THE PRINCIPLES OF IMPLEMENTING EARLY RECOGNITION SYSTEMS IN AN ORGANIZATION

Janusz Bąk*
Grzegorz Baran**

Abstract

In the context of the turbulent environment, contemporary organizations have to work out and implement tools enabling them to handle the turbulence, and primarily, to avoid negative consequences of these processes. The tools are related, among others, to obtaining and providing managers, sufficiently in advance, with adequate management information on the environment. Early Recognition Systems (ERS) are a response to such conditions of the organization functioning and the challenge in respect of information support for decision-making processes. Unfortunately, they are mainly of informalized character, dispersed on various levels and in various functional areas of organizations, and very often based on unconscious, habitual actions, and, in consequence, their advancement and effectiveness are low. Based on the main characteristics of early recognition systems, the article presents the framework procedure of systemic solutions in the area of early recognition, which is supposed to enable formally organized activities within this scope.
Keywords: *turbulent environment, management information, early recognition systems, implementation procedure.*

1. Introduction

The contemporary environment is in the constant process of change, which forces organizations that want to maintain and strengthen their competitive position to apply solutions enabling to cope with these changes. Tools which allow to counteract the effects of such changes, also, if not in the first place, allow to avoid them, via their sufficiently early identification. The tasks are related to the implementation of the process of perception and interpretation

* Ph.D., Assistant Professor, Department of Economics, Management and Marketing, Institute of Economics, Sociology and Philosophy, Cracow University of Technology, ul. Warszawska 24, 31-155 Cracow, e-mail: januszbak@pk.edu.pl.
** Ph.D., Assistant Professor, Institute of Public Affairs, Department of Management and Social Communication, Jagiellonian University, ul. Prof. Stanisława Łojasiewicza 4, 30-348 Cracow, e-mail: g.baran@uj.edu.pl.

of changes in the environment to understand them better, but primarily to anticipate its potential, future states. It arises from managers' information needs, who, in order to take decisions concerning the future of the organization, have to be equipped with adequate and provided early enough information about the environment (states, changes, trends). The methods and tools enabling the reduction of the uncertainty of decision-making processes and an increase in their effectiveness must lead to obtaining and processing information about the environment faster than the competition and enables better understanding of the conditions of the environment.

Early recognition systems (ERS) are a response to the conditions of the organization functioning in the contemporary environment as outlined above, and challenges within the scope of the informative support for decision-making processes. Research shows that they are mainly of informalized character in organizations, they are dispersed on various levels and in various functional areas of organizations, and quite often they are based on unconscious, habitual actions, and, in consequence, their advancement and effectiveness are low. Based on the main characteristics of early recognition systems, the article presents the framework procedure of systemic solutions in the area of early recognition (ER), which is supposed to enable formally organized activities within this scope.

2. The role and the place of early recognition in the organizational system

Being an open system in the constant codependent relationship with the environment which is turbulent, an organization builds a relation with it, among others, in the strategic management process in which a strategy is an attempt made to take advantage of potential opportunities and threats. Within the framework of this process, organizations have a possibility to identify potential opportunities and threats owing to the observation of the environment and the anticipation of its changes on the basis of the observation of the current signs of the future. As various authors indicate (Watkins, Bazerman, 2003; McGee, 2004; Mercer, 2001), changes are preceded by sent early (weak) signals which are a medium of information about them. By feeding information processes in organizations, they provide knowledge and become a key variable reducing the decision-making uncertainty and increasing an ability of the strategic alignment of the organization's capabilities and the expectations of the environment (Ansoff 1985). An ability to anticipate the shape of the future environment enables the identification of possible strategic options because the information constitutes the basis of decision-making

processes and integrates the elements of the strategic management system which secures the future of an organization.

