5-2023

Adaptive Study of Agile Transformation in Small, Start Up and Self Employed IT Business - Do We Really Need Agile?

Yibo Zhang
Clark University, yibzhang@clarku.edu

Adaptive Study of Agile Transformation in Small, Startup and Self-Employed IT Business-Do we Really Need Agile?

Yibo Zhang

Professor: Mary Piecewicz

Capstone Project of Project Management

Clark University

May 3, 2023

Abstract

This research focuses on the agile transformation in small, startup and self-employed (SSS) IT businesses. Through conducting adaptive, qualitative approaches on the perspectives of organization culture and business correlation level, we demonstrate some most crucial challenges during agile transformation that have been frequently ignored. Our research highlights the importance of conducting a comprehensive evaluation before embarking on an agile transformation journey. By using the "6W" model we produced as a guide, the research discusses in-depth on the complexity of make agile transformation in SSS IT businesses.

Table of Contents

Chapter 1: Introduction

1.1. General Background Information

Originating from Aerospace working processes around 1960s, the agile methodology experienced its evolution from initial rudiment to a proven working method. Since the publication of "Manifesto for Agile Software Development" in 2001, agile has been introduced to be a well-structured and revolutionary tool to common people. Experienced evolution and practice in various industries, agile was developed into a wide idea of working process which include distinctive branches, such as Lean, Extreme Programming and Scrum, etc. Today, the application of agile methods does not merely exist in software development and manufacturing industry, more attempts have been proven success at healthcare, education, and construction industries. To a certain extent, agile has been accepted as a phenomenon of a business culture, where individuals and organizations gain long-term benefits from it.

In IT and technical-based businesses, agile methodology has extensive application. We should believe the advantages of agile in its flexibility and adaptability are appropriately suited for software development working process. We may also recognize that the agile is the bandwagon in IT industry, especially at the circumstances that the peer competition do not allow a long period of development process. At this situation, IT businesses- in particularly small, startup and self-employed IT businesses, aspire to find the mystery of "rapid success." As the authors Sheedy and Glen (2011) introduced from Ayyagari, Beck and Demirguc-Kunt's article, "One sign of a robust economy is a large SME segment, which can help to grow the private sector in emerging

countries" (p. 59). In consideration of the business size, resource acquisition, individual capacity, and the value the business creates to the market, small, startup and self-employed IT enterprises entail a certain level of comprehensive capability to take a share from the market. As one of the most common IT businesses who provide general IT technical support services to their clients-Is there anything they can do to make a difference?

In fact, agile methodology brings some opportunities to them. By creating fast-paced development process, building self-organized team, and running more flexible delivery cadence, small, startup and self-employed IT businesses find out a possible solution to compete with large enterprises-At least for those businesses who lacks core technology and product, agile method, as a revolutionary fuel, rekindles the engine of those businesses, and brings them back to them track. Just like the authors Bryar and Carr (2021) described in their article, "Agile might seem perfectly suited for when a company is developing a product or service that doesn't exist and is looking to move quickly. In these cases, it's difficult to simply interview customers or watch them in action, because they can't respond to a hypothetical product" (para. 5).

1.2. Issue Exposure

However, it is not worth introducing agile, as a "new" idea for audiences-Most people knew it. Just like some of other fresh ideas come out in recent years, such as Metaverse and blockchain. Although rare people understand what those ideas exactly mean, most people have heard them more or less. In fact, the benefit of agile has been overpraised in the past years. In the same article, Bryar and Carr (2021) introduced the

popularity of agile and the idea of "Agile" in recent years that "The idea of "agile" thinking or innovation, along with its close cousin "lean," has spread far beyond its product development and manufacturing roots. It's not uncommon now to hear about the agile approach to budgeting, talent management, or even running a family meeting" (para. 2). The agile may save some IT businesses from crisis, but it is absolutely not a straw to clutch at for most small IT businesses.

In the past years, most small, startup and self-employed IT businesses failed to make the transformation to the agile. It is mainly because of the poor self-assessment made by business owners. For most of these owners, they considered the agile as a "Good to go" tool that they could apply it immediately without much cost, which is incorrect. Last year, I contacted some of my friends who is working at those small IT businesses in and outside of the United States. At that time, I was a new project management graduate student at Clark University. I asked them if they use agile as their development or working method, they all told me that "we use everything" because their boss has no idea what exactly they are using but the boss believes everything is on the right track. One of my friends told me that they accepted some of "Agile" training through their managers, but they do not have a well-managed system to support it.

