



Mohammad Ekram Yawar

<https://orcid.org/0000-0003-3198-5212>

Asst. Prof. Dr. Dean of the Faculty of Law, International Science and Technology University, Warsaw, Poland, ekram.yawar@istu.edu.pl

Sameulhaq Amany

<https://orcid.org/0009-0009-4681-2761>

Master's student in Administration and Economics, Sabahattin Zaim University, Türkiye, sameulhaq.amany01@gmail.com

Atıf Künyesi | Citation Info

Yawar, M. E. & Amani, S. (2024). Impact and Role of Information Technology Application on the Success of Leadership, Organization, Society and Individual. *Akademik Tarih ve Düşünce Dergisi*, 12 (1), 352-364.

Impact and Role of Information Technology Application on the Success of Leadership, Organization, Society and Individual

Abstract

Information technology is one of the important environmental factors that has a serious impact on the location, performance and fate of societies, organizations and individuals. The senior managers of the organization have understood the significant impact that information technology can have on the success of the organization. Managers hope to increase their understanding and knowledge of the methods based on information technology that have been used and also the possibility of successfully using them to gain a competitive advantage. Therefore, the board of directors and executive directors need to increase the management and supervision of IT, in order to make sure that IT follows and achieves the organization's strategies and goals. IT Governance is considered as an indispensable separate part of the management of the organization. This article has been prepared with the aim of introducing information technology leadership and the reasons for its importance and how to implement it in order to help managers in the direction of using information technology leadership in organizations. Information technology leadership is a phrase that is used to describe how people consider information technology in the management, supervision, control and leadership of an organization.



Keywords: Information Technology, IT, ITG, Organizational Success

Bilgi Teknolojileri Uygulamalarının Liderlik, Organizasyon, Toplum ve Bireyin Başarısı Üzerindeki Etkisi ve Rolü

Öz

Bilgi teknolojisi, toplumların, kuruluşların ve bireylerin konumu, performansı ve kaderi üzerinde ciddi bir etkiye sahip olan önemli çevresel faktörlerden biridir. Kuruluşun üst düzey yöneticileri, bilgi teknolojisinin kuruluşun başarısı üzerinde sahip olabileceği önemli etkiyi anlamışlardır. Yöneticiler, kullanılan bilgi teknolojisine dayalı yöntemler hakkındaki anlayış ve bilgilerini artırmayı ve ayrıca rekabet avantajı elde etmek için bunları başarılı bir şekilde kullanma olasılığını artırmayı ummaktadır. Bu nedenle, yönetim kurulunun ve üst düzey yöneticilerin, BT'nin kurumun stratejilerini ve hedeflerini takip ettiğinden ve bunlara ulaştığından emin olmak için BT'nin yönetimini ve denetimini artırması gerekir. BT Yönetişimi, kurum yönetiminin vazgeçilmez ayrı bir parçası olarak kabul edilmektedir. Bu makale, bilgi teknolojileri liderliğini tanıtmak, öneminin nedenlerini ve nasıl uygulanacağını anlatmak ve yöneticilere bilgi teknolojileri liderliğini kurumlarda kullanma yönünde yardımcı olmak amacıyla hazırlanmıştır. Bilgi teknolojisi liderliği, insanların bir kuruluşun yönetiminde, gözetiminde, kontrolünde ve liderliğinde bilgi teknolojisini nasıl değerlendirdiklerini tanımlamak için kullanılan bir ifadedir.

Anahtar kelimeler: Bilgi Teknolojisi, BT, BTG, Örgütsel Başarı

Introduction

The discussion about the effect of information technology on individuals, organizations and society is not a new topic, and this topic has been discussed since the beginning of the emergence and expansion of information technology. There are still people who believe that humanity is threatened by technological development. We are in a vital relationship with technology. Despite this, we should be aware of its effects on ourselves as individuals and as members of organizations and society. Therefore, in the continuation of this article, the impact of information technology on organizations, individuals and society will be discussed.

