

# ***Improving Consistency and Efficiency In Managing Oil and Gas Projects of National Iranian Oil Company (NIOC) By Establishing a Project Management Office (PMO)***

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## **1 Introduction**

National Iranian Oil Company (NIOC) with the second rank of oil and gas reservoirs in the world studies, plans, and executes hundreds of projects annually. Lack of desirable consistency and efficiency in managing these projects, leads to not negligible losses of money, time and other resources. Since seeking for new and applicable solutions in this regard is highly supported by the top management, the idea of establishing a PMO in NIOC is considered here.

### **1.1 Problem Significance**

Many NIOC projects suffer from problems in achieving project's goals on time that are accounted for partly by inconsistent management of the projects. Also there is no formal, integrated and comprehensive system for gathering and utilization of lessons learned from previous or similar ongoing projects.

Most of the project managers are not professionally familiar with the necessary tools, techniques and methodologies. Therefore tremendous amount of time and efforts are spent for solving problems that are already resolved in other projects, or could have been easily avoided through simply using previous lessons learned or existing technical tools. This in turn, results in more delays and cost overrun in the projects.

A 1-month delay in a common oil production plant, for example, with a rate of 50,000 bpd, which is not a large one in NIOC, will result in about \$100 million loss.

On the other hand there are many problems and conflicts in the organizations which are faced with managing multiple projects at a same time.

After analyzing and investigating many causes and effects, NIOC top management seeks for an organizational and systematic approach for solving these problems.

It seems that in order to make sure of consistency and continuous improvement in project management activities and prevent from resulted losses, a customized Project Management Office (PMO) should be established.

## **2 Tasks of the PMO**

To achieve the goals, PMOs commonly perform many of the following tasks:

- Establish and enforce good project management processes
- Acquire enterprise project management system
- Train and certify PMs
- Cultivate competent PMs
- Consulting services for company PMs
- Risk evaluation
- Audits and project reviews
- Keep project management database
- Help launch new projects
- Recognize and reward project management excellence
- Serve as “Home” for PMs
- Disseminate project management knowledge

(Thomas R. Block, 1999)

### 3 Types of PMO/PO

There exist three types of project offices commonly used in companies;

- Functional Project Office. This type of project office is utilized in one functional area or division of an organization such as information systems. The major responsibility of this type of project office is to manage a critical resource pool, i.e., resource management. This type can exist together with other forms of a project office;
- Customer Groups Project Office. This type of project office is for better customer management and customer communications. Common customers or projects are clustered together for better management and customer relations.

Multiple customer group project offices can exist at the same time and may end up functioning as a temporary organization. In effect this type acts like a company within a company;

- Corporate/ Enterprise Project Office. This type of project office services the entire company and focuses on corporate and strategic issues rather than functional issues.

(Kerzner, 2003)

Corporate/Enterprise objectives have more long-term effects and include:

- Promoting consistency and uniformity in project management
- Archiving project performance data
- Providing a centralized point of reference for the project management practice
- Imparting specific skills and knowledge through training to project professionals
- Enterprise-Oriented Functions

