

Approach of Japanese Project Management: A Comparison Between PMBOK and P2M/KPM in the Construction Industry.

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Abstract

Project management is important in running an organization and project managers in different countries practice different ways to deliver their best to their global clients. The most common and well-established US method, Project Management Body of Knowledge (PMBOK[®]) has been adopted by many organizations, including some Japanese organizations. However, the Japanese have come up with new project management methods, i.e., Project & Program Management (P2M) and *Kaikaku* Project Management (KPM). This research aims to identify the behavior and practice of Japanese project management methods; and to compare PMBOK[®] and P2M/KPM in the construction industry. The features and essence are highlighted, discussed, and reviewed to identify if they are applicable in construction field. The results show that PMBOK[®] is target orientated, and concentrates on time, cost and quality to obtain excellent results. P2M/KPM on the other hand, is mission orientated, responding and adapting well to environmental changes in order to overcome crises with a concentration on loyalty, safety, trust and relationships. Identifying the suitable criteria will provoke interest in organizations to implement the best suitable method in their project management in construction industry. Ultimately, the findings would determine the feasible use or incorporation of Japanese Project Management principles with the existing management principles.

Keywords

PMBOK[®], P2M, KPM, Construction

1. Introduction

Project management is an important organizational tool. Integrating smaller projects to major projects or programs acts not only as a pillar to support the entire company, but also as an engine that keeps the company running. Thus, the success or failure of a company very much relies on how a particular project is managed. The proper use of project management would improve management effectiveness and performance radically (Qiu, 2001). Project management is not just a simple management tool that companies use as without a proper standard, it is actually classified as a certified profession that meets a required standard of knowledge developed by certain project management associations around the world (Morris *et al.*, 2006). Thus, project management can be quite a powerful instrument in managing a company if one knows the skills and methods involved. Project managers in different countries run projects of similar nature, but in different ways to bridge the cultural differences for the international stakeholders (Saludin, 2005).

Academic researchers have developed a theory and approach to project management that has played an important role in many areas of globalization. These philosophies and

practices are applicable to most management activities and are beneficial not only to project practitioners but also to teachers and auditors (Gao *et al.*, 2007). The most common and well-established US method, Project Management Body of Knowledge (PMBOK®) has been adopted in many organizations around the world, including Japanese organizations. Project Management Institute (PMI) firstly made PMBOK® standardization in 1983, and released its first edition of PMBOK® in August 1996, with updated editions in 2000 and 2004. PMBOK® divides project into nine knowledge areas which organizes forty-four project component processes (PMI, 2004). PMBOK® aims to achieve three requirements, which is time, cost and project scope (Gao *et al.*, 2007).

While over 2000 Japanese obtained the PMI's Project Management Professional (PMP) qualification, the Japanese have also generated their own style of project management, the Project & Program Management (P2M), created in 2002. This system is one of the three formal project management systems recognized worldwide (Morris *et al.*, 2006).

While P2M is still making efforts to be put into practical use both internationally and in Japan over the last several years (Kinoshita, 2005), an improved paradigm called the *Kaikaku* Project Management (KPM) has been introduced (Ohara and Asada, 2009). The application and effectiveness of P2M and KPM needs to be addressed since many studies have shown an increased interest in and appreciation for Japanese management principles and practices in recent years (Lee and McCalman, 2008).

Project management is widely recognized especially in construction industry, information technology industry, manufacturing and engineering industry (Ohara, 2003). Project management was introduced in Japan first into engineering and construction industry in the early 1960s (Ohara, 2005). However, the knowledge of the existing theories does not necessarily mean they are practiced or applied widely in such industries. Therefore, the objective of this paper is to extract the features and essence of Japanese Project Management – P2M/KPM methods, to highlight its application, to do a comparison against PMBOK®, and to determine if they are viable to implement into construction industries. The scope of this paper focuses on the construction industry, as it is one of the first industries to utilize project management.

