


Adapting P2M Framework for Innovation Program Management Through a Lean-Agile Approach

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ABSTRACT

The commonly adopted project management approach is the stage-gate model, which is not always the convenient approach to innovation projects. The paper objective is to present a qualitative analysis of existing project management approaches and to propose a new hybrid model for effective management of innovation programs based on traditional project management approaches, agile methods to involve the customer, and then lean approach to eliminate waste. The results were illustrated by a new model based on the Japanese P2M (program and project management for enterprise innovation) guide, then combine it with Agile Industrial Scrum method and the agile 3S (scheme, system, and service) model of P2M, and finally with some lean tools and techniques oriented towards the innovation and project management context. Finally, an application case was illustrated where the researchers present the planning of the application of the proposed model on an innovation program in medical waste management field.

KEYWORDS

Agility, COVID-19, Hybrid Project Management, Kanban Board, Lean Start Up, Project Management, Scrum, Trello Board

INTRODUCTION

Project innovation is generally defined as the implementation of new products, new services, new markets, or realizing new organizations (Xiang & Wu 2012). This approach becomes an obligation for all companies seeking competitiveness in the era of globalisation (Sommer et al. 2015), also is considered as a crucial factor in a very challenging environment (high development costs, ever-changing customer demands, condensed product life cycles) (Müller et al. – 2012). Different project

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management methodologies, guides, and methods exist to deal with this kind of project, namely; traditional, agile, and hybrid ones. For the traditional ones, there is the Project Management Body of Knowledge (PMBOK), Projects IN Controlled Environment Version 2 (PRINCE2), P2M (Program and Project Management for Enterprise Innovation), ISO21500 ... they all use the stage-gate model proposed by Cooper in 1990 (Lartey, 2020). Their applicability was limited due to the customer involvement in the development of products (Bonner, 2010) and they present a rigid life cycle (Bushuiev & Kozyr, 2020). On the other hand, the agile project management methods have found gradually their way in the development of complex services & business models (Ghezzi & Cavallo 2018) with their flexible life cycle (Bushuiev & Kozyr, 2020). Additionally, in the same context of innovation and development of new products, the researchers found the hybrid approaches that combine stage-gate models with agile methods at the execution level (Conforto & Amaral 2010), (Bindera et al 2014), (Sommer et al. 2015), (Cooper & Sommer 2016), (Mousaei & Javdani 2018), (Lalmi et al 2021). The choice of the appropriate methodology is an important factor to avoid the failure of innovative projects (Matovic, 2020). Therefore, the project management tools and techniques must be examined carefully to identify the best ones ensuring the effectiveness of the projects (Lalmi et al 2021). This paper explores the traditional, agile, hybrid models and lean start-up methods in order to build a new hybrid management model suitable for innovation programs, while program management is defined as the management of several projects combined organically with a holistic mission (Ohara, 2005). After a deep analysis, this study was based essentially on the Japanese P2M guidebook as well as on the agile Scrum method.

The paper is structured as follows: in the next section, the researchers present the appropriate literature for the development of the hybrid management conceptual model for innovation programs. This is followed by the illustration of the result of their research and their proposed model. In the last section, they present the planning of an innovative program in the medical wastes field, where they detail each step of the proposed framework. Thereafter, possible future research avenues are suggested.

LITERATURE REVIEW

As introduced before, several project management methods, tools, and techniques exist in the literature that treat the innovation projects, this section is divided into 4 categories: traditional project management, agile project management, hybrid project management, and Lean management tools.

Traditional Project Management

Traditional project management methods follow the waterfall model, in which product development occurs in a cascade. It is suitable for projects with less complexity (Chaudhari, et al 2018). They usually start with requirements gathering, then design implementation, testing and verification phases, and finally the deployment phase. Especially in this model, the planning phase is time-consuming and this is considered as one of its drawbacks. In addition to this, the product testing starts very late and any change requires a redesign of the component which may impact the project schedule (Lartey, 2020).

Among the traditional standards and guides of project management in the context of innovation, there is P2M (Project and Program Management for Enterprise Innovation), developed in 2001 by Professor Shigenobu Ohara (Ohara, S, 2006). The program management technique in P2M allows a division of one complex task into multiple projects, manage each project, and then integrate them to optimize the overall task. P2M is considered the world's first program management of its kind (Japan International Cooperation Agency Social Development Department, 2006). It is considered in Japan the equivalent of the PMBOK guide. It was developed specifically to address and improve innovation in Japanese companies in order to ensure the success of their projects (Drob & Zichil, 2013).

P2M proposes a framework based on (Bredillet & Ohara, 2007):

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