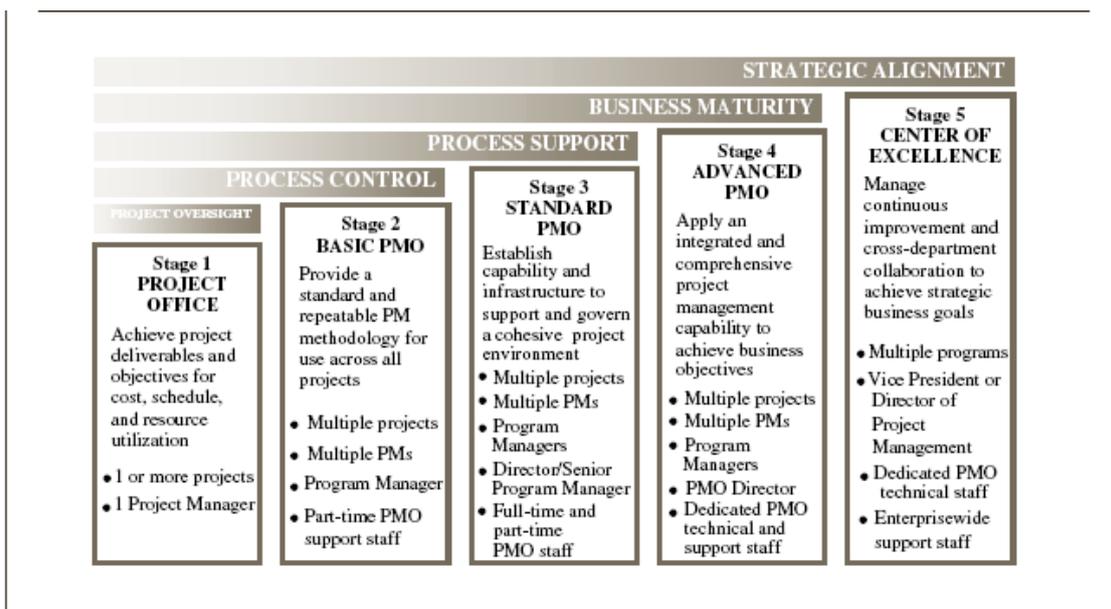
(Rad and Levin, 2004)

The remainder of this paper will focus on the corporate/enterprise project office.

## 4 The Evolution of PMO

There are five general stages of PMO competency are prescribed. Figure 1 presents an overview of the PMO competency continuum and a description of each of its stages. These five PMO stages represent a progressive competency and advancement of functionality that can be attained to meet the needs of the project management environment and the associated business objectives of the relevant organization.

**Figure 1 – Overview of PMO Capabilities across the PMO Competency Continuum** (Adopted from “*Evolving the Project Management Office: A Competency Continuum*” By: G. M. Hill 2004)



It is presumed that a higher-stage PMO has already achieved the competencies prescribed for any lower-stage PMOs. Thus, if an organization wants to establish a Stage 3 standard PMO, it will also have to ensure it has first realized the competencies prescribed for Stage 1 and Stage 2 PMOs. It is also suggested that a PMO at any stage can pursue activities at any level to address the needs within the relevant organization, which is far more important than stepping through levels of competency in sequence.

Moreover, it is critical to discern the approximate level of PMO competency that the relevant organization needs. Not every organization needs to have a PMO at Stage 5. In fact, for most organizations, the Stage 3 standard PMO is probably more than adequate.

### ***STAGE 1: THE PROJECT OFFICE***

The Stage 1 PMO is the fundamental unit of project oversight in the project management environment. The project office is created as a domain of the project manager, who is responsible for the successful performance of one or more projects. It provides the capability to ensure professionalism and excellence in applying widely accepted principles and preferred project management practices to each project effort.

### ***STAGE 2: THE BASIC PMO***

The Stage 2 or basic PMO is the first PMO level that deals with multiple project oversight and control. It furnishes the capability to provide aggregate oversight and control of multiple projects relative to the performance of multiple project managers. With an emphasis on establishing control in the project management environment, the basic PMO performs a variety of centralized project management activities, including: Having primary responsibility for establishing a standard approach to how project management is conducted in the relevant organization. This includes the introduction of common tools, repeatable processes, and preferred practices, ideally represented by implementation of a comprehensive project management methodology.

Providing the means to compile aggregate results and analyses of project status and project progress as a basis for identifying and responding to project variations, evaluating project and project manager performance, and ensuring the achievement of project objectives.