2. Project and Program Management (P2M)

P2M is the abbreviation of Project and Program Management, a Japanese version of project management which is also the first Japanese standard of project and program management for enterprise innovation developed by Professor Shigenobu Ohara of Nippon Institute of Technology, Japan, in 2001 (Ohara and Asada, 2009). P2M aims to create a framework of innovation, a strategic framework for the purpose of improving corporate values in project management methodology (Ohara, 2003) and a way for Japanese enterprises to develop more innovative approaches to ensure their businesses can compete in the global business environment (Dinsmore and Cabanis-Brewin, 2006). Innovations here include decisions to downsize or withdraw from unprofitable projects or further invest in potential ones, the restructuring of team members or projects, and an evaluation of employee performances. These enhancements and innovations will help to ensure the success of certain projects or programs.

The P2M model uses a system based on a combination of entry level project management, program management and eleven segment management frames (Ohara and Asada, 2009), as shown in Figure 1. Entry describes how to take the first step as a mission-achievement professional, project management explains team formation to accomplish a mission with high efficiency and effectively, and program management deals with a combination of projects that respond to external changes and flexibly adaptations influenced by changing surroundings (Ohara, 2003). It is important for professional project managers to establish fundamental theories and methods to accomplish their overall mission. With professional

certificates, individuals will be recognized not only in local organizations but also in international companies.

