Agile Transformation Changes from the Perspective of Project Team Values[1, 2]

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Abstract

Software project enterprises deliver increasingly complex and custom-made software products and services. Agile methods were designed to address the challenges of dynamic and unpredictable software delivery environments to support the project team operating in these difficult work conditions. Agile Manifesto has presented four key values and twelve principles as mandatory rules. However, its implementation largely depends, in each case, on project teams and their organizational context. Implementation of the Agile method in everyday teamwork is strongly coupled with team values as well as with the whole organizational culture in a given team environment. The team values, in turn, depend on people in a team and their motivation led by autonomy, mastery and purpose.

The primary goal of this paper is to present the Agile transformation changes from the perspective of project team values.

Desk review and results of the multiple case study analysis in the companies undergoing an Agile transformation process are being presented as empirical research. The research results focus on the changes of the Agile transformation process from the perspective of project team values.

The results showed an Agile transformation impacted a project team approach to work organization and it can be assessed from different perspectives of a project team values such as, for example: courage, focus, commitment, respect, openness, feedback, simplicity, communication, visibility, honesty and even a sense of humour. Broad organizational changes are impacting not only project team values, but also agility of whole project organization and its organizational culture.

Key words: *Agile transformation, organizational change, project team, Agile values.*
JEL code: M15, O22, O32.

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Introduction

Digital transformation of our life results in a rapidly growing number of IT/ICT programs and projects delivering advanced and innovative business services or products to customers and users. As the complexity, customization and rapid response expectations are constantly increasing, there is a need to search for more effective way of the project team and project organization management. The Agile project management is one of the possible responses addressing market demand and market competition, thus its popularity has arisen with a number of large-scale organizational changes through the process called Agile transformation (Gandomani, Nafchi, 2015; Dikert et al., 2016; Hoda, Noble, 2017; Denning, 2018a; 2018c).

The research results, conclusions and recommendation presented in this paper may be of value for both academics interested in Agile research studies, as well as for organization leaders who are planning or executing Agile transformation process and therefore seeking its optimization or efficiency improvements.

The primary goal of the empirical research in this paper is to respond to the research question about Agile transformation changes impacting the daily work and routines of a project team and project organization from the perspective of project team values. The empirical research results complement a review of literature on large software project organizations delivering innovative and advanced IT and ICT products and services with an Agile project management approach. The research results showed that communication and self-organization of multidisciplinary and autonomous project team are the key changes from the perspective of project team values while the most desirable team values include: feedback, commitment, respect and openness.

A literature review and an illustrative and explanatory multiple case study analysis was used as research methods. The main limitation is the web source of the majority of acquired multiple case studies, cluttered by much information deprived of any added value from the research study perspective. The second limitation comes with a number of successful cases of the Agile transformation process with very limited information about the obstacles and issues faced on the road. The future research directions can repeat the same or similar multiple case study analysis as well as quantify the measurement of capacity for agility for a non-biased Agile transformation process assessment.

The structure of the paper is as follows: the first part discusses research results and the second part contains conclusions, proposals and recommendations. The first main chapter is also divided into subchapters presenting: a review of the literature, the methodological approach, the empirical research results and the final subchapter discusses the research results.

Research results and discussion

Agile transformation changes

The ability to adapt to unforeseen changes is called agility, and it is the evolution driver of software project organizations in their business strategies (Ganguly et al., 2009). The literature offers many variations of the agility construct analysis depending on the subject of research e.g. production agility, software development agility in the project (Sheffield, Lemétayer, 2013), knowledge management processes in terms of organizational agility (Cegarra-Navarro et al., 2016) or business and operational agility (Denning, 2018c). Here the focus is to stress the agility of a software project organization defined as its capacity to respond quickly to environmental changes and opportunities in the domain of customer responsiveness, operational flexibility and strategic flexibility (Ravichandran, 2018).

The shift from traditional project methodologies to Agile project management methodologies by implementing agility feature in project organization and therefore finally becoming Agile is the ultimate goal of each Agile transformation (Dikert et al., 2016; Denning, 2018a; Gandomani, Nafchi, 2014). Achieving a higher degree of agility means that the whole enterprise can achieve more Agile values and therefore brings the opportunity to improve its position in the rapidly changing and unpredictable marketplace (Gandomani, Nafchi, 2014; Gurd, Ifandoudas, 2014).

