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Shared Leadership in a Department of Defense Acquisition Project Management Team

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SHARED LEADERSHIP IN A DEPARTMENT OF DEFENSE ACQUISITION PROJECT MANAGEMENT TEAM

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ABSTRACT

Integrated product teams (IPTs) manage the acquisition of modernized military equipment. Since acquisition processes are complex and multi-functional, product management team leaders are not experts in every phase of their projects. Therefore, team leaders rely on member expertise by serving as social architects to orchestrate collaborative work group cultures required to accomplish the teams' missions through shared leadership (Stagnaro & Piotrowski, 2013). Since a comprehensive search of literature revealed a lack of published field studies on shared leadership in product management teams, an in-depth qualitative study was conducted on a successful acquisition IPT that suggested the team portrayed the characteristics of shared leadership.

INTRODUCTION

Integrated product teams (IPT) are employed within acquisition project management offices inside the Department of Defense (DoD) to develop, procure, and sustain modernized equipment for the military (Office of the Under Secretary of Defense (OUSD), 1998a). An IPT is a multidisciplinary team established with a designated team leader by the responsible project manager (OUSD, 1998a). The IPT handbook charges team leaders with ten responsibilities that includes leading the team (OSUD, 1998b). Unfortunately, the handbook does not provide specific guidance on how the team should be led (OSUD, 1998b).

Based on the fact that project management processes are complex and multi-functional (Ng & Walker, 2008), project management team leaders are not experts in every phase of their acquisition projects (OUSD, 1998b). Consequently, to achieve team goals leaders must rely on expertise from team members by establishing a collaborative team environment. Unfortunately, the project management team leader's focus is typically on achieving project cost, schedule and performance constraints rather than facilitating team effectiveness (Valaich, George, & Hoffer, 2006). Stagnaro and Piotrowski (2013) noted that the basis for team performance is the type of behaviors portrayed by the leader. Muller & Turner (2007) posited that the leadership style of the program manager and team leader effects the success of the project.

Although most leadership paradigms have traditionally been focused on vertical leadership (Pearce & Sims, 2002) with one central leader that has authority over the team, its actions and outputs (Carson, Teslulk, & Marrone 2007), it has recently been suggested in scholarly literature

The Coastal Business Journal
ISSN: 2163-9280 Spring 2016
Volume 15, Number 1
that shared leadership in teams produces high levels of performance (Graham, 2007). Furthermore, recently published scholarly literature has also indicated that project management team leaders may be able to employ shared leadership by serving as a "social architect" to orchestrate (Stagnaro & Piotrowski, 2013, p. 2) a collaborative work group culture required to accomplish the teams' missions. Because shared leadership can occur in an organization with or without a designated leader (Carson et al., 2007), the purpose of the study was to determine if shared leadership is applicable for use within DoD's acquisition processes that use project management teams with designated leaders, which is a significant departure from the historical use of vertical leadership paradigms such as situational leadership (Hersey & Blanchard, 1977) within this context. To fulfill this purpose the study examined the following research question: Is shared leadership actually being practiced within one of the more successful acquisition project management teams despite the fact that the concept of shared leadership posited by Gibb (1954) is currently not part of the lexicon within DoD.

Although empirical research has been conducted over the last decade on shared leadership (Sanders, 2006; Carson et al., 2007; Small, 2007; Solansky, 2008) with students in a laboratory setting, little field research has been conducted on shared leadership. Although Woods and Fields (2007) conducted an empirical field study on shared leadership within an ecclesial context, and Cox (2009) conducted a field qualitative phenomenological study on the shared leadership of business representatives from a regional consortium, these studies were not focused on teams within a project management context. Consequently, a qualitative study was conducted to capture the perceptions of the leadership experiences and group dynamics from the leader and members of a defense acquisition IPT that has the reputation of being highly successful. The research was focused on understanding the collaboration and decision-making within the IPT.

SHARED LEADERSHIP THEORETICAL BACKGROUND

The idea of shared leadership was first posited by Gibb (1954), which was referred to as leadership distributed between two or more group members. Ensley, Hmieleski and Pearce (2006) posited that shared leadership is a "team process where leadership is carried out by the team as a whole" (p. 220). Shared leadership emerges within the team when there is a spread of influence between various team members without regard to the type of effectiveness of the influence (Carson et al., 2007) since leadership is considered the influence of others (Yukl, 20013). The members mutually lead one another to accomplish the team's goals through the process of reciprocal influence (Avolio, Sivasubramaniam, Murry, Jung, & Garger, 2003).