The use of computers and information technology has created some changes in organizations. These changes can be seen in areas such as structure, authority, power, content of work, occupational hierarchy of employees, supervision and occupation of managers. A summary of this discussion will be explained below (Ahituv & Neumann, 1994).

1. Organizational Hierarchy

Information technology allows for a wider control area and a reduction in the number of specialists to increase productivity and efficiency. Information technology allows organizations to control specialist knowledge and reduces the need for technical skills in the organization. It is logical that after the level of management in organizations has decreased, there will be a need

for less level and staff managers in those organizations. This process is mostly shown by the phenomenon of reduction or shrinking of the size of middle management (Sharify & Yawar, 2024). Computers are replaced by office jobs, since the need for information systems specialists increases, the ratio of white-collar workers to blue-collar workers in such organizations increases (Sharify & Yawar, 2024). Another change in the organizational structure is the possibility of creating a technology center, an electronic business center, a decision support systems department, or an intelligent systems department. In this way, special units are created for information management and information technology in the organization (Mohsen & Azhir 2016).

1.1. Concentration of Power or Choice

Whether the widespread use of information technology will lead to concentration or lack of concentration in business operations and management may depend on the philosophy of senior management. The higher the level of control and influence of the lower level employees of the organization on the decision-making process in the organization, it can be concluded that the concentration in the organization has decreased and if with the use of information technology in the organization, the level of control and the influence of managers on the decision-making process will increase, focus. Therefore, it is not possible to provide a specific and clear model in this case (Kenneth & Loudon, 2005).

1.2. Power and Location

Considering that information is a source of power, with the introduction of information systems in the organization, the amount of information under people's control will change, and thus the power of people (power derived from information) will change (Al-Dari, 2021).

1.3. Changes in Supervision

The fact that the work of the employees is done online and stored electronically provides the possibility of more monitoring. Information technologies are actually a means to facilitate control and supervision (Momeni, 2001).

1.4. The Effect on Job Displacement

An interesting topic is job mobility or job transfer. Today, you can find the amount of money that is paid to a job in any place on a website. The use of video conference for interviews and intelligent agents or representatives to find jobs and new employees increases the probability of employee turnover (Saadati et al., 2015).

1.5. Other Effects of Information Technology on The Organization

Information technology will probably have the following effects on the organization:

- Automation of normal decisions.
- Less need for allocation for some decisions.
- Less reliance on specialists to support senior managers.
- Giving power and discretion to the middle and lower levels of management because of knowledge bases.
- Decision-making by means of non-management employees.
- Redistribution of power among managers and transfer of power to the bottom of the organization.
- Electronic support of complex decisions (website, intelligent agents, decision support systems).

Some managers report that the computer gives them more time to go out of their office and be more in the flow of things. They also found that they could spend more time on planning activities. Another aspect of the management challenge lies in the ability of information technology to support the decision-making process. Information technology can change the decision-making process and even decision-making styles. For example, gathering information for decision-making will be done much faster. Intelligent web-based agents or agents can examine the environment and interpret information. Information technology processes reduce the time needed to complete each step in the decision-making process. Another possible impact on managers' jobs can be a change in leadership requirements. What is generally considered to be the characteristics of good leadership, may be significantly changed by using information technology. For example, when face-to-face communication is replaced by e-mail and computer conferencing, the leadership qualities attributed to appearance and clothing are minimized (Sharify, 2024.)

2. Work and Information Technology

Information systems affect people in different ways. What is an advantage for one person may not be so for another. Some of the ways that information technology can influence people's perceptions and behavior will be examined in this section of the article.

2.1. The Effect on Job Satisfaction

Although some jobs may be fundamentally enriched by information technology, other jobs may be repetitive and less satisfying. For example, in the early 1970s, researchers predicted that computer-based information systems would reduce management's opinion or vote in decision-making, and thus create dissatisfied managers (Maryam & Eshaghi, 2016).

