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Organizational and Developmental Dynamics of Project Review Teams in Technology Environment

Anthony D. Wilbon
Morgan State University, awilbon@jewel.morgan.edu

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Abstract

This paper is the result of a week long participant observation of a technical project review team within a large organization. A detailed log was maintained during the study and the results were analyzed to understand the relationship of the observations to prior research in organizational dynamics. Some of the existing literature implies that the current research on organizational development may be applicable to entities of various sizes. In some cases the observations from this research fell within the framework of the existing theories. However, alterations must be made to the current theories to apply specifically to small work groups who have specific missions and limited working time frames. Understanding the dynamics of these "suborganization" may lead to more effective management and result in a higher quality work product.

Keywords

qualitative research

Organizational and Developmental Dynamics of Project Review Teams in Technology Environments

by

Anthony D. Wilbon [+]

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This paper is the result of a week long participant observation of a technical project review team within a large organization. A detailed log was maintained during the study and the results were analyzed to understand the relationship of the observations to prior research in organizational dynamics. Some of the existing literature implies that the current research on organizational development may be applicable to entities of various sizes. In some cases the observations from this research fell within the framework of the existing theories. However, alterations must be made to the current theories to apply specifically to small work groups who have specific missions and limited working time frames. Understanding the dynamics of these "suborganization" may lead to more effective management and result in a higher quality work product.

Introduction

For years, small group dynamics have been the subject of research in various fields of academic study. The literature is rich with theories and cases related to group development and interaction. The research described in this paper attempts to expand the literature through the use of the qualitative paradigm to explain the relationship between observations in a corporate technical review team and classic theories on small group dynamics. The goal of this study is to gain a deeper understanding of the working relationships in technical workgroups through considering the decision making process, leadership roles, and group interaction.

The Problem

Past research has used biological metaphors to establish that organizations of all sizes go through a natural evolutionary process of development and change (Gyr, 1995; Kast & Rosenzweig, 1985; Thompson, 1967). Some studies show that larger organizations move from stages of autonomy to rigid bureaucratic structures over time. Throughout this growth process the successful organization takes advantage of opportunities to adapt to internal and external issues as they emerge. This adaptation is generally over a long period of time as the organization faces challenges and failures and learns the appropriate corrective actions to maximize successes in meeting its goals and objectives.

However, in smaller organizations such as workgroups, the time frame of existence is much shorter and the lifecyle of growth is compacted. The patterns of organizational development are more subtle and difficult to ascertain since the small "suborganization" has a specific mission and a short "life expectancy."

This study was designed to understand and explain the process of organizational and developmental dynamics in small technical project review teams as a participant observer. I have participated in several workgroups of this type and become quite familiar with the personal and professional interactions that occur in these environments. In this specific case, I entered the workgroup as a researcher with a clear mission to observe and gather information on the group dynamics. The goal of the research was to answer three questions:

1. What is the development process of small technical review teams?
2. What issues related to leadership emerge in a technical project review team?
3. What model(s) of group decision making is used in technical project review teams?

Justification of the Problem

Understanding small group interaction has become increasingly important in recent years as organizations use workgroups to focus on problems at the lower levels of its internal structure The business world has concluded, based on academic research and practical experiences, that addressing complex problems by working together in teams tends to result in more comprehensive, practical, and superior solutions. Graduate management programs have responded to the recommendations of the business community by implementing more group-based assignments in most all functional disciplines.

In technical environments small group use is even more prevalent. For example, in software development firms, most of the work is organized in small modules and managed using the project management methodology. Although programmers may develop a piece of software individually, they must first work with a designer of the software module on the front end of the project to understand the user specified software requirements and work with users on the back end who may be testing the application once the programmer is complete. In addition, a team of quality assurance specialists may be reviewing a programmer's work to ensure it meets the standards established by the project. Each programmer may be responsible for many modules and, therefore, may become involved with many small groups during the lifecycle of the project. These small groups must work together over extended periods of time in very intense and stressful environments to meet the goals of the overall project. Creating an environment that minimizes conflict, encourages creativity, and enhances the quality of the final work product is of utmost importance to delivering a quality product in a timely and cost efficient manner.

Another example of a technical workgroup is the audit or review team. Organizations bring together members from within the firm to perform a peer assessment of a particular technology project. These teams evaluate the efficiency and effectiveness of the management of the project and the product's under development. Review or audit teams also ensure that the project is adhering to specific policies, procedures, or standards established by the organization and industry. These groups accomplished their tasks by reviewing project documentation,

interviewing team members and management, and talking to other entities that interface with the project (e.g., users of the product). A report on recommendations for improvements usually result from the work of such groups.

I set out to understand the key issues that dominate the peer review process. In most cases strangers are placed on these teams to perform an evaluation in a very limited time frame (one to two weeks) and face great resistance from the project team under review. In addition to understanding the process, I wanted to tie the findings to existing literature on small group dynamics and determine whether the traditional theories were appropriate for understanding these specific types of groups.

