6. Modern methods of IT support

6.1. IT support for logistics, finance and HR

Building the IT support for the defense and security (national, state, interior) involves ventures, exceeding far beyond the technical sphere and requires multi-sided actions. ERP solutions may meet the expectations as they involve:

♦ Dynamic processes connected with functions in the organization (architecture of processes),

♦ Methods for evaluation of effectiveness in single organizational components (architecture of effectiveness),

♦ Combination of organizational structure roles and tasks which creates an organization,

♦ The role and range of information and structure of data processing,

♦ IT functions and services provided by single applications (structure of applications),

♦ Technical infrastructure creating the environment for application to operate.

Organizations, institutions and companies which adapt process approach and ERP solutions for logistics gain strategic and organizational benefits and reduce the financial costs of implementing IT solutions.

Strategic benefits:

♦ Environment for cooperation;

♦ Possibility to transform, change and create the knowledge base;

♦ Organizational and operational flexibility and adaptability;

♦ Platform ensuring constant operational efficiency.

Creating an adaptive (flexible) organization:

Efficient logistics;

♦ Right decisions

♦ Scalability and possibility of the global use;

♦ Organizational and operational flexibility and adaptability;

♦ Possibility to organize work-teams.

Economic effects – total costs of exploitation:

♦ Standardization and optimization of business processes;

♦ Reduction of previously used systems and interfaces;

♦ Using current investments in IT with SAP NetWeaver;

♦ Planning future needs;

♦ The best set of ready-made components.

Risk limitation:

♦ Engagement, partnership and experience of SAP;

♦ Solutions for security services and for the armed forces;

♦ Large and active group of SAP clients from the defense and security services, possibility to exchange experience;

♦ Benefits from huge SAP investments in research and development.

Presented benefits from implementation of modern information technologies, based on SAP technology and process approach, facilitate building and use of the integrated (multi-level) IT systems that support rational management of the capacity.

6.2. IT system as a crucial link in organization strategies

As mentioned before, the IT system is an integral part of the whole organization which, without it, cannot exist as an independent solution. A strategy of an organization defines the course of action and adaptation of particular organizational elements. In other words, the strategy of an organization is a characteristic combination of people, resources and methods to accomplish organizational goals within a defined time scope.
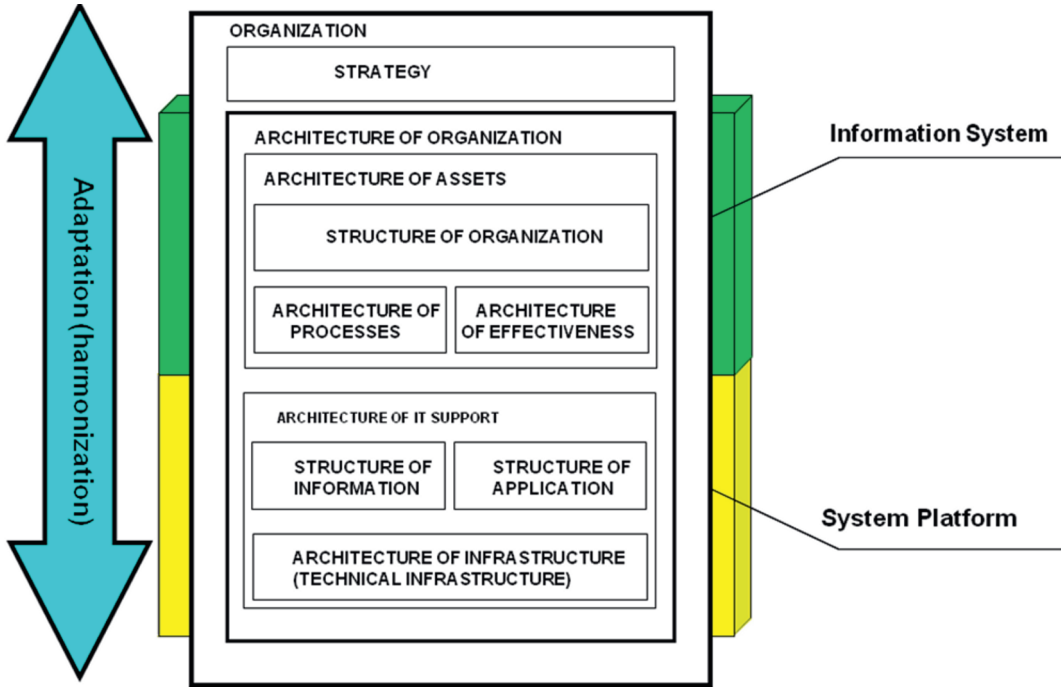
Source: D. Samól, J. Kuck, *Nowoczesne metody wsparcia informatycznego*, AON, Warszawa
Fig. 20. Basic model of an organization with IT support elements

