



ANALYSIS OF INFORMATION AS THE CONTENT OF AN ENTERPRISE INFORMATION SYSTEM

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ABSTRACT

The process of enterprise control represents activity that is inevitably bound with surroundings by information. Control of enterprise is dependant on existence of information; it is a process of that transforms information into activities. Success of control depends on the information which are at disposal and how their transformation is executed. To make work with information easier, information systems are created.

The aim of the presented article is the analysis of information as content of information system of an enterprise, which contains specification of term and content of information, classification of information and elevation of its importance in the process of enterprise control.

1. SPECIFICATION OF TERM AND CONTENT OF INFORMATION

The term of information comes from a latin word *informo* – information – *informare*, which means announcement, transfer of messages but also visualization of something. By specification of the term information from other side, in philosophy it is perceptive side of information, in physics it is a material carrier of information. From information technologies point of view, it is a string of signs in the form of sequence of letters or symbols. Under the term of information we understand data which allow knowing happenings and event that occurred are ongoing or only will come to pass.

2. INFORMATION AND ITS IMPORTANCE IN CONTROL OF AN ENTERPRISE

Information has strategic importance for any enterprise. They are projected in different ways into final operations of the enterprise. The needed information supplied to responsible and qualified employees in the right time are projected into:

- ✚ the quality of produced products and services,
- ✚ the process of adaptation to customers' demands and needs,
- ✚ production costs,
- ✚ expansion of market areas,
- ✚ price of produced goods, etc.

Information is of special importance for the area of production. Information processed in the form of documentation of technological approaches, instructions, constructional prototypes, etc. are potential sources of production. They become the real source after their use in production processes. Production wouldn't be able to go without them. Use of incomplete information can lead to high economic losses. If for example, the production is realized by inappropriate plans, inefficient use of people, materials, raw materials, machines and equipment occurs. These realities are projected in creation of profit. Well processed information contribute to increase of organizational interconnections, they improve coordination of operations and lead to improvement of results of economics. In the process of enterprise control a particular operation is direct result of measures resulting from decisions. Efficient control is based on use of information during all phases of decision making process:

- ✚ phase of information gathering,
- ✚ phase of evaluation of obtained data,
- ✚ phase of realization of decisions.

The importance of information for a manage results from their need by decision making and efficient realization of every function of management – planning, organization, leading of people, control, etc. Information is becoming one of the important assumptions by taking optimal decisions. The information have to be objective, based on which the subject taking decisions can know the state of the controlled object and to move its development towards the set aim. In the process of enterprise control, information fulfills different functions:

- ✚ securing of inevitable conditions for knowledge of the existing state of the controlled object,

- ✚ it is the mean of creation of plans and commands,
- ✚ it is raw material for operational control,
- ✚ it is source of increasing knowledge about the company and its surroundings,
- ✚ it is the source of knowledge,
- ✚ it is a tool of organization and coordination of operations of the controlled collective,
- ✚ it is the source of communication in the system.

Nowadays, managers need by their work lot of inevitable information. Although they have more than 60% more information than ten years ago, higher demands on speed of decision making process cause pressure and encumbrance, we can also talk about existence of information crisis.

Many control employees are demanding more information. It is often delusive impression, behind which is hidden own deficiency to work with information in efficient manner or quantity of information is exchanged with quality. For quantity of information there objectively exists a threshold of saturation, beyond which a human cannot process further information. Too high increase in information quantity leads to lowering of their usability. On the other hand deficiency in amount of information can lead to subjectivism in decision making process. Excess amount of information is usually accompanied by deficiency of key information, where a paradox situation is created with overflow (unimportant) and deficiency (of key) information, what threatens the quality of the control process. By designation of information quality these criteria are assessed: objectivity, consistency, integrity, pragmatism and readiness.

These criteria could also be broadened by the term of intelligence, what is a feature allowing to catch knowledge in associative principle that is close to human thinking. The decisive factor of information need regarding quantity, content and level is hierarchic level of control, where the manager – as a subject taking decisions acts. Managers on the highest level of control need information characterizing organization as a complex and information about market environment. They should secure possibility of creation of strategy and control of operation of organization. Managers on the middle levels of hierarchy need information according the given level of control (plant) or the given function (production). Employees of this level inevitably need certain overlapping of information with higher and lower level of control. Employees of the lowest level of control hierarchy need information expressing the state and results of controlled processes in high detail and frequency of their assessment.