When adopt or transfer to agile, most small, startup and self-employed business owners never realized the fact that the entire transformation process is a long-term incremental task, which require continuous support and clearly identified plan on it. Sometimes, the transformation comes with the change of organizational culture, individual perceptions, and other subjective elements. "To change a company

perspective from traditional to agile means to change people's perspective meaning radical changes in attitudes, mindsets, values, ways of thinking and interacting with the world. Together means a change in organizational culture" (Olteanu, 2018, p. 1). In other words, staying at their "comfort zone" but looking for the change will never work.

The example above is not the sole. The same or similar problems widely exist in many small, startup and self-employed IT businesses. The owners or managers of these businesses urgently require guidance when they make decisions. To some extent, they should understand the fact of agile transformation, as well as the possible consequences they may take. To make further explorations on this issue, the research paper will demonstrate a discussion on the challenges that most small, startup and self-employed IT businesses have. Then, from two distinctive perspectives, we will explain the reason why we do not suggest agile transformation in these businesses. Furthermore, we will introduce a self-assessment model- "6W," which provides a comprehensive and qualitative measurement for business owners to make their final decision.

Chapter 2: Literature Review

This literature review discusses the fact that small, startup and self-employed IT-business use & transfer to the agile in the past years. By demonstrating relevant data from research, survey and interviews, the purpose is to indicate the urgency of the issue, as well as to explain the necessity of this research.

2.1. The Use and Fact of Agile

According to the Sheedy and Glen (2011), they introduced the research from CEC that “Small business is an important part of the economy, as nearly 99% of all businesses in the European Union are categorized as an SME” (p. 59).

The authors Azizyan, Magarian, and Mattson (2011) made a wide range of survey by answering 10 distinctive questions about agile use. According to the response from 121 personnel in 120 companies over 35 countries, they found the facts that approximately 55% of them use Scrum as their selected agile method (p. 7). Besides, around 70% of respondents work in a small collocated teams (p. 7).

According to the survey made by Harvey Nash/KPMG (2019), which included 120 participants from 17 countries, “81% of respondents have started their agile transformation within the last 3 years” (p. 6), and “63% of respondents believed that their agile transformation decision was made through organizational strategic priority” (p. 7). Similar to the survey made by Azizyan and his team, KPMG found that “78% of respondents in their research use Scrum as their selected agile method” (p. 13). They also stress that “we see this illustrated in the difference in Agile adoption between IT and non-IT functions within the organization with IT taking a lead in adopting Agile principles and approaches” (p. 12).

2.2. Advantages and Problems from Agile Use

In the same research made by Azizyan, et al. (2011), “41% of the respondents were of the opinion that the most satisfactory aspect is the ease of use. The second and third most satisfactory aspects are price (17%) and customizability (17%) …… the least satisfactory aspects are lack of integration with other systems (36%) and lack of custom

reports (27%)" (p. 8). In the survey mentioned above by Harvey Nash/KPMG (2019), the author indicated that "Only 13% of respondents Indicated that top management fully supports an Agile Transformation or was the original driver towards it" (p. 10).

In the literature review by Gustavsson (2016), he collected 21 distinctive case studies from 16 articles, which demonstrated the benefits and challenges of agile application & transformation. As the result, the top three benefits are "Better collaboration in the team," "Increased customer interaction," and "Increased productivity and speed" while the top three challenges are "Changing mindset to allow flexibility," "Lack of process visibility," and "Buy-in from managers" respectively (p. 7-8).

2.3. Conclusion and Analysis

The data and research from the literature review accurately reflect the fact of the agile transformation among small, startup and self-employed IT businesses in the past decade, which is consistent with my observation from the introduction section. In fact, it is true that a large number of small IT businesses started their agile transformation or prepared to make this change. Most owners and managers had their vision on this change to improve productivity, flexibility and competitiveness of their product/service. However, the challenges from the change mainly come from sustainability and purposiveness. Since each organization and their business value/culture is unique, tailoring becomes to be a significant point that worth making in-depth discussion.

