

The Major Challenges That IT Project Managers Face in Transformation to Agile Methodology in Saudi Arabia

التحديات الرئيسية التي تواجه مدراء مشاريع تقنية المعلومات في التحول للمنهجية
الرشيقة في المملكة العربية السعودية

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Abstract

The adoption of Agile methodology in IT projects has become increasingly popular in recent years due to its flexibility and adaptability. However, the transformation from traditional project management methodologies to Agile can present several challenges for IT project managers. This research aims to identify the barriers and challenges faced by IT project managers in the Kingdom of Saudi Arabia in the transformation to Agile methodology. To achieve this, a survey will be conducted with IT Project managers in various organizations, and interviews with IT project managers in two public and private organizations. The findings of this research will provide insight into the challenges faced by IT project managers in Saudi Arabia during the transition to Agile methodology and will help in developing recommendations to overcome these challenges.

أصبح اعتماد المنهجية الرشيقة في مشاريع تكنولوجيا المعلومات شائعًا بشكل متزايد في السنوات الأخيرة بسبب مرونتها وقدرتها على التكيف. وبالرغم من ذلك، فإن التحول من منهجيات إدارة المشاريع التقليدية إلى المنهجية الرشيقة يمكن أن يمثل عددًا من التحديات لمديري مشاريع تكنولوجيا المعلومات. يهدف هذا البحث إلى التعرف على العوائق والتحديات التي يواجهها مديرو مشاريع تكنولوجيا المعلومات في المملكة العربية السعودية في التحول إلى المنهجية الرشيقة. ولتحقيق ذلك، سيتم إجراء استطلاع مع مديري مشاريع تكنولوجيا المعلومات في منظمات مختلفة، ومقابلات مع مديري مشاريع تكنولوجيا المعلومات في منطمتين عامة وخاصة. ستوفر نتائج هذا البحث نظرة للتحديات التي يواجهها مديرو مشاريع تكنولوجيا المعلومات في المملكة العربية السعودية أثناء الانتقال إلى المنهجية الرشيقة، وستساعد في وضع توصيات للتغلب على هذه التحديات.

Keywords

Agile methodology, Agile transformation, Agile challenges, Agile adoption, IT project management.

Introduction

We all know that the use of traditional methodologies in information technology projects, especially at this time, maybe an obstacle to their success, and in light of the increasing development and growth witnessed by the information technology sector in the Kingdom of Saudi Arabia, which supports the achievement of the goals and vision of 2030 in terms of the development of the information technology sector, The use of modern and agile methodologies is the best option to achieve success. Agile methodology has become increasingly important in the IT industry due to its flexible and practical approach to project management. Unlike the traditional Waterfall methodology that has been prevalent in managing IT projects for years, it follows a sequential and linear process. Agile methodology emphasizes collaboration, adaptability, and continuous improvement. Therefore, it is an ideal approach for IT projects that require frequent changes and updates.

However, moving to an agile methodology can be challenging for IT project managers and can greatly impact project success. They face various challenges during the transition, such as a lack of understanding of the agile framework, resistance from team members, and the need for a major shift in mindset and culture. Addressing these challenges is critical successfully transitioning to an agile methodology.

The findings of this study will contribute to IT project management in Saudi Arabia. It will provide insight into IT project managers' challenges when transitioning to Agile methodology and propose best practices to overcome them. By successfully adopting the Agile methodology, organizations and IT project managers in Saudi Arabia can improve their project management practices and achieve better results.

Research Problem

The major challenges that IT project managers face in transitioning to Agile methodology.

Research questions

The research questions for this study are:

- What are the major challenges IT project managers encounter when transitioning to Agile methodology in Saudi Arabia?
- What are the best practices to overcome these challenges to help in a successful transition?

Research Objectives

1. This research may provide valuable insight for IT project managers in Saudi Arabia about the challenges in the transformation to Agile methodology.
2. This research may contribute to overcoming the Agile transformation challenges.

Research Hypothesis

IT project managers in Saudi Arabia face several challenges and pitfalls in the transformation to Agile methodology.