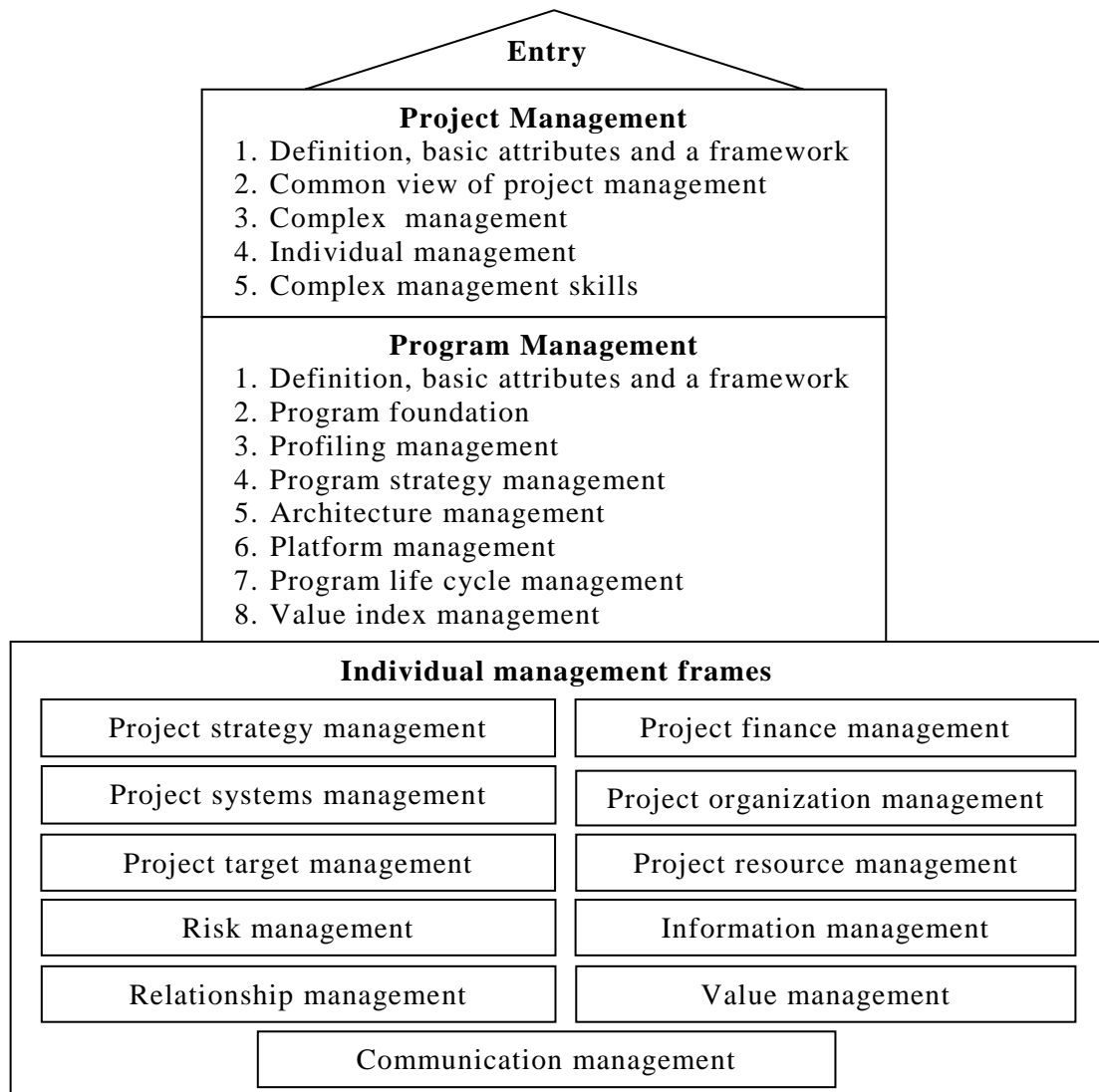


Figure 1: P2M Tower (Ohara, 2003)

Japan's economy was declining in international competitiveness, dropping from number one in 1993 to 30th place in 2002., and was threatened after China became 'The World's Factory', that producing improved qualities of various manufacturing goods with low-costs (Ohara, 2003). These were some of the factors that inspired the Japanese to develop their own project management methods. It was found that although a large number of Japanese companies obtained excellent results after employing a western style of project management, Japanese companies with creative and complex themes applied their independent program management as well, enabling them to solve problems successfully. P2M was turned into a practical system that combines a western style of project management that integrates the current Japanese cultural climate. After realizing how successful combination of these two strategies was in Japan, western companies have introduced P2M into their own organizations (Ohara, 2003).

3. *Kaikaku* Project Management (KPM)

In the 1990s, Japanese companies experienced a deflationary depression. To survive and regain their global competitiveness, the Japanese looked for solutions in the *kaikaku* (reforms) of business management, organization and technology. Although not all

companies can accept reformation in order to keep up with the economy crisis, it was found that those who were successful in reforming were those who utilized the intellectual property of the entire organization rather than those who just focused on technological abilities (Ohara and Asada, 2009). It is difficult for Japanese companies to accept reformation and easily adapt to external changes as they are a community who stands firm in their cultures and existing business methods. Despite Japan's cultural hesitancy to change, it has been proven that flexibility, adaptability and reformation are essential to survive in an economic crisis. Essentially, the successful companies were those who applied the new project management paradigm *Kaikaku* Project Management (KPM), which is an advanced version of P2M consisting of three significant Japanese elements that are essential for successful performance: *Kakusin* (innovation), *Kaihatsu* (development) and *Kaizen* (improvement), with a reference modeling of 3S: Scheme, System and Service, which were developed and introduced in the architecture management (Ohara and Asada, 2009).

KPM concentrates on the innovation, development and improvement of Japanese management methods, using the foundations of P2M to take into account the whole cycle of the project from idea, planning, execution, investment and recuperation to create value for the future. KPM is a project management practice that utilizes the perceptive ability humans are born with to promote the creation of future value by implementing a number of reform projects linked to strategy, providing a body of knowledge to train core leaders, whose responsibility is to recoup the investment and propose a methodology for avoiding risks of failure and resistance in an organization that solves complex issues (Ohara and Asada, 2009).

Japanese organizations place an emphasis on the flexibility to adapt to environmental changes and their models are created based on this concept. The strategies and methodologies of KPM have proved effective and successful in providing learning opportunities in companies, enhancing participation and motivating consensus and awareness of core leaders (Ohara and Asada, 2009).

4. Application of PMBOK® and P2M/KPM in construction industry

PMBOK® is narrower in conceptual breadth and scope compared to P2M (Morris *et al.*, 2006). While PMBOK® deals only with projects, P2M handles program management and project management therefore evaluations are made based on the entire mission rather than just a specific mission as practiced in project management (Ohara, 2003).

On the one hand, P2M focuses on their clients' goals and how they are being achieved, taking into account their opinions and suggestions. On the other hand, PMBOK® is interested more in delivering whatever is being required by the clients without considering other factors, as long as the end result is achieved. There is also a view currently stating that project management is about outputs whereas program management is about outcomes (OGC, 2002) and program management is more strategic than project management alone (Morris *et al.*, 2006). This explains why the project strategy management framework can be found in P2M instead of in the knowledge areas of PMBOK®. This framework clarifies a relationship between corporate strategies and projects that will maximize corporate value and eliminate business risks (Ohara, 2003).