The Agile transformation as transition process (Fig. 1) of moving from traditional project and program management methodologies (Kozarkiewicz, 2012; Trocki, 2013; Kisielnicki, 2014) to Agile project methodologies is a complex, unique and evolutionary itself as the scope and scale of organizational changes are very extensive, always requiring synchronization and adoption to the given project organization context (Laanti et al., 2011; Gandomani, Nafchi, 2015; Dikert et al., 2016; Denning, 2018c). The agility as a feature of a project organization adds significantly to complexity as it requires adapting the Agile mindset what it *is much more important than any management methodology itself and only its full adoption may lead to a successful Agile transformation process* (Denning, 2016, p. 13-14).

The Agile transformation process (Fig. 1) requires significant changes at all levels of a project organization (Gandomani, Nafchi, 2015; Denning, 2016; 2018c; Paterek, 2018) with the project team as a central unit and the starting point of all the necessary changes (Gandomani, Nafchi, 2016; Denning, 2018a; 2018b). There are a limited number of comprehensive research papers devoted to the Agile transformation model at the organizational level coming from software development practice (Gandomani, Nafchi, 2015; Solinski, Petersen, 2016; Hoda, Noble, 2017; Paterek, 2017a). The Agile transition process is impacted by the number of unique issues, barriers and challenges (Dikert et al., 2016; Denning, 2016; 2018c; Paterek, 2017a) requiring a lot of long-term investment and collaboration across a variety of business units at all levels of project organization (Gandomani, Nafchi, 2015; Dikert et al., 2016; Hoda, Noble, 2017).

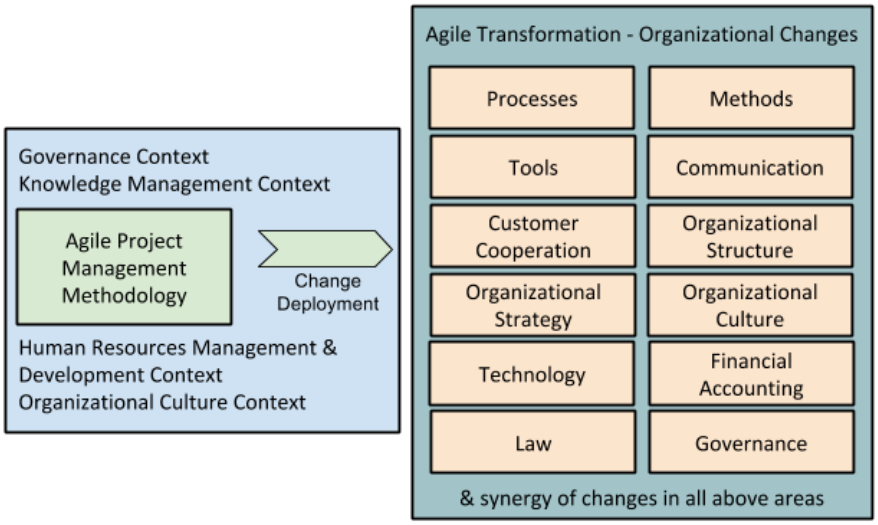

Fig. 1. **The Agile transformation process**
Source: P. Paterek (2018, p. 263)

The software project team adopting a new Agile approach to work in terms of its daily routines and activities is affected by a number of significant changes, in particular in project management processes (Cabała, 2016), practices and methods (Trocki, 2013; Kisielnicki, 2014) by shifting from its long-term execution to its short-term execution and incrementally

adapted to each subsequent iteration (Solinski, Petersen, 2016; Hoda, Noble, 2017); new technologies and tools (e.g. JIRA, VersionOne) supporting these methods (Paasivaara, Lassenius, 2014); a new way of direct and frequent communication in the team, within the project organization as well as with customers or its representatives (Gandomani, Nafchi, 2015; 2016; Denning, 2018a); organizational structure, strategy and culture (Panasiewicz, 2013; Paterek, 2016; Jovanović et al., 2017; Wirkus, Zejer, 2017) adapted to self-organized and autonomous project team management with a focus on Agile Manifesto values and principles; short-term budgeting and financial accounting (Paterek, 2017a); contracts, law and legislation aspects, in particular these regarding management decisions in public and government organizations (Mergel, 2016; Bojar et al., 2018).

