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THE DEVELOPMENT OF BENEFITS AND REQUIREMENTS MODEL BASED ON THE PROJECT OUTCOME FOR THE EFFECTIVE IT PROJECT MANAGEMENT METHODOLOGY

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Abstract: *This paper approaches the development of classifications of the types of project outcome and requirements, as well as the calculation of the estimated time limit for the project phases: initiation, preparation, planning, vendor selection, implementation, execution, monitoring and benefits management. The novelty of the study aims to develop the benefits and requirements model depending on the type of project outcome. The essence of the model is to determine the type of project result, which determines the types of requirements that are at the same and below levels of the type of project result. Types of project benefits are determined by the level above the type of project result. Thus, by defining the type of project result, one can without erroneously determine the requirements and benefits of the project. This research results are applicable for the effective IT project management methodology.*

Keywords: *IT-project, methodology, outcome classification, benefits, requirements*

IT ЖОБАНЫ ТИІМДІ БАСҚАРУ ҮШІН ОНЫҢ НӘТИЖЕЛЕРІНІҢ ТИПТЕРІНІҢ НЕГІЗІНДЕ ПАЙДАНЫ ЖӘНЕ ТАЛАПТАРДЫ АНЫҚТАУ МОДЕЛІН ҚҰРУ

Аңдатпа: *Бұл мақала жоба нәтижелерінің және талаптарының жіктелуін әзірлеуге, сондай-ақ бастамашылық, дайындық, жоспарлау, жеткізушіні таңдау, іске асыру, аяқтау, жеңілдіктерді бақылау кезеңдердегі жобаның шектік мерзімін есептеуді қамтиды. Зерттеудің жаңалығы жоба нәтижесінің типіне қарай пайда мен талаптар моделін әзірлеуде жатыр. Модельдің мәні жобаға қойылатын талаптардың негізінде жобаның нәтижесінің типін анықтау болып табылады, ол талаптар аталған деңгейде және жобаның нәтижесінің деңгейінен төмен деңгейде айқындалады. Жоба бойынша артықшылықтар (пайда) типтері жобаның нәтижесінің деңгейінен жоғары деңгейде анықталады. Осылайша, жоба нәтижесінің типін анықтай отырып жобаның талаптары мен пайдасын зерделеу мүмкіндігі туады. Зерттеудің нәтижелерін IT жобаларды тиімді басқару әдістемесі ретінде қолдануға болады.*

Түйінді сөздер: *IT жоба, әдіснама, нәтижелерді жіктеу, пайда, талаптар*

РАЗРАБОТКА МОДЕЛИ ОПРЕДЕЛЕНИЯ ВЫГОД И ТРЕБОВАНИЙ НА ОСНОВЕ ТИПОВ РЕЗУЛЬТАТОВ ПРОЕКТА ДЛЯ ЭФФЕКТИВНОГО УПРАВЛЕНИЯ IT ПРОЕКТОМ

Аннотация: *Эта статья посвящена разработке классификации типов результатов проектов и требований, а также расчету предельного времени проекта на фазах: инициации, подготовки, планировании, выбора поставщика, реализации, завершении, мониторинга выгод. Новизна исследования заключается в разработке модели выгод и требований в зависимости от типа результата проекта. Суть модели заключается в определении типа результата проекта, по которому определяются типы требований, находящихся на этом же уровне и ниже уровня типа результата проекта. Типы выгод проекта определяются уровнем выше типа результата проекта. Таким образом, определив тип результата проекта можно безошибочно определить требования и выгоды проекта. Результаты данного исследования применимы для методологии эффективного управления ИТ-проектами.*

Ключевые слова: *ИТ-проект, методология, классификация результатов, выгоды, требования*

I. INTRODUCTION

Project management is the worldwide area in today's professional trade. Project management methodologies and tools are widely utilized in the fields of project-oriented work, especially in development of new products & services, and making targeted changes within individual organizations and companies [1].

The relevance of the topic stems from the lack of unified methodologies and frameworks in IT organizations, standardizing the project management activities, lead to the following results:

- the non-coordinated implementation of the projects;
- the lack of common terminology (stuff communicate in various languages);
-the absence of uniform understanding of project management techniques;
- the lack of a clear delineation of project stakeholders' responsibilities;
- the absence of detailed description of the project management processes;
- the difficulties in handing over the project managing in case of project leaders replacement;

The aforementioned factors lead to the failure of project management efficiency in organizations as a whole.