Besides, when good relationships are built, employees feel obligated to perform at their best for the company. Japanese style management is renowned for its loyalty, be it a reward to a longtime employee for excellent service through the years, or a dedication to fair business practices between client and company. Trust is important, and this will create a good impression that will later lead to the formation of long-term relationships (Lee and McCalman, 2008). Also, if it means escaping bankruptcy, Japanese employees will often work to increase productivity, working long hours, even if it means accepting potential

salary reductions (Kinoshita, 2005). In other words, employees will sacrifice within their limits for the sake of their employer at critical times.

Communication management is important in training well-mannered employees to best represent the company. Once a healthy, reputable and clean image is projected, new projects will automatically filter in through recommendations from satisfied customers. Eventually, a strong network will be established. These results can be attributed to good management of operational processes, and the maintenance and restructuring of relationships between employer and employee (Ohara, 2001, 2003). At times, Japanese will go to the extreme, readily absorbing costs in order to maintain long-term relationships. P2M's management methods place an emphasis on quality rather than quantity, which leads to an increase in commercial returns. Japan is well known for its high standards of quality management and control (Zwikael *et al.*, 2005). Japanese companies spend more time in planning than Americans, and waste less of their time debugging finished products (Dumaine, 1991). Japanese companies regard the existence of defects as a humiliation that reflects on company honor (Jacobs and Herbig, 1998). They are not keen in producing large quantities if it means sacrificing quality because of factors like the cost of resources or consumption of time. Even if it takes a longer period to produce something of greater quality, Japanese are willing to do so. This has given them a reputation for producing high quality products around the world, with their construction consultants renowned worldwide, not only for their ample knowledge in building but for their management style as well.

Japan's system of forecasting, monitoring and interpreting costs is fundamentally different from its western counterpart (Zwikael *et al.*, 2005). Employees who are responsible for projecting and measuring product costs are rotated among several departments before taking on a cost-planning job, which is something uncommon in the west (Jacobs and Herbig, 1998). Having this mindset, Japanese engineers or those from the technical division will have a better perception when it comes to making financial decision. When engineers or architects design certain buildings, they will already have a base knowledge of specific material costs, workmanship and transportation. In P2M, a brief estimate can be quoted from a technical person instead, and not just from the usual sales personnel. Therefore estimates will have higher accuracy, projecting a good guideline to customers, and becoming especially useful to customers with a limited budget. This type of practice should be encouraged in companies.

P2M/KPM emphasizes flexibility, adaptability and how efficiently their organizations can achieve total optimization. Rather than focusing on mere partial optimization when world economy crisis occurred in the 80s and 90s, Toyota maintained its market share by using the flexible *kaizen* philosophy. Other companies such as Honda, Canon and Sharp survived too, as they adapted to changing times by continuing to invest in people (Kinoshita, 2005). Being able to adapt accordingly is a feature of P2M/KPM and *kaizen* is one of the three significant Japanese elements found in KPM. Construction companies too, adopted this philosophy in order to maintain their businesses during the economic crisis. Taisei Corporation, one of the renowned construction companies in Japan exhibits the importance of understanding knowledge management when attempting to do *kaikaku* or *kaizen* projects in construction business. Construction businesses need a 'lifecycle management', which comprises scheme management, system management and service management and requires more than 60 years to manage (Ohara and Asada, 2009). In Japan's building construction industry, the initial investment costs which include design, planning and construction are approximately 17% of the lifecycle cost of a building over 65 years old (Tanaka and Tamaki, 2009) and where the facility operating cost is four to five times the construction cost. This indicates that the costs after the building was constructed are large (Japan Facility Management Promotion Society, 1998). These large lifecycle costs correspond to the management activities of repair, renovation, innovation, and improvement (Tanaka and Tamaki, 2009). As time passes and as a result of exposure to the changes of surrounding

environment, a building will deteriorate and its asset value will depreciate, thus, maintenance or building renewal activities are needed. Thus, in *kaizen* philosophy which means constant and never ending improvement, is practiced in Japan's construction industry to ensure the necessary management activities are executed. Actually, P2M system in construction is practiced not only in Japan. In order to ensure buildings are safe for occupation and to sustain the operation of the facility, sufficient management activities are made compulsory by the government. In Singapore, buildings are renewed every five years and needless to say, daily maintenance of the facility is a top priority.

