Project Team Building: Case Study Investigation in the Construction Industry in Jordan

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ABSTRACT

Project teams play an important role in project performance. In the Engineering and Construction industry, the successful delivery of a project requires the collaboration of people with different skills and expertise which makes a healthy work relation among project team members very essential for the success of the project in particular and the organization in general. In this paper, we look at "Project team building" from three main dimensions: firstly, communication among project team members. Effectiveness of team communication in projects is becoming increasingly important due to the growing technical and organizational complexity of construction projects. Secondly, trust among project team members. Because trust is a major factor leading to the success or failure of construction project and finally, the role of leadership in project management, particularly in the construction field is very crucial to the success of the team.

To achieve the above objective, we selected a case study investigation through which a major construction project in Jordan was analyzed. After studying the project related documents. We conducted several interviews and distributed several questionnaires asking key project stakeholders about the three dimensions of project team building defined. The study involved the identification of barriers and enablers for each dimension in the project team building model. The study concluded with a framework for project team building based on the dimensions of: trust, communication and leadership that could be applied on projects with similar context in Jordan.

Keywords-- Team Building, Communication, Trust, Leadership, Project Success

I. INTRODUCTION

Project Teams and Project Team Building

Project teams are defined as: "Two or more people working together towards a common goal". Getting a group of people together does not make a team. A team develops products that are the result of the team's collective effort and involves synergy. Therefore, Team Buildings: "The process of gathering the right people and getting them to work together for the benefit of a project" (Lewis, 2007)

Team development is a five-stage process, comprising of the: forming, storming, norming and performing, and adjourning stages normally referred to as Tuchman's Theory (Michaels, 2001). The forming stage involves team members meeting and learning about their role in the project. During the forming stage, the project manager provides the project structure and direction, including the project objectives. On the other hand, the storming stage involves interpersonal issues, including conflict and polarization, whereby team members challenge each other.

Project Team Formation: Form, Storm, Norm & Perform:

When teams and other groups of people come together, they typically go through a number of developmental stages. This process can take a few days or easily stretch over six months or longer. Note that the stages can play out simultaneously or in different order so it is important to be aware of the signs and signals of each stage. The leader or team manager supporting team formation cannot jump straight to "perform" but must instead facilitate the group through this process and bring the group through the four stages. The role of the leader is to help resolve issues and move the team toward performance if it gets stuck at any point. Below is a description of stages of team building as described by Tuchman's Theory:

1) FORMING STAGE: When people first come together, they are initially polite. They find out about one another and the work to be done. There is typically a "honeymoon" period when people are excited about the newness and potential of being on the team. Some may also be fearful or timid in response to the change. Forming is best done with high task and low support to provide structure while the new group develops. Introduce people to one another with an orientation of how everyone will work together. Allow opportunities for people to socialize. Clearly communicate the vision and goals of the work to be done to help the team understand what is to be achieved. Do not overwhelm people with too much detail or expect "perform" behavior at this stage. Engage all team members and draw out quiet ones.(et. al. Kouzes, 2007)

2) STORMING STAGE: As the initial politeness fades and people start to work, tension forms around things that were vague or left unsaid in the last stage. Conflicts may arise regarding roles or procedures. Members may appear confused and dissatisfied. Output is generally low. Storming can be very strong if roles or objectives are unclear; the team faces external challenges, or if there is competition for formal or informal leadership. Managing the storming stage productively requires both a high-task and high-process focus. The manager asserts his/her role

as leader to surface and resolve differences. Work goals and individual roles and responsibilities may need review and clarification. The key is not to let disputes continue to block team cohesion. Use the stage to develop new methods for collaboration and addressing conflicts. (et. al. Kouzes, 2007).