The project team Agile transition process (Jovanović et al., 2017; Denning, 2018a; 2018b) is also specific for each individual context of the project organization (Cabała, 2016; Hofman, 2018). The most important contextual enablers of the Agile transition process from the project team and project organization perspective are: knowledge management processes and training (Spałek, 2013; Wyrozębski; 2014; Gandomani, Nafchi, 2016; Paterek, 2017b), human resources management and development (Dikert et al., 2016; Denning, 2018b), organizational culture (Paterek, 2016; Solinski, Petersen, 2016; Hoda, Noble, 2017) and governance of the entire project organization in all its aspects not only from project management methodology (Kuura, Blackburn, Lundin, 2014; Joslin, Müller, 2016).

The Agile transformation process is complex due to scaling required in large organizations as it often faces barriers and limitations when integrating with the existing project team's (Gregory et al., 2016) and the organization's governance, subjective measurement of its results (Gandomani, Nafchi, 2014) and very long period of its deployment (Laanti et al., 2011; Denning, 2016; Dikert et al., 2016). However, the results of investment and troubleshooting of these problems are rewarded by an Agile organization that is capable of delivering an instant, intimate, frictionless value on a large scale (Denning, 2018a), including a value for satisfied teams and their members (Laanti et al., 2011).

Project team values

Project management practice offers many different perspectives on Agile project team values that mature team should follow as the Agile mindset is needed for constant and continuous improvement of its performance. The first and the most popular one is coming from the Scrum Guide (Schwaber, Sutherland, 2017) and it is made up of five core values: courage, focus, commitment, respect and openness which, in turn, are based on three pillars of empiricism: transparency, inspection and adaptation (Scrum.org, 2019):

- **Courage** means the team members are able to do the right things and work on even the most complicated problems to solve it;
- **Focus** denotes that the whole team is doing sprint planned activities aimed to accomplish the sprint goal at the end of the iteration;
- **Commitment** is coupled with focus as all team members personally declare to achieving the sprint goal at the end of the iteration;
- **Respect** means all team members are equally important and respect each other independence and capability in terms of knowledge, experience and skills;

- **Openness** is an attitude of the team to be willing to hear and collaborate with each other team member as well as with customer or other stakeholders.

On the top of above five, some of the practitioners expose the additional ones, which are:

- **Visibility** (transparency) which is the availability of an actual state of product development to all interested stakeholders; however, the details are still in team ownership;

- **Humour**, as it is assumed that everyone is always doing the best he/she can, everyone needs the sense of humour related to laugh or cry;

- **Proactivity** is simply being responsible for our decisions (Covey, 1989) and guide decisions by our values, carefully selected and internalized;

- **Honesty** to yourself and each other;

- **Empathy** understood as really knowing each other, encourages helping each other, develops respect and common goals with other team members;

- **Creativity** means to be open to new ideas, creative problem solving, build on other's ideas, navigate future challenges;

- **Fun**, in other words, means people can be themselves in a given team, they can be relaxed, enjoy their work, have job satisfaction, build a trust;

- Team Collaboration; Accountability; Quality; Energy; Passion; Technical Competency (Craftsmanship).

The second one set is coming from XP (eXtreme Programming) core values (Beck, 1999):

- **Communication** should be verbal and direct as much as it is possible in order to faster establish expectations, requirements, solutions, goals and vision related to the developed product;

- **Simplicity** means to deliver the simplest solution first and refactor it later according to the expectations coming from the feedback loop;

- **Feedback** is about both giving and receiving some kind of assessment or payback information to each other and it creates a mature Agile mindset within the team;

- **Courage** is very similar to Scrum value denoting brave in doing everything to accomplish the planned work as well as to communicate and accept the feedback;

- **Respect** is also very similar to Scrum value means respect for yourself and each other in terms of different levels of knowledge and experience.

Similar to the agility construct, Agile team values are not easy to measure in quantitative terms; however, as the process is empirical, there is a need to create at least some form of a subjective measurement. The success of introducing any Agile initiatives or changes in team behavior or attitude depends on measuring the delivered value or outcome – otherwise, it is

nothing more than intuition and assumption (Scrum.org, 2018). Evidence-based management allows for converting the principles based on the best evidence into organizational practices or conscious organizational decisions by using social science and organizational research (Rousseau, 2006). The empirical process requires assessing every proposed change in terms of the evidence of its efficacy and even if an experiment fails, it is important to learn a lesson from it (Pfeffer, Sutton, 2006). The Evidence-Based Management (EBM) is an approach proposed by Scrum.org (2018) in order to quantify the value delivered to the customer as the evidence of organizational agility based on empirical evidence, logic and insight, including the measure of employee satisfaction with an indicator used in the process.