### ***STAGE 3: THE STANDARD PMO***

The Stage 3 PMO is central to the PMO competency continuum, representing the essence of a complete and comprehensive PMO capability. Although it continues to address project management oversight and control, the Stage 3 PMO introduces a new focus on support that optimizes individual and project performance in the project management environment. The standard PMO can evolve from earlier efforts to construct a basic Stage 2 PMO. It can also be designed and implemented as the initial “from scratch” effort to introduce centralized oversight, control, and support in the project management environment. If a new PMO at the standard PMO level is to be pursued from the outset, the designers and developers must ensure that functionality prescribed for the basic Stage 2 PMO is incorporated into their PMO implementation plans. Stage 3 (PMO functionality) is the solution for organizations seeking to implement project management as a core business competency or otherwise looking to improve project management capability or increase project management maturity.

### ***STAGE 4: THE ADVANCED PMO***

The Stage 4 PMO evolves from an existing, complete PMO capability and therefore is the “big brother” of the standard (Stage 3) PMO. Its focus is on integrating business interests and objectives into the project management environment. This implies introducing common practices to be applied to both project management processes and business processes. To use a term familiar to many professional project managers, the advanced PMO helps create a “projectized” business environment.

### ***STAGE 5: THE CENTER OF EXCELLENCE***

The center of excellence is a separate business unit within the relevant organization and has responsibility for enterprisewide project management operations. The PMO

functionality prescribed for the center of excellence has a focus on strategic business interests across the relevant organization. Although lower-stage PMOs may also be assigned such tasks, it is most distinct at this highest PMO level. (Gerard M. Hill 2004)

## **5 PMO Implementation Plan – NIOC Approach**

It is a must that an elaborated implementation plan is required regarding the type of industry and the common practices, culture and maturity of the organization.

In the NIOC with a history of about 50 years in the definition and executing of the oil and gas projects, while there are many core competencies regarding the rich human resources and experiences exist, the lack of an office for centralizing and integrating project management affairs becomes more and more obvious. Following the general guidelines and customizing them in order to best fit with the NIOC necessities and conditions, we will have a simplified implementation plan as follows in the suggested WBS. (Table 2)

At the first a pilot PMO for promoting and cultivating the modern project management practices in the NIOC will be established. Since the ultimate goal of the top management is a company-wide PMO, all the efforts will be made to prepare an appropriate infrastructure for implementing it.

**Table 2 – WBS for NIOC Pilot PMO**

<b>WBS Code</b>	<b>WBS Description</b>
<b>1</b>	<b>Pilot “Project Management Office”</b>
<b>1.1</b>	<b>Steering Committee Selection and Goals Setting for the Pilot PMO</b>
<b>1.1.1</b>	Selection of Steering Committee Members (PSC) and a Lead

<b>WBS Code</b>	<b>WBS Description</b>
1.1.2	Preparing the Pilot PMO Plan/Charter (Revision 0.01)
1.1.3	Presentation Session – “Projects Evaluation/Auditing Office” (PEAO)
1.1.4	Revising the Plan Considering PEAO Final Comments
1.1.5	Documentation/Report to PMO Steering Committee
<b>1.2</b>	<b>Obtain Organizational Support and Develop the Charter</b>
1.2.1	Presentation Session – “Corporate Planning Department” (CPD)
1.2.2	Revising the Plan Considering CPD Final Comments
1.2.3	Presentation Session – “NIOC Board of Directors” (NBD)
1.2.4	Identifying Organizational Constraints, Priorities and Assumptions
1.2.5	Finalizing the Plan/Schedule/Milestones/ Documentation
1.2.6	Revising the Charter (Revision 1)
1.2.7	Report to NBD/ Considering Comments and Feedback
1.2.8	Final Approval from NBD
1.2.9	Documentation/Report to PMO Steering Committee
<b>1.3</b>	<b>Define the Functions and Scope</b>
1.3.1	Identify the Basic Functions of the PMO
1.3.2	Define the Scope (limits) of the PMO
1.3.3	Documentation/Report to PMO Steering Committee
<b>1.4</b>	<b>Define the Roles/ Responsibilities/ Relations of the PMO</b>
1.4.1	Determine Roles and Responsibilities Relative to Project/ Functional Managers
1.4.2	Define the Interfaces with other Organizational Entities
1.4.3	Define the Placement Chart of the PMO (Pilot and Mature)
1.4.4	Documentation/Report to PMO Steering Committee
<b>1.5</b>	<b>Identify the PM Processes and Tools</b>

