Hidden Facilitators of Agile Transition:

Agile Coaches and Agile Champions

Reza Meimandi Parizi

School of Computing and IT
Taylor's University, 47500
Subang Jaya, Selangor, Malaysia
rezameimandi.parizi@taylors.edu.my

Taghi Javdani Gandomani, Mina Ziaei Nafchi

Department of Computer Engineering, Boroujen Branch
Islamic Azad University
Boroujen, Iran
t_javdani@azad.ac.ir, ziaei.mina@yahoo.com

Abstract—**Prevalence of Agile methods in software companies is increasing. Software companies need to employ these methods to overcome the inherent challenges of traditional methods. However, transitioning to Agile approach is a topic of debate and needs to be supported by appropriate facilitators. Conducting a large-scale research study, revealed the most important Agile transition facilitators. This paper solely presents two hidden facilitators of Agile transition, Agile coaches and Agile champions, which rarely have been taken into consideration. Both of these facilitators directly impress the people involved in the transition. People-intensive nature of Agile methods and critical role of the people in the transition process reflect the importance of these facilitators when a software company is in the transition process. This study showed that considering these facilitators when can highly impress the success of the transition and revealed the real responsibilities of Agile coaches and Agile champions when transitioning to Agile.**

Keywords—Agile software development; Agile transition; Agile transformation; Agile champions; Agile coaches; Grounded Theory; Software Engineering

I. INTRODUCTION

Agile software development as a reaction to disciplined software development, known as traditional software development, has been introduced to software industry by creating Agile manifesto [1]. Agile methods in software development have focused on different values comparing to the traditional methods, including light-weight documentation, early and frequent releases, higher quality, customer satisfaction, embracing changes in user requirement and so forth [2].

Unlike traditional methods, people are the main focus of the Agile methods. People-centric nature of these methods has led to some difficulties when software companies are changing their development style from traditional to Agile [3]. Agile transition requires involvement and collaboration of all of the software practitioners such as developers, business experts, project and department managers, senior managers, customers, etc.

Various challenges and problems are faced by software companies during their Agile transition [3, 4]. Most of the problems and challenges have roots in the people's behaviours and mindsets as well as their roles in development process. Clearly, changing traditional mindset of such people is not easy and needs enough time and effort [5, 6].

In this case, providing appropriate facilitators and supporters help software companies and development teams to adapt to their new roles and responsibilities [7]. Although several supporters and change facilitators can be taken into consideration, Agile coaches and Agile champions play a critical role in pushing the transition process forward. This paper presents a part of large-scale study on Agile transformation and describes the role of aforementioned facilitators in Agile transition and identify responsibilities of these roles in real environments.

The rest of this paper is organized as follows: Section 2 presents a concise background of Agile transition challenges followed by Section 3 which presents the employed research methodology. Section 4 and 5 describe the findings of the study. They respectively describe positions of Agile coaches and Agile champions in Agile transition process. Section 6 presents a discussion on the findings together with some theoretical and practical implications of the findings, and finally, Section 7 concludes the paper.

II. AGILE TRANSITION CHALLENGES

Agile transition process is considered as an organizational mutation in which all aspects of the organization will be affected. Changing the software development style as expected by Agile approach, is a socio-technical change [6]. This fact makes the transition more difficult than expected. Software companies need to be aware of the transition challenges and provide appropriate strategies to cope with the challenges and barriers.

The main problems and challenges are related to the people involved in the transition. After several years using traditional methods, software practitioners are accustomed to disciplined methods and their processes. Hence, they may resist against Agile transition. For example, Agile methods emphasize on self-organizing teams and shared-decision making, but 'command and control' has been used as management style in traditional methods. In this case, managers (such as senior managers and project manager) prefer to decide singly and at the same time, team members are not enough confident to collaborate in decision making

[8]. Such problems act as vital barriers of the transition. It seems that while software practitioners are motivating to employ Agile methods, they prefer to retain their previous roles, responsibilities, and mindsets.

People and organizational culture are some other problems in the transition process. People culture affects the transition and makes it more difficult than expected. Also, strict organizational processes are inconsistent with Agile approach that gives the people enough authority in performing their jobs [9].

