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THE INSTRUMENTAL USE OF INFORMATION TECHNOLOGY: THE INCREASING IMPORTANCE OF VIRTUAL ORGANIZATIONS

Demokaan Demirel
Kocaeli University

Abstract: Information reveals new products and technologies with distinctive features for organizations. It develops organizational working techniques. In the age of information, every organization is carrying out its activities on information technologies. Information technology provides close control of staff in the organizations and reduces the possibility of errors. It sets the ground for timely changes necessary for the organizations. It provides efficiency in collecting and analysing information necessary for administrative tasks. It gives managers more time to plan and execute administrative affairs. Thus, the organizational structure is no longer based on work; divided by information. Information technology has an impact on achieving competitive advantage, increasing productivity and performance, and creating new tasks and job descriptions. Virtual organizations, the organizational model of information technologies, are formed as a result of the integration of organizations with different knowledge and expertise towards a common goal. Virtual organizations gather various resources from different organizations in one project and enter the market with new products and respond to changing customer choices timely. Through information and communication technologies, it offers specialization, acceleration of business and operations, reducing costs and opening to the global marketplace. Information technology is one of the most important success factors for virtual organizations with its constantly renewed and evolving structure. Virtual organizations support dynamic changes for staff in the organization's working environments and duties. This study aims to evaluate the effects of information technology on organizations move in to a virtual environment. In the study, the concept of informatics and its contributions to the process of organizational change have been examined. In this context, the effects of information technology on business strategies, hierarchical structure, operational costs and staffing, decision making and changes in organizational processes are emphasized. In the second part of the study, characteristics and types of virtual organizations which are organizational model of information technologies, advantages and disadvantages of virtual organization structure, factors necessary for the success of virtual organizations are evaluated.

Keywords: Informatics, information technology, organizational structure, organizational change, virtual organizations.

Introduction

The basic condition for organizations to be productive is to produce more with less input. In order to provide efficiency in organizational activities, besides saving time and costs, it is also important to provide customer satisfaction. There are increasing differences among customers' expectations from organizations, preferences for goods and services. Globalization promotes competition among organizations. With increasing global competition, it has become even more important to lower the cost of delivering goods and services. In this respect, organizations are turning their investments into information technology. Information technology is helping to organizations to reach the right information fast, making quick and correct decisions in determining strategic options. One of the most important advantages of information technologies is that information is processed efficiently, stored and, when necessary, access to this information is easy. Information technologies have been influential on all the managerial activities of today's organizations. The presence of technological initiatives based on innovation in the strategic plans of different organizations is a sign of this. Information technologies have an important role in increasing communication between departments and departments, reducing hierarchical levels, staff involvement in managerial processes. Information technology has increased the effectiveness of the decision-making process in organizations. In shortening the business processes

and change management within the organization, the cost-reducing effect of information technology is seen widely. One of the important innovations of information technology for the transformation of classical organizational structures is virtual organizations.

Virtual organizations are the inter-connected channels of information and communication technologies for the production of certain goods and services by organizations in different regions. Such a structure is the result of the integration of organizations with different information and specification. Virtual organizations are among the postmodern organization types that go to cooperation through communication technologies towards a common goal. It is important that virtual organizations respond instantly to changing customer demands. A virtual organization has the ability to act flexibly. Staffs in this type of organization specialize in specific areas and can use the organization's basic skills more effectively, but the formation of virtual organizations requires a mutual trust relationship between organizations from different sectors.

It is also difficult to provide conflict management among organizations with different working styles. Problems can also arise controlling of operational activities and personnel in virtual organizations. This situation also makes it difficult for the performance of staff to be assessed correctly.

This study examines the use of information technology within organizational structures in the context of the virtual organizational model. In the first part of the study, the concept of informatics and the contribution of organizational change were evaluated. The effects of information technologies on organizational strategies, hierarchical structure, and staffing, costs, organizational decision-making, and communication process are discussed. The changes that these technologies have made in organizational processes are mentioned. In the second part, virtual organizations, which are the organizational model of information technologies, are discussed. The characteristics and types of virtual organizations, the advantages, and disadvantages they offer, critical success factors for virtual organizational structures are examined.

