INTELLIGENT INFORMATION SYSTEMS. AN IMPORTANT AID TO NATIONAL SECURITY

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Securing organizational processes is an objective and a permanent objective of organizations active in the field of national security, and to this end there are different solutions, both software and hardware. A modern solution may be the efficient use of Business Process Management and Business Process Execution Language as tools to optimize and streamline decision flows.

Key words: *Intelligent information systems, National security, Business Process Management, Business Process Execution Language.*

1. INTRODUCTION

Intelligent systems are an essential element of national security. Thus, these systems must respond to the problems of managing hardware, software, data and computer networks in a strategic way. The importance of information systems lies mainly in the effective and responsible understanding on behalf of all managers or people in an organization of the need to adapt to the global information society. Consequently, computer systems today are increasingly becoming a vital component of national security.

Using computer systems and their inherent applications in operational and managerial fields to create competitive advantage ensures Internet based exchange of information within local and national entities. For this purpose, the basic concepts of intelligent information system provides technical and behavioral elements that help substantiate specialized applications, the decision-making process and to build a strategic advantage against competitors of the organization.

The Internet - globalization relationship can be seen as one in which each factor causes the other. Globalization is a phenomenon that tends to emphasize extensive running and development of organizations, and as such more and more small and medium sized organizations fit into this phenomenon. Whereas most large organizations have developed systems globally as a consequence of the difference in costs in various places around the globe, small and medium-sized organizations use the Internet as a primary means of promotion for their activity.

2. THE CONCEPT OF BUSINESS PROCESS MANAGEMENT AND ITS USE IN NATIONAL SECURITY

A business consists of any group of activities carried out in order to produce a particular result or to meet the needs of specific customer oriented market. This result appears as a consequence of globalization. In a modern organization, information technology is leading to new guidelines requiring the use of increasingly sophisticated means (artificial intelligence, expert systems, etc.). The business environment is constantly changing and requires new techniques and methods of preparation of the process.

Business Process Management (BPM) is a structured software solution with the role of modeling and optimizing current activities (especially repetitive)

of an organization and inside and outward human interactions, and operating with all of the above in the form of processes. Information systems in the field of national security organizations have a high level of heterogeneity, but BPM provides solutions for integrating highly diverse systems.

Unlike traditional systems, Business Process Management offers advanced features for modeling and automating business flows in the organization. Also, access to diverse data sources is much easier given the interoperability of the large number of applications. BPM based new technologies enables the modeling of business processes directly by analysts (i.e. operative, financial and economic), without the support of IT departments.

3. IMPLEMENTING BPM TECHNOLOGIES IN EXISTING SOFTWARE APPLICATIONS

Technologies and standards used in implementing BPM are XML and Web services. The latter represents a standardized means of communication between Web applications. The language, specific to BPM, is Business Process Execution Language (BPEL). It is defined by a standard based on XML and Web services, which allows modeling and automating their business flows.

With this dedicated language, business flows and business rules can be defined in an intuitive way. Thus, a high level of transparency in running business operations is provided. Due to these innovations, the BPEL technology simplifies the integration of various applications and business processes.

Business Process Management solutions are used both to automate internal processes within the organization and with partners to conduct information flow. These solutions offer flexibility in integrating and automating complex business processes, involving several organizations. The implementation of BPM technology in existing computer systems requires complex information analysis that identifies business processes and establishes correlations between them. Switching to a new technology cannot be made in the absence of cost analysis seeking to identify the cost of designing, implementing and maintaining various solutions.

Once the analysis phase is over, its conclusions lead to the design of management models by using visual tools included in the Business Process Management applications. In fact, modeling business processes is meant to integrate them into the information systems from within an organization. The instruments used are based on UML (Unified Modeling Language) and BPEL (Business Process Execution Language) technology. As a result, the implementation of the solution results in the generation of components from models.

Solution testing and optimization is the last stage of implementing the BPM. It involves testing the menus of business processes, correction of programming errors or modeling, and optimization of these processes.

4. THE BUSINESS PROCESS EXECUTION LANGUAGE. AN OVERVIEW

BPEL is an XML-based language derived from WSFL (Web Services Flow Language) and WSDL (Web Services Description Language), applied to business. It allows developers to describe their business processes as Web services.

BPEL focuses on modern business process modeling and adopting Web services as an external communication mechanism. It integrates Web Services

Description Language (WSDL) features to describe incoming or outgoing messages.

Business processes can be described as executable business processes, which shape the current behavior of a participant in business interaction protocols and the business processes that use descriptions specifying the behavior of parties to exchange messages without discovering their internal behavior.

The descriptions of processes in business protocols are called abstract processes. BPEL is used to model processes both executable and abstract ones. For large-scale programming, BPEL describes the abstract processes as a series of observable behaviors. Thus, it shows you have expected/sent messages when you have found compensation for failed transactions, etc.

The main role of BPEL in data exchange via Web services is to define all steps in a transaction. The use of BPEL is designed to ensure that processes are executed in the correct order. BPEL can automate the sequencing of messages, but it does not deal with the effective execution of transactions. Thus, BPEL provides a much cheaper method than the much stronger (and more difficult) EDI (Electronic Data Interchange).

5. BUSINESS PROCESS MODEL AND NOTATION

Business Process Modeling Notation (BMPN) is the new standard for the flow of business processes and web services. Created by the Business Process Management Initiative (BPMI), the main goal of BPMN is to provide a notation that is readily understandable by all users of software for business. This includes business analysts that create the initial projects and technical developers responsible for implementing the technology that will perform these processes.

A second purpose is equally important and consist in ensuring that XML languages designed for business process implementation such as BPEL4WS (Business Process Execution Language for Web Services) or BPML (Business Process Modeling Language) can be expressed visually by a common notation. BPMN allows business process management (BPM - Business Process Management). Thus, BPMN is a central factor for a new initiative in the world of Enterprise Architecture - Business Process Management.

Business Process Management is focused on managing change and improves business processes. Business Process Management integrates different disciplines such as process modeling, simulation, workflow, Enterprise Application Integration (EAI) and Business-to-Business Integration (B2B) in one standard. The novelty of Business Process Management may lead to the false assumption that business processes were not previously managed. That of course is not true - many organizations have shaped and manage their business processes over the years using a wide variety of techniques and tools. These techniques have been either partially successful or totally failed because of a lack of standards and a full life cycle to control and guide the design and execution of business processes. Managing the change process cannot be an ad hoc process - it is necessary to control the management of innovation, architecture, design and processes. Hence, to understand the architecture, design and deployment processes modeling standards in business are required along with execution of business processes.

6. CONCLUSIONS

Implementing intelligent information systems new technologies in belonging to organizations working in the national security is welcome, organizations in the member states organizations in

our country is already having these technologies widely implemented. Given the specific processes of change in which all these organizations, the current geo-political context, securing business processes through intelligent applications is mandatory, as a primary defense operations and secret documents.

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