The weakness of the research above, again, comes from their uncertainty and data bias. In other words, business value/culture is unique. Even two businesses operating the same products/services, they could have extremely different approaches, processes,

values and self-cognitions, and those factors strongly portend the consequences when making agile transformation. At this point, general data reflection may not be able to help us exploring the critical risks of making this transformation. However, when exploring the root causes of the challenges of making agile transformation, the research above provide us strong motivations, especially encourage us to explore the necessity to demonstrate our qualitative analysis based on three distinctive approaches and "6W" model.

Chapter 3: Method and Theory

3.1. Target Audiences

Before we get started the research, we identified of our target audiences- The small, startup and self-employed (SSS) IT business owners who have strong desire to make the agile transformation while they lack specific understandings of both agile transformation process and an approach to make the decisions.

It is crucial to identify target audiences for our research. For us, identified audiences positively encouraged the research on descriptions, terminology selections and approaches. For readers, the research closely introduces the points from their familiar perspectives, along with most appropriate case studies, aiming to create most valuable contents.

3.2. Thesis Statement

Due to the unique challenges posed by the hierarchical organization culture that frequently exist, and the strict requirements of tailoring that align to the business content,

Agile transformation has limited adaptability in Small, startup and self-employed (SSS) IT businesses.

3.3. Approaches

The research paper will focus on two distinctive perspectives-Organization culture, and correlation level. For each section, the paper will discuss in-depth with various of subsidiary arguments, and then provides lucid explanations along with real-life case studies. Lastly, the research will discuss "6W" model and demonstrate the application and measurement for each SSS IT business.

Organization Culture: It is the most challenging issue that almost every small, startup, and Self-employed (SSS) IT business must face. Organization culture, to a certain degree, determines the consequences of entire agile transformation. As an intangible and unique asset for each organization, organization culture, including the governance structure, business strategy, organizational support, and individual perceptions, brings strict requirements for every participant in the business.

Correlation level: The correlation level between Agile methodologies and specific business content is a crucial factor for successful Agile transformation in small, startup, and Self-employed (SSS) IT businesses. The complexity of tailoring the most appropriate Agile process to match the unique business contents of SSS IT businesses can be considered a significant challenge. Tailoring is not one-off job. Instead, it asks for long-term updating and reviewing on the issue. In essence, the question is not merely whether we need Agile, but also whether Agile needs us.

Chapter 4: Explorations

4.1. Organization Culture

Agile transformation, according to the Barroca, Dingsøyr, and Mikalsen (2019), is "an individual's, team's, group's and organization's journey into continuous improvements changing the way we do business, meet our goals and overcome our challenges by being more flexible, targeting smaller goals and providing continuous delivery, feedback and learning the process which evolves an organization to be more reactive to changes in its environment" (para. 1). When a business works on its agile transformation, in terms of their goals, size and strategies, there are organization level transformation and project level transformation as two options. For most SSS IT businesses which has less than 50 people, there is no obvious differences for these two options due to their limited scale of teams. In other words, large IT businesses may be started with experiment groups, with continuous observation and updates, finally complete steady organization agile transformation. In small SSS IT companies, at the most time, project level transformation comes with a series impact of organization level changes, which requires timely update on its entire business structure.

From our observations, small IT business owners usually ignore their organization culture, as a significant component in the transformation, implies the final result of this change. For some local IT businesses which have 10-20 people, the owner even not believe the exist of value/culture in their business. In their opinion, people working here to support their families, why do we need a culture? Why does it matter? In other words, why does culture matter in agile transformation? "Agile transformation is based on

organizational change, so companies are faced with many challenges during this process. This strategy should take into consideration all aspects of change approach because it represents the underpinning of achievement in agile transformation process through independent transformation experiences" (Olteanu, 2018, p. 24). Yes, it is true that the agile, especially Scrum, brings the most benefits to IT businesses. However, to support the high efficiency of this working process, "Good to go" method does not work.

Figure 1-1

Figure 1-1 demonstrates a logical structure of organization culture. As the first main point in the research paper, the figure serves to clarify key factors and highlight the hierarchical relationship that frequently present in most SSS IT businesses. Together with the case study following, the research will more detailed analysis of this concept.

4.2. Case Study

According to the ScrumcCN (2014), there is a simple but typical case study which demonstrates some common problems that come out through their agile transformation. Business A is an offshore IT startup company, which has 2 different locations in and out of the country. One day, the project manager of the team sent all team members an email, saying they decided to make agile transformation from now. The email attached a document with a short introduction of Scrum and how they plan to adopt it. The project manager called everybody to read and learn through the document and the first “Stand-up meeting” will be on the next 2 days.