1. The Concept of Informatics and ITS Contributions to Organizational Change

It is clear that today's organizations need effective information management in terms of obtaining, sharing and reproducing the necessary information to reach their goals. Information, as well as emerging new technologies and products, improves current working styles and technologies (Er, 2007: 5; Özmen, 2002: 2). Informatics is the most common form of information processing, storage, transmission of information to technical tools easily and fast, and the provision of active information flows (Kök, 2006: 125). In the information age, organizations operate based on information technology and business processes turn into productivity gains. Most products and services are produced with the help of information technologies. Informatics is the opposite of the uncertainty that causes decision-making process disrupted. It is a saleable product at the same time. It is the most important intellectual capital. Not only it does raw data have to be processed and used; it also works to produce new information (Daldal, 2008). Informatics technology is an integral part of the organizational design, based on information systems and software. Such a model processes coded information, crossing time and space barriers, and distributing information equally among administrative units (Child, 1987: 48).

The evolution of informatics technologies can be examined in three stages (Bradley et al., 1993: 8):

Information Processing Period: The most important benefit expected from computers during this period is the automation of the factory to ensure that the organization works efficiently. As a result of this automation, in the 1970s, there was a decrease in blue-collar workers in organizations and this process continued into the 1980s.

Micro Period: It is based on the use of information technologies by information workers hat developed in the early 1980s. The new paradigm, aimed at meeting the needs of mid-level managers, is an informative effort performed increasing the effectiveness and productivity of organizational staff. Inventions such as micro-computers and word processors have been a milestone of this period.

Network Period: In this period, networks were established and spread among the computers. Information is provided to the staffs of the informatics technology through automation of lower level jobs. Investment and system development activities in the field of systems that provide the necessary data to the information workers have been intensified. Thus, informatics technology has begun to be used actively in the control of the collection, storage, processing, and display and controlling of information (Powell and Micallef, 1997; Bennett, 1997: 263).

Onat (2007: 70) classifies informatics technologies in different ways. Capture technologies collect and transform information into digital form with input tools. Storage technologies are a variety of tools designed to store and retrieve information in digital form. Processing technologies have created the necessary systems and application

software for the performance of digital informatics technologies. Communication technologies have produced tools, methods, and networks for transferring information in digital form. Demonstration technologies have created a variety of output tools that will display digital information. Laudon (2003: 28), who examines the positive and negative effects of informatics technologies, lists them as follows: Informatics systems can calculate and process documents on paper much faster than humans. It delivers information to millions of people instantly. It helps organizations learn more about purchased products and customer preferences. Such systems, however, can lead to the disappearance of professions carried out by personnel.

The collection of detailed information about people through informatics systems violates the confidentiality of private life. Excessive use of informatics systems can lead to technology-induced stress and other health problems. Failure of informatics systems can disrupt many activities at work.

1.1. Effects of Information Technologies on Organizational Strategies

Organizations that face global competition strive to use information technologies to differentiate, to move more flexibly and to create their own unique markets (Earl, 1991: 4). At this point, one of the most important issues in organizational management is how to benefit from information technologies supporting organizational activities and contributing to its competitive advantage. The role that information technology plays in achieving competitive advantage may be evident by examining value activities. Value activities are physical and technological activities that an organization performs for its customers (Tekin et al., 2003: 333). By applying information technologies to value activities, the costs of these activities will be reduced or the output of activities will be differentiated. In this case, organization will gain competitive advantage. Automatic material management or storage systems will reduce time and operational costs in storage, retrieval and distribution of materials for organizational logistics (Cats-Baril and Thomson, 1997: 335).

Organizations can use information technology to prevent or make it difficult for new competitors to enter the market. By investing information technologies operationally, they can increase barriers to market entry. Information technologies can create a strong link by providing important relationships with customers and suppliers. In this way, customers and suppliers can be prevented from transferring to competitors (O'Brein, 1994: 214). On the other hand, inter-organizational systems that can quickly meet customer needs or enable working with low inventories provide significant cost savings. At a time when the importance of customers is on the rise, information technology enables the complex products to be marketed at fair prices by keeping costs constant. At the same time, information technologies will spread strategic alliances among the organizations and make possible different collaborations. In this regard, information technologies support strategies to focus on cost leadership, differentiation and goals (McFarlan, 1991: 75; Schultheis and Summer, 1995: 61).

Information technologies are attracting a great deal of attention at the sectorial level achieving outputs at the lowest cost within the scope of the production economy and diversification of products and services. Information technologies expand the competitive environment in the markets by creating important investment fields for new-comers to the market (Earl, 1991: 32). In addition, these technologies can change the nature of goods and services in a specific sector and directly affect the quality of goods and services by shortening product development and distribution processes (Schultheis and Summer, 1995: 61). Information technologies improve the cost structures of organizations by enabling a very common network to be established at the sectorial level and provide important developments in organizational activities and service quality levels of organizations. It is also seen that the rate of substitution between products and services at the organizational level has changed with the opportunities offered by information technologies (Kök, 2006: 130). Organizations are now able to arrange their existing products to the needs of their customers with a small additional cost.