2.2.Lacking Human Qualities

A major criticism of traditional data processing systems is their potential negative impact on individuals' personality. They consider the activities that are computerized to be devoid of human qualities and personality. Some people feel that they lack identity and human qualities due to being computerized. On the other hand, some people are so addicted to the web that they cancel their daily activities at work or at home and create new organizational and social problems (Sharify & Yawar, 2024).

3. The Status of IT Structure in 21st Century Organizations

In the 21st century, organizations are moving towards processing, and managers' attention is focused on the company's processes, as a result, information technology is a powerful factor for this information. Organizations need information technology to increase integration and standardize processes, increase the speed of globalization process, reconstruction and frequent changes of business. Information technology helps the organization to be a processor. In this way, four processes and six principles related to information technology support the organization. Several years ago, IT executives focused on three core IT processes, including planning, transition, and operations, to achieve IT alignment with the business, but today's analysis focuses on four core processes for IT organizations. It has been noted that they consist of:

- The ability to create organizational changes: modern capabilities of information technology, web technologies, software packages, etc.
- Providing solutions for strategic requirements: ordering, outsourcing, and
- Ensuring infrastructure services that are cost-effective: the existence of peer-to-peer centralized databases
- Management of intellectual capitals: using specialized knowledge. The six principles of information technology that are important for the effective operation of the four mentioned processes are:
 - Architectural design: IT architecture determines how the infrastructure will be created and maintained.
 - Program management: including the management of dynamic application solutions and solutions that cause incremental growth.
 - Management of contracts and resources: IT units are responsible for negotiating and managing contracts concluded with commercial units. There are internal and external contracts.

- Process analysis and design: In order to become a process, companies need mechanisms for identifying, analyzing, storing and communicating business processes.
- Change management: for continuous improvement of processes and implementation of new software solutions.
- Development of skilled human resources in information technology: ensuring the existence of information technology specialists with the required skills.

Considering the complex structures that IT organizations have in the implementation of information technology, and also considering their need to apply new standards, that is, using comprehensive and continuous standards for organizations to be more innovative. Also, in order to create coordination and integration between the processes, as well as considering due to the need for information systems qualifications and staff training, the need to control and supervise the actions related to information technology was felt in the organization, and for this purpose information technology leadership was introduced (Brown & Jeanne, 1999).

4. What is Information Technology Leadership?

Information Technology Leadership (ITG) is the responsibility of the Executive Board. Information technology leadership is an inseparable part of organization management, including leadership and organization of structures and processes; to make sure that the organization's information technology supports and develops the organization's goals and strategy or not? The managers' negative experiences from the use of this technology, including the loss of credibility, delays in providing services, the inefficiency of the organization's main information technology processes and its initial failure, led the organization to they use information navigation and it was based on these reasons that information technology leadership became important and was used in organizations. Information technology leadership is used to ensure the achievement of information technology performance for the following purposes:

- Coordination of information technology with the organization and realization of the promised benefits.
- To use information technology to enable the organization to use the opportunities and maximize the benefits.
- To effectively use the resources related to information technology.
- Appropriate management of risks related to information technology.

Who are involved in the information technology leadership organization? The responsibility of information technology leadership in organizations is primarily the

responsibility of the executive directors and the board of directors, and then the operating managers must prepare the organizational structures to support the implementation and implementation of the information technology strategy. Information managers to create a bridge between information technology and business. Information technology steering committees and other similar committees are also involved (Loudon, 2014). What activities does information technology management cover? Leadership is focused on five main levels in the organization, which is shown in Figure 2. Two of the five main output levels are:

- Value transfer: focusing on cost optimization and information technology value creation. It is meant to transfer the credit value that the organization gains from the use of information technology.
- Risk management: protection of assets related to information technology, improvement of errors and inconsistencies, continuity and continuity of operations and their continuity. Three of the five main levels are drives that are necessary to obtain outputs, which include:
- Determining and setting the strategy: focusing on the coordination of information technology strategy with business solutions.
- Management of resources: improving knowledge and technological infrastructures.
- Performance evaluation and measurement: tracking project output (what is delivered) and monitoring information technology services (Alvani & Nejad, 2015).