Methodology approach

The main goal of the empirical research in this paper is to present the Agile transformation changes from the perspective of the project team values. The research population is defined as large software project enterprises adopting or deploying the Agile project management methodology in order to faster deliver new, advanced and innovative business services and products to their customers and users. The majority of analysed Agile transformation cases (> 30%) took place in the software and telecommunication enterprises in large IT/ICT departments or even at the level of whole enterprises.

An illustrative and explanatory multiple case study analysis was applied as a research method (Jemielniak, 2012, p. 14; Kozarkiewicz, 2012, p. 202; Babbie, 2014; p. 324). The primary goal of the multiple case study analysis with the intentional selection was to answer research questions and fill an epistemological gap regarding wide-scale organizational project management changes both in terms of project management methods applied by enterprises as well as changes related how the work of project teams is organised and the values they represent. The research question, however, is limited to the project teams participating in complex IT and ICT program and projects. The triangulation method was applied to strengthen the quality and deliver different perspectives of this empirical research (Jemielniak, 2012, pp. 182-183; Babbie, 2014, p. 121). The triangulation method resulted in multiple case studies sources – different enterprises, consultants and authors as well as with the number of methods applied to gather all of them. Most of the case studies were collected by the search through the existing Internet repository. Documents created by multiple authors and consultants (informant's triangulation) came from 12 consultant groups (source's triangulation). Two case studies came from standardized and unstructured interviews (Jemielniak, 2012; Babbie, 2014) with an experienced Agile coach and the last one comes from the pool of the author's own observations.

The significant limitation of this research study is the web source of the most of multiple case studies. Case studies retrieved from the web documents contain mainly the description of successful transformation processes (probably for the marketing purpose of some consultant) and also provide a very limited number of details important to this research. Discerning interpretation of each case study and the author's experience from practice allows extracting as many details as possible from the context of these descriptions, however, in the same time it can bias to incorrect or subjective author's interpretations. Future research studies may be repeated on the same or similar multiple case studies by several researchers to bring some interesting comparisons and conclusions.

Empirical research results

The empirical research results presented in the paper come as a part of the more comprehensive research study regarding the Agile transformation, partially presented in

previous papers (Paterek, 2017a; 2017b; 2018); however, without the project team's specific changes and conclusions regarding team values.

The most important aspects of presenting results are organizational changes (Fig. 2 and Fig. 3) from the project team's perspective and the impact on their values (Tab. 1) resulting from Agile transformation process deployment or adoption. An individual case study assessment of each organizational change affected daily work of the project team and routines were as follows:

- **Communication** – it affected almost all cases (85%) and it has introduced a more direct, face to face communication inside the project team among their members, as well as with outside interfaces – e.g. with other cooperating project teams, with customers and users and with other business units within the project organization;

- **Teams Cooperation & Collaboration** – it was a significant factor (71%) as it has introduced a much closer team collaboration than before the transformation process in terms of shared job activities of two or more team members; significantly more tacit knowledge and experience-sharing during daily routines, cutting down the feedback loop and enabling more creativity and experiments;

- **Friendly Work Environment** – it was changed in more than half of the cases (53%) by forming constant teams working together through a long period of time which facilitated teamwork and enhanced communication;

- **Self-Organization** – it was affected in nearly the half of the analysed cases (47%) as it is not easy to deploy; however, it is necessary to continuously drive the project team to be self-organized and autonomous in order to deliver a product increment on a regular basis;

- **Employees Initiatives & Intrinsic motivation** – it was affected in almost half of the analysed cases (45%) and it is probably an indirect effect of a friendly work environment that allowed team members to take new initiatives, commitments, become creative and proud of their performance and the job itself;

- **Multidisciplinary Teams** – introduced in a number of project teams; however, it was a complicated challenge for most project organizations as it impacted significantly their organizational structure; introduction of a skill set diversity in project teams allowed for more autonomy and self-organization of the team as well as for more creativity in designing solutions;

- **Customer Cooperation** – it was necessary to enhance team communication and collaboration with the customer, either directly (the preferred approach) or indirectly (e.g. with a customer project team representative) to shorten the feedback loop and to reduce product increment delivery time;

- **Business Cooperation & Collaboration** – it was changed similarly to cooperation and collaboration with the project team who needed to enhance communication, shortening the feedback loop with other business units of project organization, e.g. these responsible for HRM/HRD, budgeting and accounting, strategic decisions, law and legislation aspects; logistics and marketing;

Fig. 2 presents the weighted results defined as a percentage share of each organizational change in all the organizational changes identified within the analyzed multiple case studies.