The "early recognition" notion was introduced to the literature in 1980s by Kirsch (Kamas, 1992, p. 24) who indicated that in accordance with the strategic management principles, the observation of an organization**'s** environment cannot focus only on finding threats and on warning, as it was done within the framework of "early warning", but it should also serve the recognition of emerging opportunities. At the same time, the observation of the environment cannot be limited only to previously defined areas but it should run comprehensively, including the whole environment. The introduction of the notion of early recognition systems meant the extension of the environment examination tasks by communicating chances, but also going beyond the quantitative identification mechanisms.

We can define the early recognition system as a special type of an information system focused on the anticipation of changes undergoing in the environment of an organization and the reduction of uncertainty related to them, as well as informing top managers about it early enough to make it possible to undertake adequate actions enabling to avoid strategic surprises. The specificity of such a system consists in directing the processes of information processing towards perception and interpretation of weak signals being the symptoms of changes, specified by future opportunities or threats. The system is a tool informatively supporting strategic management (the planning and strategic control systems functioning in organizations) via providing information reducing the uncertainty of decision making situations leading to better alignment of the organization and the environment and by this, guaranteeing the survival and growth of the organization.

When analyzing the literature of the subject, we can identify areas in which ERS are placed and within the scope of which their usefulness for management activities is perceived. The areas are not separable and they should be rather treated as perspectives of looking at ERS in the organization activity structure.

ERS in decision-making processes

The fundamental and at the same time the broadest area in which ERS are located is the decision-making area. The systems are *de facto* designed to secure the information needs of decision-making processes in the strategic area. On the one hand, they receive (weak) signals from the environment, and on the other hand, they provide information reducing uncertainty in decision-making processes. Their sense boils down to the identification of problems, which translates, for example, into Mintzberg**'s** decision-making model (identification-development-selection) (Choo, 2006). The need itself is defined

as an information need, namely the difference between the information about the current situation and the expectations which base on experience, trends, benchmarking, or other ways of insight into the current situation.

ERS as a catalyst of learning

Another area in which we can indicate the usefulness of ERS is the area of organizational interpretation. Such location, at the point of contact between the organization and the environment is compliant with the model of an organization proposed by Daft and Weick (1984).

The problem is perceived in a similar way by Koźmiński (2004, p. 99) who writes that ERS are a source of the situational knowledge generated on the basis of weak signals, which has to be integrated with the problems of the organization against the background of the environment. Associating knowledge having its roots in weak signals with the currently possessed knowledge, bears all traits of a creative process which leads to creating new knowledge. The use of signals in the learning process is, according to Choo (2006, pp. 240-244), an interaction between giving meaning to the signals from the environment, creating knowledge on this basis, and making decisions. In this cycle, constant information flow takes place in such a way that the outlets of one subsystem form a context and provide information feeding another subsystem.

ERS as a tool of risk management

In risk management, Mitroff and Shrivastava (1987), among others, perceive ERS as a system serving the detection of coming crises and a key element of coping with them effectively. In the model they proposed, the detection stage is identified with ERS which comprises the management information systems, the computer control systems and the systems of scanning the environment, analyzing both the inside and the environment of an organization in the search for coming crises. ERS serves as the protection against them if they are identified early enough, but on the other hand, it can be used to prepare for the battle with it. In turn, Kotler and Caslione (2009) place ERS in the context of the chaotic environment which creates huge opportunities, but at the same time generates a considerable risk, and indicate a necessity to build and develop skills, systems and processes enabling fast recognition of turbulences in the environment, and, what follows, the identification of potential opportunities/ threats to avoid critical situations. In their understanding, the system is supposed to serve the recognition of weak signals which will be the basis for risk assessment.