3. CLASSIFICATION OF INFORMATION

In control of an enterprise different kinds of information that have different meaning and character are used, therefore we can classify them according to different criteria.

1. According to content of presented processes
 - a) Economic – express economic operations of the organization
 - b) Non-economic
2. According to source of information
 - a) External information

✚ Information from central organs – regarding development of economics, conditions of realization of economic politics of government, etc.

✚ Information from other surroundings (macro-surroundings)

✚ Information resulting from exploration of needs

These are information needed for creation of product and sales strategies of the enterprise. The task of this information is to know the structure of needs, factors that influence on their development, level of their satisfaction from the quantitative and qualitative side.

✚ Information resulting from exploration customers – this information supply basic data about customers, their behavior and causes of this behavior.

✚ Information resulting from survey products – obtained information is needed for decisions about their further production, innovations or production of new products. It supplies knowledge about the product, its properties and factors that influence sales and consumption.

The external information can be an impulse for design and realization of common changes into the structure of elements and processes in an enterprise, but also the impulse for design and realization of more serious changes. This information have considerable importance by realization of enterprise strategy.

- b) Internal information

Internal information in the enterprise catches situation and processes within the enterprise. Its task is to secure information for employees on different levels of control about:

- ✚ aims
- ✚ programs of operations
- ✚ state of resources

✚ course of corresponding processes.

Internal information is usually immediately usable in operations of an organization. They are the impulse for design and realization of common control hits into individual elements and working processes within the company in order to secure successful fulfillment of the planned activities.

The mutual relation between internal and external information is sent by the degree of internationalizations of operations. Enterprises with higher degree of internationalization of their operations have to mirror the need of building of information bonds to their macro-surroundings. These bonds are realized by the so called marketing information system.

1. According to levels of control of the enterprise (according to a position of information in the control system)
 - a) Strategic – scope of its use is long term, this is information of global character, used mainly for formulation of strategic aims of the enterprise. They are usually distinguished by low level of particularity and repeatability. Mainly the high level management uses such information.
 - b) Tactical – represents more particular information and it is used mainly in the phase of searching for ways and means to obtain certain aims. The level of particularity and repeatability is higher compared to strategic information.
 - a) Operational – it is very detailed with high level of repeatability and is used mainly by management acting on the operational level of control by solution of everyday problems.
2. According to relation of information to aims of the enterprise
 - a) Information needed for aims designation – it is basic information needed to correct definition of aim of the enterprise and it is the first and basic assumption of its operation. According to place of origin, it can be distinguished:
 - ✚ information from outside of the enterprise
 - ✚ inside information that shows its state and possibilities,
 - ✚ memory information stored on different memories (e.g. human skills, knowledge, experience)
 - ✚ information stored in intellectual tools – spreadsheet, archives, graphs, etc.
 - b) Information securing realization of a designated target – there is a necessity in control to have sufficient amount of information securing realization of the designated target in time and space in such way that the aim would be thoroughly fulfilled. In this phase such information has form of orders and tasks
 - c) Monitoring information – information serving to monitor fulfillment of aims, it evaluates amount and structure of used live and material work by realization of the aim. It has big importance by setting of new aims and regulation.
3. According to task of the information in operation of the organization
 - a) Information resulting in decisions – it needs processing, change and aggregation
 - b) Information resulting in operations – e.g. an order from director, order from other partner
 - c) Neutral information – it is not set to obtain a particular aim, but it can further gain such meaning.
4. According to the level of aggregation
 - a) Primary information – it is a direct reflection of objective reality, most of it is created by measurement, observation. It is very broad in scope and it is typical for the lowest level of organization.
 - b) Secondary (derived) information – its share and importance grows towards higher level of organization and it is of great importance for decision making.