3) NORMING STAGE: As roles and personal conflicts are sorted out, the focus returns to the task and what needs to be done. Objectives are clarified and the detail of work is laid out. Group rules develop and people start to collaborate as a team. Team identity emerges. Internal clashes may be replaced with external conflicts. Managing the process requires a higher focus on process than task to provide opportunities for group members to take responsibility for people and for work. Work planning is directed toward goal accomplishment. This is more productive as people feel comfortable with the objectives and in their roles. Team members take more responsibility for forging group norms and behaviors. Emergence of regular venues for socializing and creating a "family" environment may begin. (et. al. Kouzes, 2007)

4) PERFORMING STAGE: Finally, the optimal level of performance is achieved. The team works interdependently and feels like a family. There is a strong sense of team achievement and pride. Mutual accountability is maintained, and personal differences are largely kept under control. Leaders can take a lower task and support role by increasing delegation of responsibilities as the need for direction decreases. Social activities and celebrations of success are important support functions. However, this is not the time to relax but rather to focus on sustaining high performance. An ongoing balance is needed between task and support functions to keep both achievement and motivation.(et. al. Kouzes, 2007).

5) ADJOURNING STAGE: In the "adjourning" stage the project is coming to an end and the team members are moving off into different directions. This stage looks at the team from the perspective of the well-being of the team rather than from the perspective of managing a team through the original four stages of team growth. The team leader should ensure that there is time for the team to celebrate the success of the project and capture best practices for future use. (Or, if it was not a successful project - to evaluate what happened and capture lessons learned for future projects). This also provides the team the opportunity to say good-bye to each other and wish each other luck as they pursue their next endeavor. It is likely that any group that reached Stage 4: Performing will keep in touch with each other as they have become a very close knit group and there will be sadness at separating and moving on to other projects independently. (et. al. Kouzes, 2007). Figure 1 shows the stages of team formation as described by this theory.
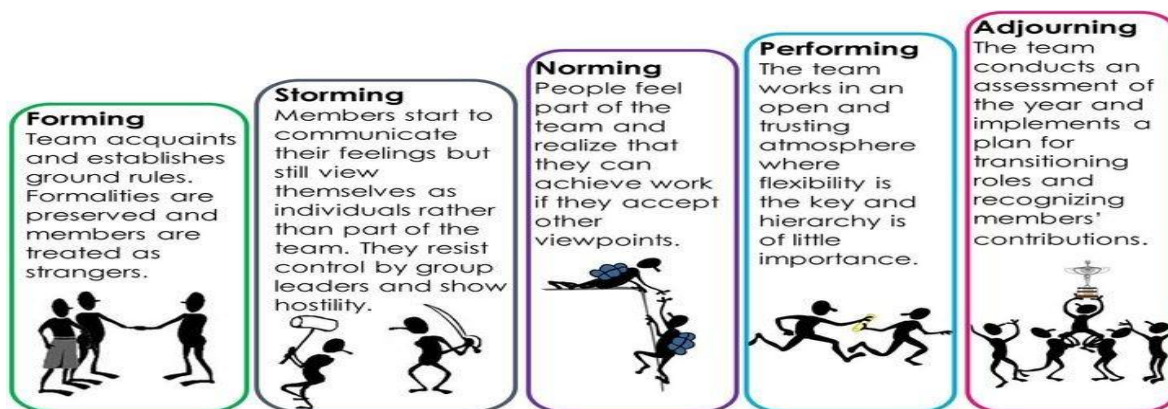

Figure 1: Tuchman's Teamwork Theory

II. PROJECT TEAM COMMUNICATION

Effectiveness of team communication in construction is becoming increasingly important due to the growing technical and organizational complexity of construction projects. The development and use of information communication technologies (ICTs) has been seen as one way of improving the performance of design and construction teams (e.g. Love et al., 2001). ICTs have also become synonymous with the better integration of project participants (e.g. Warning and Wainwright, 2000) and a means of improving collaborative working – something which is proving to be elusive in practice (Damodaran and Shelbourn, 2006). There is also growing recognition to understand the needs of the individuals and how they communicate within project teams if communication is to be effective (Emmitt and Gorse, 2007).

