

CRITICAL PMO FUNCTIONS ON COST MANAGEMENT - AN EMPIRICAL STUDY IN THE PHARMACEUTICAL INDUSTRY IN JAPAN-

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ABSTRACT

In such competitive circumstances, companies are paying a lot of attention to invest effectively in R&D projects, especially in the pharmaceutical industry. It is known that cost management maturity has a strong correlation to the corporate profitability in this industry and six critical factors are identified as keys to success of the cost management [19]. It was indicated that some sort of organizations such as Project Management Office (PMO) would take a role of supporting these factors to work effectively. This paper tries to find which PMO functions are influential on those factors by analyzing the result of interviews from quantitative and qualitative point of view. This article proposes PMO functions which are important for corporate profitability.

INTRODUCTION

It is important for a company to keep high level profitability to invest in R&D projects which considerably affect future growth of a company, especially in R&D intensive companies such as high-tech industry and chemical industry. In the pharmaceutical industry, another R&D intensive industry, global competitions are heating up day by day, and only companies with ability to invest on right projects can survive [15]. In such circumstances, many companies are trying to increase return on investment. At the same time, it is crucial to keep the best usage of precious financial resources credit as financial resources are limited. Therefore, cost effectiveness is critical when companies make investments. Continuous launch of superior products to market is a key to generate revenue. In order to keep launching such products, companies need to know on which projects they have to concentrate. Numbers of companies use project portfolio to prioritize R&D projects, however, most of them do not have an ability to make right decisions, especially in case they do not have timely information on cost situation of each project [20]. Therefore, cost management is indispensable to lead a right decision from cost effectiveness point of views. It is already proved that cost management maturity strongly correlates to corporate profitability, and introduced critical factors which are keys for cost management [19]. Additionally, it was indicated that some sorts of organization have an influence on those factors to be active and effective.

Before 1990s, an administrative office of one big project was recognized as Project Office. Then companies found out necessity of managing and controlling all the projects in one organization to make them have a synergy. After that, Project Management Office (PMO) started to be acknowledged as a corporate organization which controls projects through functional organizations even from cost management point of view. Recently, PMO is expected to support decision making of top management to select right projects to invest by providing appropriate information to them [5][16]. In some cases, such kinds of PMO are called Program Management Office.

Although PMO is one of organizations which have an ability to promote factors for cost management success, no research has identified critical PMO functions on cost management. Accordingly, this article tries to find relations between those factors and PMO functions to propose critical PMO functions on cost management.

LITERATURE REVIEW ON PMO FUNCTIONS

Numbers of PMO functions have been developed and discussed in books grounded in the field survey or

their consulting experiences. [3][10][11][13][14][16][17][22][23], and many academics have been trying to find what sort of PMO can contribute to the organization's performance and it is recognized that cost management is one of important functions of PMO [1][2][4][6][7][8][9][12][18][21].

Table 1. Kinds of PMO and functions of each PMO by Tony

Kinds of Project Office					
Project Management Center of Excellence		40%			
Project Support Office		34%			
Program Management Office		16%			
Project Management Office		10%			
Project Management Center of Excellence Functions			Project Support Office Functions		
A-1	Process	19%	B-1	Project reporting	39%
A-2	Training	16%	B-2	Process tool selection and support	21%
A-3	Consulting	13%	B-3	Project portfolio administration	13%
A-4	Capabilities	13%	B-4	Finance activities	11%
A-5	Common approaches	11%	B-5	Project document management	4%
A-6	Advocacy	9%	B-6	Miscellaneous project consulting	4%
A-7	Best practices	8%	B-7	Training	4%
A-8	Establishing priorities	6%	B-8	Schedule reporting	2%
A-9	Enterprise/portfolio reporting	5%	B-9	Project oversight	2%
Program Management Office Functions			Project Management Office Functions		
C-1	Recruiting and developing project managers	19%	D-1	Project management	19%
C-2	Strategy alignment	19%	D-2	Quality Assurance	19%
C-3	Project selection and prioritization	14%	D-3	Miscellaneous	14%
C-4	Resource assignment/management	11%			
C-5	Portfolio management	11%			
C-6	Program assessment	11%			
C-7	Miscellaneous	11%			
C-8	Communication	4%			

Table 2. New definition of PMO functions

Functions	Frank Toney, Parviz F.Rad, Ginger Levin
Portfolio Management	project portfolio administration portfolio management enterprise/portfolio reporting Program assessment
Vision Sharing	
Strategy Planning	strategy alignment
Flexibility	establishing priorities project selection and prioritization resource assignment/management
Policy Establishment	
Transparency of information	Project reporting Schedule reporting
Application of Methodology	process Common approaches
Enhancement of Information System	communication process tools selection and support
Effective use of actual data	lessons learned database
Standardization and Optimization of Estimation	Project document management
Education	training Best Practices
Skill Development and Evaluation	project management capabilities advocacy recruiting and developing project managers
Performance Appraisal	
Audit	project oversight
Financials	finance activities
QA	quality assurance
Project support	project management miscellaneous project consulting

