model-driven DSS

One might assume that model-driven DSS are the same in localized or global enterprises, but in many cases such systems will differ in the complexity of the quantitative model and in the demands placed upon the user interface. For example, it may be necessary to rapidly convert solutions into various currencies or to deal with widely differing tax rates and tariffs.

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Enterprise Architecture

Integrating decision support systems in an enterprise architecture for a global enterprise remains challenging. A computing architecture reflects the translation of the overall vision of an enterprise into specific technology solutions. More work is needed to incorporate decision support into an evolving distributed architecture.

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