II. PROJECT MANAGEMENT PROCESSES OVER TIME

The period between the inception and execution of the project has come to be known as the project cycle or project life cycle (phases). For each project, regardless of its blueprint, the life cycle of certain project duration is essential [2].

The general framework of project life cycle has the following sequence of phases:

•Initiation phase (developing conceptual design, defining the given project, assessment of alternatives, analysis, development and approvement of a concept);

•Preparation phase (supplier selection);

•Vendor selection phase (in case of outsourcing);

•Planning phase (development of key project components, project team building, structure planning, tenders and bidding, contracts and subcontracts);

•Implementation phase (execution of the main tasks for achievement of project objectives);

•Execution phase (achievement of the ultimate project goals, reviewing/ wrap-up, project closing);

•Monitoring and benefits management (by customer request).

The success of the project determines not only obtaining a qualitative product, but also acquiring the defined benefits and meeting the results on time [3].

Based on the experiments of more than 100 projects confirmed that the time limit value at each phase is identified accordance with the following Fig. 1

III. PROJECT OUTCOME CLASSIFICATION

The output of the project will be its result. The project outcome – output which obtained after the execution of project management processes and operations.

The types of project outcome in the field of information technologies are proposed to classify as follows: (Fig. 2):

Product (service) – product or service that provided to legal and physical individuals.

Business – process is a logical, consistent and interrelated approach of actions that consumes resources, create values and execute the outcome.

Function (roles) – business-function which performs one or multiple operation(s).

Infrastructure – a set of interrelated service structures or facilities that provide the basis of system functioning (IT infrastructure, social and engineering infrastructure).

Channel sales is a communication line for providing the services to the clients (affiliates, branch offices, self-service points, Internet, smart phones, sms and etc.).

IT system – a set of hardware, software and organizational support designed to provide users timely within adequate information.

Data – information (hard/electronic) requiring the improvent in the quality of report (matching the filling fields & formats and etc).

