

Surveying Trust in Virtual Organizations

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INTRODUCTION

Based on the results of the information and communications technologies (ICT), a new “digital” economy is arising. This new economy needs a new set of rules and values, which determine the behaviour of its actors. Participants in the digital market realize that traditional attitudes and perspectives in doing business need to be redefined. In this dynamic and turbulent environment that requires flexible and fast responses to changing business needs organizations have to respond by adopting decentralized, team-based, and distributed structures variously described in the literature as virtual-, networked-, cluster- and *resilient virtual* organizations (VO). One main aspect of this approach is that organizations in this environment are networked, that is inter-linked on various levels through the use of different networking technologies.

According to experts who approach production systems from the mutual benefits for enterprises and humans (users/workers/customers) a balance of organizations and humans has to be developed in order to reach a high level satisfaction of both sides. Satisfaction for enterprises means acceptable profit level (originating, for example, from flexible and fast reaction for market demands, quality of products, innovation) for people means, for example, salary, interesting work, helping other people, or time with their families, basically to have a type of freedom. Employees who are satisfied (have freedom and flexibility) are better workers they are better motivated in their work as well.

Malone appoints in his book (Malone, 2004) that the convergence of technological and economic factors (especially the rapidly falling cost and the fast growing technical possibilities of communication) is enabling a change in business organizations. It will be (or it is already) possible in some sectors (e.g., in some service types) that workers aren't employees at all, but electronically connected individuals living in different geographical places.

Some of the characteristics of a future company (or already existing companies) that are related to collaboration and trust are as follows:

- **Type of organization:** Decentralized organizational structures (loose hierarchies, democracies, external markets, and internal markets) that will be based on infocom technology but centered around stable human values,
- **Style of management:** Move from the command-oriented management to the coordination-based approaches (new skills are required).

Virtual organizations are among the organizational structures that match characteristics listed above. The business environment initiates the changes of a company; the type of organization changes first (e.g., local, geographically distributed) then according to the organizational needs changes the communication infrastructure. Based on these changes alter the management style, the way of collaboration and the behavior of human workforce.

In this new organizational environment the new modes of collaboration, realized by new communication tools need new modes of trust building, as the application of conventional rules cannot be applied, or have low efficiency. The lack of trustworthy security services is a major obstacle to the use of any information and communication systems in private, in business (B2B) as well as in public services. The different types of VOs became important part of the global economy so the problems in their collaboration and communication can cause significant losses and risks. This is the reason why trust turned into a significant factor in the operation of virtual organizations.

This chapter describes the basic elements of the different types of working partnerships and trust, and introduces the possible ways and main characteristics of trust building in the new production environment giving a survey of the above listed elements.

BACKGROUND

Virtual Organizations

A virtual organization (VO) is a geographically distributed organization whose members have a long-term common interest or goal bind, and who communicate and coordinate their work through information technology. VO refers to a temporary or permanent collection of geographically dispersed individuals, groups, organizational units, which do or do not belong to the same organization, or entire organizations that depend on electronic linking in order to complete the production process. They are usually working by computer (e.g., e-mail and groupware) while appearing to others to be a single, unified organization with a real physical location. The virtual corporation, virtual-, real time -, enterprise cover mainly the same term as VO.

According to Townsend et al. (1998) there are five key considerations for organizations moving from conventional communication to virtual one: (1) the increasing rate of flat or horizontal organization structures; (2) increased inter-organizational cooperation, as well as competition; (3) increased adaptation to the changes in workers' expectation of organizational participation; (4) the shift from simple production to service or knowledge intensive working environments; and, (5) the increasing globalization of trade and company activities.

A networked organization has multiple leaders, lots of informal links and interacting levels. The links are the various coordination and "agreement" mechanisms. In a network, high degrees of informal communications (both face-to-face and over electronic networks) achieve success where formal authority and communications in hierarchical organizations often fail. Mutual links and reciprocity across the links are what makes networks work. So, informal communication is a key feature in virtual organizations. Because of a lack of formal rules, procedures, clear reporting relationships, and norms, more extensive informal communication is required. Formal communication is non-interactive, impersonal, and involves use of media such as reports and structured meetings.

Four distinct virtual organizational types can be differentiated according to (Palmer & Speier, 1997) based on the scope of the work, the projected length of time spent in the virtual work, types of projects, the range of involvement and the number of personnel

involved as criteria: permanent virtual organizations, virtual teams, virtual projects, and temporary virtual organizations.

Communication Technologies for Virtual Organizations

As the base of virtual organizations are the interdependent, separate production teams/units, the cooperation and collaboration has of vital importance. The structure, the communication systems and the collaborating people/teams/organizations that define today's organizations characteristics must be harmonized to accomplish complex, demanding tasks. The collaboration is done through different media according to the actual demands of the tasks. The conventional tools are the telephone, fax, writing letters. On the next level are the computer network-based solutions e.g., e-mail, ftp, telnet, groupware. A higher quality of communication media is the Web-based communication solutions. Through Web pages a secure, easy and fast communication can be realized.

A new way of connection is the application of different wireless technologies for communication in virtual organizations. Wireless technology means mobility, namely individuals are available independently from location and time. This mobility is an important attribute of today's organizations.

This mobility can be achieved by using different types of wireless networks as satellite communication, wireless wide area networks (WWAN—different types of mobile phone systems—GSM, GPRS, UMTS and iMode), wireless local area networks (WLAN, such as Wi-Fi, also called mobile Internet (IEEE standard 802.11a/b/g) and wireless personal area (or Pico) network (WPAN— e.g., Bluetooth, IrDA2). These networks can be interconnected, so the user can be reached really at any place through a type of wireless connection.

An important service of mobile phones is the MMS (multimedia messaging service). The multimedia element differentiates MMS from other messaging offers by integrating the ability to send and receive photos, images and even video clips by camera phones. This message type is significant also in trust building.

WWAN solutions are spreading quickly also in enterprise communication solutions. Developers and service providers offer compact mobile phone-based packages for enterprises that make receiving e-mails possible and browsing company databases from anywhere.

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