: What is the role of decision support in virtual organizations?

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Computerized decision support helps make virtual organizations possible. DSS is an enabler and a facilitator of distributed and shared decision making. From a broad perspective, organizations are social arrangements of people who are working together to accomplish a shared goal. Adding the adjective "virtual" to the word organization, corporation or enterprise often means the people or employees work for multiple legal entities and rarely meet face-to-face. The people in a virtual organization work together and coordinate their tasks using information systems including decision support systems (DSS) that have been connected using telecommunications, the Internet and distributed computer applications. Virtual organizations require information technology to support both work processes and member communication.

Members of a virtual organization monitor and control performance, have a structure for decision making and use technology to maintain relationship across physical distances and time zone differences. Virtual organizations can
be very formal alliances or more informal social networks. Information technology is the key enabler for creating, maintaining and operating virtual organizations. An Economist (2009) article noted "The virtual organisation has an almost infinite variety of structures, all of them fluid and changing."

Verifone was an early example of a virtual organization. In a 1995 interview, then CEO Hatim Tyabji, said a virtual organization is a company that operates continuously through traditional barriers of time and distance. The entire company communicates around the clock via electronic mail and other information systems and tools. Managers converse via email, or by the transmittal of internal documents or by the company wide combined usage of a single informational database (cf., Galal, Stoddard, Nolan, and Kao, 1996). Tyabji said in an interview "E-mail is powerful in this company because there are no exceptions. There is no paper. There are no secretaries. Period. (Taylor, 1995, p. 115)" In general, virtual organizations can not exist without a communications-driven DSS
whether people are using a simple email system, video conferencing over IP or a virtual world technology like Second Life.

Pang (2001) identifies Crowley Communications, a public relations firm, as a virtual organization. Crowley "provides products and services such as press releases, brochures, photos and graphics. The firm has only one
full-time employee, Jolene Crowley, who is in charge of contracting teams of people to work on projects as needed. These teams are spread around California and the rest of the United States and are made up of specialists linked by computers and telecommunications equipment. This virtual

company partners with a
marketing firm for larger scale projects."

Small publishing companies are often virtual companies that rely on other companies to handle their printing and distribution. Some insurance and financial service companies are also virtual companies. Training companies and distance learning programs may be virtual organizations delivering services using the Internet. Some organizations create virtual teams with members who only interact using information and communication technologies.

One can also view a virtual organization as a network of independent organizations linked together by information systems and information technology to exploit market opportunities by sharing skills, costs, and
market access. Some virtual organizations operate on a project-only, temporary basis. Many virtual organizations operate as permanent and ongoing entities. According to Vine (1995), "a virtual organization uses technology to create new arrangements among employees, suppliers, customers, and others to quickly
gain new opportunities with greater efficiency and lower cost."

Some major characteristics common to virtual organizations include spanning traditional organization boundaries, working with partners, geographical dispersion, shared decision making or at least collaboration, extensive use of
information and communications technology, and no creation of a new legal entity. Some authors argue a virtual organization does not have a central office or a formal organisation chart. Supposedly the structure is more of a network than a formal hierarchy. Also, some authors primarily focus on the temporary and ad hoc nature of some virtual organizations.

In a virtual organization, excellent computerized decision support reduces coordination costs, improves collaborative decision making, enhances performance tracking, and assists in planning and action taking. Coordination and
collaboration can range from simple email, to cell phones, to groupware to virtual worlds. Organization control and performance tracking may include
key performance indicators (KPIs) accessed from dashboards. Financial oversight and management is generally centralized but accessible from the web. Project management may involve web-based project coordination and goal tracking. Various
approaches may be used for customer relationship management. In best practice organizations, Web sites are used for maintaining organization knowledge and documents. All five types of computerized decision support can and probably should be used in virtual organizations to increase effectiveness and enhance performance.

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What are the anticipated benefits of "virtual" organizations? There are eight major benefits discussed in the literature including: increased effectiveness; reduced costs; improved client satisfaction; reduced capital investment needs in
new businesses; expenses are greatly reduced; lead times are shortened; inventory is better managed; and a direct connection is established with the customer.

According to Charles Handy (1995) in a Harvard Business Review article, the technological possibilities of the virtual organization are seductive. But he argues its managerial and personal implications require rethinking old notions of
control. As it becomes possible for more work to be done outside the traditional office, trust will become more important to organizations. Handy proposes seven rules of trust. First he says trust is not blind: It needs fairly small groupings in which people can know each other well. Second, trust needs boundaries: Define a goal, then leave the worker to get on with it. Third, trust demands learning and openness to change. Fourth, trust is tough: When it turns out to be misplaced, people have to go. Fifth, trust needs bonding: The goals of small units must gel with the larger group's. Sixth, trust needs touch: Workers must sometimes meet in person. Finally, trust requires leaders.

In general, a virtual organization is a group with members and resources dispersed geographically, but which functions as a coherent unit through the use of information technology infrastructure, including various analytics and decision support. There will be many types of virtual organizations. Some will succeed and realize the anticipated benefits; others will fail for lack of trust and a lack of technological expertise. Innovative computerized decision support can help a virtual organization succeed.

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