None of the first four factors can be managed well without the existence of an evaluation factor and performance measurement. After introducing the information technology leadership to the organization, to start the implementation and implementation of the information technology leadership, in order to determine the status of the organization, use the relevant checklists, which five factors have been mentioned. It is an effective method for the full implementation of information technology leadership, there are various standards (Research about technology and new technologies, article about the impact of technology on human life and new technologies of the world) such as (COBIT= Controlive Objectives for Information & Related Technology), among them, COBIT prepared by the IT Governance Institute and internationally as a good model for Information control, IT and related risks have been accepted and information technology management has been selected for implementation and audit (IT Governance Institute, COBIT, 3rd Edition Hardcover – September 1, 2000).

5. COBIT Framework

In recent years, it is obvious that there is a need for a reference framework for control and security in information technology news, and there is also a greater need for the users of

information technology services to be audited. Made by internal groups and a third party, guaranteed to do. Also, in order to gain a competitive advantage and be efficient in terms of cost by relying on technology, in order to achieve success in organization management and information technology management and monitoring and evaluation of the organization's performance, for developing business goals and requirements in order to respond to needs, from The reference framework called COBIT is used. The definitions that should be considered in the COBIT framework are:

- Control: policies, implementation methods, activities and organizational structures that have been designed to ensure that business goals will be achieved and adverse events will be prevented, or reduced or corrected.
- The goals of information technology control: expressing the desired results or plan that will be obtained through the implementation of operational methods, control of a specific activity.
- Information technology leadership: creating relationships and processes to guide and control the organization to achieve the goals of the organization, to create added value or to balance the risks resulting from the implementation of information technology. and its processes.
- The main goal of the COBIT project is to develop clear policies and appropriate models for information technology security and control, for global approval by specialized, governmental and commercial organizations. The goal of COBIT is to achieve business goals (IT Governance Institute, COBIT, 3rd Edition Hardcover – September 1, 2000)

6. The Principles of The COBIT Framework

COBIT is a model for information technology leadership. The basic concept of the COBIT framework is that the control over the information technology is created due to the fact that this information must support business goals or requirements. The COBIT framework is considered at three levels: At the bottom level, there are activities and tasks that are needed to achieve measurable results. Activities have a life cycle while duties are more discrete. Then the processes are defined as a set of activities and tasks in a higher layer. At the highest level, which is the focus of COBIT, the processes are gathered in one area. Therefore, from a conceptual point of view, the COBIT framework can be considered from three dimensions:

1. Information Standards;
2. Information Technology Resources;
3. Processes Related to Information Technology;

We can say these three dimensions in the COBIT cube as 4. The four broad areas considered in COBIT are: planning and organization, creation and implementation, delivery and support, monitoring. Thus, in the field of planning and organization, strategy, tactics and concerns related to IT identification can be collected in the best way to achieve business goals. In the field of creation and implementation to know and create an information technology strategy, possibilities must be identified, developed or created. In the field of delivery and support, delivery to the location and provision of the required services are taken into consideration and the required support processes must be initiated. In terms of supervision, all IT processes must be regularly evaluated in terms of quality and compliance with control requirements (COBIT®3rd Edition Framework July 2000 Released by the COBIT Steering Committee and the IT Governance Institute).

7. How Do You Introduce COBIT to The Organization?

COBIT usually creates approved activities for managing and controlling information resources and information technology. COBIT is designed for three groups:

- For COBIT managers: it helps to establish the balance between investment risks and their control in often unpredictable environments.
- For COBIT users: It helps to ensure the security and control of IT services provided by internal groups and third parties.
- For COBIT auditors: it helps to document and present their views and opinions about the internal controls of information technology for the information and awareness of the managers, to be effective.

