



INCORPORATING INNOVATIONS INTO ORGANIZATIONS FUNCTIONING: VIRTUAL VERSUS TRADITIONAL FIRM

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Received 13 October 2005; accepted 25 November 2005

Abstract: The aim of the paper is to reveal specific features of functioning of virtual organizations in order to suggest directions of efficient management in traditional firms. Specific features of virtual organizations are classified and compared to those of traditional ones. The authors suggest the ways enabling to incorporate innovation into management of traditional organization in order to achieve more efficient performance of latter ones.

Keywords: virtual organizations, management innovations, information technology.

1. Introduction

There are some discrepancies in literature describing the term of virtual organizations; different authors mention a whole bundle of different features that are supposed to be more or less characteristic to this type of organizations. However most of them agree on the definition of a virtual organization as a set of individuals and/or institutions linked by information technology to share resources [1].

It is not essential for members of such organization to be related hierarchically or subordinately. Informational/communicational is the main type of relation that keeps members of a virtual organization together [2].

The substantial function of any organization is information management. Information is a private asset of a firm which is planned, developed and secured. Information management is an inner operation of sorting informational resources which helps achieving goals of a firm by using those resources in the right situation [3]. Traditional organizations engage separate employees – information managers to gather, sort and store this asset, while virtual organizations use information systems to implement this function. The latter example shows only one of many superior features of virtual organization.

2. Characteristic of Virtual Organizations

Virtual organization has a little or no formal structure. Typically, it has only a small group of permanent employ-

ees and modern information systems for organization management, administration and work coordination. As the needs of the organization change, temporary workers are brought in, facilities are leased and basic support services are outsourced to meet the demands of each unique situation [4]. In fact, companies such as Nike, Liz Claiborne and Dell Computer sell hundreds of millions of dollars' worth of products even they outsource most of their manufacturing [5]. The temporary workforce in virtual organization changes with the current situation: some people are leaving the organization, while others entering. Outsourced services also change to meet the demands of customers. In other words, the virtual organization exists only in response to its own needs [5]. This kind of organization structure provides virtual organizations perhaps the main advantage versus traditional ones – flexibility. Because of a simple, non-hierarchical structure decisions can be made rapidly and the react time to any changes is minimized. The possible structure of a virtual organization is illustrated in Fig 1.

On the other hand, because of a weak emotional relationship between members of a virtual organization it is less likely that a strong employee loyalty or team spirit is to develop [3].

3. Specific Features of Virtual Firms' Management Conditioned by Innovations

Information system is a system for transforming raw data into information and transmitting it for use in decision making [3]. The relationship between virtual organi-

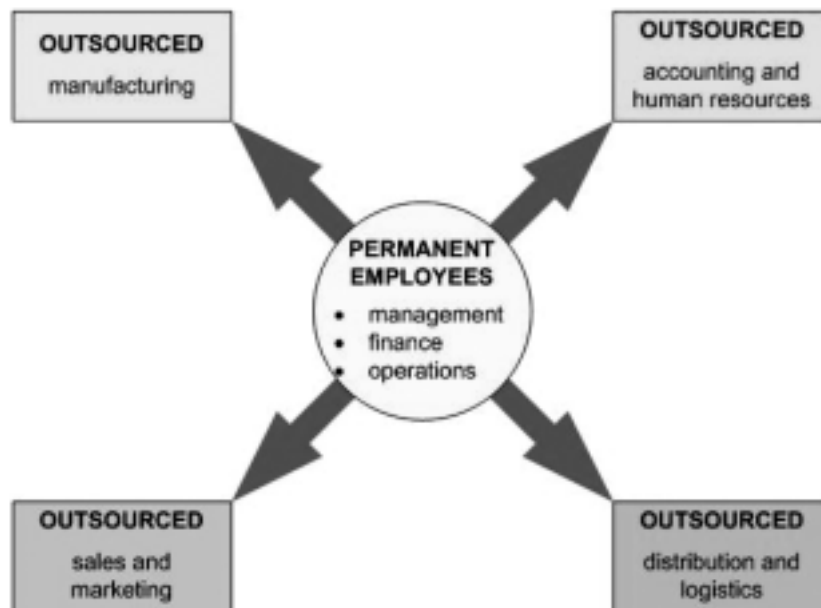


Fig 1. Structure of a virtual organization

zations and information systems is significant: the existence of virtual organization directly depends on the operation of information systems. Although any disorder of information system may result in disorder in work, virtual organizations rely on such systems to improve performance.