Another difference in construction management methods between PMBOK[®] and P2M, is that the former is 'goal-orientated' and latter is 'mission-driven' (Ohara, 2006). In order to accomplish a mission, P2M not only takes into account each process that comes along the way but also the detailed content of each process. They use clear and measureable success measures for each project. Timelines and specific targets are set for each milestone, and once they are achieved, work on larger targets will commence. This cycle will be repeated until the end target is successfully actualized. On the other hand, PMBOK[®] is prone to place emphasis on meeting the target or goal rather than how the target was actually achieved. In the building construction industry, there is a need to go through certain stages, such as design, planning, study, construct, commissioning, maintenance and investment recovery stages. With a mission-driven mindset, each stage is of equal importance. Employees are divided into small teams and are given different project tasks or assigned to different stages of the construction process. Then these different project teams will emerge with different outputs in each stage and create a conglomerate of several divisions or programs to reach an outcome. This concept has produced favorable results. One Japanese company that practices this concept is Sharp. Although they are a non-construction company, they showed how perfectly this idea worked. They established this efficient system in which new products are made in project teams and have created several successful products (Kinoshita, 2005). The management of the construction industry using P2M also deals with information management. Building renewal businesses use computer-aided facilities management (CAFM) in facility management systems (Tanaka and Tamaki, 2009). Control over the building's security and alarm system, lifts, energy efficiency measures and ventilation systems can all maintained through one central system.

Some construction sites with the Japanese style management use the famous 5S system, consisting of *Seiri* (tidiness), *Seiketsu* (standardization), *Seiton* (orderliness), *Seiso* (cleanliness), and *Shitsuke* (discipline). A well-organized site will create a safer environment with more efficient and productive operation. Safety is very important in P2M/KPM, especially when it comes to construction sites. The Japanese method has very strict and high standards concerning safety measures to ensure the construction site is a safe place for their workers on site. In P2M/KPM, focus is also placed on mentoring, on-the-job training and other training courses. Educating their employees is vital as human resources are definite assets. Putting an emphasis on 'people' hand cooperative unions has always been a strong characteristic of many Japanese companies (Kinoshita, 2005).

5. Conclusion

Project management has been recognized as a special management technique applied globally in organizations and the practice of it shows improved outcomes in certain industry. The target orientated PMBOK[®] claims that excellent results are accomplished by focusing on time, cost, and quality. PMBOK[®] only delivers accordingly as long as the target is met and rarely considers other such circumstances, while the mission orientated P2M/KPM responds well to environmental changes. In other words, the Japanese method P2M/KPM emphasizes flexibility and how to adapt to environmental changes in order to overcome crises, and will take into account other factors as well and not only concentrate only on the end result. P2M/KPM focuses on solving complications that occur during the

process, concentrating on measures of success, customer satisfaction, and communication management. The Japanese method of management stresses loyalty, safety and trust. When applied in construction industry, these features will actually increase the success rate in construction projects. Construction is a vast industry that requires good project management skills. Improper management will lead to problems and trouble in the long run. With Japanese management methods, construction projects will produce high quality buildings. Also, considering the Japanese mindset in dealing business, there will be fewer debt problems. They portray an image of very good payers as they always honor their payment terms. After highlighting and extracting the features, essences and applications of Japanese P2M/KPM style of project management, we can conclude that this approach is beneficial to the construction industry and that the execution of projects under this management method has proven successful.

This review however, has a few limitations. The research touches only the surface of PMBOK® and P2M/KPM, briefly discussing their main features. This paper discussed the application of certain features, comparative management methods, and the general methodology of both PMBOK® and P2M/KPM. However, further in depth investigations should be completed on each of the frameworks and features to understand in greater detail their essence, importance, appropriateness to successfully apply them to construction projects. Since at present, there is no such universal project management body of knowledge for the construction industry, by selecting and combining the good features from the western PMBOK® and eastern P2M/KPM, we might create a well-rounded project management body of knowledge that may work not only regionally, but for the rest of the industry.

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