In multidisciplinary design teams, members come from different organizations, which have different organizational cultures and which also use a variety of information systems. Individuals also have different levels of understanding, opinions, skills and rates of adoption of the available communication tools as well as preferences for specific means of communication. Effectiveness of design team communication appears to be highly dependent on two inter-related factors. First, the communication acts of team members, their preferences for using specific communication media and access to

easy to use tools. Second, the competences of team managers to facilitate stimulate and motivate their members to communicate effectively as a team. Balancing use of available communication means might to be made more than once during a design process, depending of the phase of design, the usefulness of high or low interaction and feedback to stimulate design progress and considering risks of miscommunication and failures. Time for design is often limited and team members might run several design projects in different stage of development. Due to the use of the various communication tools, team communication might become ineffective without clear guidance from management and involvement and commitment from all team members.(Emmitt and Gorse, 2007).

The goal of Project Communications Management is to ensure timely and appropriate collection, storage, distribution and generation of project information. Communication is so important on projects that it is an integral part of a successful project. Every project should include a communication management plan a document that guides projects communications. Figure 2 shows the communication model for team such as:
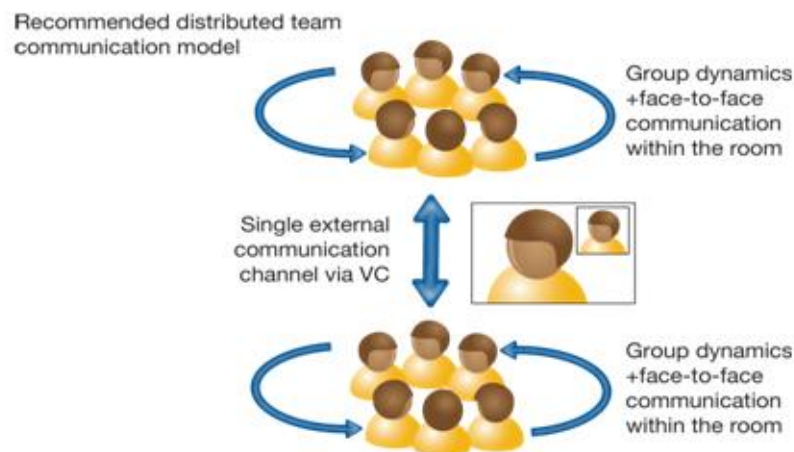

Figure 2: Project Team Communication Model

III. LEADERSHIP ROLE IN PROJECT TEAMS

Leadership is one of the most important and essential factors in effective project management. Leadership can be seen as the art of achieving desired results. The emphasis in the project management field on leadership as opposed to management is in recognition of the need for the special skill sets that leaders possess and bring to an organization or project. Many administrators, supervisors, and even top executives execute their responsibilities without being great leaders. Leaders guide behaviors by setting the vision, direction and the key processes; in other words, leadership has a large influence on the whole project process, actions of others. Leadership refers to the actions involved in leading and influencing people within the organization towards the desired organizational goals. Utilizing effective management styles plays a vital role in ensuring project success, through establishing and maintaining motivated teams. Project managers can utilize different leadership styles including autocratic, democratic, laissez-fare, bureaucratic, charismatic and transformative leadership among others. However, the transformational leadership style considered the most appropriate leadership style since it involves managers inspiring and motivating members of the team.

Project success involves effective team building and embracing teamwork. Team building forms a critical aspect in promoting project success, whereby effectiveness of the team members is key to the achievement of project success. Effective project managers ensure that they select and utilize competent teams to ensure successful projects. Further, motivation remains a key aspect in ensuring that the teams remain motivated in working towards the overall project goals. Project managers utilize different motivation approaches to ensure that their teams remain motivated, including Maslow's Hierarchy of needs, Hertzberg's Motivation-Hygiene theory, McGregor's theory of X and Y and David McClelland's achievement motivation theory among others (et. al. Kouzes, 2007). This paper explores the concept of leadership and team building in project management, applying key theoretical model to demonstrate ways in which project managers can ensure project success by utilizing effective leadership styles and maintaining motivated teams.