Technical problems are other transition challenges. However, they are not as critical as the others [3]. Finally, customers in several case studies have been reported as the transition challenges [10, 11]. Customer involvement is one of the underpinnings of Agile and lack of customer collaboration is a serious risk for successful Agile transition and adoption [12, 13].

Agile and disciplined methods are different in nature, so, those who have experience in disciplined methods, normally could not easy adapt themselves with Agile processes and practices. In fact, there are various human aspects to be considered in Agile transformation [14]. This fact makes the transition a complicated and multi-dimensional process which needs to be supported by appropriate and in-time facilitators.

To sum up, Agile transition is subject to various problems and software companies need to provide effective facilitators to deal with the possible challenges.

III. RESEARCH METHODOLOGY

Grounded Theory (GT) was employed to conduct a large-scale research study to explore various aspects of Agile transition process. GT proposes a systematic process to help the researchers to discover a grounded theory (the outcome of GT) using substantive data [15]. GT is a suitable research methodology to study human-related problems [16]. Hence, application of GT in a people-centric process like Agile transition process assists the researchers to achieve valuable results. Furthermore, employing GT while there is no up-front hypothesis is helpful [16]. In this study, there was no preconceived problem or hypothesis too. Therefore, GT was a good choice the researchers. Moreover, conducting several high quality research studies in context of Agile software development using GT, motivated the researchers to choose GT for this study [17-19].

A. Data Collection

This study was started with data collection as recommended by GT instructions. The recruitment process was started by publishing online invitations in Agile professional on-line communities over the internet. Those Agile experts who had experience in at least one Agile transition process were eligible to attend the study. Forty nine (49) Agile practitioners from different companies in 13 countries voluntarily participated in the study. The participants had various roles in their companies. About half of them, however, were Agile coaches and mentors who helped many companies to do their transition. Also, most of the participants were from US and Europe and a few from Asia and Australia. Agile transition was ongoing in about half of them and it was a good opportunity for the researchers to collect fresh data.

Several interviews have been conducted using semi-structured and open-ended questions. Since all of the participants were out of the country, online media were used to conduct the interviews. The initial questions were about the participants' backgrounds and general concepts of Agile transition. The next questions were about the challenges they faced with during the transition, their suggested solutions, steps of the transition, etc. Following GT guidelines, all the questions covered only general concepts and data collection was continued up to reaching data saturation-no new concepts appear in the interviews [16].

Due to space limitation, list of the participants has not been provided.

B. GT Procedure

GT starts with data collection and ends with theory building. Figure 1 shows GT steps and artefacts. One some data were collected, data analysis or data coding was started. The transcribed data were reviewed line by line and key points were extracted. Once a key point was extracted, a code, called open code was assigned to it. Then, immediately, the new code was compared to existing open codes in the same and previous transcribed. This process is known as constant comparison method. Then, employing constant comparison method on all open codes led to emergence of concepts, a higher level abstraction in the coded data. Again, constant comparison method was run on the emerged concepts and led to emergence of categories. Finally, theoretical coding was employed to develop a grounded theory. Glaser's Process coding family was used in this study to describe the process of Agile transition and adoption.

The emergent theory reflects the main concerns of the Agile practitioners in real environment. Hence, it is grounded in data which has been collected directly from the real environments. Data analysis discovered all aspects of Agile transition including its challenges, its facilitators, its prerequisites and so on.

Obviously, presenting all findings of such a large-scale study needs enough time and space. The researchers report the emerging concepts, categories, or parts of the emerging grounded theory. This paper solely presents two emergent concepts regarding to Agile transition facilitators. Furthermore, although GT papers often include quotes from interviews to highlight certain points, this paper does not provide any verbatim quotes, primarily because of space limitation.

IV. AGILE COACH AS A TRANSITION FACILITATOR

Agile coaches play a significant role in Agile transition process. The participants explain the role of Agile coaches as transition facilitators. The role of an Agile coach is highlighted in various points as follows.

