ARCHITECTURAL APPROACH, BASED SYNCHRONIZATION BUSINESS AND INFORMATION TECHNOLOGY

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Summary: In this report attempst to clarify the substance of contemporary architectural approach and the related architectural processes. Particular attention is paid to the funding required to maintain this dynamic development and in line of business and IT.

Key words: architectural approach to enterprise architecture, business architecture, architectural process, information technology.

Архитектурния подход, основа за синхронизация на бизнеса и информационните технологии

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Резюме: В настоящият доклад се прави опит да се изясни съвременната същност на архитектурния подход и свързаните с него архитектурни процеси. Особено внимание е обърнато на необходимостта от средства за поддържане динамичното развитие и то в синхрон на бизнеса и ИТ.
Дейността на съвременното предприятие е невъзможна без информационните технологии, поддържащи неговите бизнес процеси. Съвременните информационни технологии се явяват не само основен инструмент за реализация на ключовите процеси в една организация, но и в много от случаите, ключов фактор за повишаване ефективността и успешното развитие на бизнеса

Ключови думи: architectural approach to enterprise architecture, business architecture, architectural process, information technology.

Доклада е публикуван в :

INTRODUCTION

The activity of the modern enterprise is impossible without information technology supports its business processes. Modern information technology not only constitute a major instrument for the implementation of key processes within an organization, but in many cases, a key factor for enhancing the effectiveness and successful business development [1, 2]. In this sense, Bill Gates in his book "Business at the speed of thought" writes: "Information technology and business are becoming increasingly interlinked. I consider it a serious discussion of these topics, without prejudice to the other, is simply absurd "[4].

The idea of close and effective interaction of business and information technology are the basis of the architectural approach in which these two concepts are considered as a whole - the enterprise architecture The history of the architectural approach stems from the mid 80-ies of XX century. Today, according to surveys of IBM CEO Survey 2008 profitability of an enterprise is increased by:
- 2% with only the optimization of information technology;
- 8% in the optimization of business only;
- 20% for implementation of the architectural approach.

In this report attempst to clarify the substance of contemporary architectural approach and the related architectural processes. Particular attention is paid to the funding required to maintain this dynamic development and in line of business and IT.

PURPOSES AND APPLYING OF THE ARCHITECTURAL APPROACH:

1. Maintaining synchronization in business development and information technology supporting it.
2. Increasing integration of enterprise:
- Integration of markets;
- Integration of designers, developers and producers
- Integration of hardware and software, etc.
3. Support analysis of the enterprise in various fields - economic, organizational, quality, etc.

Reasons for using the approach
- Growth of the scale and complexity of IT as well as the value and risk in the projects in their creation and deployment;

• Inclusion of IT as part of the core business and therefore increasing the efficiency requirements for investment in IT;

• Transition to a process approach and the necessity of IT support processes in the enterprise.

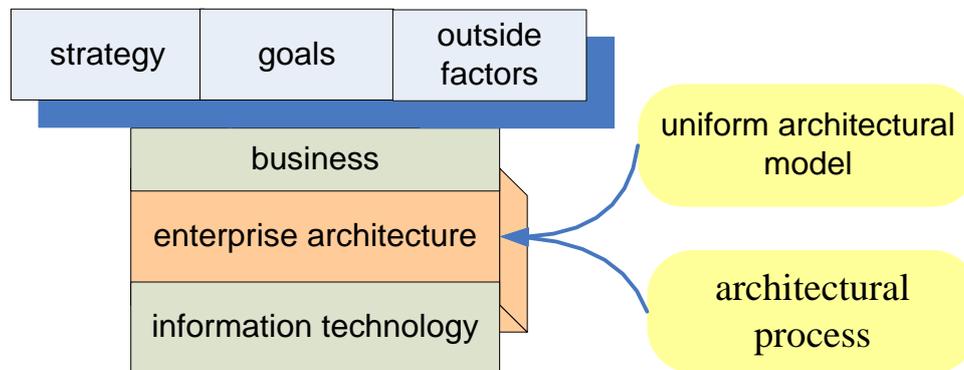## Substance of the architectural approach

Figure1. Architectural approach

Allows you to draw a clear picture of one or another object as an organization (company, department) and the subject area of the functional activities of several organizations (figure1).