Frank Toney [23] surveyed on functions of PMO, conducted by Top 500 Project Management Benchmarking Forum in the US. Instead of specifying important functions or roles for PMO, Toney showed a result of the survey. In this survey, he made it clear what kinds of functions were actually implemented in PMO of companies in that forum, and portion of those PMO functions, as shown in Table.1. Earlier works had defined PMO functions based on practical needs recognized in real projects and derived what kinds of functions PMO should cover. However, no description on functions that are critical not only for cost management but for whole project management is found. Thus authors tries to identify effective PMO functions for cost management based on detailed descriptions of earlier works by defining PMO functions newly as shown in Table 2.

This table shows that there are no functions related to ‘Policy establishment’ and ‘Performance appraisal’ in the definition of earlier works, although these are recognized as critical success factors for cost management [19]. Thus this paper tries to find recent situation of these functions in detail, as well.

RESEARCH METHODOLOGY

This research conducts interviews to nine companies that manage R&D projects in pharmaceutical companies. These are selected from companies who accept interview based on the reply to questionnaire to companies and operate R&D activities in Japan more than five years and have stable revenue in the last 3 years. In this research, companies were divided into two groups based on their profitability. Companies in group of high performers have higher than 20% profitability, in group of low performers have lower than 10%. This study sample consists of five high performers and four low performers. Based on functions of Table 2, PMO functions are scored by interview according to levels shown below.

Level 2: Performed, checked and improved

Level 1: Performed

Level 0: Not performed

Interviews are conducted to two or three people in PMO and one or two project managers in each company to gather fair and detail information on status of PMO functions from cost management point of view. An interview per interviewee takes 30 minutes. A statistical analysis (t-test) is applied on results to extract functions which affect corporate profitability. In addition, qualitative analysis is done in detail to understand how they are operated.

RESULTS

The result of scoring PMO functions are shown in Table 3. Companies A to E are high performers and W to Z are low performers.

Table 3. PMO function scoring

Functions	High performer					Low performer			
	A	B	C	D	E	W	X	Y	Z
Portfolio Management	2	2	2	1	1	2	2	1	1
Vision Sharing	2	1	2	2	1	0	1	0	0
Strategy Planning	2	2	2	1	2	0	1	0	0
Flexibility	2	2	1	2	1	0	0	0	1
Policy Establishment	2	2	1	2	2	0	0	0	1
Transparency of information	2	2	1	2	1	0	1	0	1
Application of Methodology	1	2	2	1	1	1	1	1	1
Enhancement of Information System	1	2	2	2	1	0	1	0	1
Effective use of actual data	2	2	2	1	2	1	0	0	0
Standardization and Optimization of Estimation	1	2	1	1	2	1	1	1	1
Education	0	1	1	1	2	1	0	0	1
Skill Development and Evaluation	0	1	1	0	1	0	1	0	0
Performance Appraisal	2	2	2	1	2	0	0	0	0
Audit	0	1	1	0	1	1	1	0	0
Financials	0	1	1	0	1	1	1	1	0
QA	2	2	2	2	2	2	2	2	2
Project support	0	1	1	0	0	0	0	0	1

PMO functions have significant differentiations between high performers and low performers by t-test shown below. (*p<.05, **p<.01)

- Vision sharing **
- Strategy planning**
- Flexibility**
- Policy establishment**
- Transparency of information*
- Enhancement of information system*
- Effective use of actual data**
- Performance appraisal**

ANALYSES

The followings are cases of high performers' PMO functions which have significant differentiations. These cases show reality of PMO of excellent companies and best practices of PMO for successful cost management.

-Vision sharing

Case 1:

Project cost management is recognized as a core competence of the company. Project cost management strategy is stated in project management principals and reviewed and revised regularly.

Case 2:

Top management believes project management including cost management is a key to success. Strategy for project management including appraisal system is clearly stated in project management principals in conjunction with performance appraisal system and maintained regularly.

-Strategy planning

Case 1:

Project management is recognized as a very important method to manage cost. Strategy of project and cost management is maintained by top management in steering committee based on PMO proposal.

Case 2:

Project management is recognized as a core competence of the company. Project and cost management strategy is stated in project management principals. The principals are reviewed and revised regularly by PMO.

Case 3:

PMO has a functionality of strategic planning for projects as a program management office. This PMO is responsible for reporting all the cost for projects and proposing a draft idea of budget change of projects to top management regularly.

-Flexibility

Case 1:

PMO is in charge of preparation of project portfolio, and PMO manager reviews portfolio every quarter. According to that portfolio, PMO manager moves budgeted cost from one project to another regardless account type.