A few weeks after they adopted stand-up meeting, everybody was exhausted about it. To have the meeting with both two teams at the same time, one team had to attend the meeting before getting off work. People were not happy about it, and most of the team members believed the meeting was just wasting of their time.

During each sprint, team members realized that they do not have opportunities to discuss the priorities of the task. Instead, product owner and their top management keep adding tasks into the sprint without any discussion with members.

As a result, the agile transformation of Business A failed rapidly. Nobody announced the failure of the transformation, while people were still working in their own way, but they all understood that they are not on the right track. (paras. 29-44)

4.3. Organizational Structure

It is a typical example of unsuccessful agile transformation. In essence, we could find they ignored the important role the organization culture played in this transformation. In organizational structure, responsibility had not been identified well. Scrum master and product owner are not familiar with their roles in this working process, neither ignored the process that they should follow. When the management decided to start the transformation, they should make careful assessment on organizational governance process and see if it is adaptive in the Scrum. More specifically, the organization should nominate a transformation leader, who directly reports to the top management, and responsible for transformation design, process, and problem collections. On the other hand, although Scrum and most of other agile methods suggest building a self-organized team, it doesn't mean product owner and Scrum master could add story points anytime without assessment.

It is true that agile has a more flexible atmosphere for both team members and managements. In most SSS IT businesses, the challenge exists on execution ability based on their organization structures. For some businesses which have less than 20 people, they even don't have a well-designed governance process or organizational structures. When the business owner makes all decisions, the employee may not be willing to report

to their managers. For the same reason, the managers may not be able to make their decisions. As a result, the agile works in a predictive way.

4.4. Organizational Strategy

Another issue that can be seen from this case study reflects on the organizational strategy. The project manager, as well as the business owner, do not provide an exact goal of the transformation, which implies the transformation may not align with the business strategy. Agile transformation is a continuous process that owners entail to understand why they decide to do it. They might have been told that agile is "good" that everybody uses that, but they are not aware of the specific benefit the agile will bring to them. The serious consequence of lacking strategical alignment is the manager does not know how to measure the success criteria in each transformation phase, then, people are not motivated to adapt to this change. As a good leader from SSS IT business, they should demonstrate a clear vision of making this transformation. More specifically, why is this decision correct? If the owner lacks professional knowledge to make periodic plans, they should set up a minimum goal that the rest of people could work toward to it. For instance, we hope everybody can be familiar with the agile working pace within 2 months and provide feedback to me, then we could decide the next step.

In SSS IT businesses, the main challenge to overcome the barrier of strategical alignment is the owner's business acumen and awareness. Owners have to convince themselves to believe they are doing the "right thing," then they could possibly demonstrate an appropriate vision of transformation to the rest of employees. In consideration of various of challenges and risks of the transformation, most SSS IT

owners may start by a “careful attempt.” For that reason, SSS IT business owners usually need to overcome more barriers on it because they can’t afford to lose.

4.5. Support & Individual Perception

In organizations, human resources are invaluable assets, and organizational culture represents the shared values of its people. The success of an agile transformation is heavily dependent on individual perception and the level of support provided to employees. In the case study, the organization failed to pay attention to employees' feelings, which ultimately hindered the success of the transformation. At the beginning, business A gave only 2 days self-training period to employees on Scrum and their transformation plan. Since Business A has two different locations in two countries, the managers should consider cultural barriers and time differences. As for the Scrum team, common members lack participation in sprints. Instead, Scrum masters and product owner, persisted autocratic leadership style, which is not the agile suggested. Overall, business A didn’t provide continuous support to their people. As a result, employees did not believe in the value of agile, and they finally lost their motivation to participate in this transformation.

To make improvement, continuous support is necessary. The support includes training support and any financial assistance that is required to make the change. Physically, working space re-build, supplies purchase is needed. In employee training, the organization should prepare a periodic training plan, which matches their transformation plan. For most employees and managers who are familiar with their working cadence, it is crucial to let them accept the value of agile. Although most agile

transformations started from bottom to top, we still suggest the owner to make a top-down change plan because they top management should start to accept agile value as a part of their business value, then the entire execution of the transformation will be easier. In the article, Agile Transformation by KPMG (2019), the author wrote "We see successful organizations investing heavily in Agile awareness sessions and trainings…… To make the change sustainable, the education and training should go hand in hand with coaching on behavior. This holds for all levels in the organization from team to the executive board" (p. 10).