1.2. The Effects of Information Technologies on Hierarchical Structure, Personnel Relations, and Operational Costs

Developments in the field of information technology have removed the barriers between the units, institutions and even countries. It increased interaction between lower-level staffs and upper-level superiors and citizens and the state (Siegel, 1995: 21).
The development of information technologies in organizations can be examined in six periods (Yılmaz, 2007: 14-15):
  ✓ **Functional Hierarchy without Automation (1950):** For each function, information is kept manually by the people. The transition to computer possibilities is a radical innovation.

- ✓ **Functional Hierarchy with Object-Oriented Automation (1960):** Communication in the organization is vertical. Horizontal communication and automation have been developed. Software applications have been introduced
- ✓ **Functional Hierarchy with Shared Database on Main Computer (1970):** Software applications have become integrated with business processes. A database management system has emerged. Organization is hierarchical with vertical information flows.
- ✓ **Process-Oriented Organization (1980):** Redesigning professional processes is on the agenda. Three-tiered software architecture has emerged with user graphical interface systems.
- ✓ **Supply Chain Management (1990):** Data warehouses are used in factories and distribution centres. In the institutional level, internet applications have been supported by wide area networks.
- ✓ **Future-Web-Focused Organizations**: High-broadband networks and low communication costs have strengthened cooperation among organizations and increased communication possibilities. As the information systems take over the hierarchical levels of management and accelerate their management tasks, hierarchies and matrix organizations give place to temporary ad hoc structures and team-based organizations. Administrative control in hierarchical structures has now changed. Coordination of works in the organization and decision-making takes place within teams. Computer networks reduce hierarchical levels so that staffs work as a team. The working units in the informatics age have decreased. Postmodern organizations have moved away from the mechanistic organization idea of classical management theory. Personnel have the ability to express their personal thoughts and decisions in a transparent business environment (Drucker, 2000: 211).

It is important to emphasize the shared mission and vision of an organization in a new organizational structure, to define different learning opportunities for managers, and to emphasize management's commitment to personnel (Thomas and Ely, 1999: 141-142).

Today, the ability to substitute the workforce with information systems reduces the necessity of transferring authority by creating new organizational levels. Another effect of the information systems on the structural dimension is that some parts of the organization have to be removed, some parts to be merged, or the organization to be functionally re-departmentalization (Bengshir, 1996: 240).

Employment opportunities in the new job areas arise when information technologies enter organizations. In particular, there is an increasing need for staff to specialize on information technology and to be employed at managerial level (Bengshir, 1996: 264).

Information technology undertakes control works done by staffs in organizations and reduces the possibility of making mistakes. It broadens the field of control by monitoring staff behaviours more closely. Thus, the organizational structure becomes less complicated. The organizational process is facilitated; therefore the efficiency and the competitiveness increase (Özarslan, 2007: 62; Turunç, 2006: 113). These advantages and the reducing effect of IT technologies on organizational costs can be considered in three part (Ramirez, 2003: 44-48):

• **External Coordination Costs:** Information technologies provide organizations the ability to communicate with suppliers and customers at any time and instantly be aware of market innovations. It prevents the disadvantages that may arise from asymmetric information.

• **Internal Coordination Costs:** Information technologies ensure that organizations operate more efficiently by reducing internal costs with an efficient distribution network to be established within the information technology.

• **Operational Costs:** As the scope of information technology increases, the network of suppliers and customers for the market will also expand. In addition, no additional costs will be incurred; because, all information provided to institutions and individuals is stored and used beforehand.

1.3. The Effects of Information Technologies on Decision Making and Communication Processes

Information technology influences the decision-making function by increasing the speed of researches, leaving right choices to programs and changing the techniques used for performance evaluation (Whisler, 1970: 62). The first result of the decision-making process with the introduction of information technologies in organizations is the gathering and integration of different decision centers. The second result of decision-making with the widespread use of computers from information technologies has changed in decision centers. Information gathering and processing function remain responsibility of the lower levels of the organization with the centralization in decision-making. Decision-making responsibility is gradually shifting towards to higher

administrative levels. Moreover, decisions are becoming measurable and objective (Whisler, 1970: 67). Information technology influences decision-making effectiveness in various ways. Computers make it possible to increase the number of decisions connected to a particular result. It shortens the planning period by laying the groundwork for making the necessary changes in time. Information technologies enable the administrators to make more rational decisions by gathering and analyzing the necessary information. It accelerates staffing at the operational level. It gives more time to managers in the planning and executions of administrative by transferring routine operations to subordinates (Bengshir, 1996: 255).