As a result, to introduce COBIT in an organization, we must introduce it to the three groups of people mentioned in the organization and make them aware of the benefits of COBIT. To accept COBIT, who should be affected? Basically, COBIT is a framework for information and communication technology managers of an organization. Therefore, managers, especially creators of information technology policy, play an important role in the adoption and creation of COBIT in the organization. In addition to operating managers, information managers and strategic committees, other key people including executive managers, business process owners and top managers should also adopt COBIT. Why should an organization adopt COBIT? The reasons that encourage managers and key decision makers to accept COBIT are:

1. Due to the problems experienced by the organizations.
2. Managers' need to supervise the organization's resources.

3. By controlling information technology resources, the total cost of providing its services can be reduced.
4. COBIT will reduce the fear, anxiety and uncertainty of managers due to not achieving business goals.
5. Making sure that the organization complies with applicable laws and is enforceable.
6. Creating and establishing improved communication between managers, users and auditors by using COBIT.
7. COBIT provides a framework for identifying risks related to information technology and evaluating and controlling them. (Larry, 1984).
8. Some organizations have improved themselves by using COBIT, comprehensive and integrated audits. Source no: 4 above (COBIT®3rd Edition Framework July 2000 Released by the COBIT Steering Committee and the IT Governance Institute).

8. What are the Scope and Limitations of COBIT?

In order for COBIT to be implemented successfully, everyone should know what COBIT is, what it is used for, and what it can do. There are several points at this time:

1. COBIT is a new way of thinking.
2. COBIT is a framework that should be compatible with the organization.
3. COBIT should be used as a source of management, control and audit.
4. Key employees must be aware of COBIT and receive training to achieve a successful implementation.

9. How to Implement COBIT in Your Organization?

Successful adoption of COBIT requires training. After introducing COBIT in the organization, in order to implement it, first the main managers must be fully familiar with it and accept it. After approval, it is necessary that COBIT is identified as an appropriate model in the regulations, policy and implementation methods, and then risk assessment and audit planning are done through the forms mentioned below. The forms are:

- Pre-audit activities form: identification of whether the audit activities related to the information technology process are in the pre-audit area? This form is completed by the audit team.
- Section report summary form: identification of processes related to information technology that are considered more important

This form is completed by department managers:

- Risk assessment form: helping the audit team to identify processes related to information technology where there will be risk. This form is completed by the audit team or managers or jointly.
- Form of responsible groups: to identify those who carry out each process related to information technology and those who are ultimately responsible for each process. This form is completed by the audit team with the participation of the managers of the department to be audited.
- Performing an audit using COBIT, after programming, the audit process is performed based on the following steps:
 1. Determining the type of audit: Select the required type of audit for the department that needs to be audited. Types of audits that are possible are to be completed, including: financial, performance, interest, etc.
 2. Determining the audit objectives: After choosing the audit type, it is time to define the COBIT control objectives to gain insight. And to be more aware of the processes related to the selected information technology for this audit.
 3. Audit development and planning: If there is an audit program, that program is compared with the COBIT audit guide, and if there is no audit program, an audit program is prepared through the COBIT audit guide.

In this step, the following activities are performed: comparing the audit objectives with COBIT control objectives, comparing the audit program with the COBIT audit program, adding the audit activities suggested by the regulations and organizational guidelines and the law.

4. Conducting an audit: an audit is conducted according to the COBIT audit guide.
5. Writing an audit report: writing the results by focusing on the goals that have been achieved and the goals that have not been achieved (source no. 4) (Larry, 1984).