ERS in planning and strategic control

A particularly significant area is that of planning and strategic control, or more broadly, strategic controlling. ERS is one of the key elements of the strategic management system because it constitutes a tool for recognizing changes in the environment in the form of emerging potential opportunities/threats, and informatively secures its implementation. Gołębiowski (2001, p. 81) claims that: "both strategic planning and strategic control deal with setting the strategic directions in changeable conditions of operation" and indicates the essence of planning and strategic control consisting in the permanent monitoring of external and internal conditionings of operation and the progress in achieving strategic goals, and the implementation of the organization strategy; they are focused on the detection and interpretation of signals about coming changes before they evoke unfavourable consequences and on proper reaction to them in order to increase the level of strategic alignment and a capability of correcting threats and using opportunities. Such an attitude, closely connecting planning and control, by leading to the emergence of controlling which takes over and supports the planning and control process indicates a significant role of ERS in this process (Gołębiowski, 2001, p. 84).

Taking into account the above areas of the ER application and their present state of practical use, one of the basic challenges in the context of the current stage of development is the strive for the institutionalization of this function. The question organizations should ask themselves is not the question whether to systemize activities within the area of ER but how to do it to achieve the best possible effects.

3. The basic principles of the early recognition system implementation

When analyzing the literature and the research by various authors, we can indicate four fundamental principles which concern the ERS design and implementation. According to them, the system:

- should be designed and implemented on the strategic level,
- should be implemented as a formalized system,
- should actively involve the users,
- should be based on the organizational information system (Choo, 1998, pp. 203 -211).

The ERS goals, the areas of its product application, as well as the character of the implemented processes orient it strategically in the sense that the activities are of a long-term, integrative and cross-sectional character, and the future of the organization depends on the effectiveness of its functioning. ER cannot be treated as an insignificant, secondary organizational function that only organizations which are large and rich in resources can afford. In

the turbulent conditions of the environment, organizations cannot remain indifferent to changes in the environment, they have to possess some knowledge about them, and competences related to the early recognition of the changes carried by weak signals become a necessary (at least) condition of maintaining the competitive position. It is particularly important for small and medium-sized organizations which have no reserve resources and a possibility to "get lean" in a crisis situation. For them, encountering a strategic surprise in numerous cases will mean bankruptcy. Small and medium-sized organizations have to rely on their knowledge about the environment and, owing to higher flexibility, win the fight for a competitive position with large organizations because large organizations can amortize the shortage of their knowledge with the possessed resources. Maintaining the dynamic organization-environment balance forces turning the key process securing decisions informatively into strategic activeness. For these reasons, a higher level of management should be a promoter of this system in the whole organization. ERS will be effective only when it acts in a continuous, not an incidental way, and because of this it should be treated as an investment (similarly to research and development) and although on an ongoing basis it consumes resources and generates costs, it can lead to a spectacular success of an organization as a result of recognizing one, specific, ground-breaking change in the environment (earlier than others). The investment should concern both people and the sources of information. Early recognition requires the involvement of all members of the organization, therefore, leadership should be located on the top management levels so that it could possess authority and power enabling the integration and coordination of actions and information flows. The strategic significance of ERS is constituted by the use of the system outlets in making and applying strategic decisions.

Moreover, the implementation of formalized, structured and continuous systems is necessary. Formalization is to ensure the qualities of permanence to ERS, its isolation from other systems and, to some extent, limit the freedom of activity to behaviours which are desired. Non-formalized ERS are just additional activeness to which free time is devoted, and implemented only when it is convergent with the interests of an individual, efforts are doubled and significant information may "escape" as a result of the occurrence of gaps in gathering and processing information. In fact, such an attitude results in the lack of knowledge on how the environment is changing and instead of building competitive advantage it becomes activeness with a vague aim, responsibility and benefits. Formalization should concern an organization of any size. Various authors pay attention to the fact that managers are naturally oriented to the recognition of changes and they only need organizational support enabling an improvement in the processes of gaining, interpreting

and integrating information about the environment. A formalized system means that the information processes base on organizational goals and critical information needs. A continuous system means that in an uninterrupted way information is gathered, networks of contacts and the base of knowledge are built. Obtaining information should be decentralized, and its processing should be centralized, so that it would be possible to integrate information, eliminating its doubling and maximizing effectiveness.