A. Preparation phase

Preparation phase is the initial step of the transition, when the company is providing the transition prerequisites and gets ready to start the transition. In this phase, Agile coach can help managers in the following items:
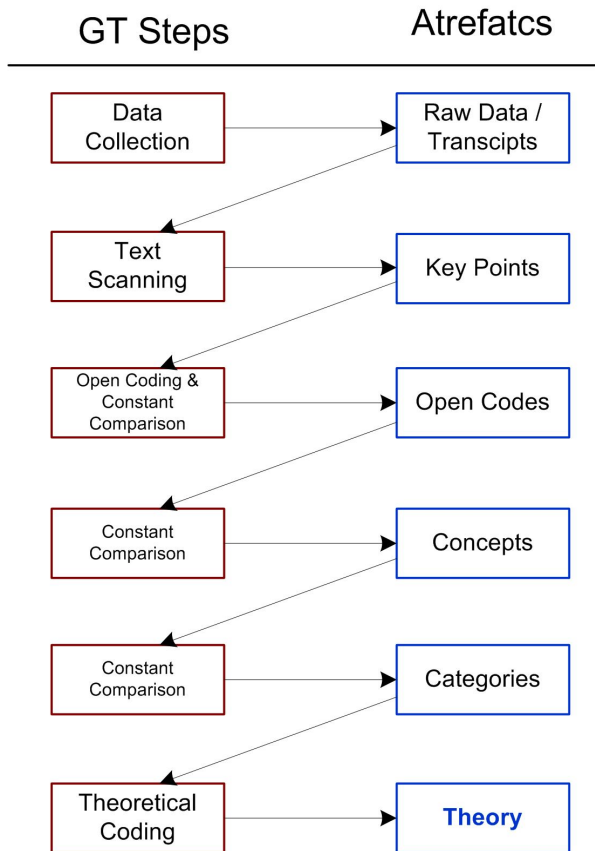
GT Steps — Atrefatcs

Fig. 1. Grounded Theory steps and artefacts

- Guiding the managers in defining the transition goals and success criteria.
- Guiding the managers in defining business goals.
- Guiding the managers in training needs analysis.
- Teaching Agile principles and expected values.
- Conducting a pre-start up assessment to check whether company is ready for the change or not.
- Motivating customers to involve and collaborate in the transition process.
- Preparing an action plan or framework for Agile transition.
- Identifying the potential risks of pilot project and raising them before starting the transition.
- Collaboration with HR department to select the most qualified team members for the initial adoption.
- Help in preparing a transition plan, from preparation phase to fully adoption.

Based on the above items, it seems that Agile coach should be hired before starting the transition to manage or handle the preparation phase.

B. Adaptation phase

While development team members, managers, and customers are adapting to their new roles and Agile practices, having enough access to an Agile coach is very helpful. The participants stressed on having an on-site full-time coach during the transition. Since most of the challenges stem from adapting people to new roles, such a supportive coach, can help them to change themselves with less effort and time. Also, in this stage, an Agile coach can help the team members to be familiar with the Agile practices, in a practical manner.

An Agile coach must make sure that Agile transformation is on track. To do this, he/she can make sure that team members are following the desired Agile practices. He/she also should consider the ground conditions and make the winning strategy.

An Agile coach needs to answer the questions related to Agile approach, methods, or practices during the transition. This is also another reason why a coach is better to be on the ground to answer the raised question quickly.

Beside the above roles, Agile coach need to have a plan for gradual adaptation. In this case, the transformation will be easier and more effective. Encouraging people to the changes, especially when facing problems, is also another duty of the Agile coach that facilitates the transition.

C. Adjustment

During the transition or even after adoption, an adjustment phase or step can be defined, if necessary. In this step, Agile coach can suggest some adjustment activities in order to better adaptation to the Agile practices. Sometimes, the adjustment is necessary to cope with the company's limitations or weaknesses. Handling the required adjustments is one of the Agile coach's responsibilities.

Sometime fully adoption is not possible. In this case, software companies need to do some development tasks or activities in non-Agile ways. Although in such cases most often some parts of companies remain non-Agile, but they can do some modifications in Agile practices in order to employ them based on their limitations.