Literature Review

Small group interaction has been studied in a variety of research projects over the years (Bales, 1950; Fisher, 1970, 1980; Geier, 1967; Mills, 1967). Much of the existing literature suggests that the effectiveness of small groups vary greatly (Hare, 1976). Most importantly, researchers find open communication to be a significant element to small groups achieving their purpose. According to Fisher (1980), the ultimate challenge of any small group is to find the balance between the tasks at hand and the socio-emotional factors that most often lead to distraction and sometimes deterioration within group settings. Fisher defines socio-emotional factors as the feelings and relationships that exist between the members of a group. Socio-emotional factors (such as when a group member feels inadequate, angry, superior, or sad) also lead to the group dysfunction. On the other hand, too much concern for harmony or closeness leads to groupthink or the inability of group members to think critically and vocalize disagreements with others. Therefore, besides completing team tasks, it is incumbent upon team members to consider the social factors that could propel them toward, or deter them from, their goals. Following are summaries of the theories relevant to this research.

Small Group Development and Adaptation

For this study, I focus on the model proposed by Gyr (1995) who posits that all organizations experience natural stages of development that swing from freedom and autonomy to unity and cohesion. The Gyr model suggests that the stages shown below are relevant to organizational of any size.

Exploring Stage. In this initial stage, the organization's mission and expectations are defined. The structure of the organization is informal as the organization or workgroup establishes its priorities and members of the organization or workgroup identify their roles. Since the organization is in an infantile state, most everything associated with it is undefined, ambiguous, and very fluid. However, the members of the organization are optimistic about their future. In addition, the leadership of the organization is very important as members look to them for guidance.

Systematizing Stage. In the second stage of development, the organization begins to establish order, routines and controls. Members implement policies and procedures, and have clear roles and responsibilities.

Venturing Stage. This stage establishes a clear delegation of power and authority. The organization's members become more clear about the mission and are comfortable about the contribution they make to meeting its goals. Differences between members are more distinguishable and leadership begins to delegate responsibilities accordingly to take advantage of strengths of its resources. Group members begin to work well together and more effectively as a team.
Integrating Stage. The final stage causes a shared vision of the direction the organization should follow. The organization begins strategizing on a long term basis and the people are more motivated to use their acquired skills to achieve the shared vision.

With each of these stages, Gyr (1995) suggests that it becomes the leader's decision on when it is appropriate to move from one stage to the next. This assumption that leaders control the organizational development process coincides with much of the traditional strategic management literature whereby the leader of the organization is considered the sole visionary (Andrews, 1987; Ansoff, 1965). This rational model assumes a clear distinction between planning and implementing organizational strategies (Ansoff, 1991) and has been criticized recently as unrealistic. Mintzberg (1990) suggests that the rational model of organizational strategic planning falsely assumes:

1. that prediction of future events by the organization's leadership is possible,
2. that leaders can be detached from the subject of strategies, and
3. that all planning can be formalized.

Another school of thought is the existential model posited by such organizational theorists as Quinn (1980) and Mintzberg (1985). These researchers have found that organizations adapt not through some conscious efforts by leaders, but through a cycle of learning from prior experiences. Quinn (1980) introduced the term logical incrementalism to explain that firms develop strategies in an emergent process through logical incremental extensions of historical behavior. As leaders come to know a context and their organization's capabilities of dealing with it, eventually the organization converges on a pattern of behavior that is most appropriate for its operating environment.

Small Group Interaction

Every group, despite size or goals, meets the challenges of balancing the opposing forces of task activity and socio-emotional activity. A successful small group attempts to establish a pattern of interaction that considers both forces without giving priority to one or the other. According to Bales (1953), this interaction and balancing act is considered the equilibrium problem. Conversely, if a group focuses too much on just achieving the tasks assigned to them, it leads to the destruction of the group's social structure. Otherwise, if the group focuses much attention on increasing interpersonal relationships, the tasks suffer. In reality, groups bounce between these two extremes of task interaction and socio-emotional interaction in an attempt to find a balance that leads to increased effectiveness. Bales (1950) has developed a classic model for analyzing interaction in small groups. This tool is useful for gathering empirical readings of small groups through classifying each act displayed by its members into twelve categories. The observation

categories are useful for researchers of small groups by disciplining them to watch for particular events that occur.

Another classic tool for analyzing small groups is to evaluate communication networks. To do this, a researcher must observe the flow of information between group members. Frequently, as the interaction process continues, a systematic pattern emerges in small group communications that reflects the developing social structure (Fisher, 1980). As shown in Figure 1, there are five common patterns of communications that may appear: chain, circle, wheel, "Y", and all channel (Fisher, 1980).