Conclusion

According to the topics presented in this article, it can be concluded that information technology has a great impact on all dimensions and functions of organizations, and managers of organizations are required to Attention is given to issues related to information technology. Otherwise, they are condemned to death. Regarding the impact of information technology on the society, it should be noted that information technology has brought with it countless opportunities and threats. Finally, the people of the society, as an element of the societies and organizations, are strongly influenced by information technology. Information technology is an inseparable part of business and its leadership is an inseparable part of organization

management. In information technology management, the roles and responsibilities must be clearly identified and committees such as the steering committee (at the executive level) and the strategy committee (at the management level) have been formed, then a plan for implementation and implementation. Leadership, like COBIT, is necessary. In order to carry out leadership, the following tasks must be done: preparation of the organizational framework for managers, coordination of information technology strategy with business goals, identification of risks, definition and identification of process levels, identification of inconsistencies and contradictions. Yes, the development of improvement strategies, the evaluation of the results of these works will be repeated until complete improvement.

References

- Alvani & Nejad, T. (2015). *Management Information Systems*, Hamon Software Publications, first edition <https://tinyurl.com/f4cyxbyy>
- Brown, C. V., & Ross, J. W. (1999). *The IT organization of the 21st century: moving to a processed-based orientation*. no publishing house.
- Al-Dari, H. (2021). *The book of information systems in management*. Payam Noor University, <https://tinyurl.com/4tk2wzyh>
- Momeni, H. (2001). *Information and Communication Technologies Management Book*. University Publishing Center, Tehran, Iran. <https://tinyurl.com/4uukpfrf>
- COBIT, (2000). *IT Governance Institute*. 3rd Edition <https://tinyurl.com/2s3juh5e>
- Kenneth, C. & Loudon, J. P. (2005). *The Book of Organizational Management Information Systems*. Rasa Publishers. <https://tinyurl.com/54tbvtjw>
- Loudon, K. (2014). *Management Information Systems, translated by Rezai Najad*. Rasa Publications, 6th edition. <https://tinyurl.com/3dfaarpy>
- Larry R. H. (1984). *Experience with INTELLECT: Artificial Intelligence Technology Transfer*. AI Magazine, 5, 2, <https://tinyurl.com/zckvsn37>
- Maryam, L. & Eshaghi, M. (2016). Investigation of the effect of nanotechnology on the environment. *Environmental Science and Technology*, 4 (19), 61-49. <https://tinyurl.com/yc87hesv>
- IT Governance Institute, COBIT, 3rd Edition Hardcover – September 1, 2000, <https://tinyurl.com/2s3juh5e>
- Saadati, M. R. et al. (2015). Educational technology and its role in education, place of publication: First International Conference on Psychology and Educational Sciences, Tehran, Iran. <https://civilica.com/doc/460092/>

Mohsen, V. & Azhir, M. (2016). *The impact of technology on human life*. The first conference on structure and architecture, Tehran, Iran. <https://tinyurl.com/3peddv99>

Momeni, H. (2001). *Management of Communication and Information Technologies*. University Publishing Center. <https://tinyurl.com/3hfxj5py>

Ahituv, N. & Neumann, S. H.(1994). *Book of Norton Riley, Principles of Information Systems for Management*. publisher Business and Educational Technologies. <https://tinyurl.com/2p88ftju>

Research about technology and new technologies, article about the impact of technology on human life and new technologies of the world. <https://tinyurl.com/mryhpnst>

Sharify, A. J. (2024). Positive and Negative Effects of Technology on Organization Culture. *Akademik Tarih ve Düşünce Dergisi*, 11 (1), 137-147.

Sharify, A. J. & Yawar, M. E. (2024). Examining the Impact of Transformational Leadership in the Development of Organizational Voice An Analysis of the Mediating Impact of Information and Communication Technology. *Akademik Tarih ve Düşünce Dergisi*, 11 (1), 210- 228.

COBIT®3rd EditionFrameworkJuly 2000Released by the COBIT Steering Committee and the IT Governance Institute <https://tinyurl.com/rsjzckc>