

INFORMATION - COMMUNICATION TECHNOLOGIES (ICT) AND THEIR INFLUENCE IN THE PROCESS OF STRATEGIC MANAGEMENT

INFORMACIONO-KOMUNIKACIONE TEHNOLOGIJE (ICT) I NJIHOV UTICAJ NA PROCES STRATEŠKOG MENADŽMENTA

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Abstract

To lead organizations and maintain competitiveness in the long term, nowadays, is directly dependent on information-communication technologies. The relationship is even more pronounced in modern organizational performance, which pushed ICT to be treated as an unavoidable organizational opportunity or valuable organizational resource.

The introduction and use of ICT in organizations is bringing benefits in all stages of strategic management. This is particularly important in the process of strategic planning for obtaining relevant information for setting strategic targets, efficiency in the process of strategic implementation and achievements monitoring through the process of strategic control.

In this context the main objective of the paper is to emphasize the important role of ICT in strategic management and in all its three main stages of planning, implementation and control.

Keywords: ICT, strategic management.

Apstrakt

Vođenje organizacija i održavanje konkurentnosti dugoročno, danas je direktno zavisno od informaciono-komunikacionih tehnologija. Odnos je naglašeniji kod moderno organizovanih dostignuća, koja su postavila ICT kao neizostavnu organizacionu mogućnost ili vrijedan organizacioni resurs.

Uvođenje i upotreba ICT u organizacijama ima korist u svim fazama strateškog menadžmenta. Ovo je posebno važno u procesu strateškog planiranja za dobijanje relevantne informacije za postavljanje strateških ciljeva, efikasnost u procesu strateške implementacije i postizanje praćenja kroz proces strateške kontrole.

U ovom kontekstu glavni cilj ovog rada je naglasiti značajnu ulogu ICT u strateškom menadžmentu, kao i u tri faze planiranja, primjene i kontrole.

Ključne riječi: ICT, strateški menadžment.

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INTRODUCTION

The size of organizations, complex organizational structures, market globalization and changes in the environment complicate the process of running organizations. Because of this, ICT and its application in organizational performance, today receives increasing importance and the success of the organization and individual managers within it, regardless of the hierarchical level they are on, largely depend on the existence or non-existence of ICT and the degree of its development and applicability in the organization (Jolevski, 1997). In fact, the benefits of using ICT are enormous and apply to every part of organizational performance, including:

- Easier making of good decisions;
- Increased efficiency and effectiveness of the organization;
- Enhanced strategic and competitive advantage of the organization;
- Successful control;
- Improving the quality of products and services;
- Improving communication and cooperation within the organization;
- Easier redesigning of business processes, etc.;

Given the fact that ICT is becoming one of the main driving forces for the development of new trends in organizations and the basic component that enables organizational changes, understanding the changes and their implications, are directly related to knowing the skills of information technologies use in execution of business tasks (Josimivski, 2011).

STRATEGIC MANAGEMENT AND ICT

For an organization to be competitive in the market it needs to have certain unique organizational capacities. Among others, of particular importance is the information capacity. Information occurs as particularly important and significant input resource in the planning process. Passing key, quality and timely decisions in a dynamic and changing environment must not rely only on experience and intuition of employees or management. Accurate, timely and reliable information is the only foundation for decision making at every level in the organization.

In this context, strategic management functions as a continuous process of research, gathering information for planning, implementation and control. And as a result of this ongoing process, the optimal achieving of organizational goals and customer needs occurs.

Furthermore, the successful strategic implementation is not possible without reliable and timely informing of all employees about their activities and relations in the work process (Stefanovska, 2014).

Seen from organizational aspect, ICT represents a set of methods, procedures and resources, designed in a manner to help achieve the set organizational goal. Through their activities such as data collecting, data processing, storage of data and information, organizations have the opportunity to use relevant information but have the task to provide all levels of management of information necessary for the functioning of the overall organization (adapted according Jolevski, 1997). Reviewed from strategic aspect, they aid in decision-making and implementation of certain strategic decisions and determine the long-term directions of work. Therefore, we can say that the information capacities signi-

ificantly simplify and modernize the operation and communication in any organization. In this sense, the strategy of introducing technological and organizational innovation is the main condition for innovative organization that, in addition to flexibility and quality, is the most important component of the competitiveness of the organization (Kolomejceva-Jovanović, 2001).