The architectural approach "Enterprise Architecture Framework" systematizes and allows the company a fixed architecture description in the form of working models, charts and comments of all functional modes of operation of an object.

Architectural approach is defined as a critical factor for organizations that effectively use IT in their business[2]. It is an instrument for increasing the effectiveness of existing business processes in organizations and the development and implementation of technical systems supporting them to provide.

The main task of the architectura approach is to optimize the mutual relationships and existing relationships within an organization by establishing a corresponding IT infrastructure and applications that support this activity. Figure 2 presents a functional model of the architectural approach. Architectural processes have an influence on architectura artifacts in order to create an architectural description of the business. The level of maturity of enterprise architecture is established by architectural analysis. In accordance with this level, feedback is established for synchronization of business needs with the deployment of information technology.
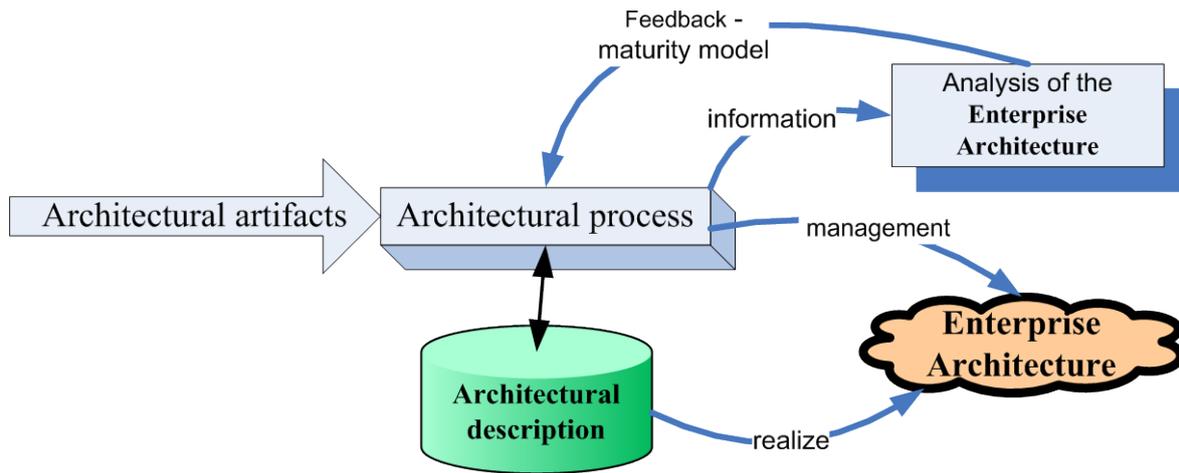
Figure 2. Functional model of the architectural approach

ENTERPRISE ARCHITECTURE

According to ISO 15,704 (Industrial Automation Systems - Requirements for Enterprise-Reference Architectures and Methodologies. 1999) of the enterprise architecture must include:
- The role of stakeholders (owners, employees, customers);
- Description of the processes (functions and behavior);
- Presentation of all supporting technologies over their lifetime.
To the components listed as well be added another:
- Description of the organization, ensure that the architecture of the enterprise.

In conformity with the document "Federal Enterprise Architecture Framework. Dev. by: The Chief Information Officers Council (USA) "architecture is a strategic information base that provides:
- The structure of the business;
- The information necessary to conduct business;
- Technology used to maintain business operations;
- The processes of transformations and development necessary for the realization of new technologies in response to the emergence of new business needs.

Architectural description - Single, comprehensive description of the current and target state of business and information technology, and their interconnections. Architectural description is the basis for the development of enterprise architecture, its analysis and support to date.

Architectural process - provide reasonable and effective management of business development and information technology supporting it. The most common proceses   includes:
- Processes to support architectural description;

• Process analysis in architecture;
• Process management architecture.

Architectural artifacts-- Information, data models necessary for the establishment and operation of the enterprise architecture. Architectural artifacts includes:

• Mission and strategy - customer needs, business goals and objectives, key success factors;
• Dictionary of elements in the architectural products;
• Business reasons and regulations - business plans, business rules;
• Models of organizational infrastructure - schemes, rules, instructions;
• Timing;
• Functional models;
• Information models;
• Patterns of Events;
• Models of interaction of architectural components, etc.

Architectural analysis- appears to be one of the key architectural processes as a result of which fixes the current state of the architectural components of the enterprise (business, data, applications and infrastructure) and their interaction. It is done through feedback to refine the goals and objectives in the pursuit of architectural processes.

