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**Investigation of Project Communication Management in Project-Based Organizations using the PMBOK Guideline**  
**Case Study: National Gas Company of Lorestan province**

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ABSTRACT

Efficient use of limited resources is among the objectives of efficient management and employing modern techniques of management is very effective in this field. Communications management is quite important in project-oriented organizations. PMBOK guideline is a good guideline to create efficient and effective communication. In this paper the application of communication management field of PMBOK guideline has been presented in projects processes of a project-oriented organization for effective communications management. To better understand the concepts, processes associated with projects in Lorestan province Gas Company have been employed as a project organization. The methodology includes three steps of data collection through interviews with relevant personnel, identification of processes and processes analysis based on Communications Management field of PMBOK guideline. Additional and unnecessary information turnover in the processes has been identified and removed. The results showed that creating correct communication in an organization will eliminate many of the existing delays in the processes. Also the results showed that communications management improvement leads to the improvement in all knowledge fields of PMBOK guideline in an organization, resulting in reduced time and cost, efficient use of limited resources and increased efficiency and viability of the organization.

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## 1. Introduction

Today, projects are the main way of doing works. Organizations pay more attention to their merit as a competitive advantage (Rolf Medina and Alicia Medina, 2014). Overall performance of the project oriented organizations (POO) is not limited in successful implementation of one or two large or complex projects and it depends on how to manage a set of projects. Many POOs consider successful project management as a competitive advantage for the use of limited resources. Project management requires some steps for evaluating the performance. Periodic evaluation of projects is considered according to the organization's business objectives and strategies (Purnus and Bodea, 2014). Project performance is significantly affected by the collaboration of project team members and their knowledge. A lot of qualitative and quantitative studies have been done on project performance but few studies have examined the effects of knowledge and collaboration ( Wi and Jung, 2010).

Popaitoon and Siengthai, (2014) examined human resource management practices, knowledge absorption capacity of the project team and the project performance in project-oriented companies. They used data from 198 projects in multinational companies in Thailand automotive industry. Their results showed that HRM practices adjust the effect of project team knowledge on project performance. Their results showed that HRM not only facilitates knowledge management from ongoing project to the future projects, but also the relations between the absorption capacity of the project team and long-term performance of the project will be strengthened. Rolf Medina and Alicia Medina (2014) performed an experimental study aimed at increasing our understanding about the involvement of the project manager in competitive management in huge Swedish project-oriented organizations. They have provided a framework for human resources management and believed that management competence procedures related to the projects are followed by the presence of project manager in the company's long-term goals. Purnus and Bodea, (2014) proposed a prioritization plan includes several criteria related to the affective opportunities in organizational objectives and rate of internal capital return and they analyzed the impact of projects priority on the project portfolio according to the organization's long-term strategy and presented strategies for improving the project portfolio. Jaferi et al (2014) in an article have analyzed project-related processes in project-based organizations based on PMBOK guideline risk management area. They introduced lack of proper risk management in an organization as an important factor in the failure of the project and resources waste and have presented some strategies based on PMBOK guideline risk management scope to improve processes. Kärnä et al (2013) have reviewed project stakeholders satisfaction in infrastructure projects and considered it as an important factor in the success of projects and believe that to community infrastructure good performance with high quality is important. They have evaluated level of satisfaction with the completed project from the perspective of different stakeholders. Their goal was to find infrastructure projects development areas by means of analyzing stakeholders performance and it s compare with other types of infrastructure projects. Their results showed that the performance of infrastructure projects is low compared to other projects, also showed that the infrastructure projects beneficiaries are less satisfied with each other performance. Pemsal and Müller (2012), examined the practices of knowledge management in project-oriented organizations (PBOs) and proposed five suggestion about inductive and empirical knowledge management. Results showed that knowledge management practices in project-oriented organizations are influenced by environmental and structural factors and informal governance practices are more efficient than formal ones. Also their results showed that informal knowledge management makes mechanisms which seem difficult for executive managers and the executive authority is related to some aspects as human abilities and attitudes to professional ethics that influences knowledge management practices. Chen and Partington (2012) in a paper have reported an initial exploration of project management techniques to understand and perform tasks and pursued phenomenon studies of motor designers and

founded that the original semantic structure of people's perceptions about their job creates their qualifications and capabilities in work. When carrying out an interview with 30 project managers in England manufacturing factories, they have obtained three different original concepts from the project managers. Each perspective has a main different focus and a series of different key features happen for project managers when their experience and work implementation reflect a better arrangement of three different shape of project management competence. Chinowsky (2011) has focused on engineering project organization and believes that traditional aspects of project-based organizations and project management are not sufficient to overcome the challenges of the global economy. Result showed that with regard to environmental cases and multi-cultural projects admission of interdisciplinary perspectives as a basis for the study of engineering at all levels is required. Wi and Jung, (2010) used factors of time, cost and capability and analyzed the impact of 10 factors on projects performance and predicted the performance of the project team members to evaluate competitive knowledge and competitive collaboration of project-oriented organization. Predicting the performance of the project team members provided information required for organizing the team and helped the decision-making process of project team members. In addition, the coefficient of each factor was helpful to identify problems and explore knowledge behavioral styles, collaboration, time availability, and organizational costs. Najafi (2010) considered evaluation of structural and environmental challenges in the project management of different organizations as a vital subject which requires critical analysis. He has identified the structural and environmental factors affecting the project to evaluate and analyze these problems. Najafi through network analysis process has measured the dependence between strategic factors and offered the most effective strategy on project management. The method was tested on Alupan Company and the validation of the method has been approved using structural validation approach. Yazdi (2005) showed Project Portfolio Management that is one of the latest techniques used in projects management business. Project Portfolio Management is a secure method that companies employ to use scarce resources with the highest output value. This method which needs continuous practice of the project is a perfect and precise approach in business and causes moving towards organizational excellence. McGarry (2003) studied the impact of project management training on improving knowledge and practical skills of the project management and for this purpose, he used a project simulation experimental team as a part of a project management educated level. Results showed that the application of simulation improves the interface of knowledge and ability to apply that knowledge. Results presented in this paper showed the value of project management learning exercise as a team, collaboration in practice by raising levels of project management knowledge and enhancing the abilities to apply that knowledge.