The presented model is useful for defining guidelines for IT support of an organization. Figure 20 shows the operational area of an IT system and its technical aspects – the system platform in the organization. It is very important to adapt the platform for the circulation of information already at the stage of building and later, while exploiting it. The technical layer of the system should include the organizational structure with the users and their roles, the range of information and the place of the event recorded in databases. Generally, the models of processes reflected in the information structure involve: managing, command and control, informing, reporting, planning and numerous areas connected with logistics, finance and HR. This is a key to success of the whole enterprise. This is so, because the information structure determines the application pattern. Experience shows that following the presented pathway in one direction only, i.e. "from the top to the bottom", to model the whole organization at the very basis and then creation of the application structure is time consuming, costly and sometimes even impossible. That is why the SAP solutions, with IDS Scheer software, provide ready- made reference patterns (models) which combine the information system and the required structures of the system platform. Only with such support it is possible to create IT support for very complex network of processes, in the right time and at low costs.

The question arising is how to model (map) the strategy of an organization. The first step is to explain the situation in the surrounding of the organization and then to formulate findings important for a new solution. The projects implemented so far prove that IT solution should support many areas where an organization, institution or company comes into contact with its surrounding. This includes cooperation of an organization with agencies in the field of acquisition, direct or indirect cooperation with the industry, and cooperation within individual projects where relations are built at the legislative level. That wide range of relations is important to define guidelines for IT solutions. It is worth mentioning at this point that nowadays, modern companies build IT systems for themselves as well as for their surrounding. This is a key feature of SAP solutions which base on NetWeaver integration while application platforms are prepared to cooperate within a wide business environment, reaching far beyond a single organization, institution or company.

While modeling an organization with logistics, the basic strategy map may be described in four perspectives. These perspectives are developed and may concern many aspects of organization – especially where application of information technology is necessary. In practice, in large organizations, institutions or companies a number of maps is created. They appear as the perfect tool to formulate and communicate partial strategies at all organizational levels.

6.3. Introducing organizational changes in logistics; organization, institution and company with the support of information technology

While presenting the IT systems for logistics, finance and HR, it is important to explain three basic terms: information system, data processing system and computer system. The basic aim of an information system is to collect, process, store and distribute information for the decision-makers to select proper choices. An information system where communication and data processing for logistics, finance and HR are assisted by computer techniques is called a computer system. In that respect, a computer system may be defined as a separate, computerized part of an information system.

It is important to implement the computer system only when the structures, tasks and managing processes in logistics, finance and HR are identified and ordered. It concerns the whole environment since the integrated (multilevel) IT systems have very complex structure and integration takes place at different levels, comprising separate functional areas. Integration proceeds throughout six subsequent stages. The importance of particular activities changes, depending on the level of the IT systems design. It is worthwhile to focus on the lowest level of integration. There, it is required to unify/standardize, e.g.: concepts, entries, definitions, etc. In logistics it means standardization of the material codes, limits of any kinds, norms and accounts. This first step to organize logistics, finance and HR at a single organizational level in institutions, military bases, police headquarters, etc., streamline implementation of the system. Stable and transparent structures of logistics, finance and HR, defined processes and complete knowledge (databases) are the basis to build an integrated (multilevel) IT system. First of all, the guidelines in organizations, institutions and all areas and organizational levels should be defined in a way to record accurately and enter decisions, requirements, property, connections and ranges and contents to the integrated (multilevel) IT system. In practice, the list of goals set for IT solutions - the integrated (multilevel) IT system, should facilitate building and developing on many levels and in different perspectives.

The first and most obvious perspective is supporting the rational resource management for logistics. The second perspective assumes that an IT system should contribute to improved management processes in logistics, finance and HR. In the next perspective it is easy to notice the importance of the system for the quality of performing logistic tasks in strict connections with finance and HR systems, at particular organizational levels. The fourth perspective indicates the need for integration with the structures of other organizations, institutions and companies, locally and internationally. The perspectives help to achieve a strategic insight into the design of solutions, which include all important elements. Modeling of the indicated perspectives is the guideline for an IT solution within particular subject areas and criteria of effectiveness in such fields as: logistic procurement (acquisition, production and distribution) in connection with financial and HR security.

Success of a wide range and important project demands proper skills and resources: collected knowledge, training and willingness to cooperate on the platform. Only with these resources can the following elements work properly: information structure, application structure and the technical structure. In other words, IT solution is composed first by the well prepared people, able to cooperate within an organization, and only then, by technology and infrastructure. Single thematic areas may be observed also from the process perspective. The guidelines are formulated in details at the level of various categories of processes, such as: command and control, informing, planning, predicting, simulation, inventory, reporting, designing structures and norms, evaluating and monitoring. This helps to shape an IT solution in all the mentioned aspects – architecture in connection with organizational changes. In such prepared environment, an IT system can be fully useful as an integral part of the whole organization, institution or company.