Stages of implementation:

- Assess the level of maturity of the enterprise under CMM method [7];
- Identifying key factors for success at positioning the company in the market;
- Development of architectural description in accordance with the results of these two stages;
- Planning initiatives to synchronize business and IT.

INTERRELATIONSHIPS OF THE ARCHITECTURAL APPROACH WITH OTHER APPROACHES

The architectural approach is seen in the inextricable link with systems and processes approaches. The figure 3 linkages are shown on the approaches and their main function in the establishment of the enterprise architecture.
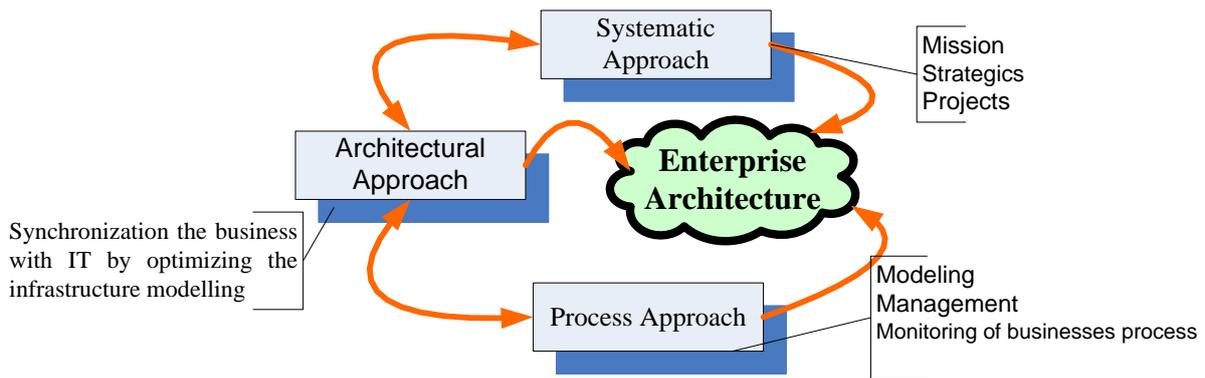
Figure 3. Relationship of systematic approach with other approaches

Systematic approach is a approach to research and management facilities, and treat them as a system in which certain elements of internal and external connections that affect the functioning of the system. The objectives of each element are formed depending on the overall purpose of the system. Today it is generally recognized that the system is the best approach - arranged and reliable basis for management of complex interrelated activities, allowing to detect and analyze the constituent system components and their interconnections [3,6].

Process Approach is a approach, which allows to study, design, implement, implement, maintain, analyze and optimize distributed processes beyond the boundaries of divisions and companies and covering multiple applications running on different technology platforms [5].

BENEFITS FROM THE IMPLEMENTATION OF THE ARCHITECTURAL APPROACH

1.Information support activities of tracking and development of information infrastructure, including:
• Discovery of business processes, and their classification according to their maturity necessary informatization.
• Improving the computer network in accordance with the ranking of its components;
 Analysis of information systems (IS) and their interaction;
• Assess the degree of optimization of information processing in interacting systems (elimination of duplicate systems and data);
• Discovery, formalization and documentation of requirements necessary business information systems;
• Analysis of alternatives for improving the information infrastructure.

2. Information support activities to improve business processes, including:

• Discovery of business processes that require improvement;
• Elimination of duplicative activities;
• Analysis of alternatives for improving business processes.

3. Information support of all stakeholders.

4. Reduce IT costs by:

• Reducing the cost of identifying the architectural components;
• Low IT spendings, according to the organization reached maturity;
• Removing duplicate functions in IT applications;
• Optimize IT Infrastructure;
• Implementation of a unified corporate architectural standards.

5. Shortening the time to adequately respond to changes in business environment by:

• Knowledge of information architecture, appearance is the basis for the adoption of relevant decisions;
• Availability of tools for the analysis of architectural details;
• Availability of system processes for managing the enterprise architecture.

CONCLUSION

Approach described in the report is the basis for achieving the business level but in line with modern requirements"

- Work in real time;
- Dynamic response to changes in the external environment;
- Continual improvement of business processes and information technology supporting them.

The model approach and lessons learned can be used by managers, architects and designers in adopting decisions regarding the architecture of the enterprise.

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