Information, as an important resource, not only provides support in the planning process, but to a great extent in the control process. However, care should be taken of the fact that not any data is information. Data is a non-analyzed fact; information is analyzed data that informs the user. The value of information depends primarily of its quality, the time of its placement, the quantity and its suitability for the need. The information often provides the answer to a certain position or interest that individuals, groups or institutions have for a separate question, wherein consequences or alternatives are possible.

Managers from every level of the organizational hierarchy, daily face the challenge of making decisions that, above all, must be of good quality and aimed at solving a range of organizational problems. It is in that section the information is intended to assist in understanding a particular problem, as a prerequisite for effective decision making. The role of information systems is to assist managers in collecting and sorting information as part of their strategic power. Information systems, as systems of interconnected components, perform collecting, processing, storing and dissemination of information to support decision-making and organization control (Laudon, 2007).

After the emergence of the Internet, information and its quantity can not be compared with any technical-technological innovation. Internet Network as a serious source from which organizations receive a range of information is no longer a novelty, but a standard tool in the daily operations of the organization and the users of its products and services. The economic importance of the Internet is the ability to affect large number of human activities, and the openness of the network provides a large number of state and private organizations with different products and services to be mutually competitive. This leads to reduction of the economic importance of geographical boundaries and enabling international presence, even of the smallest organizations, providing communication, exchange of information, services support at no additional cost (Cronin, 1993).

However, the use of Internet information leads to organizational change. Networked organizational environment encourages employees to participate in the process of collecting or sharing information and solving organizational problems, mainly through cooperation. This way of work also reduces traditional hierarchical management barriers and even the boundaries of the organization. Nevertheless, with this kind of communication most of the information is transmitted through terminals, hence the personal contact between people is disappearing. As a by-product, this can lead to a reduction in the amount of informal information, which can reduce the effectiveness of the decision-making process (Curtis, Cobham, 2005).

Today, managers have unlimited access to databases, e-mail and other types of electronic communication, which provide modern and fresh information. The flow of information is increasing by those obtained through various sources, for example, newspapers, publications, letters, forums and so on. Therefore, it can be rightly said that the decision-making process in any organization depends on information available to managers. Of course, if

the information is made through standard procedures, and is at the same time objective, it is considered relevant in making the decision (Curtis, Cobham, 2005).

RESEARCH SECTION

The organization, as an open system, is constantly connected to its environment and exchanges information. All the information that managers receive from people, organizations, media outside the organization etc. are external sources of information. In his research Mintzberg states that managers increasingly rely on information coming from the external environment than those generated internally in the organization.

After the comparison with other similar surveys, for example, the survey of Johan Frishammar, conducted on four famous Swedish companies, and those carried out in the Republic of Macedonia, the results largely do not match. Namely, the managers in the Republic of Macedonia, as the most important source of information when making strategic decisions, consider personal sources of information from subordinates and superiors. The information received from customers is considered the most important source for making strategic decisions. The managers in the Republic of Macedonia said that the Internet and databases are also a very important source of information, as opposed to the research conducted by Johan Frishammar. Following the research, it is concluded that managers mostly visit the websites of their suppliers, competitors and customers, most of whom want to use the information related to their products/services. Very frequently visited websites and pages are those of some ministries, the National Bank of the Republic of Macedonia and state institutions of the Republic of Macedonia. However, managers say that the direct contact is the best way in which they provide the bulk of the information, which confirms the personal contact, and thus overlapping with the research of Mintzberg and Johan Frishammar is obtained.

In the frames of the survey that was conducted in this paper, 30 organizations from Pelagonia region in the Republic of Macedonia have been surveyed. Throughout the survey a questionnaire was the used instrument, which contains several blocks of questions. One block of questions concerns the way of collecting information that is used in the process of strategic management. Here are the results obtained:

The first question of this block relates to how the organization obtains the information needed in the process of strategic planning. The respondents ranked them by their importance.