Decision-makers, as the ERS users, cannot be passive but they should actively co-create and co-participate in these systems, not only in the strategic sense mentioned before, but also in the operational sense, starting with the articulation of information needs and the context in which the information will be used, and ending with the generation of feedbacks. The users of the system are the focal point for them, these are their needs that initiate new information cycles, and each person and unit in the organization is a potential valuable detector of information and the source of knowledge. The organization is "flooded" with information from customers, consumers, suppliers, etc., therefore, everyone in the organization has to be aware of the value and significance of the information they obtain every day from the environment, and which they do not usually ponder. They have to be motivated to collect and process information because the lack of involvement on their part will lead to lower effectiveness.

A considerable amount of information needed for early recognition can be possessed by an organization in its resources, but it is usually dispersed information, and the employees possessing it are not usually aware of its importance and value for the organization. Due to that, they do not feel a need to share it. Since the information resources possessed by an organization and competences to obtain it within this scope are dispersed all over the organization, the processes which serve to obtain, process and spread strategic information have to be integrated with the information management processes in the whole organization to enable the implementation of the aforementioned actions in a systematic way. The construction of ERS and the integration with the organization information system should be based on one central point of the convergence of dispersed information in the whole organization (Gilad 1994, p. 170). The integration of the dispersed competences which support obtaining and analyzing weak signals creates a system able to recognize the key changes in the environment.

4. The framework procedure of the early recognition system implementation

To sum up the deliberations carried out so far, in the context of the tool subject to implementation within the organizational system, we can say the following things about ERS:

- it is an information system implementing information processes related to obtaining, processing and passing information focused on the needs for taking strategic decisions,
- it is a subsystem of the strategic management system, the area of the environment examination in particular, supporting informatively the implementation of the strategic controlling function (planning and strategic control) which facilitates the flexibility and adaptation in the turbulent environment);
- supports actions in the context of identifying opportunities for growth and implementing or redefining strategic goals, as well as provides top managers with information necessary to take more rational strategic decisions;
- on the basis of the identified future opportunities and threats which are communicated through weak signals, it predicts long-term changes in the environment and analyzes their impact on a possibility to implement the organization's bundle of goals;
- people, along with their capabilities of perceiving and interpreting information, are a key subject of ERS;
- the efficiency of functioning depends on the scope of the perception of the environment and the intensity and interpretation of the obtained information.

Taking the above into consideration, as well as the fact that ERS have to be planned and implemented systematically, the implementation of ERS in an organization should be an organized activity. The process of implementing the formalized system should include four major stages (preparation - designing-implementation - exploitation) which consist of partial tasks based on the analysis of the situation, requiring specific decisions to be taken:

- becoming aware of the real goals of activity and their mutual relations - by the management and the team members,
- planning the actions - planning the means and methods of operation adjusted to the goals and the conditions,
- winning and allocating resources - necessary to fulfill the goal or transform the conditions in order to achieve the goal with the possessed resources,
- implementation of the plan - systematic and consistent activities,
- inspection of the implementation - comparing the implementation with the adopted patterns and correcting the activities (Zieleniewski, 1979, p. 203).

The framework implementation procedure presented below (Table 1) is a set of key activities which must be undertaken within the framework of the organized actions to bring about the effective implementation of ERS in an organization.

The first stage of this process is the preparation stage, the next one is the designing stage, then implementation, and the final one is the exploitation and improvement of the implemented system functioning. The main emphasis should be put on the first two stages, because the key issue to achieve success its good consideration and preparation of actions (Bieniok, 2004, p. 57).

Table 1. The framework procedure of the ERS implementation

Stages	Characteristics
I. Preparation	1) Making managers aware of the necessity to implement ERS. 2) Defining the main goals of ERS. 3) Audit of the ERS currently occurring in the organization.
II. Designing	1) Development of the ERS concept and design intent. 2) Designing the ERS architecture. 3) Defining methods, resources and budget necessary for the implementation and exploitation of ERS.
III. Implementation	1) Appointment of the ERS implementation team. 2) Training the organization members on the essence, principles of functioning and their role in ERS. 3) Conducting necessary changes in the organization (structural, process-related ones). 4) The launch of ERS.
IV. Exploitation	1) Using information and knowledge generated by the system in the decision-making processes. 2) Inspection of the ERS functioning. 3) Suggestions of changes and constant improvement of ERS.