Lambart and Peppard (1993: 199) argue that new organizational structures depend on the capacity of information and communication technologies. While all power and authority in classical organizations are in the upper management levels; in the new organizational structure, authority and responsibility have shifted to lower levels and the decentralization has increased with management information systems. The management information system allows more direct communication than horizontal communication. Group decision support systems provide common information to group members. The importance of interpersonal communication has increased with computer-aided information systems (Bengshir, 1996: 258).

The staffs in the organization are involved in determining the standards of education. The staffs are relatively independent from the control and evaluation. This situation has provided the possibility of autonomy to the staffs. As information systems have increased coordination and communication between units and departments, organizations have turned to horizontal departmentalization (Pollacks, 1997: 19).

1.4. The Role of Information Technologies in Process Innovation

Information technology is an important tool in the redesign of business processes and is seen as the fundamental provider or facilitator of radical process innovation (Hammer and Champy, 2006; Davenport, 1993). According to this; these technologies are part of all radical change studies and are the basic catalyst. The introduction of the use of information technology in an organization or the improvement of existing processes increases efficiency by ensuring top-level performance (Barnatt, 1996: 73). These technologies enable control of production processes by systematizing the content and shape of production specifications (Zhang and Lado, 2001: 151).
Information technology reduces or completely eliminates works based on human power within an organization. It enables to obtain detailed process information in the understanding of organizational objectives. It allows changes to the order of tasks in the process. It provides coordination between tasks and processes through following process situation closely. It can be used in the interaction of the two parties in the process and can eliminate intermediaries from the process (Davenport, 1993: 51).
The information processing capacity of processes is increasing with the use of information technologies. Decision-making process is getting easier. The possibility of making mistakes is reduced by providing intra-organizational integration and coordination (Üreten, 1998: 476-477).

1.5. The Disruptive Effects of Information Technologies on Organizational Rules

According to Hammer and Champy (2006), information technology is replacing rules that restrict the way in which organizations do working styles. Common databases and information can be found in more than one place simultaneously. Thanks to professional systems, a general expert can do the work of a specialist. With telecommunication networks, organizations can benefit from the advantages of being centralized or not at the same time. Decision making with decision support tools is now the mission of all staff. With wireless data communication and portable computers, staffs can send and receive information from any place. It can be effectively contacted with customers through interactive video discs. Desired information is obtained easily with automatic detection and research technology. High-performance information processing technology enables reviewing of organizational plans regularly.

2. Typical Examples of Instrumental Use of Information Technologies: Virtual Organizations

Virtual organizations are those organizations in different geographical regions connected by the help of information and communication technologies for the production of specific products and services. Such organizations are not hierarchical and centralized. It is a network-type market mechanism in which people and resources are allocated in response to projects and problems (Ahuja and Charley, 1999). The developments in information technology and the advantages that these developments offer are facilitating the emergence of virtual organizations. The basis of virtual organizations is information and specialization. Information and specialization are combined with the possibilities of communication technology. Virtual organizations are

formed as a result of the integration of organizations with different information and speciality towards a common goal (Koçel, 2010: 440-441).

In this part of the study, features and types of virtual organizations, advantages and disadvantages of these organizations and success factors for virtual organizations are examined.

2.1. Features and Types of Virtual Organizations

Unlike a non-virtual organization, a virtual organization is a set of teams that exceed the boundaries of time-space through computer and communication technologies (Lipnack and Stamps, 1997: 6). It can also be seen as a temporary computer network that independent companies, suppliers, customers and even former competitors can make it dependent on information technology (Byrene, 1993: 102). Virtual organizations form the basis of cooperation, information and communication technologies for a common purpose and have features such as vertical integration, globalization and mutual cooperation (Grumshaw and Sandy, 1998: 47). In virtual organizations, the face-to-face relationships of individuals have decreased. Many staffs spend a significant portion of their time at the computer. The main use of computers at this point is to meet the need for intensive communication among people. The problems of transmitting information vertically in virtual organizations to ensure the necessary information arrive on time to the necessary places have removed. The horizontal and diagonal flow of information is more intensive and communication is made directly between the relevant units (Goldman, Nagiel, and Preiss, 1994: 206).