- Information obtained from customers - rank 1;
- Independent analysis of the environment - rank 2;
- Team activity in the organization - rank 3;
- Visiting fairs, seminars etc. – Rank 4.

If we analyze the answers to the first question, it can be concluded that most of the information they need in the strategic planning process, especially in order to make the right decisions, is based on information obtained from clients. A large number of organizations are opting to conduct independent analysis of the environment, of course, if the organization has experience in this field, trained staff and the software that will allow storage and processing of the obtained information.

The second question relates to how the general managers rank in importance the information that an organization needs for successful strategic planning. Given below are the answers (ranks).

- Customer information Rank 1;
- Information from distributors Rank 3;
- Information about competition Rank 2;
- Information from suppliers Rank 4;
- Information obtained from open sources (Internet, newspapers, etc.) Rank 5.

The third question relates to whether the availability of information provides a better overview and assessment of market conditions. The question is asked in order to get an opinion on the importance of information in the process of improving the competitiveness on the market and its sustainability in the long term. The results are presented in the table below.

VAR00005

	Observed N	Expected N	Residual
Yes	28	15,0	13,0
Probably	2	15,0	-13,0
Total	30		

Test Statistics

	VAR00005
Chi-Square	22,533 ^a
df	1
Asymp. Sig.	,000

If we analyze the charts one can see that the answers “no” and “do not have an opinion” did not get a single reply. As for the other offered answers, “yes” and “probably”, it can be noted that the majority of respondents confirm that availability of information enables them to have a better overview and assessment of the conditions. According to the values of Chi-square test, it can be concluded that there are statistically significant differences in frequencies between the statements of the respondents, suggested by the values obtained χ^2

(1, n=30)=22,533, p=0.000 (Sig. = .000).

Asked whether with accurate and timely information delivered to the organization it can gain an advantage over the competition, 83.3% of respondents gave affirmative response, not a single respondent gave a negative answer, while 13.3% of respondents answered with “partly”. 3, 34% of respondents have no opinion on this issue. The results are shown in the table below.

VAR00001

	Observed N	Expected N	Residual
Yes	25	10,0	15,0
Partly	4	10,0	-6,0
No opinion	1	10,0	-9,0
Total	30		

Test Statistics

	VAR00001
Chi-Square	34,200 ^a
df	2
Asymp. Sig.	,000

According to the values of Chi-square test, it can be concluded that there are statistically significant differences in frequencies between the statements of the respondents, suggested by the values obtained χ^2

(2, n=30)=34,200, p=0.000 (Sig. =. 000).

Of particular importance to the strategic management is to process the received information so that it can be used in the planning process. It must be kept for an extended period of time in certain databases, which should increase the existing organizational memory. In this context are the following two questions from the questionnaire. Namely, to the question whether the information obtained is edited, analyzed and synthesized according to importance, so as the final material can be used in the process of strategic planning, different answers have been received, depending on the investments the organization makes in software used for this purpose. The table below presents the results following the analysis on this issue.

VAR00003

	Observed N	Expected N	Residual
always	10	7,5	2,5
often	15	7,5	7,5
rarely	3	7,5	-4,5
very rarely	2	7,5	-5,5
Total	30		

Test Statistics

	VAR00003
Chi-Square	15,067 ^a
df	3
Asymp. Sig.	,002

According to the values of Chi - square test, it can be concluded that there are statistically significant differences in frequencies between the statements of the respondents, suggested by the values obtained χ^2

(3, n=30) = 15,067, p = 0.002 (Sig. =. 002).

Asked whether the received and already analyzed information is kept by organizations for an extended period of time sorted into databases, so that they can be searched at any time, which increases the overall organization memory, it can be again concluded by the answers that this depends on the total venture in this segment by each organization. Namely, 33.3% of respondents do this always, 40% of respondents do this often, while 20% do this rarely and 6.67% very rarely. The results are shown in the table below.