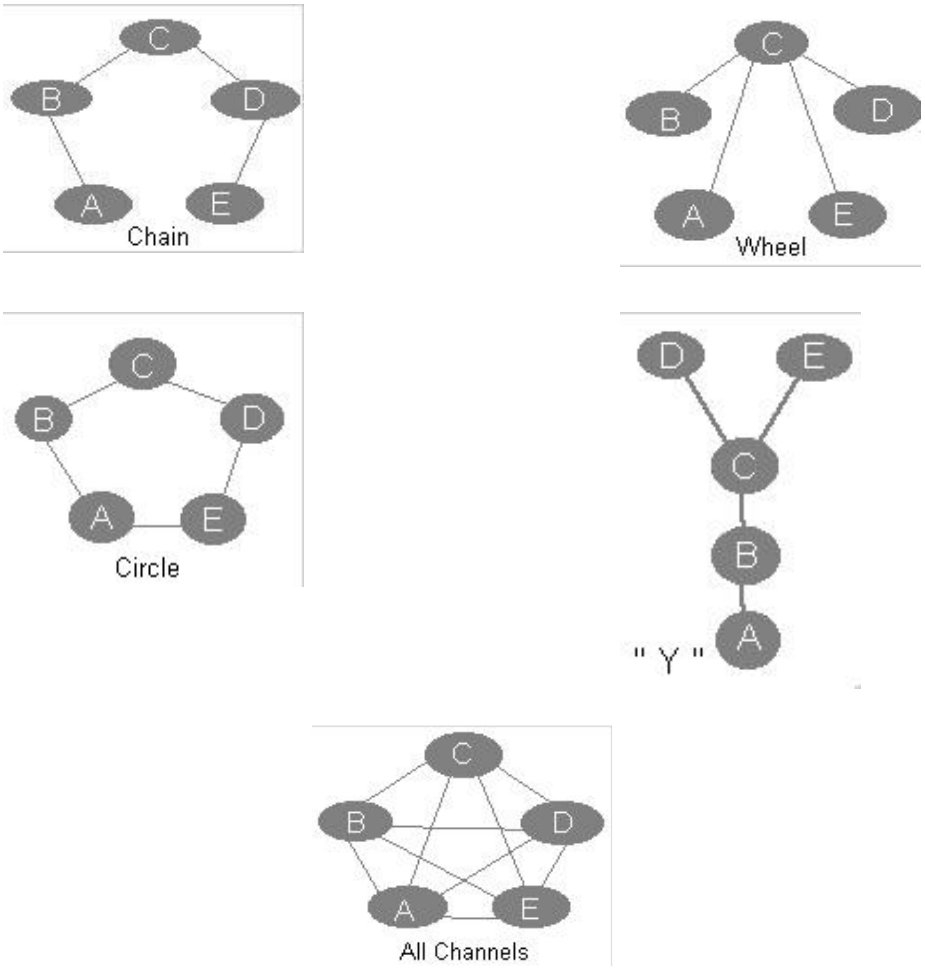

Figure 1: Common Networks in 5-Member Groups

Source: Fisher, 1980, p. 78

The all channel network implies equal usage of all communication linkages and is typical of a new group. As the group develops the network evolves around issues of centrality and distance to create linkages for delivering and receiving messages to other members in the group. Some networks are faster and more efficient than others. For example, the centralized wheel or chain

networks require that information is delivered to the central contact (position C) before others receive. Obviously, this takes much more time than the circle network which allows group members to deliver and receive information relatively quickly. The type of network employed by group members may change continuously throughout its evolution.

Small Group Leadership

There is a multitude of research on leadership within organizations (Lieberson & O'Connor, 1972; Smith, Carson, & Alexander, 1984; Stodgills, 1948, 1974; 1974). More recently, Wills (1994) defined a leader as "one who mobilizes others toward a goal shared by leader and followers" and emphasized that a leader and follower are interdependent and together they must pursue the shared vision of the group. Therefore, leadership is not inherent in a single individual but depends on the group and its goals.

Significant research on leadership has focused on leadership styles. Stodgills (1974) described four classic styles of leadership: authoritarian, democratic, laissez-faire, and human resources. The authoritarian style is characterized by high control of the group by the leader. In this case, the leader tells others what to do, limits discussion on ideas and new ways of doing things, and discourages teamwork. This style tends to be most effective when there is a major time constraint, the group lacks skill and knowledge, or the group members do not know each other. The authoritarian style is ineffective when the group's goal is to develop a strong sense of teamwork, the members have some degree of skill/knowledge, or the group wants an element of spontaneity in their work.

Moderate group control characterizes the democratic leadership style. In this case, Stodgills (1974) suggests that the group members have the knowledge and skill, but it is necessary for the leader to coordinate group action. It involves group members in planning and carrying out activities and promotes the sense of teamwork. Also, the leader participates as an active member of group. This style is most effective when there is plenty of time for the group to work together and there is a high degree of motivation among its members. It is most ineffective when the team lacks skills or knowledge and when there is a high degree of conflict present.

The laissez-faire leadership style gives little or no direction to the group. In fact, the group has a high degree of control and assumes responsibility for meeting its goals and objectives. The opinion of the leader is offered only when requested. This style is most effective when there is a very high degree of skill and motivation between the group members and the routine is familiar to all participants. It is most ineffective when there is a low sense of interdependence and an expectation that the leader is to provide guidance on the tasks. In the human resource style of leadership, the leader focuses on satisfying the needs of members with little emphasis on tasks.

Other theories suggest a contingency approach to leadership. Situational Leadership Theory (Blake & Mouton, 1981) posits that the style of leadership depends on the situation. Also, Fiedler (1967) suggests that a leader's effectiveness depends on the match between the style and the degree to which he or she controls the situation.