<b>WBS Code</b>	<b>WBS Description</b>
1.5.1	Risk Management Processes and Tools
1.5.2	Quality Assurance Processes and Tools
1.5.3	Change Management Processes and Tools
1.5.4	Schedule Management Processes and Tools
1.5.5	Financial Management Processes and Tools
1.5.6	Supplier Management Processes and Tools
1.5.7	Documentation/Report to PMO Steering Committee
<b>1.6</b>	<b>Estimate the Resources</b>
1.6.1	Labor
1.6.2	Facilities
1.6.3	Tools/Processes
1.6.4	Outsourced Suppliers
1.6.5	Documentation/Report to PMO Steering Committee
<b>1.7</b>	<b>Get Budget and Approval to Start</b>
1.7.1	Finalize Operating Procedures
1.7.2	Obtain Executive Approval for the Procedures and the Budget
1.7.3	Documentation/Report to PMO Steering Committee
<b>1.8</b>	<b>Staff the PMO</b>
1.8.1	Acquire the Individuals
1.8.2	Orient and Train the Individuals to the PMO Objectives
1.8.3	Documentation/Report to PMO Steering Committee
<b>1.9</b>	<b>Startup</b>
1.9.1	Initial Session for Units to Start/ Follow the Planned Procedures and Functions
1.9.2	Special Coordination Session for the Selected Company Project

WBS Code	WBS Description
	Managers
1.9.3	Documentation/Report to PMO Steering Committee
<b>1.10</b>	<b>Closing</b>
1.10.1	Check for All WBS Activities Proper Completion
1.10.2	Documentation/Report to PMO Steering Committee
1.10.3	Documentation/Report to NIOC Board of Directors

## 6 Pilot PMO Charter

Establishing a pilot PMO in an organization should be treated like any other project, consequently the first step is providing a charter for it. Organizational politics aside, the greatest challenge that most organizations face is to define what the PMO's purpose should be, and why it is being created. Consequently for writing a clear and applicable charter for the NIOC pilot PMO we should consider the following points:

- The PMO requires a clear mission and that mission must be based upon the needs of its customers
- There is no universal definition of a PMO and from an understanding of customers can come a definition of requirements. Only at that point can the PMO truly characterize and implement its services.
- Every project requires clearly defined goals, a mandate from management to proceed and a plan by which to execute it.
- The Mission is included in the PMO Charter, which is its mandate.
- There should also be a “Project Plan” that guides implementation of the PMO.

The PMO Charter is, in effect, the organizational mandate for the PMO to exist. It defines:

- Who the PMO sponsors are?

- Who the customers are?
- The services that it offers.
- The staffing and support structures required to deliver those services.

In fact, we need the following information before we can begin development of the PMO Charter:

- PMO Mission (as voiced by management)
- Customers & Stakeholders
- Service Offerings
- PMO Structure
- PMO Success Profile

A PMO is expensive to create and put into operation, usually there is some specific reason for this investment

- There may be a problem with management of projects that the PMO is supposed to correct
- The PMO may be seen as a means of reducing the risks.
- We must be fully aware of the reasons for initiating a PMO before we begin its development. Once you understand why the organization is moving to create a PMO, it is much easier to define its role and primary functions. In general, the following steps are effective for obtaining the information needed for the PMO Charter:

### *1 The Mission Statement*

- Identify the PMO's primary stakeholders
- Meet with them and learn their expectations of the PMO
- Define the measures of success that the PMO will be judged by
- Develop and gain acceptance of a PMO Mission Statement
- Building on the *Mission Statement*, gain agreement on some High Level

## Objectives that will guide the work of the PMO

- These Objectives should be few in number and directly support the Mission

### 2 *The Functions*

- It is while discussing the work of the PMO with your customers that they will begin to get a true appreciation of what it will mean to have an established PMO.