IV. TRUST IN PROJECT TEAMS

It is widely understood that trust is a complex issue and many factors influence trust in relationships. Trust has been explored numerous times in the literature with regard to an individual's relationship with specific others, their leader and their organization. Surprisingly,

very few researchers have tackled trust at the team level. Recent scholars on trust issues argue that trust is: "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the other party, irrespective of the ability to monitor or control that other party (Mayer et. al, 1995, P.712).

Rousseau et al (1998, p.395), in a special issue on trust between organizations, state that: "trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviors of another".

Adopting both definitions to form a clear definition for trust in project teams, we can simply define trust in project teams as: " The shared perception by the majority of team members that individuals in the team will perform particular actions important to its members and that the individuals will recognize and protect the rights and interests of all the team members engaged in their joint endeavor." (Webber et. al., 2001, P.201). This definition is distinct from previous definitions because it involves the shared expectations of the majority of team members about the team itself, rather than an individual or team expectations about another individual, leader or organization. (Webber et. al., 2001)

V. PROJECT TEAM BUILDING THEORETICAL FRAMEWORK

Based on the above literate survey on project team building, and the discussed theories, we managed to build a theoretical framework that describes the project team building conc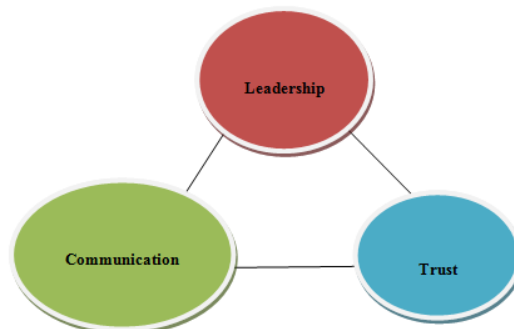ept in project organizations, the following figure shows the important factors for building a successful team based on: trust, communication and leadership. These three dimensions forms the pillars of a project team building model/ framework that we seek to validate though this research study. Below is a discussion of these key dimensions:

1) **Communication:** communication is a key aspect of project team work, without communication information will not be distributed to the right people in the right team resulting in lack of efficiency and mistakes in project work. It is important though to understand the barriers the prevent communication among members of the project team and the factor (enablers) that helps to enhance communication in the project.

2) **Trust:** trust is ability of someone in the project team to rely on another one to produce reliable work or information on the project. Trust in projects is earned and not given in advance to project team members. People gain trust of each other by producing reliable work and respecting each other and delivering to their promises in the project. In this project, we will examine the dimensions of trust in terms of barriers and enablers that helps enhance the level of trust among team members.

3) **Leadership Style:** the role of the project manager as a leader to the team is crucial, without the vision and direction of the project manager; the team will not be able to deliver the required result and will not work together as one unified and integrated team. Through vision and good leadership style, the project manager can guide the team towards successful completion of the project. In this study, we will also look at this dimension as an important aspect of project team building.

Figure 3: Project Team Building Framework

VI. PROJECT TEAM BUILDING CASE STUDY

To examine the proposed framework for project team building, we adopted a single-case study in our research project; because the case study was found more suitable for a complex and sensitive topic like project team building which requires us to know confidential information and details about the three dimensions of team building defined. This sensitive and confidential information would not have been secured through questionnaire or even individual interviews with different project teams, since the topic of team building is very much related to the culture within the organization which differs from project to another. The selected case is tested with the purpose of showing how trust, communication and leadership skills affect project performance.

The purpose of the case study was to identify the barriers and factors (enablers) that help to improve team building from the three dimensions stated. In this case

study, we aim to investigate the problem of lack of teamwork, the barriers of team building among project stakeholders and the factors that will help to improve team building in construction projects in Jordan.