The most obvious difference that distinguishes a virtual workplace from a real workplace is that it is organized around basic professional processes and is customer-focused. Jobs with sharp boundaries in the traditional workplace have been disappeared. Processes including the whole of the jobs have gained importance. Staffs have had to have full information of their jobs, gain new skills, and take more responsibility (Crandal and Wallace, 1998: 25). Especially today, the most important reason why organizations create virtual organizations within themselves and with each other is that they can respond to rapidly changing customer demands timely (McIntosh, 1995: 46).

It has been seen that organizations have passed through various stages in becoming virtual. Above all, it is necessary to establish a computer network within the organization (intranet) and all operations must be done with the help of computers. The organization must decide on basic capabilities, and it must do the jobs outside basic capabilities through "outsourcing". Strategic business partners should be identified and staffs should be made informed and sensitive about organization's mission, vision, and strategic goals (Ulrich, 2001: 54).

Information and capabilities in virtual organizations are in a disorganized network. A virtual organizational structure is based on a capacity that brings together the disordered skills and abilities among multiple locations. Therefore, these technologies provide an easier structure to support disorganized staffs and work teams. Virtual organizations support dynamic changes in organizational working environments and tasks. Integration in a virtual organization means bringing cooperation and trust to a higher level. It is also benefited from the synergy of staffs in the integration (Pang, 2001: 1-6).

Virtual organizations are made up of a three-dimensional model such as modularity, heterogeneity, and cyber diffusion. In a virtual organization, there are modular units that are small and manageable with centrifugal decisions. Heterogeneity refers to having different but complementary performance profiles, taking into account the strengths and capabilities of the units. As a consequence of the restructuring of the virtual organization, the units are spreading in time and cyber space (Wigand, Picot, and Weichwald, 1997: 71; Katzy, 1998: 43).

In a virtual organization, the activities of the participants and their inter-relationships are coordinated to achieve specific objectives. Collaboration among participants is conscious and the goals express quantitative objectives that encourage the creation of a new organization. A virtual organization has a complex structure that simultaneously deals with different things or elements (www.virtual-organization.net, 16.07.2017).

In a study by Burn and Ash (2000: 3), six different models of virtual organizations were examined:

- ➢ **Virtual Faces**: Virtual faces are an example of virtual organization that performs the same operations as a structural organization to create added value through communication technologies.
- ➢ **Union Model:** A virtual organizational model that is shaped by a consortium consisting of equal participation of all partners.
- ➢ **Stars-Union Model:** A virtual organization model in which the environment of the central organization is surrounded by satellite organizations on the network.

> ➢ **Value-Association Models:** It is based on a value or supply chain model that brings together a range of products and services.
> ➢ **Market-Union Model:** The partners of the market-union model are organizations usually located in cyberspace. This model can also be defined as virtual communities at the same time. Amazon.com is an example of a market-union model in which links and substitutability are very high.
> ➢ **Virtual Intermediaries:** Information intermediaries that provide specific information services and strategic opportunities for the virtual building to occur.

Palmer and Speier (1997) classify virtual organizations differently:
- **Office Work at Home:** It is suitable for remote operation. Virtual staffs do the work and send them to the required places via internet or intranet connection.
- **Mobile Office:** It is applied in situations that requiring mobility. It is an organization consisting of travelling vehicles without fixed places with mobile vehicles equipped with communication technology.
- **Virtual Mobile Operator:** A structure that utilizes mobile operator network and mobile phone service to provide virtual operator services.
- **Imaginary Organizations:** Imaginary organizations have no physical structures, no visible parts, only their back offices and call centers have an operational network.
- **Permanent Virtual Organizations:** This virtual organization is designed to be revenue-generating and cost-effective to respond to market opportunities. This model bases all its operations on virtual concepts, involves virtual tasks and teams, and requires a virtual management of the organization's activities.
- **Temporary Virtual Organizations:** It is an extension of virtual project design. A temporary virtual organization is established to work on multiple projects and respond to specific market opportunities. When the market opportunity ends, it ends in the virtual organization.
- **Virtual Teams:** In-organization virtual concepts produce virtual teams as a kind of organization. These teams are formed within organizations with larger and more specialized functions. Virtual teams are usually project-focused. They are usually set up to serve between six months and one year. The common goal of virtual team members is a motivation tool (Gienier and Metes, 1995: 217).