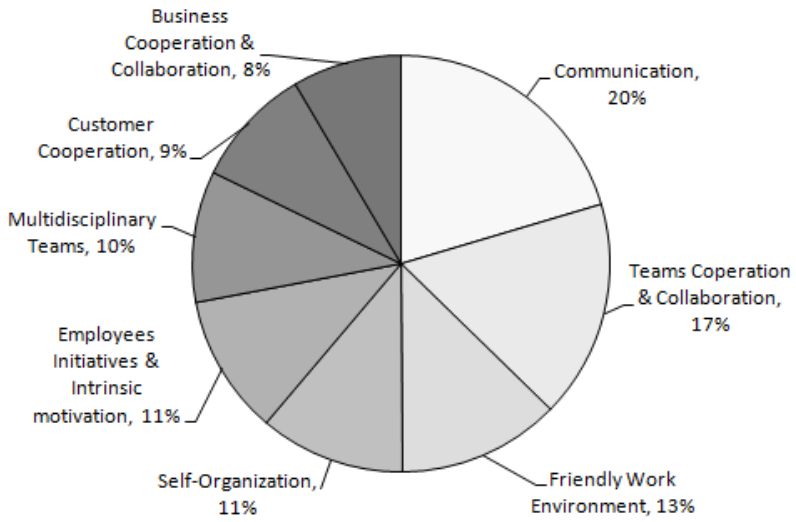

Fig. 2. **Organizational (weighted) changes in the Agile transformation process**
Source: made by the author

Fig. 3 presents the same results but from a different (non-weighted) perspective. It indicates a percentage share of each one organizational change in the entire analyzed multiple case studies.

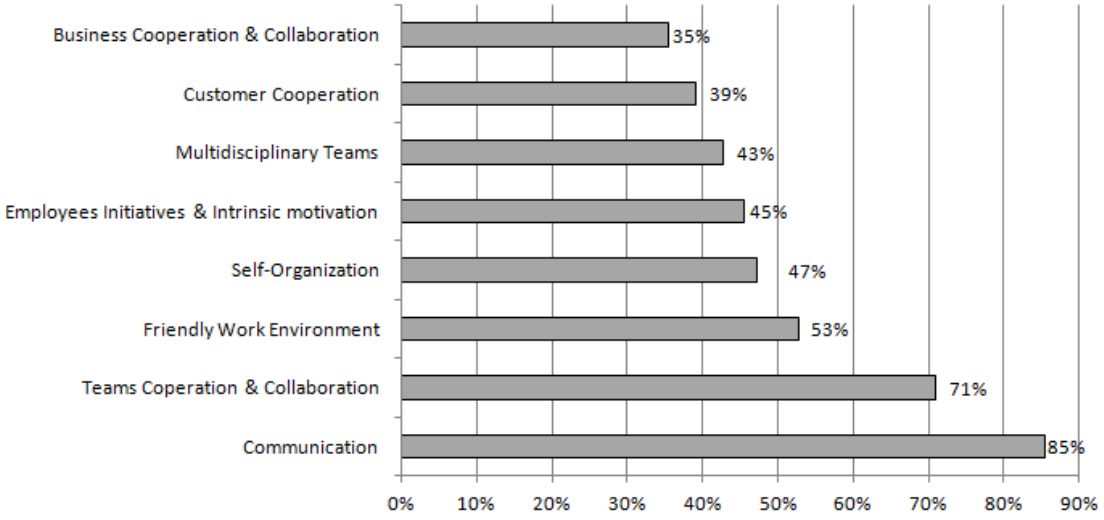

Fig. 3. **Organizational (non-weighted) changes in the Agile transformation process)**
Source: made by the author

Tab. 1 presents the author's own assessment of the impact of the organizational changes on the project team's values identified during the Agile transformation process deployment based on multiple case study analysis. Changes in the organizational communication affected most (11 out of the total of 15) identified Agile project team values. Feedback and communication values were mostly (by 7 organizational changes) impacted by all the identified organizational changes.