### 3 *Critical Success Factors*

- Identify those steps that your organization can take to ensure that the PMO is successful.
- Also note the milestones that your organization should plan on reaching as the PMO is implemented and begins its work.

### 4 *Metrics*

- The PMO is a major investment. Management has the right to know that the investment is paying off.
- Identify those areas of greatest concern to your organization and establish means of measuring the impact of the PMO in those areas.

### 5 *Staffing and Structure*

- Once you understand the work that the PMO is expected to do, you are in a position to define the staff structure that will make it all happen.
- Be clear not only on the number of bodies, but also respective roles and reporting arrangements.

## **6** *Budget*

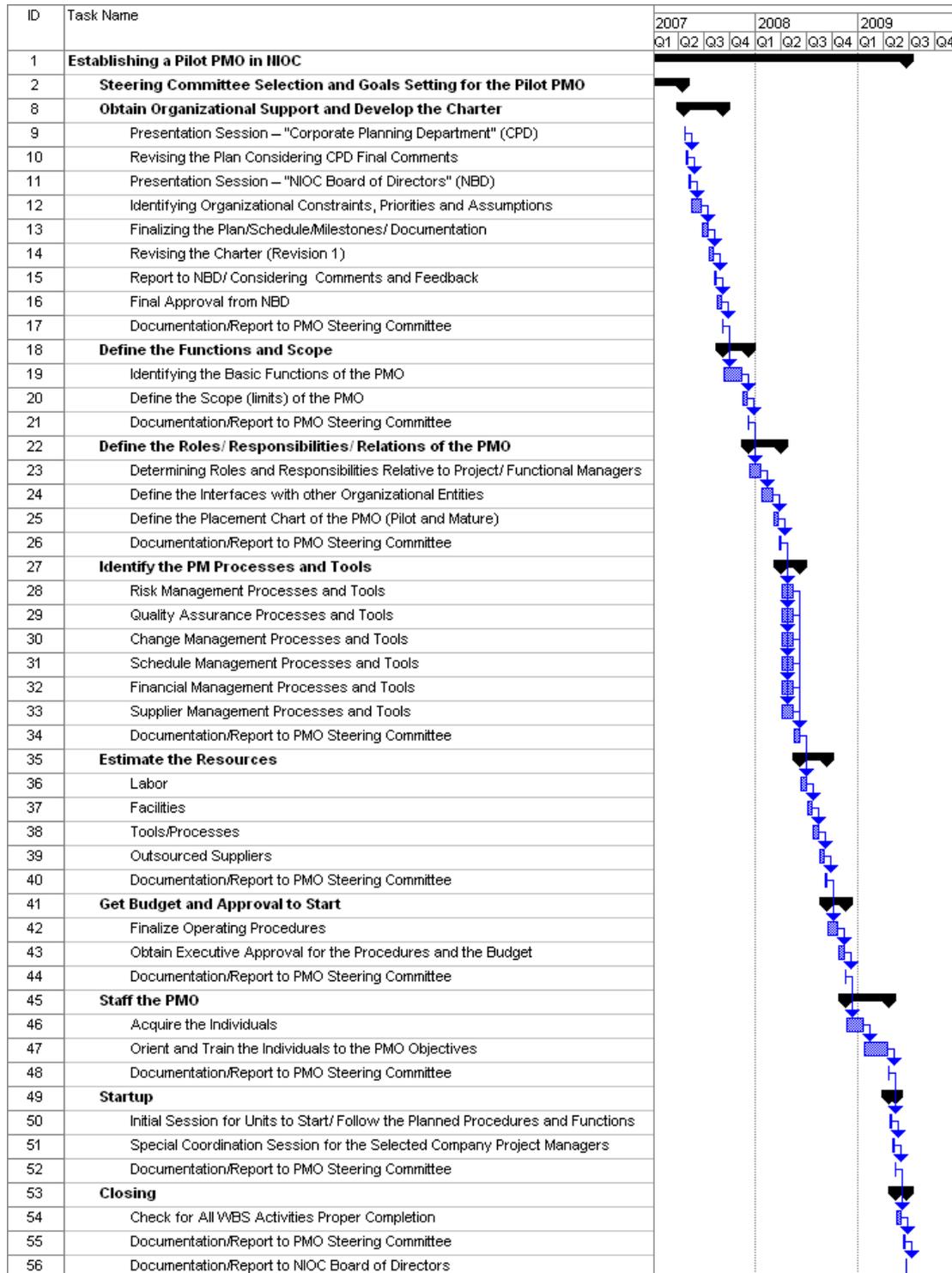
- How much will it cost to establish the PMO?
- Provide at least a rough estimate of what the costs will be in the first year (or other period of time as management dictates)
- If you write a formal ROI, this information will be invaluable.