Research Methodology

The methodology of this study was a qualitative literature review following the principles of systematic research. A tool called Google Scholar was used to search for previous studies related to the title of our research.

Literature Review

Gandomani & Nafchi (2016) Determined different aspects of human-related challenges throughout the Agile transition process. Agile transition needs enough time and effort and is most often subject to several challenges and barriers, mainly because of its people-centric nature. The results of this study show that the root of the emerging issues is people's perceptions about the Agile transition.¹

Cockburn & Highsmith (2001) The researcher highlighted that managers working in an agile manner should focus on people and factors such as friendliness, talent, skill, and communication. These qualities become the primary concern of the agile team. Developing skills is important so that each person can offer greater value over time. Attention to humanitarian issues gives a particular sense of project flexibility, as these factors have a positive impact on managers' challenges in applying the flexible methodology.^{2,3}

Jovanović , Mesquida , Mas & Colomo-Palacios (2020) The researcher highlighted in this study that in order to adopt agile methods and their applicability, many organizations need to adapt their processes. In order to support and direct the rapid transition, he mentioned in his research the factors that affect the transition process. The focus has been on five, which are pre-transformation activities, obstacles and results, stages and activities, agile practices, and situational factors. Finally, the researcher gave us a list of 154 apparent factors that influence the rapid transition of the agile methodology and the proposed adoption process.^{4,5,6}

Korhonen (2013) The researcher sheds light on how the introduction of agile practices actually affects a large software development organization, which is part of Nokia Siemens Networks. The impact of this rapid transformation was assessed in terms of its success in achieving the objectives set by management prior to the commencement of the transformation. This longitudinal study included two separate analyses, conducted at 6-month intervals, that measured what agile practices were already in use in the organization and what, if any, impacts were visible in terms of goals set by management. Monthly analyses included measures of defect data and surveys of employees directly involved in the transformation. The study showed two things: first, that the introduction of agile

practices does indeed have the beneficial effects one might expect, and second, that with this type of study, it is not only possible to assess the impact that the adoption of agile practices can have. In a large and well-known software development company, but the effects are also visible at a surprisingly early stage. Therefore, when measuring the impact of applying the methodology in a systematic manner, we can face the challenges and develop proactive plans to succeed in shifting to the agile methodology in a positive and more effective manner.^{7,8,9}

A study by Aleksandra Zhbaj, discusses the challenges faced by IT companies when transitioning from Waterfall to Agile methodology. The study found that the main challenges include resistance to change, lack of understanding of Agile methodology, and the need for a cultural shift¹⁰. The author suggests that IT companies should provide training and support to their employees to overcome these challenges.

Another research by Taghi and Mina, provides a grounded theory approach to identifying the essential prerequisites of Agile transition and adoption. The study found that the essential prerequisites include the need for a clear understanding of Agile methodology, the need for organizational support and change management, and the need for a cultural shift¹¹. These prerequisites make people and organizations more strong to deal with the potential transition challenges.

One of the key challenges identified in a literature is organizational culture. According to Pussella and Bandara, organizational culture is the utmost challenge in adopting agile project management methodologies¹². The traditional project management approach is often characterized

by a rigid organizational culture that values control and predictability. In contrast, agile methodology requires a more flexible and collaborative culture that values adaptability and continuous improvement. The clash between these two cultures can lead to resistance to change and hinder the adoption of agile methodology.

Pawel Paterek (2017) investigates the knowledge management aspects of an Agile transformation in project organizations. The author emphasizes that large-sized enterprises implementing IT projects require effective knowledge management to address challenges such as reduction of time-to-market, higher project efficiency and productivity, predictability of customer deliveries, transparency of project planning, and improving cooperation and communication between business and project teams¹³. The author discussed that Agile project management methodology can help address these challenges through organizational changes, but the transition process requires addressing several knowledge management aspects, issues, and challenges.