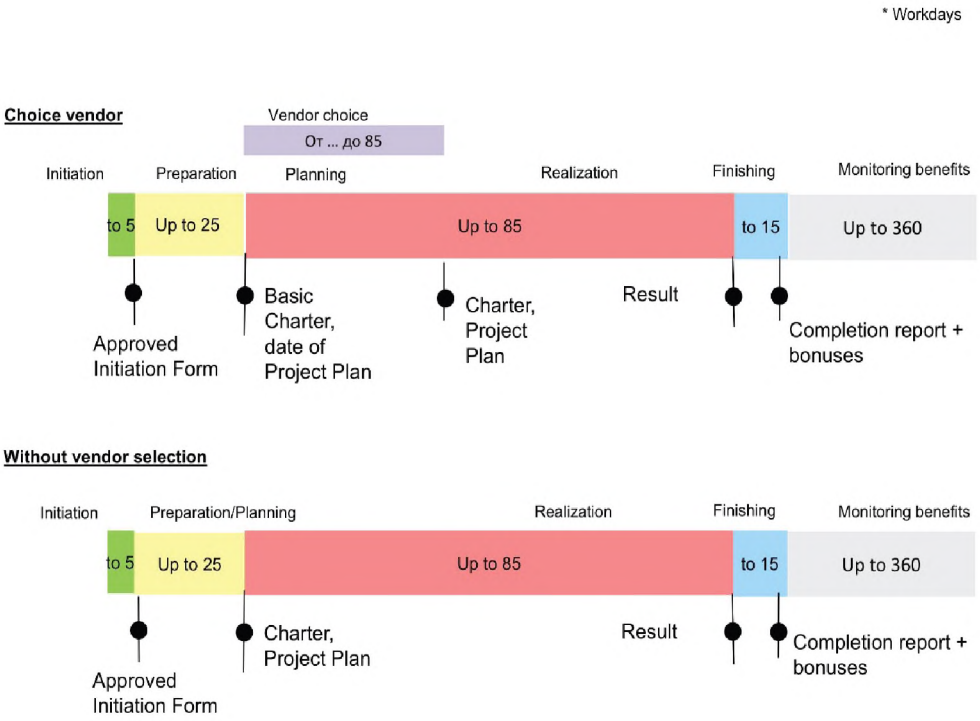

Figure 1 - Stages of the project and the time limit

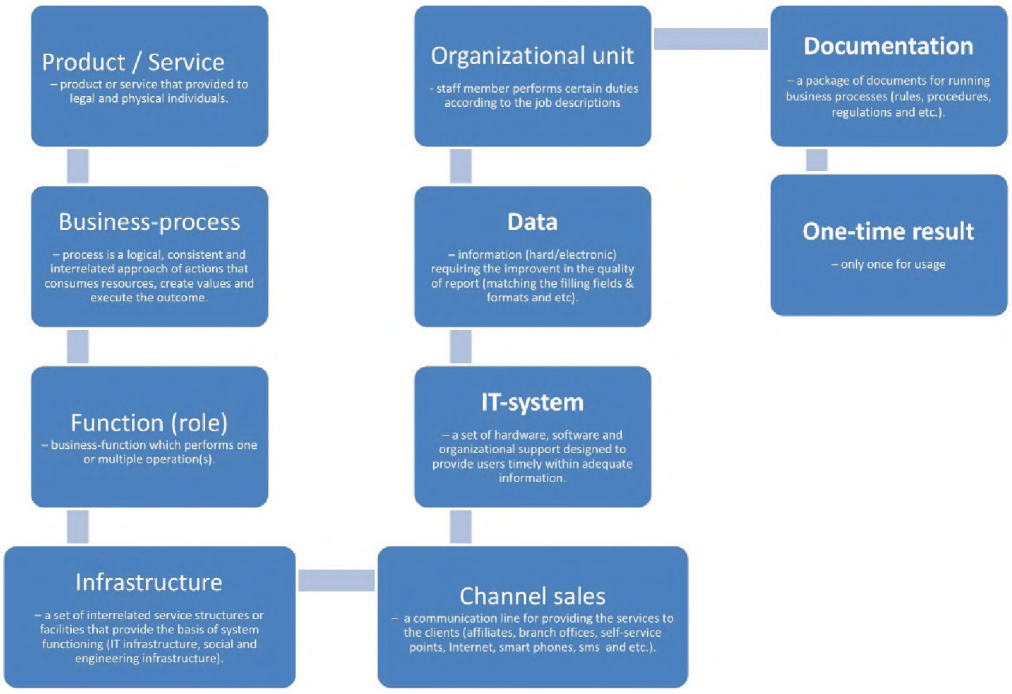

Figure 2 - Project Outcome Classification

Organizational unit – staff member performs certain duties according to the job descriptions

Documentation – a package of documents for running business processes (rules, procedures, regulations and etc.).

One- time result – only once for usage [4].

IV. THE MODEL OF BENEFITS AND REQUIREMENTS DEPENDING ON THE TYPES OF PROJECT OUTCOME

The project objectives must address the needs of the project. The objectives should determine the business requirements and tasks which are being undertaken in the result of project execution.

The project purpose is a measurable outcome to ensure the achievement of project milestones. The result of the project should meet the requirements [5].

This study offers the scale model of project benefits and requirements based on type of its outcome. (Fig. 3).

The essence of the model is to determine the type of project result, which determines the types of requirements that are at the same and below levels of the type of project result. Types of project benefits are determined by the level above the type of project result. Thus, by defining the type of project result, one can without erroneously determine the requirements and benefits of the project.

Project requirements should be classified into 4 categories: «As best as possible», «As much as possible»", «As soon as possible», «As cheap as possible» [6].

The category «as best as possible»:

- Functionality – the list of features that satisfy the users needs.
- Quality – the requirements to product/ service features upon request of the client.
- Stability – the requirements to maintain a target level of functionality in case of interaction failures.
- Security – the requirements to prevent an illegal access from unauthorized users not allowing a permission to data & programs.
- Flexibility – the requirements to maintain the functionality upon any major changes.
- Maintenance – the requirements to execution of all types of activities related to mainteanance (minimizing efforts in making major modifications or changes in accordance with uncertain needs of client) [7].

