

CYNEFIN FRAMEWORK IN COMPONENT-ORIENTED MODEL OF IT-PROJECTS MANAGEMENT

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Transformational global processes of informatization of the society cause dynamic growth of scale and variety of information tasks of the enterprise. In order to solve these tasks it is necessary to develop effective methodology of project management of IT projects (projects for the development, implementation and maintenance of information systems and components of their infrastructure) in accordance with the given organization's goals and strategies.

The effectiveness of modern IT projects is a critical issue and a key to success in managing information flows at different levels of economic and environmental systems. However, the process of developing and implementing an information system today is a complex, long-term, and costly project that involves high risks, and require the application of adequate management methodologies [1, p. 57].

A characteristic feature of modern IT projects is the presence of changes and updates, which may concern not only the project implementation, but also the goal of the project or its quality characteristics [2, pg. 114].

One of the main tasks directly influencing the efficiency of the Informatization project is the right choice of the process model and implementation methodology as a necessary condition for effective management of the time, cost and risks of IT projects. It also increases the project's manageability and predictability.

Evolutionary vector of the development of methodologies is directed towards increasing the flexibility of the Waterfalls model of Life Cycle (V-shaped model, iterative model, interactive, spiral model [3, pg. 182]), through standardization, control and documentation.

A modern trend from the leading IT vendors is the departure from the universal methodologies to the architectural component-oriented approach based on the Cynefin Complexity model (Cynefin framework [4, pg. 301]). The Cynefin framework allows categorizing IT projects by complexity (structured simple projects, structured complex, intricate projects, chaotic projects [5]) and move toward increasing the flexibility of the methodology or selection of the classical Methodology (table 1).

Table 1

Architectural component-oriented approach to IT-projects by Cynefin framework			
Projects	Projects Feature	Method	Model
Structured simple	Presence of particular links. Effective way to achieve the result is present. Emphasis on the stage of analysis and design. Predictable. Focus on detailed planning	Benchmarking. Method "Best practice". PERT (Project Evaluation and Review Technique). CPM (Critical Path Method). WBS (Work Breakdown Structure)	Waterfalls life cycle model. Iterative model with intermediate control and feedbacks. SSADM (Structured Systems Analysis And Design Methodology). IC: Standard Implementation Technology (TCB)
Structured complex	Cause and consequence links are present but are not clear. Specialization of performers is high. The processes are designed for the average qualification of performers	Expert methods allow discovering relationships. Method "Good Practices". Methods of project management. PMI (Project Management Institute)	Project Management Model, based on PMBOK (Project Management Body of Knowledge). Six Sigma. Prince 2 (Projects in Controlled Environments). CMMI models
Intricate	Characterized by tangled and various links, lots of project participants, complex cause / consequence links. Ambiguous results	Iterative method is applicable. Practice is achieved during the experiments. Flexible teams. Informal communication	Flexible methodologies: Agile, Scrum, Lean. RUP (Rational Unified Process). RAD (Rapid Application Development)
Chaotic	No cause / consequence links. Cannot make any conclusions. Efficiency depend on the individual abilities of the project team. Require a more qualified management, universal team	Introduction of strict restrictions and transfer into more ordered and simple system (ACOA). Fast actions lowering turbulence allow the system to become intricate (XP – Extreme Programming)	Architectural component-oriented approach to managing IT projects. Microsoft (MRF, MSF, MOF); IC: Fast Results. IC: Technology of Corporate Implementation

The architectural component-oriented approach based on the Cynefin model (Cynefin framework) is manifested in the division of IT projects into the projects of preparation for the implementation of the information system, projects of implementation of the information system; projects for the creation and reengineering of IT infrastructure, outsourcing and consulting projects (of various types and levels), training and support.

Enterprise, being a system, requires a systematic approach to the implementation of IT projects. Each project should be considered in the context of the related projects. The more complex the project, the more formalized approach it requires. A formalized and structured approach allows providing a real opportunity to complete the goals.

In modern practice, software development models are multivariate. There is no single right for all projects, starting conditions and payment models. The choice depends on the specifics of the project, the system of budgeting, subjective preferences.

The complex architectural approach (varieties combination of formalized and structured models) allows providing a real possibility of performing information tasks. It also allows comparing and bringing into conformity the model of conducting business and the technological approaches used, to concentrate resources where they will bring maximum impact. The competitiveness of a modern enterprise is directly related to the availability of the necessary information technology infrastructure; ability of the staff to use it effectively; ability to scale and update it.

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