Most groups have leaders designated by a higher authority in the organization or elected by the group members themselves. In the technical environment, these leaders are often given the title of project manager or team leader. Often, others in the group will take on leadership roles at various times in the group's life cycle. These emergent leaders play significant roles in moving the group toward its goals although they may not be recognized as leaders in the traditional sense. Geier (1967) has proposed a model for leadership emergence in small groups that consists of three stages. This model presents a process of elimination where contenders of leadership battle each other through group interaction and are ousted one-by-one as the group progresses through each developmental stage. The result of the elimination process is that one person emerges as the group leader. According the Geier, the emergence of the leader is a gradual process that occurs as a person achieves status in the group.

Although there is a plethora of research on leadership, some have studied the role of membership in groups as well. Bonser and Heasley (1968) have suggested four styles of membership: impulsive, routine, subversive, and constructive. These authors suggest that a certain style of leadership results in particular membership styles. The impulsive member is highly emotional and usually identifies more with the current leader than with the group. The routine member generally lacks initiative, but will carry out assigned tasks to the best of his or her ability and interest. Subversive members are generally interested in promoting his or her interests and will go along with the group as long as the interests of the group and his own interests are in harmony. This style of membership represents a potential disruption of the group. The constructive member possesses definite leadership ability, shares in the group responsibilities, and accepts major group roles.

Bonser and Heasley (1968) suggest that the impulsive, routine, and subversive styles of membership will be predominate where the leader exhibits an autocratic style of leadership. Where the democratic leadership style is displayed, the predominate membership style is constructive. The laissez-faire leadership leads to impulsive, subversive membership styles.

Group Decision Making

Bales (1950) has outlined three phases of decision making. In the first phase, the emphasis is on problems of orientation (deciding what the situation is like). In phase two, the emphasis shifts to problems of evaluation (deciding what attitudes should be taken toward the situation). Phase three leads to an emphasis on problems of control (deciding what to do about it).

In the decision emergence model, groups do not make decisions; they emerge from group interaction. This emergence of a group consensus is gradual and cumulative. Fisher (1970) identified four phases of the emergent decision making process: orientation, conflict, emergence, and reinforcement. The orientation phase is characterized by getting acquainted, clarifying issues, and tentatively expressing ideas. For the conflict phase, there are disputes over decisions proposed by the group as members begin to make up their minds about certain decisions. This sometimes leads to polarization among the group members over specific issues. The emergence phase sees a dissipation of conflict and a coming together of polarized members of the group. In the reinforcement phase, the group begins to reach a consensus on decisions. Fisher relates this phase to a "spirit of unity" pervading the group.

In the spiral model, one member introduces an idea and other members respond with agreement or disagreement, extension, and revision (Scheidal & Crowell, 1964). The idea is the object of discussion and it develops over time to reflect the group's viewpoint. When an idea is developed, the group anchors its position. The political model of decision making relates to the work done by Allison (1971). Allison's work focused on the emphasis in exercising political power either within or by the organization. With regards to decision making, this model considers the preconceptions developed by decision-makers prior to entering the decision process and the desire to ensure that their needs are met in the final decision. The process involves a cycle of continuous negotiation among the group members with the intent of swaying others to accept their perspective (Lahti, 1996).

The Research Design

The Methodological Approach

I used the qualitative research paradigm to study issues of small groups in its natural environment. As a "complete participant" observer (McCall & Simmons, 1969), I conducted field research in a selected project review team setting. The members of the project review team were never aware of my role as researcher and viewed me as a colleague on the project review team. The intent of this research was to study the project review team in its natural environment thus encouraging participants to work as they normally would in a typical setting.

The Research Field

The research was at the Worldwide Systems (Pseudonym) organization. Worldwide Systems is a large multisite organization whose headquarters is located in Washington, D.C., with several independent business units (BUs) throughout the United States. The Board of Directors and its staff approves the budgets of the BUs, establishes the organization's policies and procedures, oversees any spending that is above certain preestablished limits, and audits all major technical projects that are performed by the BUs.

The business units of Worldwide Systems are autonomous organizations with separate executive management and staff responsible for managing and supporting the regional aspects of the industry. Each BU is involved in a variety of projects that are unique to enhancing its competitive position in the regional operations. Occasionally, BUs work together on projects that may benefit Worldwide Systems overall.

To meet the goal of increased synergies between the BUs, Worldwide Systems has used review teams and workgroups to focus on issues of concern to all stakeholders. The workgroups evaluate different types of technologies, recommend technology strategies that address organizational business needs, and consider future technology trends and how they can strategically apply to Worldwide System's mission. The Board of Directors use review teams to audit, evaluate, and determine the effectiveness and efficiency of BUs' technology projects.

Workgroups generally have members from throughout the organization. The project review team for this study consisted of seven members from throughout Worldwide System. Worldwide

assigned the project review team to review and evaluate a mission critical software application (Project X) that one of the Midwestern business units volunteered to develop and share with the entire organization. The review was held onsite for a one week period to review documents and interview members of Project X with the goal of identifying:

1. Things the project review team felt Project X does well;
2. Issues the project review team felt Project X must address (these items will be monitored by an internal auditing function to assure that they are completed);
3. Items the project review team felt the project should consider addressing but are not mandatory to correct; and
4. Items that deviate from established standards, policies, procedures, or practices.