The research design was made in a way that enables us to validate all the information and data collected by using several data collection tools. Within the single case study, we conducted several interviews with different project stakeholders to understand the topic of project team building from different perspectives. We also used questionnaire forms distributed to participants of the case study to validate the information collected in the interviews and ask special questions that the participants will not be willing to share in an interview. Finally, we used the data and results obtained to validate the theoretical framework for project team building which was developed based on the literature review.

The case study selected was a Specialty Hospital Expansion project in Amman-Jordan. A contract was recently signed between the client and a major contracting firm in Jordan to build a new expansion and upgrade the existing facilitates within the main hospital building. The project cost is 40 million Jordan dinars for a total of 110 hospital beds.

After completing this project, the hospital will become one of the most prestigious hospitals in Jordan. The client representative issued a press release stating that one of the most prominent features of the project is that the building will be environmentally friendly, based on green building technology and equipped with the best modern equipment and connected to all the international medical centers developed. He pointed out that the new construction will provide 500 jobs for Jordanian families and will include the best training centers for its employees. The new construction and expansion will include new operating rooms, intensive care rooms, cardiac catheterization, magnetic resonance and dialysis units in addition to fertility and heredity units. The project represents a total area of about (12758.12 m2) which consists of two buildings made of concrete structure.

VII. DATA COLLECTION & ANALYSIS

A) Interviews:

At the start, we approached the client representative as the contact point for our study and asked permission to conduct the study which includes interviews and questionnaire forms distributed to project team members. The Client was supportive and interested in the study findings and enable us to contact key members of the project team working with the consultant and the contractor. We even conducted an interview with the client representative himself, who provided valuable insight on issues related to project team building. We tap recorded most of the interviews after taking the

permission from the interviewees to facilitate data collection and analysis.

The questions of the interview focused on the three basic dimensions: Trust, Communication and leadership which enables the success of the project team. Within each dimension, five to seven questions were asked to try to identify the key elements of each dimension with regard to barriers and enablers of project team building. The average duration of the interviews was 45 minutes, we collected different views on these three dimensions based on opinions and experience of the interviewees. We finally consolidated all the answers and analyzed it using qualitative analysis techniques to reach a comprehensive view on issues discussed. At the end of each interview, we provided the interviewee with a questionnaire form to fill it independently and return it to us in a closed and sealed envelope...

B) Questionnaires:

We also designed a questionnaire survey form to be circulated to the project team members of the case study; we managed to collect 15 forms out of 25 distributed to the team. The questionnaire was designed to ask simple and straight forward questions to the participants about the three dimensions of project team building under investigation in this study. Participants included members of the contractor and consultant team. The questions were Yes/No questions with the ability to comment on the answer if they want. Respondents were asked to state whether they agree or disagree with a particular statement; other questions are designed to solicit input with regard to identifying key leadership skills.

Once all the answers were received from the interviews and questionnaire forms and data were analyzed, we realized that additional interviews are needed to understand more the barriers and enablers of project team building related to trust, communication and leadership. Therefore, we conducted additional interviews with participants who are experts in the project management field. Interviews are conducted using a set of open-ended questions concerning trust, communication and characteristics of a project leader. These characteristics include: forward-looking; competent; inspiring; intelligent; enterprising spirit; loyalty; leadership motivation; integrity; self-confidence; and knowledgeable of the business. As identified by interviewees', one of the important traits is the ability to communicate effectively. According to the previous survey, communication skills are the most important characteristic of leaders. As affirmed by the survey and interview participants, successful leaders are great communicators. Great communication involves writing, speaking and listening. Good leaders also have clear objectives. The Table below shows the barriers and enablers related to the three dimensions of: Trust, communication and Leadership...