Case 2:

Project budget is created by strategic planning section once a year. PMO reviews the budget referring current project status quarterly. Big financial team belongs to PMO through the world, and this team checks all actual and forecasted cost against budgeted cost every month. Top management decides to change the budget according to reports from them quarterly.

-Policy establishment

Case 1:

Top management reviews cost management policy every year with PMO manager. PMO has

responsibility to ensure that the policy is understood by all employees.

Case 2:

PMO has a responsibility to check cost management policy whether it is suitable for current company situation with top management. Furthermore, PMO drafts to renew the policy for top management in case it is out of date. PMO has a responsibility to make propaganda for the policy throughout the company.

-Enhancement of information system

Case 1:

PMO contains IT team that is responsible only for project management tools. That means the team is also responsible for project cost management system. This team designs all the systems related to project management to be able to have interfaces to mission critical system like ERP (Enterprise Resource Planning) systems. That helps top management to monitor all of the project cost.

Case 2:

PMO sets up a concept of IT system related project management in conjunction with IT department to build up project management system. IT department is in charge of mission critical system to hold actual cost data. As a result, there is a system that contains project planning data and actual financial data. This can provide transparency of project cost data.

-Effective use of actual data

Case 1:

IT system contains actual data of project cost for many years, and PMO establishes knowledge management system for project cost. PMO finds average cost on each activity, and according to actual cost, PMO designs its own standard cost of each activity.

Case 2:

IT system contains all the actual data of project cost, and PMO tries to find ways to minimize cost based on actual data compared with best practices. PMO has a responsibility to optimize cost on each activity.

-Performance appraisal

Case 1:

PMO is in charge of education related to project management. PMO has a responsibility to renew materials of education and penetrate cost conscious way of thinking. For this purpose, PMO designs a project based appraisal system. In that system, project managers and functional managers evaluate mutually.

Case 2:

PMO is working in conjunction with human resources department and establishes a career system for project managers. For the other employees, PMO is responsible to design an idea how to educate employees in project based organization and an appraisal system. Human resources department applies this appraisal system to project staff.

According to the above, the followings are derived ;

The fact that most of the companies in high performer group use IT system effectively indicates that IT infrastructure is a key to success of cost management. For deployment of IT system effectively, PMO plays a key role. In high performer companies, PMO develops and maintains cost management system in conjunction with IT department. At the same time, they put a lot of efforts to educate employees to use systems effectively. Some PMO had their own education and appraisal systems not only for project managers but for line managers or project staff. All of the high performers have some standard methodologies which are owned and maintained by PMO. Applying IT system with actual data is mandatory to optimize estimations.

Cost flexibility is critical to manage R&D project cost properly. In order to promote cost management smoothly throughout the company, cost conscious company culture would be highly required as well as cost management policy. PMO also played an important part for other factors. This means that PMO is a

key to success for cost management.

Policy establishment is a new concept of PMO role and has not been recognized as an important function of the PMO. One of the biggest reasons is that this has been thought as a role of strategic planning section. In this research, Policy establishment does not necessarily mean creating a policy for the cost management itself, but rather force and help to top management to define and penetrate policy through the company. Many of high performers' PMO managers are involved in establishing a cost management policy with top management and are also responsible to rollout the policy throughout the company.

With the result of this research, it is very convincing that a policy has to be recognized by all employees, as it forms core of company culture. Without cultivating cost conscious company culture, it is difficult to seek cost efficiently. Consequently, this must be acknowledged as an important function of PMO. It is interesting that all of the high performers' PMO have a role of policy establishment. This explains that excellent companies have their own ways to ensure the policy of cost management to be understood by employees in organization. Those excellent companies expect PMO to be not only a center of the project management but a core of culture development.

Based on this analysis, PMO functions that have significant differentiations are categorized into two areas as follows;

1. Strategy

- Strategy planning
- Vision sharing
- Policy establishment
- Flexibility
- Performance appraisal

2. IT

- Transparency of information
- Enhancement of information system
- Effective use of actual data

This shows that now PMO is no longer just a Project Management Office, but more like a Program Management Office that should take a part of corporate strategy. Therefore it is assumed that managing PMO properly is critical not only for project management or cost management, but corporate management.

CONCLUSIONS

This article tried to find critical PMO functions for cost management in the pharmaceutical industry in Japan. Eight functions categorized in two areas were found as critical functions for cost management. One is Strategy area and another is IT area. Through interviews to high performer companies, it became clear that PMO is acting a key role to perform a successful cost management.

Among the functions, 'Policy establishment' is quite a new concept as a PMO function. PMO became a pillar of the organization to achieve company target, not focusing on just a single project goal but whole company result. Recently project jobs in a company are increasing, thus PMO takes important roles related more and more. Especially in strategic area, PMO should work not only as a project management office but also a program management office which realizes the company strategy. In conclusion 'managing PMO properly' is supposed to be the best practice of effective cost management and corporate management.

Further research on PMO functions in other industries with more samples is required to define the most efficient PMO model.

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