A systematic literature review provided by Elizabeth of the organizational culture attributes that influence the adoption of Agile practices. The study found that the main organizational culture attributes that influence the adoption of Agile practices include management control, team collaboration, market, values, and creativity¹⁴. The authors suggest that organizations should create a culture that supports these attributes to facilitate the adoption of Agile practices.

Another research conducted by Santos explores the challenges faced by organizations during their journey towards adopting agile methodology. The authors conducted a qualitative study using thematic analysis and interviewed key persons responsible for leading agile transformation initiatives in four Brazilian organizations. The authors identified 26 challenges that can impact the success of agile transformation initiatives, which they grouped into five dimensions: People, Organizational Culture, Processes, Scalability, and Technology¹⁵. The Organizational Culture dimension includes challenges related to a culture conflicting with agile values, incompatible organizational structure, and a lack of a process to guide the transition.

In conclusion, transitioning from traditional project management to agile methodology can be a challenging process for organizations. The literature review highlights several challenges and barriers associated with adopting and implementing agile methodology, including organizational culture, knowledge management, resistance to change, inadequate training, and difficulty integrating agile with existing processes. Organizations must address these challenges to ensure a successful transition to agile methodology.

References

1. Gandomani, T. J., & Nafchi, M. Z. (2016). Agile transition and adoption human-related challenges and issues: A Grounded Theory approach. *Computers in Human Behavior*, 62, 257-266.
2. A. Cockburn and J. Highsmith, "Agile software development: The people factor", *Computer*, vol. 34, no. 11, (2001), pp. 131-133.
3. Gandomani, T. J., Zulzalil, H., Ghani, A. A., Sultan, A. B. M., & Sharif, K. Y. (2014). How human aspects impress Agile software development transition and adoption. *International Journal of Software Engineering and Its Applications*, 8(1), 129-148.
4. Jovanović, M., Mesquida, A. L., Mas, A., & Colomo-Palacios, R. (2020). Agile transition and adoption frameworks, issues and factors: a systematic mapping. *IEEE Access*, 8, 15711-15735.
5. T. Javdani Gandomani and M. Ziaei Nafchi, "Agile transition and adoption human-related challenges and issues: A grounded theory approach," *Comput. Hum. Behav.*, vol. 62, pp. 257–266, Sep. 2016.
6. T. Kahkonen, "Agile methods for large organizations—Building communities of practice," in *Proc. Agile Develop. Conf.*, 2004, pp. 2–10.
7. Korhonen, K. (2013). Evaluating the impact of an agile transformation: a longitudinal case study in a distributed context. *Software Quality Journal*, 21, 599-624.
8. Kettunen, P., & Laanti, M. (2007). Combining agile software projects and large-scale organizational agility. Published online 13 July 2007 in Wiley InterScience
9. Hartmann, D., & Dymond, R. (2006). Appropriate agile measurement: Using metrics and diagnostics to deliver business value. In *Proceedings of agile 2006* (pp. 128–134).
10. Zhbajnova Mircheska, A., & Antovski, L. (2020, September). Transitioning of IT Companies from Waterfall to Agile Methodologies.
11. Javdani Gandomani, Taghi & Ziaei, Mina. (2016). The Essential Prerequisites of Agile Transition and Adoption: a Grounded Theory Approach. *Journal of Internet Computing and Services*. 17. 173-184. 10.7472/jksii.2016.17.5.173.
12. Pussella, H.D.M.M. & Bandara, Amila. (2018). Exploring the Challenges in Transitioning from Traditional Project Management to Agile Project Management. *Peradeniya Management Review*. 1. 17. 10.4038/pmr.v1i1.25.
13. Paterek, Pawel. (2017). Agile Transformation in Project Organization: Knowledge Management Aspects and Challenges.
14. Mkoba, Elizabeth. (2022). Organisational Culture Attributes Influencing the Adoption of Agile Practices: A Systematic Literature Review. *Journal of Information Systems Engineering and Management*. 7. 10.55267/iadt.07.11690.
15. Reginaldo, Fabio & Santos, Gleison. (2020). Challenges in Agile Transformation Journey: A Qualitative Study. 11-20. 10.1145/3422392.3422436.