(Gary J. Evans, 2005)

## **7** **Schedule**

Considering the main characteristics of the NIOC organization, a preliminary schedule for implementing the Pilot PMO has been developed using MS-Project software.(Fig. 2)

**Figure 2 – A Preliminary Schedule for Implementing the Pilot PMO in the NIOC**



## **8 The Pilot PMO and Its Components**

### **8.1 Pilot PMO Scope**

As mentioned in the previous parts and like any other project, the process of establishing a PMO should be started by doing preliminary studies and designing a pilot project which is more manageable, also by doing this, we can easily fix possible faults and problems. Consequently, the scope of our pilot project will be limited in the type of covered projects, size and functionality as follows:

- The pilot PMO only covers new projects that have progress rates below 10% and minimum Capex (Capital Expenditure) of \$250 million.
- For the purpose of simplicity in the communication between the pilot PMO and the organization, the *Corporate Planning Department* of NIOC will be the first interface of the PMO to the organization.

### **8.2 Pilot PMO Organization Chart and Its Placement in the NIOC**

Figure 3 shows the suggested organization chart for the planned pilot PMO and Figure 4 shows its placement in the NIOC organization.

As shown in the Figure 3, there is a Steering Committee which consisted from five PMP project managers and the PMO director, also the heads of all the PMO units will contribute in taking strategic decisions and major planning activities regarding the PMO.