Table 1
Organizational changes in the Agile transformation from the perspective of project team values

	Courage	Focus	Commitment	Respect	Openness	Visibility	Humour	Proactivity	Honesty	Empathy	Creativity	Fun	Communication	Simplicity	Feedback
Communication	X		X	X	X	X	X		X	X	X		X		X
Teams Cooperation & Collaboration	X	X		X	X					X	X		X		X
Friendly Work Environment				X	X		X		X	X		X	X		X
Self-Organization	X	X	X			X		X			X		X	X	X
Employees Initiatives & Intrinsic motivation	X		X					X			X	X		X	
Multidisciplinary Teams			X	X	X	X					X		X	X	X
Customer Cooperation		X	X	X	X				X				X		X
Business Cooperation & Collaboration		X	X	X	X	X							X		X

Source: author's calculations

Fig. 4 presents an Agile readiness protocol (Panasiewicz, Paterek, 2017) that enables the preliminary assessment of project team and project organization to transformation deployment. This tool provides an assessment of four areas of the project team and project organization management readiness for adopting Agile, namely: governance, human resources management & development, knowledge management and organizational culture. Positive answers to all the readiness protocol questions (Fig. 4) decrease the risk of an unsuccessful or abandoned transition, otherwise there is a risk for superficial deployment – it is "pseudo-Agile" as all artefacts are indicating a new approach, but the Agile mindset is not built in or abandoned deployment – both the old way of governance and the old mindset are maintained (Panasiewicz, Paterek, 2017).

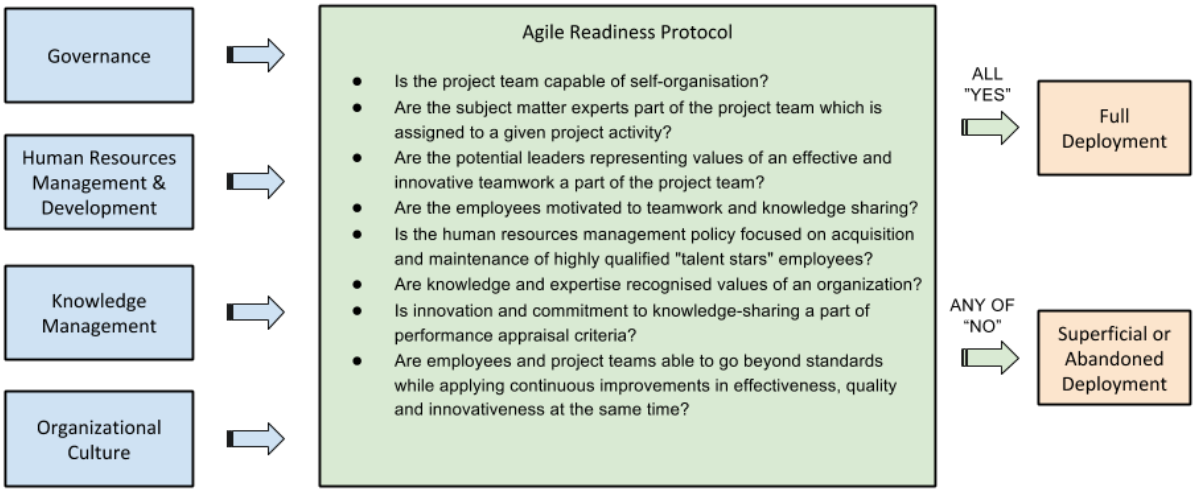

Fig. 4. **Readiness protocol of the Agile transformation deployment**
Source: P. Paterek (2018, p. 265)

The future research opportunity for the above-described tool is to convert or add the questions that deliver indicators for the quantitative assessment of impact to project team values affected during introducing the Agile transformation team and organizational changes (Tab. 1).

Results discussion

The author's empirical research study presented organizational changes of the Agile transformation impacting the project team as well as a whole project organization (Fig. 2 and Fig. 3) and also the impact of these changes on the project team values (Tab. 1) as a response to the research question of this study.