In most SSS IT businesses, it brings a series of challenges to provide continuous support while letting people shift their perceptions from traditional concepts to the agile. In hierarchical organization culture, it is difficult for owners and managers to release some of their power to the team. "Sometimes project managers do not like to relinquish their authority and sometimes team members do not like to accept such responsibilities, because they do not have enough confidence in themselves" (Gandomani, Zulzalil, Ghani, Sultan, Parizi, 2013, p. 1). Although the agile method emphasizes having a "servant leadership," which also refers to Theory Y and Z leadership, SSS IT business owners and managers struggle to make this shift. On the one hand, they may be hesitant to take risks that could lead to a profit loss. On the other hand, to be a "servant leadership" might be an emotional challenge, especially for some owners who have invested significant efforts into their business.

When handling employee training, owners should be aware that not everyone would like to make the change. In particular some of experienced employees who have

been accustomed to their own way for years, the request for change for them is severe. Sometimes, the negative attitude expressed by such experienced employees makes dramatical impacts on the overall progress of training. The owner may extend the training period, but the result is more funding investment. For most SSS IT owners, the prospect of losing experienced employees due to the change may be undesirable.

In summary, organization culture, including organization structure, business strategy, support and individual perceptions, bring a series of adaptive challenges for SSS IT businesses on their agile transformation. Based on our observation and the typical example demonstrated in the case study, SSS IT business owners should conduct a carful assessment in terms of factors above, and then make their final decision. Attempting agile transformation without considering organization culture is not recommended.

4.6. Correlation Level

As one of the essential attributions of agile transformation in SSS IT businesses in our research, correlation level stresses on the necessity if the business should make their agile transformation. Starting from business value and customer requirements, SSS IT business owners are expected to conduct an assessment. In other words, they should consider about a question of why we need agile and what will agile bring us and our customers? In the upcoming case study, we will present a successful example of agile transformation, followed by a detailed analysis of practical challenges and issues.

4.7. Case Study

Business B, according to ScrumCn (2014), is a small software development company, made a well-planned decision to adopt agile transformation. To ensure its

feasibility, the top management held discussions with the operation department and formulated a monthly transformation plan. Scrum was chosen as the appropriate agile method for their needs. After consulting with the project manager and marketing personnel, the team realized that they frequently received 1-month-period projects from clients. Business B decided to conduct an initial assessment by implementing Scrum in these projects and identifying areas that required improvement.

After a month, the team identified that some components of Scrum were not suitable for their business due to their smaller scale and short project periods. To improve their processes, the team tailored the agile method by considering their business values, customer requirements, and team size. They decided to incorporate some of XP's components into their agile process. With continuous review and updates, Business B successfully completed their exploration and discovered a unique direction for their business (paras. 51-58).

When comparing Business B with the previous case study, it becomes evident that Business B had a clear understanding of their goal and the reason behind the transformation. This indicates that the business owners and managers had a professional approach and had conducted proper assessments, research, and discussions to determine what their business and customers needed. Another important aspect was that during the tailoring phase, the team proactively identified weaknesses from previous attempts and made timely adjustments that aligned with their business values.

“The strategy for an Agile Transformation comes from knowing where your organization is today and where you need to go” (Zack, 2019, para. 17). In SSS IT

businesses, just like business B above, we would suggest conducting a comprehensive assessment before they get started. If the business owners are not familiar with professional assessment approaches, they may attempt to use root caused analysis instead. This first question they should ask is “What will this transformation bring us?” This question emphasizes the potential value for specific business content. In technical-based IT businesses, especially in those companies who frequently develop new products/services based on customers’ requirements, then the owner may expect more flexibility working pace and more adaptive processes. In some non-technical IT businesses, which provide general IT support, or operating a weather forecasting platform, they may not really need this transformation because the correlation level is low. It is reasonable for those business owners who decide to adopt agile transformation anyway, but sometimes the low correlation level brings further issues to the business, such as not seeing return on investment, lower productivities and even bankruptcy.