V. AGILE CHAMPION AS A TRANSITION FACILITATOR

Agile champion was addressed as another facilitator that directly impresses the people involved in the transition. A champion in Agile transformation was referred to as a person who can adjust Agile practices to suit environment and also support other members in the change process.

The participants claimed that existence of champions in Agile teams can facilitate transformation and motivate the others to follow required changes as defined in the transition framework or plan.

The participants declared that most often Agile champions are those with the most enthusiasm, while rest of team member are almost indifferent to Agile. Agile champion was referred to as 'Agile hero' too, who is exemplar for the other members. Such an expert can motivate others to go forward when they are exhausted or disappointed.

Agile champions can drive the internal changes, and expand or even break the borders that Agile practices face in their environment. The changes with more Agile champions come to fruition easier.

Some of the participant addressed "dark champions" as those who "fight for status quo". They believed that Agile coach should focus on dark champions more than indifferent members. They argued that most of the barriers and obstacles stem from "dark champions". They continued that if the transition fails or faces with critical problems in initial stages, "dark champions" impress the indifferent members.

Agile champions are a member of an Agile team (pilot team), so, they are completely close to other members and feel the real challenges the pilot team is facing. Therefore, Agile champions are direct contributors to success to the success of pilot teams.

Some of the participants stated that Agile champions can overcome the "it won't work here" symptom. As they expressed, Agile champions strongly can facilitate achieving initial successes and encouraging indifferent and opponent members.

Furthermore, Champions can reduce side effects of changes, lead and inspire the change and lead people to next levels. This is also very critical, especially to help other people in new technical tasks.

As participant expressed, an Agile champion can be a developer, project manager, Scrum master, etc. and it does not matter what is the technical role of an Agile champion.

VI. DISCUSSION

After presenting the findings of the GT, reviewing the literature is helpful to strengthen the position of the research results.

Coaching in Agile methods is slightly different from coaching in traditional methods. Good coaching can bring leadership concept to Agile methods [20]. Augustine [20] explained that such coaching is meant to demonstrate "light touch" leadership. Ganesh and Thangasamy [21] described personal characteristics of an Agile coach by explaining importance role of Agile coaches and their effects on the transition.

Beck and Andres [22] suggested to hire experienced Scrum masters and Agile coaches to help team members for adapting to Scrum practices, especially those which have focused on individuals and interactions.

Poppendieck [23] in a panel emphasized on the role of Agile leaders and coaches in Agile migration and expressed that for helping people in the transition, Agile coaches and leaders are required while managers are optional. Hoda [24]

described the role of Agile coach and mentor and focused on the role of coach on self-organizing team as one of the important Agile concepts. On the other hand, there are some reports on lack of effective and good coaching and its effects on Agile transformation [25-27].

Some roles in Agile teams may impress other members significantly during the transition. Agile champions are those who play a hidden role to facilitate the changes and persuade others to change themselves. Hoda et al. [28] explained the role of champions in self-organizing teams. They stressed on the role of champions in understanding business drivers and also their effects on other members.

Senapathi and Srinivasan [29] discovered that champions and senior managers are the roles that have significant influence on usage and adoption of Agile practices. Earlier, Kum and Law [30] discovered that Agile champion (member or team), is one of the success factors in Test Driven Development methodology. Also, the findings of the current study discovered that Agile champions make Agile transition easier and help other team members to adapt their new roles. Yet, it seems that it can be studied further.

Literature review supported the important role of the Agile coaches and Agile champions in facilitating of the transition. Both of the roles encourage the persons involved to adapt their activities to what Agile expects. Furthermore, this study showed the responsibilities of Agile coach and champion during Agile transformation.

This study has some implications and recommendations for theory and practice. The main implication of this study for theory is related to human-centric nature of Agile approach. While Agile manifesto simply explains Agile values, Agile adoption is not a straightforward and smooth process. This is mainly because successful Agile transition requires changing in people's mindset. Accordingly, the change is not easy and needs considerable supports. For this purpose, considering some roles to direct and encourage pilot teams is extremely helpful. Agile coaches and champions are those who directly and indirectly impress other members during Agile transition and adoption.