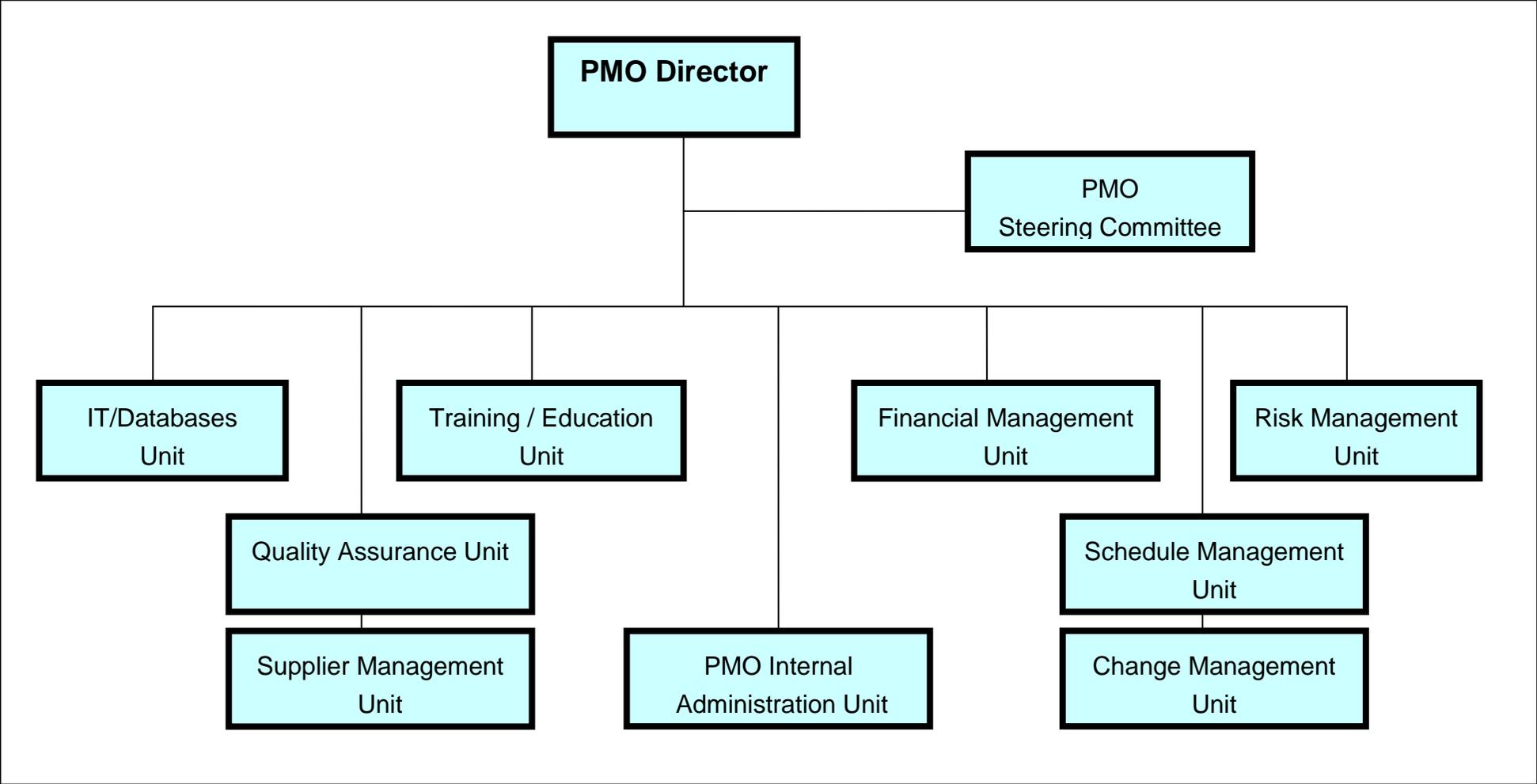
In addition we planned eight major units including: Risk Management, Quality Assurance, Change Management, Schedule Management, Financial Management, Supplier Management, IT/Databases and Training and Education.

Finally for the purpose of administration of the PMO itself, we suggested a PMO Internal Administration Unit.