Cost analysis can be made through exploring opportunity cost and return on investment. Generally speaking, the change that does not create extra value for business and customers is not worth making. The measurement of correlation level is positively related to the business value. When making strategic decisions, SSS IT business owners may analyze the opportunity cost on it. For instance, if we spent the same number of resources on other places, such as updating equipment, advertisement, hiring more people, etc., instead of going agile, can we expect better consequences? In most SSS IT businesses, the challenge of this part exists on the tailoring. The definition of tailoring here not only means the development of the most suitable process, and governance. Additionally, it implies a long-term ROI assessment based on their main businesses. As

for most SSS IT companies, the top one priority is to survive from the competition. When doing long-term investment on agile transformation, it is risky to maintain a stable cash flow, and that's why our research suggests the correlation level as a crucial factor to measure the success rate.

Chapter 5: Findings and Suggestions

In our adaptive research of agile transformation of SSS IT businesses, we realize that the actual transformation process is more difficult than expected. It is true that small IT businesses, especially those who operate unique business content, the agile transformation plays the role of booster. However, for the rest of common businesses, the agile transformation may not bring them more competitiveness in a short time. Compared with large IT businesses, small, startup and self-employed IT company owners are not given a good motivation to make a successful transformation.

Agile transformation can bring higher value to technical-based businesses compared to non-technical businesses. While there are various research studies that provide mind maps, methods, and processes to assist SSS IT businesses in their transformation journey, there is a lack of focus on the pre-transformation phases and the factors that need to be considered before making the decision. Therefore, we have developed a logical model called "6W" that can help SSS IT business owners to conduct a comprehensive pre-transformation assessment. This model aims to address the challenges that are commonly encountered as tough barriers during agile transformation.

5.1. 6W Model

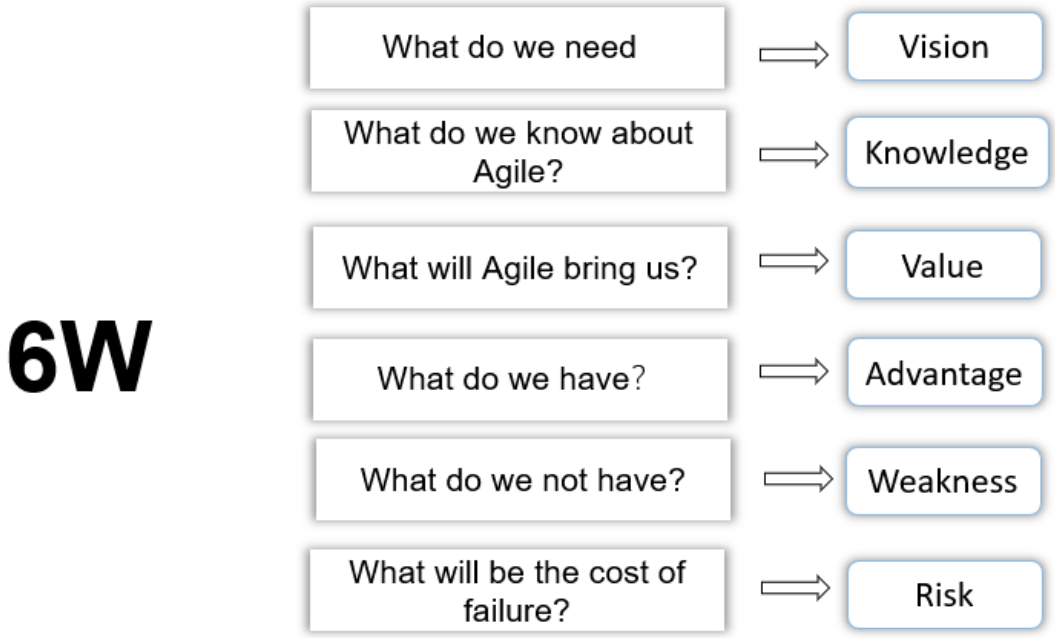

Figure 2-1

The model of "6W" we produced is a logical mind map that improves SSS IT business owners to make comprehensive self-assessment based on their business conditions. The model consists of six distinctive "What" questions, each question matches a unique factor that reflects the fact from the agile transformation.

"What Do We Need?" This question emphasizes the essential purpose of making agile transformation. In other words, it asks for the owner's vision of the change. Referring to the measurement of correlation level from our research, this question helps to build motivations.