The project review team studied in this research consisted of seven members from various parts of the organization and from diverse technical, gender, and ethnic background. The designated project leader (Annette) has organized similar reviews in the past from the Board of Directors. The other members are (including myself):

Elias, who works at the Board of Directors and who has had a great deal of experience in reviewing technical organizations, but not software application projects;
Jasmine, who has a business background and who has very little technical experience, but who has been quite involved in Project X in the past from a business, nontechnical perspective. She also works at the Board of Directors;
Alina, who is from one of the southwestern BUs within the organization and who has experience in projects similar to Project X;
Jeffrey, who is from another midwestern BU with project management experience; and
Paula, who is from a BU in the northeast and who has experience in the maintenance function of software applications[1].

All participants have varying degrees of technical backgrounds and have worked on projects with similar scope as Project X. The members of the team were divided into three groups of twos and assigned functional areas, such as application development, application support, and project management. Elias was a temporary member of the group assigned to focus on a specific technical area.

The team worked out of a conference room at the location of Project X for the week long duration of the review. As each "subteam" of project review team members went out to gather documents and interview members of Project X, the conference room became the central location for us to return, synthesize our data, and discuss our findings. It became the location for most of the observations for this study.

Data Collection

As researcher, I participated on this project review team as an active working member. The members of the project review team were not informed that I was observing their behavior. This approach was taken to ensure that the natural work setting was not disturbed. I took detailed notes during team meetings and maintained a research log that documented all observations

throughout the existence of the team. I found that maintaining the research log provided a structured process for organizing my observations and thoughts. Although I had worked in small groups on many occasions, documenting my observations as they occurred provided the opportunity to identify behavior that may have been overlooked or lost in past experiences. I took great care to write down every observation and discussion as it occurred, regardless of how trivial it may have appeared at the time. I further drew diagrams of the room and seating arrangements to understand how this may have affected the groups interaction. As I collected literature, notes from studies were also added to the log so that all data from the research were maintained in a central repository. Overall, the process of maintaining the research log resulted in a rewarding research experience and a rich collection of data for the analysis. I believe that for the qualitative researchers this is a most value tool for participant observations.

Data Analysis

The research log was analyzed to identify patterns and themes and the results were related to existing theories on small group interaction. In addition, I analyzed electronic mail, reports, and other documents created and distributed by the project review team. I coded data from the research log to analyze the meanings of the observations and to assist in identifying patterns that may relate to the theory on small group interactions[2]. In the first level coding, I used descriptive codes to attribute a class of phenomena to portions of the research log text (Miles & Huberman, 1994). I used these codes to relate the textual descriptions to the proposed research questions in an attempt to explain observed behavior. Next, pattern coding was used to group the first level codes into relevant themes that could relate to the theory. The pattern codes identified the relationship between the facts of this study and the theory presented earlier in this paper. The results of the data analysis are presented in the following section.

Discussion of Findings

Development, Growth, and Adaptation

My findings revealed that the stages of development for technical workgroups were similar to Gyr's (1995) model. However, there was no evidence that the leader made direct efforts to move the group through the lifecycle. In this research, the Project X review team's stages of development were: exploring, venturing, and integrating. Table 1 illustrates the distinct phases of development resulting from this study based on the observed occurrence of specific events.

Table 1: Project X - Stages of Development

Prior to review team meeting	**Week of Project Review Team (Day 1 to Day 2)**	
	Day 1	Day 2
Team leader sets up conference calls to introduce team, answer questions	Team members meet for the first time	Interviews with Project X staff

Team leader makes arrangements for work area Tasks are assigned Preliminary review of Project X documentation Team leaders sets up first interview with Project X management for team members	Initial meetings/presentations with Project X management Review of Project X documentation First interviews with Project X managers	Preliminary identification of problem areas Group discussion on findings and recommendations
EXPLORATORY PHASE		**VENTURING PHASE**

Table 1: Project X - Stages of Development (continued)

Week of Project Review Team (Day 3 to Day 5)			**Post review team meeting**
Day 3	Day 4	Day 5	
Continue interviews Group discussion on findings Separation of findings into appropriate functional areas	Continue to organize findings into appropriate functional areas Subteams - draft findings Prepare draft findings/recommendations Prepare draft presentation Practice presentation Preliminary discussions of findings with Project X management - Presentation	Preliminary review of findings with senior management of BU	Conference call with Project X management to discuss final recommendations of review team Write and deliver final report
INTEGRATING PHASE			

In the first phase, the structure of the review team and task assignments were established prior to the actual meeting of its members. The designated leader of the team took on most of the responsibility for such things as setting up the work area, organizing initial meetings, distributing

documentation. After several conference calls and email communication to outline the general guidelines and expectations, the Project X review team met face-to-face for the first time at the Project X location for the week-long review. Several team members had to become familiar with the assigned work area as only a few of us had visited this particular business unit in the past. Additionally, many team members were meeting each other for the first time and were becoming acquainted. The group's structure was loose and informal, but the procedures for preparing reports and presenting findings were established previously based on experiences with groups who performed similar reviews in the past Group members only needed specific instruction on how to meet the organization's objectives for this particular review.