The procedure is initiated by the top management, as a consequence of realizing a need to possess such a system and the will to implement it, according to the principle adopted before that it should be designed and implemented at the strategic level. The realization of these needs becomes a starting point to define the goal for which the ERS will be implemented, the functions it will fulfill and the set of tasks necessary to be performed to achieve the goal. The next stage should be a diagnosis of the present situation within the framework of the current ERS audit which should give an answer to the question about the scope, intensity and effectiveness of the currently implemented activities and should include, among others, the identification of

the ERS users and their needs, the identification of the kinds and sources of the currently obtained information. Designing a specific organizational solution in the form of the formalized system and defining the methods and resources necessary to implement ERS are the actions ending the preparation stage, after which the managers have the awareness of the currently implemented actions and are in the possession of the design of the formalized ERS construction, functioning and the way of implementation. The implementation stage begins with the temporary (until specific effectiveness of functioning is achieved) appointment of the team implementing ERS. The team should have adequate competences, necessary resources and authorization to carry out changes in the structure. At this stage, education and training of the personnel is extremely important, making them aware of the specificity of the system and the character of involvement expected from them. The implementation team introduces changes, assigns responsibilities and launches the first information cycles related to the perception and interpretation of information. The entirety is fastened together by the inspection which concerns the functioning, the way of implementing the tasks and procedures, as well as the internationalized information culture. The results of the inspection become a source of the suggestions for the improvements and this way the whole system is constantly improved.

5. Conclusion

The presented framework procedure of implementing and exploiting ERS enables the effective implementation of systematic solutions with reference to the early recognition of changes in the environment, it only requires the adjustment to the specificity of a particular organization. The ERS implementation and keeping it later "on the move" will allow the organization to find the place and the position in the chaotic environment, as well as to keep and improve its competitive position.

References

Ansoff I. (1985). *Zarządzanie strategiczne*. Warszawa: PWE.
Bieniok H. (2004). *Metody sprawnego zarządzania.* Placet: Warszawa.
Choo Ch. W. (1998). *Information Management for the Intelligent Organization*. Medford: ASIS.
Choo Ch. W. (2006). *The Knowing Organization*. New York Oxford: Oxford University Press.
Daft R. L., Weick K. E. (1984). Toward a Model of Organizations as Interpretation Systems. *Academy of Management Review*, 9 (2).

Gilad B. (1994). *Business Blindspots*, Chicago: Probus Publishing.

Gołębiowski T. (2001). *Zarządzanie strategiczne. Planowanie i kontrola.* Warszawa: Difin.

Kamas D. (1992). Systemy wczesnego rozpoznania w świetle literatury niemieckiej. *Przeobrażenie Systemów Kierowniczych*

Kotler P., Caslione J. A. (2009), *Chaotics. The Business of Managing and Marketing in the Age of Turbulence*. New York: Amacom.

Koźmiński A. K. (2004). *Zarządzanie w warunkach niepewności.* Warszawa: PWN.

McGee K. (2004). *Heads Up: How to Anticipate Business Surprises and Seize Opportunities First*. Boston-Massachusetts: Harvard Business School Press.

Mercer D. (2001). Fear of the Future – a New Management Approach. *Management Decision*, 39 (8).

Mitroff I. I., Shrivastava P. (1987). Effective Crisis Management. *The Academy of Management Executive*, 1 (3).

Watkins M., Bazerman M. (2003), Predictable Surprises: The Disasters You Should Have Seen Coming. *Harvard Business Review*, March

Zieleniewski J. (1979). *Organizacja i zarządzanie.* Warszawa: PWN.