Accurate and timely communication plays a big role in the projects' success. Good communication management prevents wasting of limited resources and time and causes optimal use of them. Given the above background, a research was not found that consider projects management communications and pay attention to project forming processes and their improvement based on PMBOK Guideline communication management area. So in this paper to improve communications and organizational performance, processes related to the projects have been analyzed in a process-oriented organization based on communication management field of PMBOK standard.

## **2. Article description and methodology:**

Processes related to project management have been studied in the project-oriented organization of Lorestan province Gas Company. These processes shape the required operation to manage the gas networks and Construction Projects in provincial level. According to the data collected through interviews with employees of projects associated departments and the analysis and understanding of their performance, process groups have been identified and the way of their information flow has been

analyzed based on communication management field of PMBOK guideline. This means that any process that reflects how the organization is doing things has been analyzed according to the five areas of the PMBOK guideline communication management, including Stakeholder identification process, communication planning process, performance reporting process, information dissemination process and stakeholder expectations process, and their deficiencies are identified and corrected. Also cases that exist in the guideline but are not considered in the organization have been defined in accordance with the PMBOK guideline. Interviews have been used to collect data. In order to ensure the accuracy of the collected data, Delphi method has been used.

### 3. Investigation of communication management area in the organization:

According to the communication management field of PMBOK standard, processes existed in the organizations in accordance with standards have been specified and processes that were not existed have been defined for the organization and also processes existed in the organization but were incomplete have been completed. in Table(2) the results are shown.

**Table2** ProjectCommunicationsManagementprocesses

Process	process group	Available atorganization	Defined forthe organization
Stakeholdersidentification	Initial	there is nodocumented program in the organization	National Gas Company, people, Government, Stakeholders
Communication Programming	Programming	Communicationshavetraditional form in the organization	projectsaverageoutputperinput atthe end of eachmonth, Providemonthlyprogressreportsto theCEObyProject Manager, Budget andinventoryreportweeklytothe CEO andProject Manager, Permissions be offer tothecontractorwithin the stipulated time, The use ofcomputerizedcommunicationsystems in the organization is recommended.
Performance Report	Monitoring andControl	Only exist in theexecutive department	Performance of each unite according totheirinput and output average be gathered, Performance ofthe project teamand suppliersto becollected
Data Distribution	Executing	needed statistics is offered by Planning Unit	Each unit's performanceand projects performance and both of them be reported to the CEO, Suppliers' performance be reportedtothe Goods unit
Managestakeholder expectations	Executing	There is not in the Organization	Recognizing the expectationsof suppliers of goods, contractorsand people

### 4. Discussion

Results showed that documented information planning does not exist in the organization. Stakeholders identified for the organization help to determine the long-term and short-term goals and strategies of the organization and they should be considered in communications plan for the organization. Timely reporting of inventory and budget level reduces delays due to shortages of goods

or budget in the project management process. The performance report defined for the organization is effective in accelerating the performance of each unit because their operations will be monitored and controlled. Understanding the expectations of contractors, suppliers of goods and people is effective in making successful organizational decisions. For example a contractor expects the organization to provide procurement of required goods, funding and the necessary permits at the required time once the contract is signed and in the case of difficulties during project implementation, the organization should prevent the project to stop by its timely supports. The delays in the processes associated with projects have been detected and removed that resulted in accelerated time operations. Computer communications systems within the organization can be used for timely access of employees to the required information.

## 5. Conclusion:

communications is quite important in any organizations and projects so that, it is impossible to carry out without any communication and If there is inappropriate and poor communication, works will be done slowly and in poor quality resulting in wasted time, money, manpower and other related resources. In this paper processes associated with project have been evaluated based on Communications Management field of PMBOK standard in the project-oriented organization of Lorestan province Gas Company. Data for this study have been collected through interviews with relevant staff. Analysis conducted on data collected in the field of project communication management led to processes documentation, define or modify in this area for the organization. Defined processes according to five Processes groups of PMBOK guideline communication management area includes identifying stakeholders in order to understand their expectations and respond to their aspirations , communication planning based on the output of each unit to track flow of data and to prevent request stagnation in a unit in a timely manner , the use of computerized communication systems within the enterprise aims to fast track the status of requests by employees in each unit, defining the way of performance reporting and its present to the administrators , information dissemination and communication method with stakeholders. By reviewing identified process groups, additional and unnecessary turnover in the process has been detected and removed which prevents the wasting of time and it will increase performance. Modifying the communications plan for the organization will result in increased efficiency of each unit and the overall organization.

Studies and the results obtained in this paper will be useful for any organization, especially in project-oriented organizations. Due to the definition of process groups in the organization and their analysis based on communication management field of PMBOK standard, managers can identify communication shortages in the organization and define correct processes of communication resulting in removal of delays and losses caused by the lack of correct communication in organization and thus organizational performance improvement, efficiency increase and organization survival will be obtained.

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