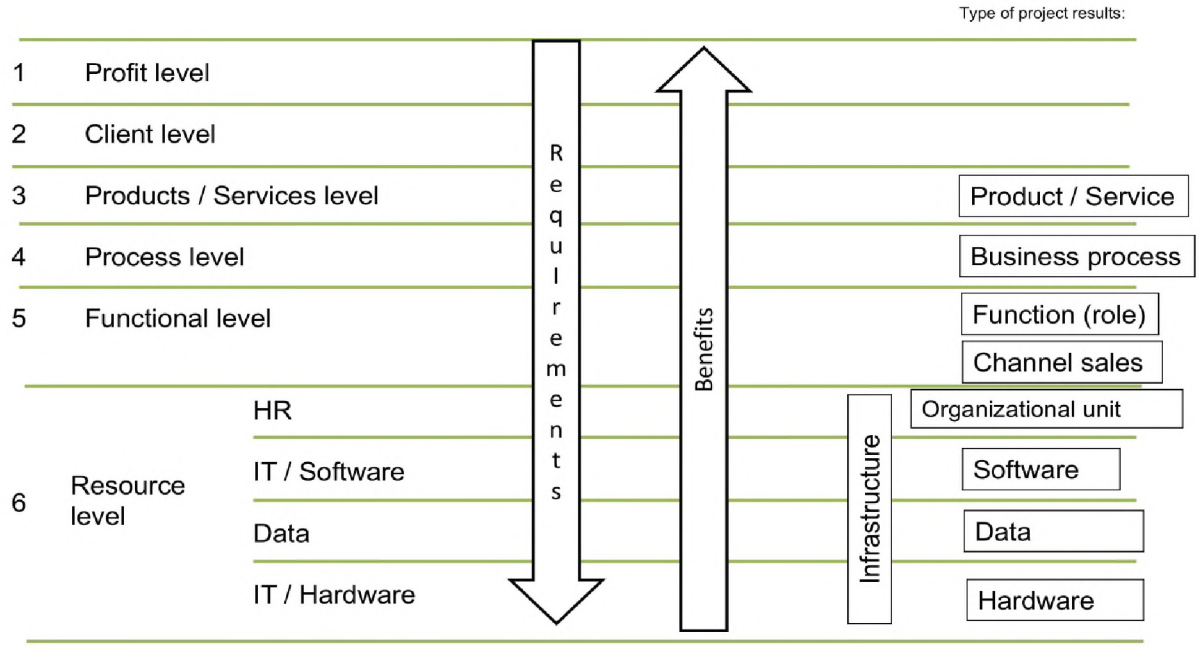

Figure 3 - The model of benefits and requirements of the project based on type of its outcome.

The category «As much as possible»:

- Capacity – the maximum productivity flow at once.

The category «As soon as possible»

- Performance rate – the requirements to execute the desired deliverables within allocated time.
- Productivity – the requirements to increment the volume of goods/services per unit of time.

*The category «*As cheap as possible*»:*

- Efficiency – the requirements to obtaining result with respect to the resources spent on it (cost per product/service).
- Cost – value-measurement requirements of the project outcome.

CONCLUSION

Project management today is a recognized area of professional activity. The methodology and tools for managing IT projects are widely used in the areas of project-oriented activities, especially when creating new products and services, with targeted changes within the framework of IT organizations and companies.

The established classification of the types of project outcomes and requirements; the model of project benefits and requirements based on the type of its outcome are applicable to the effective IT project management methodology.

REFERENCES

1. Jason Westland, Project Management Life Cycle, by Kogan Page Ltd., 2006. – 255 p.
2. A Guide to the Project Management Body of Knowledge (PMBOK Guide), Fourth Edition, Project Management Institute, Inc., 2008.
3. H. Frank Cervone, (2011), "Understanding agile project management methods using Scrum", OCLC Systems & Services, Vol. 27 Iss: 1 pp. 18-22
4. Dr. Alistair Cockburn, "Using Both Incremental and Iterative Development", 2008, The Journal of Defense Software Engineering pp.27-30
5. Gabrielle Benefield. Rolling out Agile in a Large Enterprise, HICSS '08 Proceedings of the Proceedings of the 41st Annual Hawaii International Conference on System Sciences, 2008.
6. Pankaj Jalote, Aveejeet Palit, Priya Kurien, V.T. Peethamber, "Timeboxing: a process model for iterative software development", The Journal of System and Software (2004), pp. 117-127
7. Yu Beng Leau, Wooi Khong Loo, Wai Yip Tham and Soo Fun Tan. "Software Development Life Cycle AGILE vs Traditional Approaches", International Conference on Information and Network Technology (ICINT 2012)