Since this team was established within a larger organization, the members already had a general sense of the overall group objectives in the context of Worldwide System's goals prior to joining. Technical project review teams of this sort have been in place for quite some time within the organization and, although the members in this case had not previously served on a review team, they were well aware of the mission. The team leader selected the members based on their technical competencies in various areas of application development and assigned the members their responsibility areas prior to establishing the project review team. Therefore, team members needed very little direct leadership or supervision to complete their assigned tasks.

The first morning that the team met consisted of meetings with the senior management of Project X to acquaint the review team with managers and their responsibilities on the project and to give us an overview of the software application functionality. The project review team entered the venturing stage immediately after the initial meetings were completed as we began setting up interviews for the rest of the week. According to Gyr (1995), this is the stage where the leaders begin delegating responsibility to the team members and the strengths of individuals are more recognizable. The emphasis shifts from implementing procedures to meeting the goals of the group. Here, the team's members became familiar with their roles on the review team and began pursuing them almost immediately. As Table 1 illustrates, this phase was the shortest of the entire lifecycle in this case.

During the integrating phase, the members became comfortable with the intent of the project review team and began focusing more on the shared purpose of providing an accurate assessment of Project X. Considering the short time period of the group's existence and the need to complete the review assignment within one week, this phase came very quickly by necessity. There was very little time to deal with issues that may divide the group. During the one week period, the integrating stage may have consisted of one day.

Gyr (1995) suggests that the systematizing phase is where order, routines, and controls emerge into a predictable organizational life. I found that this phase was not a stage that was distinguishable in this review team's life cycle. Due to the short time frame of this project review team's existence it became unnecessary for us to create a systematic, stable structure. Also, since we were operating within the construct of a larger organization, policies and procedures were already established.

Group Leadership and Membership

The designated leader of this study was Annette. However, due to her insight of issues related to Project X and experiences working directly with members of Project X in the past, Jasmine became the person who directed the team on issues that arose and directed others on how to assess conflicting interview responses from Project X staff.

Leadership emergence did not occur through a process of elimination as suggested by Geier (1967). Jasmine's emergent leadership role related directly to her technical knowledge and experience with this Project. In most cases regarding technology, the person who has a great deal of expert technical knowledge becomes the defacto leader as others defer to them for understanding of project specifics and direction. Another contradiction with Geier (1967) is that Jasmine's leadership emergence did not occur gradually. Her role was a critical source for the review team members to obtain direction about particular issues and was evident from the first day of the review team's existence. Table 2 illustrates the relationship of this finding to theories on emergent leadership through examples from the research log.

Table 2: Leadership Emergence

Theory/Author	**Findings**
Geier (1967) Two types of leaders: designated and emergent	Although the project review team started with a designated leader, another project review team member emerged as a leader due to the technical knowledgeable about Project X and based on past experiences
Example	
{Log: P16, L14} Jasmine has worked with this particular project quite closely over the past 2 years...Jasmine is very in-tune with the history and the concerns that the project team has about us coming in to beat them up yet again. She shared with me some examples of past problems and tried to explain why some of these issues may not be as bad as they may appear. However, she willingly admits that we have our work cut out for us because this team is understaffed, lost many of its experienced people, and not as competent as they should be to support the software. **{Log: P18, L1}** There is some general discussion about issues obtained from our interviews with the users . . . Most of the questions seem to be directed toward Jasmine, who has become the project review team's resident expert on the software application we are reviewing. **{Log: P36, L11}** Annette has said to me several times that she really thinks Jasmine made a major contribution to the project review team. Her insight on Project X helped us to understand some intimate details of the management structure, project history, and other areas that allowed us to make more useful recommendations. Because of this, Annette wants to make sure that we have someone that is knowledgeable about the project under review in all future project review team efforts.	

Another aspect observed in this study was the style of leadership displayed by Annette. In this case, the style of leadership appears to correlate directly to the development phase of the project

review team. For example, in the earlier phases of the project review team's development, the style exhibited by Annette was more bureaucratic. In other words, a set of informal and tacit rules established by the larger organization influenced Annette's leadership role and the role of the group. Annette used moderate control to assign the team members to functional areas for the review. She also had to explain the process for how these reviews are generally run and the expectations of the team members. Formalities such as setting up the first set of initial meetings with senior management of Project X and explaining the report formats were all her responsibility.

However, as the group moved into the venturing and integrating stage of development and became more comfortable with the goals and objectives of the project review team, Annette's style of leadership became more democratic. This leadership style became the dominant process utilized by Annette through the critical phases of the review team. The project review team members had the technical knowledge and skills but they had to be coordinated for group action. Eventually, Annette became less of a leader in the traditional sense and more an equal participant in the project review team. On occasion, she did provide moderate leadership control. For example, each evening the team held roundtable discussions on findings they uncovered during the day. Annette usually acted as facilitator for this meeting but did not act in an authoritative manner. This worked very well as it is very likely that an authoritative style would have been met with great resistance. The literature also suggests that the democratic style of leadership is most effective when there is plenty of time for the group to work together. Considering the time constraints of this review team, this study contradicts that hypothesis.