The first key finding from both perspectives, the organization's method of teamwork as well as Agile team values, is a change in the communication towards close, means more direct, face to face communication, as it enables and enhances cooperation and collaboration within the project team as well as with customers, users, other project teams and business units of a large software project organization (Gandomani, Nafchi, 2015; Dikert et al., 2016; Denning, 2018a; 2018c). The above changes in communication facilitate an increase in nearly all the values identified for the project teams (Tab. 1). The second key finding from both perspectives i.e. from the perspective of project team changes as well as from the project team values' perspective, is the ability of a multidisciplinary project team to self-organize, assuming it possesses a given level of autonomy from its organization (Gandomani, Nafchi, 2015; Dikert et al., 2016; Hoda, Noble, 2017; Denning, 2018a; 2018c). It is crucial for a successful deployment of Agile transformation (Laanti et al., 2011; Solinski, Petersen, 2016) and also for all the team values related to the team focus and commitment to deliver valuable, regular and incremental product deliverables (Tab. 1).

From the perspective of Agile project team values, the key ones are (Tab.1): a feedback loop as it is the driver or enabler of an effective communication inside and outside a project team and three values coming from the Scrum method: commitment, respect and openness, as they allow to integrate and consolidate project team members as a one team responsible and accountable for delivered results and solutions. In order to reach these values in the project team, it is necessary to provide enough leadership support, establish correctly roles and

responsibilities in the Agile transformation process (Dikert et al., 2016; Gandomani, Nafchi, 2016; Jovanović et al., 2017; Denning, 2018b).

From the holistic and the system perspective approach note that the whole Agile transformation process and identified organizational changes (Fig. 1, Fig. 2) are unique for a given project team and project organization context, in particular in terms of delivery of project team values (Tab. 1) which strongly relate to the Agile mindset in a given project organization (Gandomani, Nafchi, 2014; Denning, 2016; 2018a; Ravichandran, 2018). The most important project team's enablers for Agile transformation changes are related to: human resources management & development (Gandomani, Nafchi, 2016; Denning, 2018b), organizational culture (Gandomani, Nafchi, 2015; Paterek, 2016; Hoda, Noble, 2017), knowledge management (Gandomani, Nafchi, 2016; Paterek, 2016, Paterek, 2017b) and overall project organization governance (Kuura, Blackburn, Lundin, 2014; Gregory et al., 2016; Joslin, Müller, 2016).

The opportunity for future research studies is in the quantitative measurement of the agility degree (Gandomani, Nafchi, 2014) to provide a better assessment of Agile transformation process changes as it is still a more subjective or perceived assessment. Another interesting future research opportunity is a quantitative measurement of team values together with its dynamics, e.g. similar to the Evidence-Based Management (EBM) tool proposed by Scrum.org (2018) or a modified version of Agile Readiness Protocol (Panasiewicz, Paterek, 2017).

Conclusions

The ultimate goal of each Agile transformation is adopting the agility feature in project organization and eventually becoming Agile. Owing to increased agility, a project team as well as a whole project organization, can achieve more Agile values and eventually adopt the Agile mindset.

The following key conclusions are the main research findings:

1. The key Agile transformation changes in a large project organization have a significant impact on a daily teamwork and routines and are related to communication and self-organization of a multidisciplinary and autonomous project team.

2. The right feedback as well as commitment, respect and openness are the most important Agile project team values coming from the organizational changes introduced by Agile transformation process.

3. From the holistic perspective, it is mandatory to investigate, identify and address project team and project organization context in terms of human resources management and development, organizational culture, knowledge management and overall project organization governance in order to adjust Agile transformation changes correctly.

The key proposals and recommendations are as follows:

1. As the Agile transformation process is complex and requires a considerable investment of organizational resources it is recommended to investigate, analyse and identify guidelines and practices to address changes related to the project team's communication and self-organization.

2. In order to establish a proper Agile mindset in a team or organization, it is recommended to find a quantitative measurement of the degree of agility (e.g. through

assessment of the Agile project team values) and find a way to measure the effectiveness of Agile transformation process changes and its dynamics in a longer timeframe.

3. The Agile transformation process is somehow unique for each team and for each project organization and thus it requires investigating, identifying and addressing project team and project organization contextual enablers, e.g. these related to knowledge management processes or organizational culture challenges.

The modern program and project management remains in need of further comprehensive studies as well as some empirical research in the project management practice as we now live in the era of digital transformation occurring in each area of our life. Agile project management is one of potential responses to the challenges of IT/ICT project management; however, an Agile mindset is not easy to adopt because of to its subjective and imperceptible nature.

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