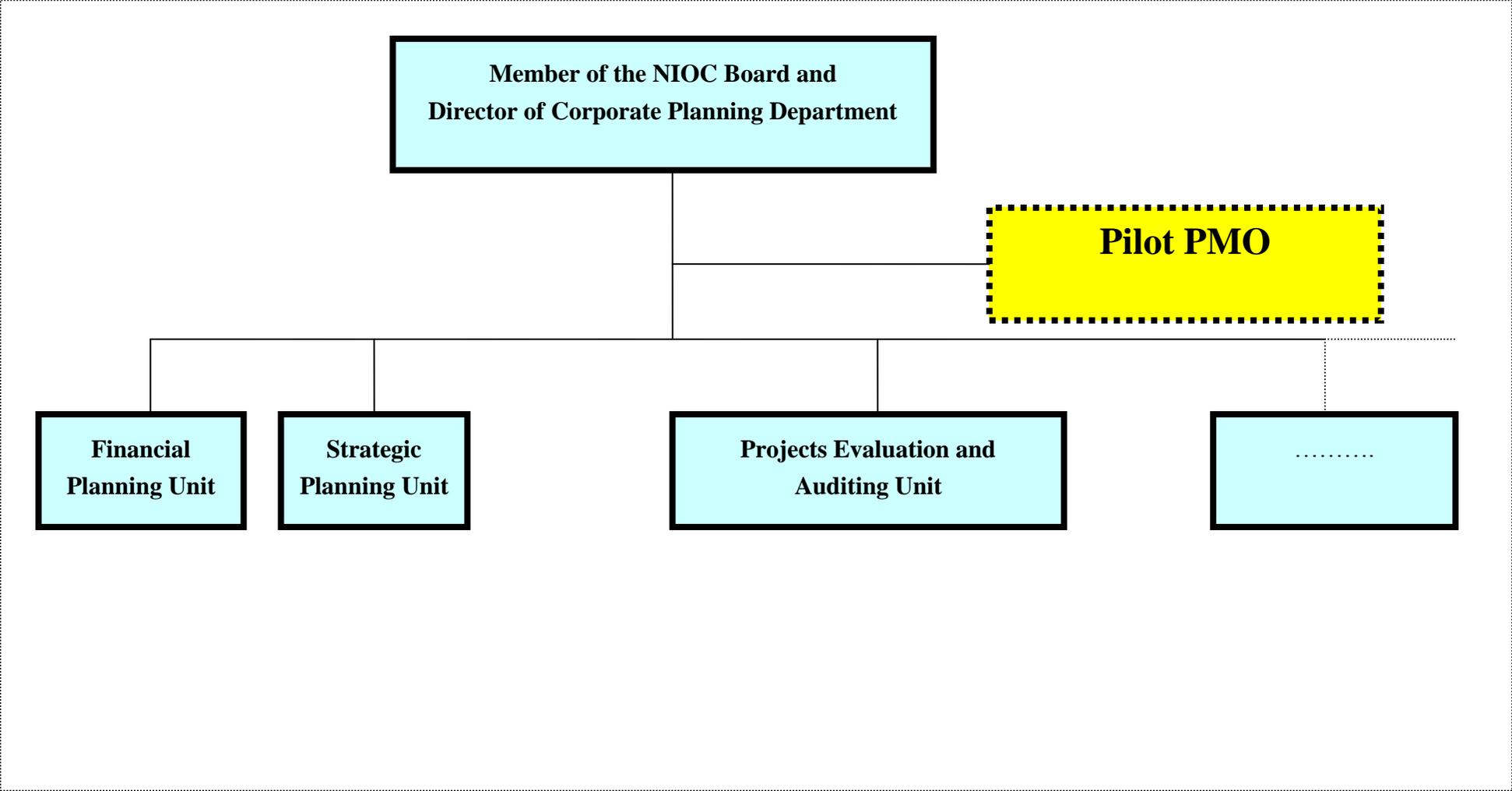
For the purposes of this plan, it is recommended to place the pilot PMO in a larger unit of the parent organization that has the maximum access to the information of the ongoing and past projects, also has a good and established relation with the top management and the project managers in the company.

According to these facts we suggested the *NIOC Corporate Planning Department* to be the optimum position.

**Figure 3 - The Pilot PMO Organization Chart**



**Figure 4 - The Placement Chart for the Pilot PMO**



## **9 Conclusions and Recommendations**

The PMO is a key component of a project-based organization. The PMO creates an information framework that creates visibility and accelerates communication. With effective PMO practices, team members can raise high priority issues to the appropriate levels quickly; project managers can identify resource constraints and acquire capacity; and leaders can coordinate the array of activities necessary to deliver the projects on time and schedule. NIOC with a rich history of successful executed projects and expert personnel should improve its project management practices by establishing a PMO.

At the end we should recommend the following points:

1. Successful implementation of PMOs needs a great support from the management, without executive support, the PMO becomes a choke point or a benign internal consulting agency.
2. A well-run PMO requires that leadership first investigates exactly the root causes of existing problems in the field of project management and tries to solve them using known standards and best practices.
3. Implementing a PMO helps organizations to use the information more efficiently and improve by learning and agility.
4. For a PMO to succeed, three components must be in balance: Leadership, Goals and Implementation

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