Table 1: Barriers and Enablers of Project Team Building

Key Dimensions	Barriers	Enablers
Trust	Lack of Practical Experience.	Assigning roles and responsibilities gradually & fairly to the team
	Non-compliance with instructions	Avoid the Blame Culture
	Not respecting Deadlines	Sincerity at work.
	Lack of communications.	Transparency and Sharing Information.
	Lack of Knowledge	On the job training
Communication	1. Lack of Personal Skills by the PM	1. Fair Allocation of job responsibilities
	2. Lack of work experience by the PM	2. Friendly relationship between team members.
	3. Lack of Trust by the team members	3. Building Trust among team members
	4. Lack of communication with the team	4. Motivating Team members
	5. Lack of respect for team members	
Leadership Role	1. Daily work stress.	1. Management Support
	2. Lack of trust.	2. Motivations of team members.
	3. Personal conflicts.	3. Increase team morale.
	4. Lack of Self-confidence.	4. Provide clear directions and instructions
	5. Fear of blame	5. Competency

1. Trust among Team members: all of the team members interviewed agreed that the following is happening on the project when it comes to trust issues:

a) There exists a level of trust between team members on this project
b) Team members trust each other with the information they provide about the status of the project or any information they need to do their job.
c) Participants agreed that the Project manager and the company trust its employees with the ability to do their job properly.
d) The project team is confident that they can do the job properly, on time and achieve the objectives of the project.
e) The project team members think of their colleagues as being serious in their job and committed to the project

2. Communication among team members: following are the communication issues on the project as reported by the team:

a) Most of the participants agreed that there is constant communication happening between the client, consultant and he contractor on issues related to the project execution.
b) All the participants agreed that there are project regular meetings to review the progress of the project among project team members.
c) All of the participants agreed that there are "minutes of meetings" to document the actions taken in the meeting and that it is circulated to the team after to take actions accordingly.

d) All the participants agreed that project team meetings are very important in solving problems and making everyone aware of what is happening on the project.
e) Most of the participants acknowledged that there are weekly and monthly reports prepared on the status of the project and that these reports are distributed to the project team.
f) Most of the participants said that they review the progress reports to be aware of the status of the project.
g) Few project members said that they socialize with their colleagues after work and the reason being limited time and work pressure.
h) Few project members said that the company organize this kind of social activities (lunch-out, events) due to limited time and busy workload at the head office.
i) Some project members said that there is a database to save project information but that is only available to the project manager.
j) All members agreed that the availability of a database for the project will facilitate the communication among team members and information sharing

3. Leadership by the Project Manager: following are the key issues related to the leadership role of the project manager as reported by the project team.

a) Most of the project participants said that senior management of the company supports the team and the project manager in his role, only two members, said that the company is

micromanaging the project and interfere in every single detail.

b) Most of the project participants said that senior management in the company encourages the team to communicate and boost their team morale, only three members mentioned that management keeps focusing on mistakes and bring it up every single time even if it is a small mistake.

c) Most of the project participants said that the project manager encourages innovation and participation by the team in solving problems in the project.

d) All project participants agreed that the company shares decision making with them in matters related to the project and does not take decisions alone.

e) All project participants agreed that the company has a clear vision about the project and what needs to be done to achieve the project objectives and they work to achieve it.

f) All project participants agreed that there is also clear direction and instructions given to the project team when it comes to their role and responsibilities on the project.

g) Most project participants agreed that the senior management is good listener to their problems and concerns at work while only one said that the company is making decisions on its own and not taking their opinion into consideration.

VIII.   PROJECT TEAM BUILDING FRAMEWORK

The results of the interviews and questionnaires were analyzed and connected together to form opinions of the project participants in team building in an effort to try to understand team building in construction projects, we managed to identify factors that prevent leadership, communication and trust from developing within the team which we called it "Barriers" and other factors that helps to improve and strengthen the issues of trust, communication and leadership, called it "enablers". The barriers are factors that the project manager/ project team needs to avoid while the "enablers "are factors that the project manager/ project team needs to focus on.