Traditional organizations usually use information systems for performing technically oriented tasks such as storing data about deposits and payouts, simulating engineering solutions, sorting specific advertisements and so on. Virtual organizations use information systems more widely: for organization management, organizational problem analysis, quality control, risk analysis, financial analysis and similar.

Information networks interconnecting management information systems are the main tools of virtual firms that let to minimize the amount of permanent employees and simplify their structure. Virtual firm sends information to its members, suppliers and customers by means of information technology, so it consumes less time and expenses than doing the same in traditional ways. It is obvious that such firms require fewer employees. For example, a customer of a virtual firm may call to a 24 hours a day working call center serviced by an interactive voice response system [6] and give or specify his orders, find out his balance etc. The service in this example does not require any permanent employees. It is implemented using a special type of computer hardware and software.

Information networks that let upper-level managers to communicate directly with workers provide opportunity to eliminate middle layers in organization management structure. Operation managers that govern lower-level employ-

ees in traditional organizations are replaced by information networks and management information systems by virtual ones. Such interconnected information systems coordinate all activities of all members of a virtual organization and let an organization to avoid difficulties caused by geographical distances. The most popular manufacturer of management information systems is German SAP AG [7], which in collaboration with database manufacturer Oracle [8] occupies the most part of information management system market in the world. An example of management information system architecture is shown in Fig 2.

Information systems rely on data transmission networks to exchange data. The biggest and thus the most popular data transmission network in the world is the Internet. It is the main means of virtual organization members' communication.

4. Features of Relations of Business-to-Business and Business-to-Consumer in a Virtual Firm

The Internet network essentially changed the ways of business communications. In a few years this worldwide network influenced the way of communication between customers, suppliers, manufacturers and firms by providing new possibilities and also enabling unexpected competitive threats [9].

Communication via data transmission networks is a necessity for virtual organizations. In this section the ways of communication based on the Internet network mostly used by virtual organizations, their members, partners and clients are described.

E-mail is the most widely used means of electronic com-



Fig 2. Architecture of a management information system

munication in organizations. E-mail enables users to create, send and read messages using computer. These messages can be formatted either by plain text or HTML (HyperText Markup Language) parameters. Various data files can be attached to an e-mail message.

Discussion mailing lists are groups where registered members can discuss about created topics. Each registered member can follow the discussion or take part of it.

Instant messaging, as an objective way of communication is used in the biggest organizations of the world. This technology enables an unlimited number of users to communicate in real time using either in written, audio or video forms. Users of instant messaging can also create conferences in many forms.

Internet telephony enables users to use the Internet for voice transmission over VoIP (Voice Over Internet Protocol) protocol. This technology creates an alternative for fixed telephone connection. The rates for calls to fixed or mobile phones are usually lower than using traditional telephony services. However, Internet users can intercommunicate for free.

File transfer using FTP (File Transfer Protocol) is one of services of the Internet which enables users to upload or download files to/from file servers on the worldwide network.

5. Virtual versus Traditional Organizations

The purposes of both virtual and traditional organizations are the same, but the difference is in the ways of reaching them. Organizations of both types are operating in the same environment but different work style conditions dif-

ferent sensitivity to impact of environmental components. Table 1 provides the comparison of the main characteristic features of virtual and traditional organizations.

Recall that the main environmental components, affecting both types of organizations are: politics, economics, social sphere and technology.

Political component includes problems in different organizational relationships (legislation, tax system, monopoly etc.). For example, different tax systems in different countries present lots of difficulties for electronic commerce [10]. The biggest virtual organization in the world Amazon [11], which specializes in selling printed publications and audio records encountered the German law on price regulation and could not compete with local book sellers.

Economical component outlines wider development of economics in country, region or global context. The main factors of this component are interest rates, evolution of

Table 1. Summary of virtual and traditional organizations' features

Feature	Virtual organizations	Traditional organizations
Organizational structure	None to small	Small to large
Organizational system	Informal	Formal
Permanency of employees	Low	Medium to high
Usage of information technologies	High level	Low to medium level