Various styles of membership were evident in this study. The literature suggests that where the democratic style is displayed, the predominate style of membership is constructive. I observed this to be the case in this study as well. Although one member of the team attempted to become subversive, the overwhelming theme and tone of the group tended to push toward the constructive model.

One example of a subversive member was Jeffrey's insistence on reorganizing Project X. After discovering certain facts about Project X and its organization, he continuously refers to "the way things are done" in his BU or the "way things use to be done" in the Worldwide Systems. He persistently suggests that we make recommendations for Project X to reorganize its resources as they were in the past. He believed that by doing this, the problems we were uncovering would be alleviated.

Annette believed that we should not make such a recommendation because the organizational structure is a decision that should be made at a higher level within the business unit rather than at the project level and they should not be penalized for this decision. She also suggested that there are ramifications from making such a suggestion that we may not be capable of dealing with due to our limited authority as a review team. We had no idea why they decided to organize that way, but what we should focus on is the root of the problems. Jeffrey finally agreed with this assessment, but it took an overall group effort to convince him.

Group Decision Making

The review team's decision making tended to follow Fisher's (1980) emergent process. Table 3 illustrates an example of one decision that the group had to consider and how it relates to the phases of Fisher's model.

Table 3: Group Decision Making Example

Fisher's Emergent Model: Four Phases	**Review Team Decision Making Action**
Orientation	Review team gets acquainted and discusses preliminary issues
Conflict	Project X has a management steering group made up of several officers and managers throughout the organization. This group was established to provide guidance on management issues in the project. However, the group has not met in a year and there is no evidence that they are contributing anything to assist the Project with the many problems they are having. Jeffrey has made the point on several occasions that we should recommend that this group be abolished since it is apparent that they serve no purpose. Annette defends the mission of the steering group and thinks they can still play a role in helping Project X deal with their problems. ... Jasmine walks in during the discussion and jumps in to support Jeffrey on this issue. She also sees no evidence that the steering group is making any contribution. Annette says, "Jeffrey, I think its obvious I'm not going to agree with you on this issue." Alina speaks up in support of Annette saying that we really need to evaluate this further before we suggest getting rid of a group. Steering groups on other projects have been very instrumental and if this one is abolished it may be very difficult to get it reestablished. They agree to table the topic and Annette agrees to think about it further.
Emergence	More investigation into this issue finds that the role of the steering group is unclear. Annette and Jeffrey begin to come to an agreement that this is an issue. Although Jeffrey feels strongly about recommending that the steering group is dismantled, Annette feels that maybe we can find another way to present this finding. They discuss maybe recommending the role of the steering group needs to be increased in the Project.
Reinforcement	More discussion on this topic leads to a consensus. Instead of making a *recommendation*, meaning that Project X would have to address this finding and the BU's auditor would follow up on the result, a *suggestion* is presented that the Project should identify opportunities for the steering group to participate in the project and eliminate redundant responsibilities. This is how it appears in the final report.

This study observed behavior consistent with Allison's (1971) political model of decision making. Project X had gone through many organizational changes in the last three years that caused instability in the product and delays in its delivery to the customers. The review team had prior knowledge that Project X's team was experiencing massive turnover due the project delays and pressures to complete and install the software. The morale of the current staff was very low. We talked about how this would affect our analysis and Annette expressed that our role was to identify areas that we felt could help them, not point out the problems from the past. A log entry below illustrates the politicized environment in which the team worked.

{Log: P8, L8} Since this project has been criticized for its mismanagement many times in the past (overbudget, missed milestones, etc) the Vice President of the Business Unit responsible for Project X has been very wary of the objectives of our review team and what we expect to accomplish[3]. Consequently, this review has become very politicized and any report we create will have to be approved (and maybe altered) by the division director at the board of directors to ensure the Business Unit is not penalized again for past mistakes.

Several findings we uncovered were dismissed as a result of past problems. Since the team members had preconceived notions about the project, this influenced several decisions we made regarding recommendations. Occasionally, the review team made extra efforts to justify some findings to ensure, if questioned in the future, these recommendations would be acceptable.

Group Interaction

As with the leadership style, I observed a direct link of group interaction with the stage of the group's development. For example, in the venturing stage, the communication network was similar to the *All-channel* model, as everyone talked openly and tried to get a feel for each other and the review process. As the project review team entered the exploring stage, the network took the form of the *wheel* model, whereby most of the interaction revolved around the designated project leader. Finally, in the integrating stage, the network became the *circle* model where communication was open and all players were involved in the group interaction.

In addition, nonverbal communication played a role, although not a destructive one. Some members of the team used aggressive gestures to get their points across and passive body language to demonstrate their disagreement on decisions. The following log entries provide examples of the typical group interactions:

{Log: P22, L14} Jeffrey has displayed that he is not very comfortable with the process. He views it as too political. After discovering certain facts about Project X and its organization, he continuously says he does not understand why or how they function. He keeps making reference to "the way things are done" in his BU or the "way things use to be done in the organization" prior to all of the computer resources moving to central locations. Whenever he does this, everyone seems to direct their attention to another task or avoid eye contact with him. To get attention directed back at him he tends to pound his finger into the table to make his point.
{Log: P23, L28} Jeffrey tends to sit back from the table during the entire conversation. Paula is looking at some papers and not paying much attention to the topic at hand. Jasmine is doodling something.