6.4. The integrated (multilevel) IT system for logistics, finance and HR

Analyzing solutions for informatization in the leading European countries, the experience of Polish companies and that of the author himself, one can conclude that there is an urgent need for informatization of logistics, especially logistic procurement in connection with finance and HR, within all organizations and institutions. Informatization should make use of modern technologies (software, applications, equipment, computer networks) and ensure tele-information security. Moreover, it is necessary to complete the development of the system of product coding as a basis for database and informatization of the all assets in single organizations, institutions and companies. As an end result the Integrated (Multilevel) IT System for Logistics, Finance and HR will be built. This system would work in a real time, thanks to the applied mechanisms of planning, analyzing, monitoring and evaluating.

Such a solution will create new quality. Furthermore, it will support inventory of assets by such criteria as: quality, quantity and value in all units (branches) at particular organizational levels. The experience of other countries prove that in order to start building the integrated (multilevel) IT system, it is first necessary to organize and at the same time identify logistic, financial and HR tasks in the areas which would be integrated.
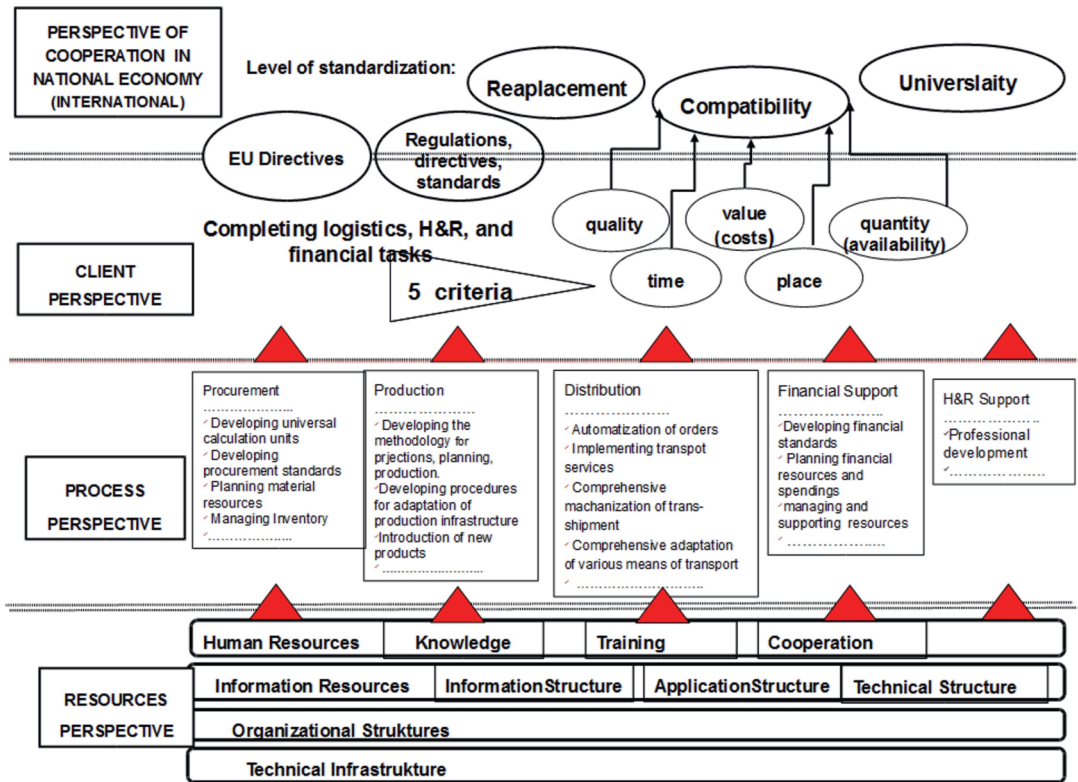
Source: elaborated on J. Kuck, *Nowoczesne technologie...*, cit., p. 102.

Fig. 21. Detailed map of organization strategy

The objective of such system is to support:

♦ Comprehensive integration within an organization, institution or company and their external surrounding;

♦ Perfect performance of tasks in single units (branches) at all organizational levels;

♦ Perfect process management;

♦ Rational resources management to provide security.

While building the system, the range and time of introducing single standardization levels (compatibility, exchangeability, universality) should comply with the task performance critera, such as quality, quantity, time, place and value. The precisely defined tasks should improve the organizational structures, human resources (including knowledge, training and skills), information and the technical infrastructure.

In the process of decision making in logistics, finance and HR and the right flow of information play an important role. As never before, it is obvious that advantage is gained by the one who possesses information. To get hold of the information in real time, it is necessary to implement IT tools for single processes. IT support for information processing in logistics, finance and HR should streamline the following:

♦ Command and control, managing,

♦ Informing,

♦ Planning,

♦ Predicting,

♦ Simulating,

♦ Inventory and reporting,

♦ Developing structures and norms,

♦ Monitoring and evaluating.

The efficiency of an IT system should be ensured by implementing good-quality applications and proper technical infrastructure. The application structure in such system may be discussed at two levels: the logical and the physical one. The technical structure is used to collect, process, store and distribute (transfer) information while single elements of an IT system are closely linked with each other.

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