Quantitative Assessment of the IT Agile Transformation

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Abstract

The aim of this paper is to present the quantitative perspective of the agile transformation processes in IT organisations. The phenomenon of agile transformation is a complex challenge for an IT organisation since it has not been analysed in detail so far. There is no research on the readiness of IT organisations for the realisation of agile transformation processes, and such processes prove to be of uncontrolled character. Therefore, to minimise the risk of failure referring to the realisation of transformation processes, it is necessary to monitor them. It is also necessary to identify and analyse such processes to ensure their continuous character.

Keywords: IT organization; agile transformation; agile project management; scrum; maturity capsule

1. Introduction

Nowadays business environment is dynamic, characterized by high speed, high change, complexity and uncertainty of factors. Especially Information Technology (IT) world has flattened. Due to combination of technology progress and lowering political barriers it is possible for people and organization to work with almost anyone, in any place and at any time.

Project management – application of knowledge, skills, tools and techniques to project activities \cite{1} approach must ensure successfulness of addressing and handling dynamic changes that provider deals with. Neither client and business environment is constant, but also provider’s organization usually changes, adopting to market situation in

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order to remain competitive i.e. for last twenty years trend in organization structure is towards flat hierarchy, by removing middle management layers to shorten communication cycles and reduce costs.

Purpose of this paper is adaptation of estimation techniques in IT organization during transformation processes supporting one of Agile management approach – Scrum. Usage of introduced techniques supports provider organization (project managers) with data that can help understood and address challenges brought by dynamic changes in business environment during software project developed. Proposed techniques are not only focused on project evaluation, but also project surroundings, including relations with customer and process appearing in provider organization. Such a complete approach is a result of implementation of C-S-P (Client, Supplier (provider), Project) Maturity Capsule model for project realized in Scrum.

Structure of this paper of four parts. The first part is an introduction to cross-section over project management practices, describing why and how project management changed over last forty years towards Agile approaches. Lastly Scrum framework as a popular representative of Agile methodology is elaborated.

Second part describes mapping of C-S-P Maturity Capsule to Scrum framework as a method of negentropy evaluation of this process. Negentropy understood as a measurement of degree of process organized. Concept of C-S-P Maturity Capsule is mapped on three equally important elements represented by Scrum roles, which are Development Team, Product Owner and ScrumMaster. To allow negentropy measurement, techniques of Investigation Questionnaire’s and Normalized Velocity are proposed and elaborated.

The third part – verifications of proposed techniques are presented, based on data acquired from analyzed Scrum Team. Conclusion and observation are divided, based on point of view represented by interests of recipient. In first part disused result are from ScrumMaster point of view, focused on narrow time horizon. Second part presents Product Manager point of fixated in wider time horizon.

2. Agile project management

In 2002 high decrease of failed project comparing to previous years is noticeable, at the same time percentage of successful project rises. This change might be reflected by change in mindset of project managers understanding importance of customer involvement and adaptation to change project scope. “So-called lightweight agile software development methods evolved in the mid-1990s as a reaction against the heavyweight waterfall-oriented methods, which were characterized by their critics as being heavily regulated, regimented, micromanaged and overly incremental approaches to development” [10].

Awareness of how import is customer involvement changed approach in the way projects were managed. This new approach of project manager was reflected in “Manifesto for Agile Software Development” published in 2001. It defined the approach now known as agile software development. “We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan.

That is, while there is value in the items on the right, we value the items on the left more” [14].

In practice basic attempt of all agile approaches is an early and sustainable rate of feature value delivery. That reduces complexity by breaking down the work into smaller pieces. Project development is ongoing with frequent releases of working features rather than a huge release at the end. Ideally it would be possible to continue provide incremental improvement indefinitely.

Popularization of agile practices improved successfulness ratio of IT projects. In Fig. 1 results of CHAOS report from the Standish Group on management style from year 2002 and 2012 are presented.
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