The first recommendation for practice is that software company have to hire Agile coach(es) and Agile champion(s) before starting their transition. Managers should empower Agile coaches and Agile champions to really do their jobs as expected. Agile coaches can help company from preparation phase, when company is preparing to change its development process. Software companies need to consider Agile coach's viewpoints in many stages of Agile transition such as hiring competent members, team set up, preparing an action plan, creating progress criteria, defining business goals, etc.

Also, this study recommends hiring a full-time on-site coach rather than an external coach. Since pilot teams most often are faced by various challenges, a full-time coach can help them in the right time. Such a coach can train team members can train team members and help them in case of problems.

Furthermore, hiring some Agile experts as Agile champions in various roles will facilitate the transition. Especially in software companies with many years' experience in disciplined methods, Agile champions can strongly facilitate the change process. They can overcome the resistance against change and negative perceptions about Agile approach and its usefulness.

Moreover, Agile champions can facilitate some successes in early stages of the transition. Reaching early success in Agile transformation process is a success key for fully adoption. Early successes can encourage indifferent team members or even Agile opponents to effectively collaborate with other members and follow the change process by following the Agile processes.

While there are many potential challenges and problems during Agile transformation, hiring competent Agile coaches and champions can reduce the challenges and increase the chance of success.

VII. CONCLUSION

This paper explained two critical roles in Agile transition process. Agile coaches and Agile champions are the transition facilitators which directly impress the people involved the change process. Agile coaches have a distinguished role in the transition in many stages. They can facilitate providing the prerequisites of the transition. Also, they can be helpful in direct coaching the people who involved in the transition by teaching them what they need to be familiar with their new roles and responsibilities. Also, they can facilitate the adaptation by proposing the required adjustments. Totally, they can help all the practitioners to overcome their problems during the transition process and facilitate the change process.

Agile champions like Agile coaches can significantly facilitate the transition. They can adjust Agile practices to suit environment. Also, they act as exemplar for other members, encourage them to accept their new roles, and adapt to Agile activities in a practical manner.

REFERENCES

[1] K. Beck, A. Cockburn, R. Jeffries, and J. Highsmith. (2001, July 2013). *Agile manifesto*. Available: http://www.agilemanifesto.org

[2] D. Cohen, M. Lindvall, and P. Costa, "An introduction to Agile methods," *Advances in computers,* vol. 62, pp. 1-66, 2004.

[3] T. J. Gandomani, H. Zulzalil, A. A. A. Ghani, A. M. Sultan, and M. Z. Nafchi, "Obstacles to moving to agile software development; at a glance," *Journal of Computer Science,* vol. 9, pp. 620-625, 2013.

[4] S. Nerur, R. Mahapatra, and G. Mangalaraj, "Challenges of migrating to agile methodologies," *Communications of the ACM,* vol. 48, pp. 72-78, 2005.

[5] A. Cockburn and J. Highsmith, "Agile software development: The people factor," *Computer,* vol. 34, pp. 131-133, 2001.

[6] K. Conboy, S. Coyle, X. Wang, and M. Pikkarainen, "People over process: Key challenges in agile development," *IEEE Software,* vol. 28, pp. 48-57, 2011.

[7] T. Javdani Gandomani, H. Zulzalil, A. A. Abd Ghani, A. B. M. Sultan, and K. Y. Sharif, "Exploring Facilitators of Transition and Adoption to Agile Methods: a Grounded Theory Study," *Journal of Software,* vol. In-press, 2014.

[8] N. B. Moe, A. Aurum, and T. Dybå, "Challenges of shared decision-making: A multiple case study of agile software development," *Information and Software Technology,* vol. 54, pp. 853-865, 2012.

[9] J. Iivari and N. Iivari, "The relationship between organizational culture and the deployment of agile methods," *Information and Software Technology,* vol. 53, pp. 509-520, 2011.

[10] A. Martin, R. Biddle, and J. Noble, "The XP Customer Team: A Grounded Theory," presented at the Proceedings of the 2009 Agile Conference, 2009.