4. INFORMATION AND ENTERPRISE INFORMATION SYSTEMS

To facilitate the work with information, information systems are created. The problem area of creation and use of information systems in real-world practice is very complex. Information systems are systems that are designated to gather, organize and distribute data. The data processed in information systems gain information importance. They are designated mainly for managers on all levels of control. By supply of information they support their work mainly in the phase of planning of the control process. Information systems are very often automated by information technologies. By building of enterprise information system it is necessary to take in account the basic demands on information:

- 1) From time point of view:
 - ✚ patness – information is supplied when it is needed,
 - ✚ actuality – information has to be in time it is supplied actual,
 - ✚ frequency – information has to be supplied as often as it is needed,
 - ✚ time period – information has to be supplied with regard to past, present and future.
- 2) From the content point of view:
 - ✚ accuracy – correctness of information,

- ✚ relevancy – supplied information have to be related to needs of the particular receiver, particular situation,
 - ✚ completeness – all information, which are needed have to be supplied,
 - ✚ extent – information should have broader or narrower scope and can be of internal or external character,
 - ✚ compactness – only the information that is needed have to be at disposal,
 - ✚ efficiency – they allow to supply information about efficiency by measurement of enterprise operations and compare them to advance or accumulated sources.
- 3) According to form:
- ✚ comprehensibility and transparency – information has to be in form that is easily understandable and transparent,
 - ✚ detail – information has to be in a detailed or summarized form,
 - ✚ order – information has to be ordered in order set in advance,
 - ✚ presentation – information can be in oral, numeric, graphic, text or other form,
 - ✚ the carrier of data (media) – information can be supplied in different forms (printed documents presented on screen or other media).

Successful fulfillment of basic functions of an enterprise is mainly conditioned by quality of its information system. Enterprise information systems represent a file of activities that secure gathering, transfer, storage, processing, distribution and presentation of information in the enterprise for the need of decision making in such way, so that the control employees could execute their control functions. Its task is to secure sufficient amount of relevant, actual and precise information in needed time and in an appropriate form for preparation of decisions. It is the part of the control system, which secures integration of the basic parts of enterprise control.

Information system of an enterprise is the main tool, by which changes in economic environment can be identified and analyzed and further accordingly adapt behavior of the enterprise. Therefore the importance of information and information systems is always growing in inner enterprise control. So that the management could flexibly adapt the enterprise to conditions of the surroundings, the information system has to be able supply information with very short response about the state of all resources and costs of the enterprise, rentability of individual economic centers, products, services and this all in different time periods.

5. CONCLUSIONS

The ability of every enterprise to survive is mainly dependant on fast reaction to outer impacts and the ability to adapt to new conditions of environment. One of the assumptions to secure efficiency of an enterprise is to efficiently use of information. The quality of decision making is dependant mainly from qualitative information and the ability to process it. The outer circumstances force into new technologies, to be more intelligent, so that they could gain certain strategic information for their decision making. Information systems are used in enterprises for the purpose of efficient use of information and their task is to produce qualitative and relevant information needed for the control process. Enterprises that do not put their attention to inclusion of information technologies are in strategic disadvantage compared to their competition.

REFERENCES

- [1.] KHOURI, S. : Riadenie ťažobného podniku – informačný systém a jeho vplyv na využívanie a zhodnotenie ložiska,
- [2.] Dizertačná práca, Košice 2004
- [3.] CEHLÁR, Michal - BEHÚN, Marcel - CEHLÁROVÁ, Ivana: Ekonomika ťažby surovín. In: Manažment podnikania a vecí verejných. roč. 2, č. 4 (2007), s. 24-30. ISSN 1337-0510.
- [4.] KAMENÍKOVÁ, Katarína - AL-ZABIDI, Denisa: Finančné riadenie firmy : Zbierka riešených a neriešených príkladov. 1. vyd. Košice : TU, FBERG, 2006. 63 s. ISBN 80-8073-663-4.
- [5.] TEPLICKÁ, Katarína: Progresívne trendy riadenia výrobných podnikov. In: Ekonomie a management. vol. 7, no. 4 (2004), p. 26-31. ISSN 1212-3609.
- [6.] CEHLÁR, Michal - MIHOK, Jozef - KYSELOVÁ, Katarína - BOHUŠOVÁ, Veronika : Informačný systém ťažobného podniku a jeho vplyv na zhodnocovanie ložiska. In: Uhlí-Rudy-Geologický průzkum. vol. 12, no.4 (2005), p. 24-28. ISSN 1210-7697.
- [7.] CEHLÁR, Michal - KYSELOVÁ, Katarína: Ekonomické charakterizovanie technologických procesov pri ťažbe nerastných surovín prostredníctvom výpočtovej techniky. In: Acta Metallurgica Slovaca. roč. 9, č. 1 (2003), s. 55-62. ISSN 1335-1532.