{Log: P21, L5} After we finished, we walked back to the hotel. On the way back I noticed that we began to separate. The members of the board of directors staff walked together while the members from the BUs walked ahead of us leaving us behind.

Conclusions

Small group environments provide an ideal situation for qualitative research using participant observation. Use of this paradigm allowed an alternative perspective on the operations of small groups and the dynamics associated with interactions in such social settings. As mentioned earlier in the paper, the findings of study substantiate much of the theory developed on small groups (Allison, 1971; Blake & Mouton, 1981; Fisher, 1970, 1980), but also presented some areas of divergence (Geier, 1967); Gyr, 1996; Blake and Mouten (1981). The designated team leader's style changed based on the events that occurred in the team's lifecycle. More importantly, I observed a direct relationship between leadership emergence and technical knowledge and experiences. Experience tells me that in technology related work environments this observation is consistent and accurate. Even in situations where the group members have technical backgrounds, I have witnessed a tendency to show deference to those who exhibit more knowledge and can demonstrate their advanced skills. Another contradiction with the current theory was that leadership emergence in this case did not occur gradually. Again, the shortened time frame of this group's work environment inhibited lengthy battling for group acceptance of a leader. This case illustrates that leadership emergence can occur immediately upon group establishment if the person presents the right tool set and demonstrates their ability.

I believe that future research on small group dynamics using the qualitative paradigm is essential in explaining the complex social interaction in these environments. I personally do not feel that my findings would have been clearly identifiable through use of traditional quantitative methods. Moreover, the compressed time frame of these types of groups and the changes that may occur due to the ever-transforming technological environment suggest that historical models and methods for studying group interactions should be altered to better understand these social phenomena.

One area that may provide an excellent research opportunity is the investigation of how diversity (e.g., differences in gender, race, ethnicity, and other characteristics) influences small group interaction. For example, Larkey (1996) says, "employees tend to interact with those who are more like themselves . . . This mechanism repeats itself in workgroups. From simple demographic differences, patterns of communication can be predicted that include some people and exclude others and preexisting network ties" (p.476). I saw this several times as we separated on the walks to the hotel, on the lunch breaks, and other times along gender, racial, and organizational affiliation lines. For instance, members of the team who worked at the board of directors tended to spend their free time together because they knew each other and worked together in the past. Members of the team who worked at the business unit level formed a bond because they were more familiar with the level of work performed in their respective organizations. In the after hour social gatherings where all workgroup members participated, there was an initial uneasiness as we attempted to find areas of similarity and comfort through our conversations. As organizations become more diverse and the use of small groups increase,

understanding how diversity issue influences group interaction is critical to enhancing effectiveness.

Gardenwartz and Rowe (1994) identified four layers of diversity in workgroups: personality, internal dimensions, external dimensions, and organizational dimensions. All of these layers have some impact on the group's performance and effectiveness. The personality dimension is the character attribute of each member of the group. Gardenwartz and Rowe (1994) defines the internal dimensions as age, gender, race, ethnicity, sexual orientation, and physical ability. External dimensions are geographic location, personal habits, and work experience. The organizational dimensions are functional level, work content, division/department/unit/group, seniority, work location, and management status. The diversity literature identifies several areas that may have some relationship to this study, considering the wealth of diversity represented in the research environment. Unfortunately, due to the short time frame of the team's existence and this research, issues related to diversity were not easily identifiable and the study prohibited a deep exploration of how the diversity dynamics may have influenced the group's effectiveness.

This research experience was rewarding for me and exposed some unexpected findings that I believe contribute to the literature on small group interaction. Use of participant observation allowed an insight that may not have been captured in any other form. Perspectives from other researchers in similar settings are needed to expand our understanding of group dynamics and opportunities exist for use of the qualitative paradigm to explore many other questions on the research of small group development, interaction, and leadership.

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Author Note

[+]*Anthony D. Wilbon, Ph.D., M.B.A.* is an Assistant Professor at Morgan State University. He received his doctorate at George Washington University's School of Business and Public Management in Washington, D.C. His primary field of study is Management of Science, Technology and Innovation and his supporting field is Strategic Management. Mr. Wilbon has a Master of Business Administration from Howard University and a Bachelor of Science Electrical Engineering from Michigan State University. Over the past 12 years, he has worked as a consultant and senior analyst on information technology projects for many leading international firms. His research interests are in management of technology and strategy in small to medium sized enterprises. He can be reached at 14201 Christian Street, Upper Marlboro, MD 20772. His e-mail address is email: awilbon@jewel.morgan.edu.

Footnotes

[1]All names used in this paper have been changed to ensure the confidentiality of the research participants.

[2]Future references in this paper to the research log are in the form of: Log:Pxx,Lxx. For example, Log:P28,L19 refers to page number 28, line number 19 in the research log.

[3]Note: Since executives at the BUs are evaluated based on findings from these types of reviews, they have an increased sensitivity about potentially damaging results.

Anthony D. Wilbon