VAR00005

	Observed N	Expected N	Residual
always	10	7,5	2,5
often	12	7,5	4,5
rarely	6	7,5	-1,5
Very rarely	2	7,5	-5,5
Total	30		

Test Statistics

	VAR00005
Chi-Square	7,867 ^a
df	3
Asymp. Sig.	,049

According to the values of Chi - square test it can be concluded that there are statistically significant differences in frequencies between the statements of the respondents, suggested by the values obtained χ^2

(3, n=30) = 7,867, p = 0.049 (Sig. = .049).

The last question of this block of questions relates to how often organizations invest in ICT in their organization. We can be pleased by the fact that many of them gave a reply that they do this often or very often, unlike the significantly smaller number of responses that addressed the “rarely” or “very rarely”.

VAR00007

	Observed N	Expected N	Residual
Very often	12	7,5	4,5
often	8	7,5	,5
rarely	8	7,5	,5
Very rarely	2	7,5	(5,5)
Total	30		

Test Statistics

	VAR00007
Chi-Square	6,800 ^a
df	3
Asymp. Sig.	,079

According to the values of **Chi-square** test it can be concluded that **there are no** statistically significant differences in frequencies between the statements of the respondents, suggested by the values obtained χ^2

(3, n = 30) = 6,800, p = 0.079 (Sig. = .079).

CONCLUSION

ICT innovations that are daily imposed represent a significant factor in the success of many organizations in the private and public sector and are key factors for successful performance within the new digital economy. The implementation and use of ICT in organizational operations has its own importance in all aspects of strategic management. In strategic planning, for setting real competitive strategic goals, in the implementation process, and, of course, in the process of control as the last, but not the least important stage, which should provide feedback for future strategic planning. However, it can be concluded that ICT finds wide application within the constant flow of information in the organization, both horizontally and vertically.

It is thought that the efficient flow of information is one of the most important components in the process of strategic management. Employees must know what is decided and what is happening. Hence, it is very easy to recognize the knowledge of the employees. If we constantly hear “nobody told us” or “nobody asked us,” then it is visible that the employees are uninformed. It is therefore appropriate to maintain reliability in the timely and daily flow of information, which, sometimes, can be significantly aided by the use of ICT.

Furthermore, the implementation of organizational strategy involves a prior making of an operating plan. The operating plan identifies actions that have to be realized in order to achieve organizational goals. Each operating plan contains the following elements: who is the initiator, who is responsible for the task, when it starts, when it ends and how

much it costs, how would you assess the success of each completed task. Here the question arises: how can the operating plan be implemented then if the employee is not informed?

The management, according to the way of information and communication in the organization, implies certain behavior of co-workers, or subordinates. According to some research, a growing number of co-workers (estimated up to 50%) who, because of lack of information and poor organizational communication in general, close in themselves, exempt from work duties and are static in the workplace. It is important to develop good communication relations between superiors and co-workers, because experience has shown that, in essence, this is what most motivates the employees.

REFERENCE

1. Burgelman R.A. & Doz YL, 2001, *The power of strategic integration*, Sloan Management Review, 42 (3): p. 28-38;
2. Cronin M., 1993, *Doing Business on the Internet, How the Electronic Highway in Transforming American Companies*, Van Nostrand Reinhold, New York, p.151;
3. Curtis G., Cobham D., 2005, *Business information systems*, fifth edition, Prentice Hall, p. 38, 37
4. Hansen, M & Birkinshaw, JM, 2007, *The innovation value chain*, *Harvard Business Review*, 85 (6): p. 121-131;
5. Jolevski T., 1997, *Management of Industrial Systems*, Faculty of Technical Engineering in Bitola;
6. Josimovski Saso, 2011, *Information technology UKIM Skopje*, p.5;
7. Kolomejceva-Jovanović, L., 2001, *Management of technological development: the challenges of the third millennium*, Grmeč, Belgrade, p. 119;
8. Laudon K.C. & Laudon J.P., 2007, *Business Information Systems*, Seventh Edition, Prentice Hall, p.10
9. Levkov N., 2007, *Analysis of information sources on which relies the management decisions in the Republic of Macedonia*, Yearbook of the Faculty of Economics, Volume 42 S. 1-422, p.404, 406.
10. Stefanovska L. 2014, *Fundamentals of strategic management*, BAS, p.70 - 72;