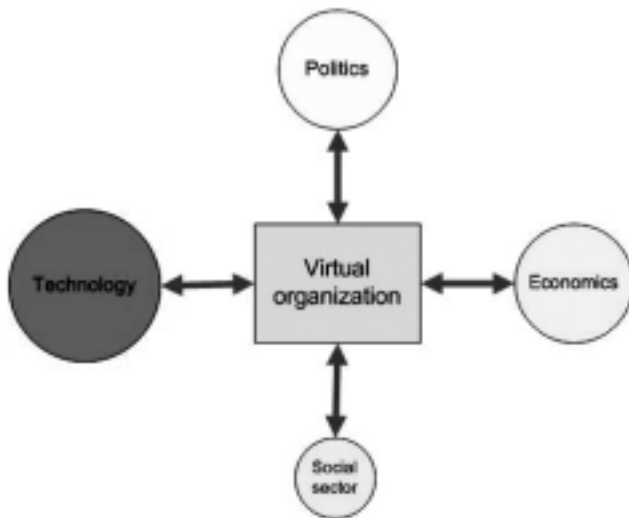


Fig 3. Impact of environmental components on virtual organizations

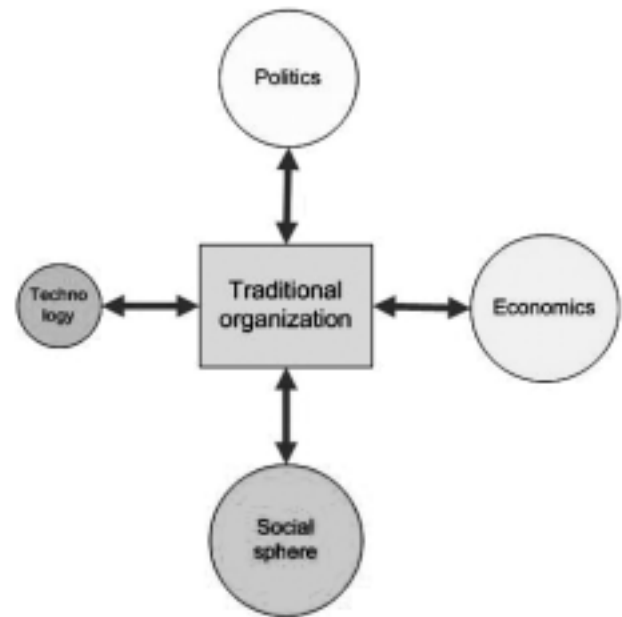


Fig 4. Impact of environmental components on traditional organizations

stock exchange and other criteria of economic growth. Social component includes demographical, social mobility of people and opinion to work and leisure. Technological component involves new products coming, development of data transmission networks, computer and related goods. Figs 3 and 4 present the differences of the impact of environmental components on both virtual and traditional organizations.

As a result of virtual and traditional organizations' features comparative analysis the authors of this paper suggest to enrich management of traditional organizations by adopting some elements of virtual ones. The essential elements to adopt are:

- Usage of management information systems for simplifying organizational structure;
- Usage of information systems for implementing accounting, marketing and work process control;
- Usage of data transmission networks for Business-to-Business and Business-to-Consumer communications.

6. Conclusions

Virtual and traditional firms are both profit seeking organizations operating in the same environment. Nevertheless, due to specific features of operation style virtual and traditional organizations displays different sensitivity to core components of environment: technology and social sphere.

Virtual organizations rely on information technology use, which allows keeping organizational structure simple

and make Business-to-Business and Business-to-Consumer communication less time and cost consuming.

Traditional organizations rely more on their social structure, maintain and foster human relations such as trust, loyalty, group work etc.

Hence, both virtual and traditional organizations have their own advantages and disadvantages. Despite high attractiveness of virtual organizations, traditional firms can not be replaced by former ones. The incorporation of innovations into traditional firms would allow extending usage of information technologies and hence improving performance of traditional organizations.

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INOVACIJOS IR ORGANIZACIJŲ FUNKCIONAVIMAS: VIRTUALI IR TRADICINĖ FIRMOS

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Santrauka. Straipsnyje siekiama atskleisti specifinius virtualios organizacijos funkcionavimo bruožus, kuriuos galima būtų panaudoti tradicinių firmų valdymui efektyvinti. Virtualių organizacijų charakteringi bruožai klasifikuojami ir detalai lyginami su tradicinių organizacijų bruožais. Autoriai pasiūlo būdus, padėsiančius inkorporuoti inovacijas į tradicinių organizacijų valdymą ir taip užtikrinti efektyvesnį jų funkcionavimą.

Pagrindiniai žodžiai: virtualios organizacijos, inovacijų vadyba, informacinės technologijos.

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