"What Do We Know About Agile?" This question helps to make self-assessment for business owners and their employees' capability on agile transformation. Knowing the capacity of organizations' intangible assets decides the difficulties to get started.

"What Will Agile Bring Us?" This question conducts the analysis of ROI. More specifically, value assessment helps to align agile transformation with business strategies. When the SSS IT owners do not see obvious profit, value, and benefits from the question, then the change may not be worth adopting.

"What Do We Have?" This question stresses the advantages and strengths of the organization. Fundings, talents, resources and soft skills are all valuable assets that could help to improve agile transformation.

"What Do We Not Have?" Compared with advantages, this question emphasizes the drawbacks and weakness of the business. Depending on the critical level of those weaknesses, SSS IT owners will understand the places need more attention.

"What Will Be the Cost of Failure?" This assumption encourages owners to consider the potential consequences of a failed agile transformation. By conducting a risk assessment, owners can determine the level of impact the business can absorb and whether they have the resources to handle potential setbacks. It is crucial to assess the cost of failure beforehand to avoid risking the entire business.

The "6W" model provides a comprehensive approach to tackle the most challenging factors of agile transformation identified in our research, including organization culture, structure, business strategies, self-perception, support, and correlation level. By addressing the six key questions, the model enables SSS IT owners

to conduct a thorough pre-transformation assessment, providing a solid foundation for their agile transformation journey. Overall, the "6W" model is a crucial tool for SSS IT owners to kick-start their agile transformation journey and achieve successful outcomes.

Chapter 6: Conclusion

In this research, we conducted adaptive analysis on agile transformation in small, startup and self-employed IT businesses. Based on our observation and explorations on previous works, we focused through the perspectives of organization culture and business correlation level, which we believe are two most important sections that most SSS IT businesses owners ignore. Based on two case studies from our research, we emphasized the advantages of making agile transformation in SSS IT businesses, but we also demonstrated our concern on the poorly performed adaptability of agile transformation. In consideration of the challenges which frequently existed in hierarchical organization culture and strict requirements of tailoring that align to the business content, we conclude that agile transformation, in most SSS IT businesses, has limited adaptability.

The conclusion doesn’t mean that SSS IT business owners should not conduct agile as their business strategy. Instead, we encourage them to have an in-depth evaluation through the “6W” model we produced. Again, as the SSS IT business, the biggest challenge for them is to survive from the intense competition, “Good to go” idea will never work.

As we conclude this research, it is important to acknowledge its limitations. One such limitation is that the guidance provided may not be applicable to all SSS IT businesses, as technical-based businesses may require different approaches than general

non-technical IT businesses. Moreover, the specific products and services offered by each business may also impact on the suitability of the proposed approach. As a result, further research is needed to provide more detailed and context-specific analysis. Additionally, we recommend that future research consider adopting qualitative model-based explorations to further analyze the topic.

References

Agile Transformation (2019). *Agile Transformation.* Netherland: KPMG. Retrieved April 25, 2023

Azizyan, G., Magarian, M. K., & Kajko-Mattson, M. (2011). Survey of Agile Tool Usage and Needs. *ResearchGate*, 7; 10.

Barroca, L., Dingsøyr, T., & Mikalsen, M. (2019, May 21-25). Agile Transformation: A Summary and Research Agenda from the First International Workshop. *Agile Process in Software Engineering and Extreme Programming Workshops*, p. 1.

Colin, B., & Bill, C. (2021, April 9). *Have We Taken Agile Too Far?* Retrieved from Harvard Business Review: https://hbr.org/2021/04/have-we-taken-agile-too-far

Gandomani, T. J., Zulzalil, H., Ghani, A. A., & Sultan, A. B. (2013, August 5). Towards Comprehensive and Disciplined Change Management Strategy in Agile Transformation Process. *Research Journal of Applied Sciences, Engineering and Technology, 6(13)*, 1.

Gustavsson, T. (2016). BENEFITS OF AGILE PROJECT MANAGEMENT IN A NON-SOFTWARE. *Project Management Development – Practice and Perspectives: Fifth International Scientific Conference on Project Management in the Baltic Countries, CONFERENCE PROCEEDINGS*, pp. 7-8.

Javdani, T., Zulzalil, H., Ghani, A. A., Sultan, A. B., & Parizi, R. M. (2015). The impact of inadequate and dysfunctional training on Agile transformation process: A Grounded Theory study. *Elsevier, 57*, 1.