The results of enabling these factors in a project team will lead to improved productivity within the team and less stress and conflicts between members of the team, which will ultimately lead to improved quality and saves time and cost on the project.
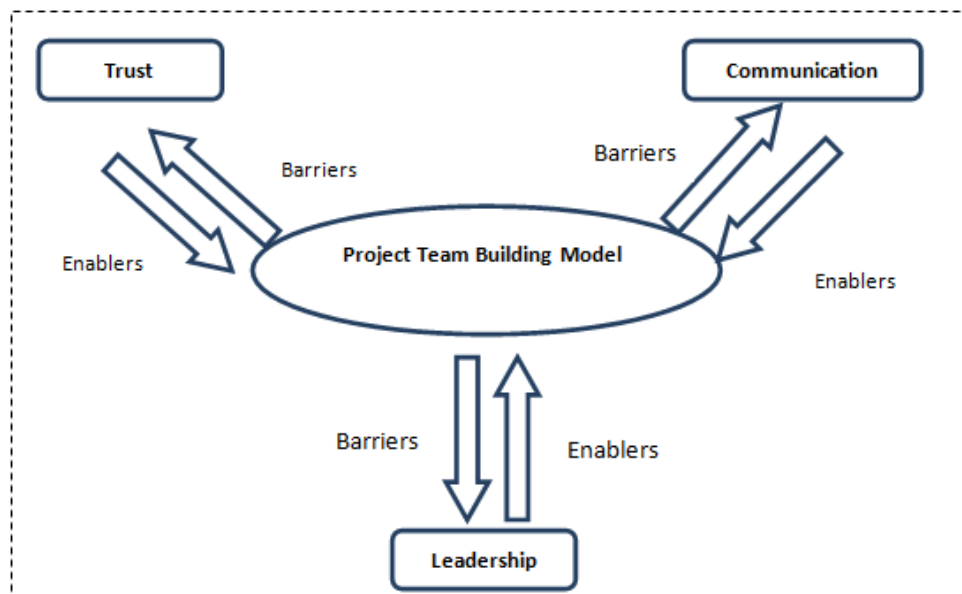

Figure 4: Project Team Building Framework

As stated in the above figure, Project team building will highly depend on the key aspects of: Trust, Communication and Leadership. Each one of these dimensions, has a set of enablers and barriers that will either foster trust, communication and leadership among project team members or will prevent it from happening on the project. A successful project manager will work on emphasizing the enablers of trust, communication and leadership and preventing the barriers from happening on his/her project therefore, increasing the chance of project success and building a cohesive and strong project team that will result in improved performance of the project and saving time and cost to all stakeholders.

IX.   CONCLUSIONS

Project Team building is a complex issue that is related to culture and personal issues and behaviors of individuals within the project team. The case study confirmed our theoretical framework that the three cornerstones of project team building were: trust, communication and strong leadership. Without these elements a project team cannot function as one unit and will not produce the results required.

However, the three dimensions of project team building are interrelated and are not isolated from each other. Each dimension has an impact on the other. Therefore, it cannot be studied or analyzed separately, For example, trust is related to communication, and communication is related to trust and both of them are important factors to support strong leadership. A successful project manager cannot function as a true leader if he cannot communicate with the team and if he can't gain their trust and also trust his team members. On the other hand, team members cannot trust their leader, if he is not communicating properly with them project rerated matters. Additionally, if there is communication and trust among team members, but there isn't strong leadership to steer the project team in the right direction, nothing will get accomplished and the project will suffer from the absence of decision making in the team.

This case study revealed important barriers that affects trust, communication and leadership in project teams and how to overcome these barriers in order to build a strong relation among team members that helps the project to achieve its objectives. The study also defined a set of enablers for each dimensions in the project team building model which should be followed by project managers in order to effectively utilize their project teams. After all, construction organizations should focus on team building as it is an important part of the project success, an isolated, weak project team will be a burden on the organization and will cause time delays and cost increase to the project. A strong and well integrated project team on the other hand, is a useful tool for the project manager to achieve the project on time and within budget.

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