[11] R. Hoda, J. Noble, and S. Marshall, "The impact of inadequate customer collaboration on self-organizing Agile teams," *Information and Software Technology,* vol. 53, pp. 521-534, 2011.

[12] S. C. Misra, V. Kumar, and U. Kumar, "Identifying some important success factors in adopting agile software development practices," *Journal of Systems and Software,* vol. 82, pp. 1869-1890, 2009.

[13] P. Tsirakidis, F. Köbler, and H. Krcmar, "Identification of success and failure factors of two agile software development teams in an open source organization," in *4th IEEE International Conference on Global Software Engineering, ICGSE 2009*, Limerick, 2009, pp. 295-296.

[14] T. J. Gandomani, H. Zulzalil, A. A. Abdul Ghani, A. B. M. Sultan, and K. Y. Sharif, "How human aspects impress Agile software development transition and adoption," *International Journal of Software Engineering and its Applications,* vol. 8, pp. 129-148, 2014.

[15] B. G. Glaser, *The Grounded Theory Perspective III: Theoretical Coding*. Mill Valley, CA: Sociology Press, 2005.

[16] B. Glaser, *Basics of Grounded Theory Analysis: Emergence Vs. Forcing*. Mill Valley, CA: Sociology Press, 1992.

[17] A. Martin, R. Biddle, and J. Noble, "XP customer practices: A grounded theory," in *Agile Conference, AGILE 2009*, Chicago, IL, 2009, pp. 33-40.

[18] S. Adolph, W. Hall, and P. Kruchten, "Using grounded theory to study the experience of software development," *Empirical Software Engineering,* vol. 16, pp. 487-513, 2011.

[19] R. Hoda, J. Noble, and S. Marshall, "Developing a grounded theory to explain the practices of self-organizing Agile teams," *Empirical Software Engineering,* vol. 17, pp. 609-639, 2011.

[20] S. Augustine, *managing agile projects*. New Jersey, USA: Prentice Hall, 2005.

[21] N. Ganesh and S. Thangasamy, "Lessons learned in transforming from traditional to agile development," *Journal of Computer Science,* vol. 8, pp. 389-392, 2012.

[22] K. Beck and C. Andres, *Extreme Programming Explained: Embrace Change*, 2nd ed. Boston, MA: Addison-Wesley Professional, 2004.

[23] L. Anderson, G. B. Alleman, K. Beck, J. Blotner, W. Cunningham, M. Poppendieck, and R. Wirfs-Brock, "Agile management - an oxymoron?: who needs managers anyway?," presented at the Companion of the 18th annual ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications, Anaheim, CA, USA, 2003.

[24] R. Hoda, "Self-Organizing Agile Teams: A Grounded Theory," PHD thesis, Victoria University of Wellington, New Zealand, 2011.

[25] K. Sureshchandra and J. Shrinivasavadhani, "Moving from waterfall to agile," in *Agile 2008 Conference, AGILE '08*, Toronto, ON, 2008, pp. 97-101.

[26] H. Hajjdiab and A. S. Taleb, "Agile adoption experience: A case study in the U.A.E," in *IEEE 2nd International Conference on Software Engineering and Service Science, ICSESS 2011*, Beijing, China, 2011, pp. 31-34.

[27] J. Srinivasan and K. Lundqvist, "Agile in India: Challenges and lessons learned," in *3rd India Software Engineering Conference, ISEC'10*, Mysore, India, 2010, pp. 125-130.

[28] R. Hoda, J. Noble, and S. Marshall, "Organizing self-organizing teams," in *32nd ACM/IEEE International Conference on Software Engineering, ICSE 2010*, Cape Town, 2010, pp. 285-294.

[29] M. Senapathi and A. Srinivasan, "Understanding post-adoptive agile usage: An exploratory cross-case analysis," *Journal of Systems and Software,* vol. 85, pp. 1255-1268, 2012.

[30] W. Kum and A. Law, "Learning effective test driven development: Software development projects in an energy company," in *1st International Conference on Software and Data Technologies, ICSOFT 2006*, Setubal, Portugal, 2006, pp. 159-164.