2.2. Advantages and Disadvantages of Virtual Organizations

Advantages and disadvantages of virtual organizations can be specified as follows (Mirap, 2004: 38-40):
They have the opportunity to collaborate in teamwork across organizational and geographical boundaries. Virtual organizations have advantages such as flexibility, ability to adapt and speed. Organizations in the partnership have the opportunity to specialize on their basic capabilities. It provides the opportunity to find and retain highly skilled and motivated staffs in their organizations. It can get the resources that a large organization has. It reduces fixed costs and increases staffs productivity and enables customer satisfaction. Despite these advantages; it is very difficult to provide control of staffs in virtual organizations. Also, it is difficult to manage conflicts arising from different ideas or working styles in virtual organizations. The performance evaluation process is also problematic; because, the control in the virtual organization cannot be done by the hierarchical top authority. In order for virtual organizations to function successfully, a mutual trust relationship must be found. In situations where there is no mutual trust relationship, customers do not want to do business with these organizations (Afgün, 2006, 84-87).

2.3. Success Factors for Virtual Organizations

The first factor that plays a role in the success of virtual organizations is the communication that empowers the relationships between staffs and customers. For this purpose, face-to-face meetings are held in the staffs themselves and with the customers periodically. In a virtual organization, communication are important to equip staffs with the knowledge and to share information, to create values that will ensure coordination, performance and job satisfaction (Tutar, 2002: 25). Virtual teams develop different strategies to facilitate effective communication in the virtual environment (Kayworth and Leidner, 2000: 25).

The second success factor in virtual organizations is the creation of a common organizational culture. It is important for a virtual organization to overcome cultural awareness and to form teams from complementary cultures. A third success factor in virtual organizations is leadership. The leader forms the objectives of the team and provides continuous performance feedback. He coaches his staffs by providing team cohesion and compliance. One of the most important success factors in virtual organizations is technology. The virtual organization trains team members in the use of different computer-aided communication systems. It enables

customers to use the technological equipment more easily and increases their perceptions of technological issues. It makes a general assessment of the political and economic obstacles in front of international telecommunications.

Conclusion

One of the important indicators of the information society is the increase in the use of information and communication technologies at the organizational and social level. With the use of information technology, the barriers between organizations and staffs have been removed. With the automation of work processes, jobs have become routine increasingly, and specialization has gained importance. Organizations have had more information about customer preferences regarding goods and services they offer. New working styles within the organization have emerged with technological changes.

With the new jobs that require talent management, the need to employ highly qualified staff of training and skill levels has also increased. Organizations have begun to use information technologies as a strategic weapon to jump ahead. Innovative and different strategies provide a global competitive advantage for organizations. The production of quality goods and services has gained importance in accordance with customer profile and preferences. Instead of hierarchical structures, information technologies introduced temporary project-based organizational formations and types of organization based on teams. It reduces the need for staffs to control their works and operations. Thus, organizational working order is accelerating and productivity is increasing. In this case, it reduces the operator's internal, external costs and operational costs.

It is seen that organizational decision centers are well-coordinated and integrated with powerful communication networks through information technologies. The ability of managers to decide rationally is increased by ensuring effectiveness that the necessary information is collected, stored and evaluated. Authority and responsibility in the new type of organization are transferred to lower levels. This improves the way subordinates do business and gives to subordinates responsibility-awareness. Managers focus on very long organizational strategies rather than routine operations. Since coordination between units and departments has increased, organizations have shifted to the horizontal departmentalization. Improvements in organizational performance have been observed with the shortening of work processes.

Virtual organizations, which are the organizational model of information technologies, suggest a decentralized market mechanism instead of a hierarchical and central organization. Horizontal and diagonal communication is more intense in virtual organizations based on the mutual cooperation of organizations with different information and specification, and customer demands are highly regarded. With the determination of strategic business partners in the direction of the mission and vision, the virtual organizations also benefit from the synergic capacity of the staffs. Especially team work is encouraged by overcoming organizational and geographical boundaries, but interactive communication must be provided effectively for the success of virtual organizations. The creation of a common organizational culture allows for strategic action in the direction of the organizational vision. Leadership in virtual organizations is an important issue. The leader must have the ability to collaborate, trust and effectively communicate in a virtual environment. One of the most important factors in the success of such organizations is the pursuit of technological developments that are constantly changing and evolving as a result of global competition. Nowadays, it is difficult for an organization that does not benefit from the possibilities offered by information technologies to survive.

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