OLTEANU, C. G. (2018, January). IT Agile Transformation. *Economy Informatics*, p. 24.

O'Sheedy, & Glen, D. (2011, November). A Study of Agile Project Management Methods. *Southern Cross University*, p. 59.

Zack, T. (2019). *AGILE TRANSFORMATION: THE GUIDE TO GETTING STARTED*. Retrieved April 30, 2023, from LeadingAgile: https://www.leadingagile.com/2018/07/the-basics-of-agile-transformation/

敏捷开发基础及失败成功案例分析, S. (2014, May 17). *敏捷管理实践*. Retrieved from ScrumCN: https://www.scrumcn.com/agile/scrum/4055.html

CLARK UNIVERSITY

CHALLENGE CONVENTION.
CHANGE OUR WORLD.

Appendix: Project Charter:

Adaptive Study of Agile Transformation in Small, Startup and Self-Employed IT Business-Do we Really Need Agile?

6.1. Project Overview

6.1.1. Introduction

The project, as the capstone of project management program of Clark University, is designed with 5 distinctive sections, with two case studies and a creative qualitative model "6W." The capstone project has its topic of exploring the essence of the challenges of agile transformation in small, startup and self-employed (SSS) IT businesses. The approach of the capstone consists of two main points-organization culture and business correlation level, which the author believes are the two most significant parts the most SSS IT business owners ignored. Based on relevant research on agile transformation, the research will come through a brief and lucid demonstration, aims to present valuable guidance for SSS IT business owners.

6.1.2. Major Stakeholders

1. Yibo Zhang (Author)

2. Mary Piecewicz (Capstone Professor)

3. Audiences- The target audiences are designed as small, startup and self-employed IT business owners who have interest in agile transformation, back lack comprehensive understandings and overview on the change.

6.2. Project Goal and Scope

6.2.1. Project Goal

1. Provide detailed explanations of the challenges of agile transformation in SSS IT businesses.

2. Provide reasonable evidence of why we believe agile transformation has limited adaptability in those businesses.

3. Provide suggested guidance with qualitative measurement model “6W” to help the pre-transformation assessment.

6.2.2. Project Scope

1. Conducting literature review on the range of relevant research of agile transformation.

2. Demonstrate case studies on this subject.

3. Research Data.

4.The model of “6W.”

6.3. Assumptions

The capstone project made its assumption that agile transformation has a limited adaptability in small, startup and self-employed IT businesses.

6.4. Constraints

- Time limited
- Resource access limitation
- Research capacity
- The support of resources
- Overall quality of the project

6.5. Risks

- Late changes on main structure of the project
- Missing submission of project components
- Unsupported evidence

6.6. Measure of Success

Project Outcomes	Measure of Success
A logical Conclusion provided	Respond to the Thesis Statement
A logical Argumentation Structure	Main points are supported
Strong evidence & Data use	Reasonable & Persuasive data
Argumentation Integrity	Respond to Assumptions
Articulated Writing	Clear and understandable English writing

6.7. Stakeholder Sign-Off

Yibo Zhang	PJM Graduate Student	2/13/2023
Name	Title	Date
Name	Title	Date

Lesson & Learned

Issue Name	Problem/Success	Impact	Recommendation
Well-Defined Thesis Statement	Success	Lead the expansion of the rest of analysis of the paper	N/A
Logical Project Structure	Success	Intro-Literature Review-Methods-Exploriation-Findings and Suggestions-Conclusion	N/A
Research Method	Qualitative	Expected to have more quantitative approaches	Suggest to add more data-focus analysis
Problem Solving	Success	The project pointed out the issue and provided possible solutions and suggestions	More detailed solutions are expected
Value Provided	Success	Provide constructive suggestions to SSS IT owners	More detailed suggestions are recommended
Project Schedule	Partial Success	The project should have been done earlier	The project should have been done earlier
Project Scope	Success	The project is under scope	N/A

In short, the project was successfully delivered. The project meets the most successful criteria on the topic selection, thesis identification, method demonstration, evidence indication and conclusion indication. The project reached its designed goal to provide suggestions to SSS IT business owners on their agile transformation.

The weakness of the project exists in its diversity of source selections. In other words, the project should provide more research regarding the topic. Besides, the project

should provide more detailed suggestions for specific departments, field of SSS IT industry that may adopt suggested solutions.