Although shared leadership's primary characteristics are collaboration and shared decision-making (Stagnaro & Piotrowski, 2014), it is key to note that shared leadership can occur in an organization with or without a designated leader (Carson et al., 2007). This is because many other leadership styles can be integrated into shared leadership (Hoch & Dulebohn, 2013). The sharing of leadership, which includes decision-making, is not necessarily equal among all team members (Seibert, Sparrowe, & Linden, 2003).

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

Stagnaro and Piotrowski (2014) maintained that shared leadership is appropriate in contexts like information technology projects where the project manager, who is accountable, is not the expert. Faraj and Sambamurthy (2006) described the information technology team environment as one where highly skilled employees collaboratively work interdependent complex tasks required to accomplish the project. Since the project manager is typically not the expert in all areas associated with complex projects, project leadership requires collaboration between team members that results in the project leader being more of a "social architect" to orchestrate group activities (Stagnaro & Piotrowski, 2013, p. 224). Within this context the project leader does not necessarily have a reduced leadership role (Stagnaro & Piotrowski, 2014). Instead the project team leader, as an orchestrator, creates a cooperative climate within the team culture that includes collective decision-making (Stagnaro & Piotrowski, 2014). Consequently, project leadership involves "those work activities that influence the motivation, knowledge, affect or practices of all team members" (Stagnaro & Piotrowski, 2013, p. 224).

Shared Leadership Model

Carson et al. (2007) theorized a model based on two assumptions: 1) shared leadership occurs only when members are willing to influence the team's direction and influence other member's motivation towards and support for the group; 2) all the team members must accept collective leadership by multiple members. The model consists of two antecedent conditions: one internal and one external (Carson et al., 2007).

The internal team environment includes a "shared purpose, social support, and voice" (Carson et al., 2007, p. 1222). Shared purpose engenders motivation, empowerment and organizational commitment (Linden, Wayne & Sparrowe, 2000), which enhances the team members' inclination to assume shared leadership (Avolio, Jung, & Sivasubramaniam, 1996). Social support encourages cooperation and member commitment to group outcomes (Kirkman & Rosen, 1999) through member recognition and appreciation of member ideas (Marks, Mathieu & Zaccaro, 2001). High levels of voice encourages team member participation and proactivity in accomplishing team goals resulting in shared leadership (Carson et al., 2007).

The external environment includes team coaching (Carson et al., 2007) that encourages (Morgeson, 2005) member initiative and shared commitment (Hackman & Wageman, 2005). Supportive coaching by external leaders, like program managers, provide motivation and consultation on areas where the team requires external assistance (Hackman & Walton, 1986), which stimulates the emergence of shared leadership (Carson et al., 2007).

Enhanced Shared Leadership Model

Hoch and Dulebohn (2013) proposed a more complex holistically structured model of shared

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

leadership that includes antecedents, mediating, and moderating variables.

The antecedents include: structural supports for the team, the nature of external vertical leadership, and team member characteristics (Hoch & Dulebohn, 2013). The structural supports, which encourage greater team member participation, consist of "perceived team support" (PTS), "information" and "rewards" (Hoch & Dulebohn, 2013, p. 118). PTS includes members' perceptions that the team cares about their welfare and appreciates their ideas and efforts (Bishop, Scott, & Burroughs, 2000), which is similar to the first antecedent condition posited by Carson et al. (2007). The sharing of detailed information between members on the importance and integration of member tasks with team goals is an important structural support for shared leadership (Hoch & Dulebohn, 2013). Finally, team member participation is enhanced by fair reward systems that recognizes member contributions (Van Herpen, Cools, & Van Praag, 2006).

Leadership external to the team, which is typically vertical, significantly impacts the team and the emergence of shared leadership (Hoch & Dulebohn, 2013). Similar to Carson et al.'s (2007) external coaching antecedent, empowerment and positive personalized leadership behaviors of external leaders from high-leader member exchange relationships or individualized consideration provided by transformational leaders influence member attitudes and behaviors by creating a climate that fosters the emergence of shared leadership (Hoch & Dulebohn, 2013).

Hoch & Dulebohn, (2013) contended that members that exhibit self-leadership, have an internal locus of control, and possess a proactive personality are more likely to engage in shared leadership. Self-leadership consists of the self-regulation activities that results in individual self-motivation and self-direction (Houghton & Neck, 2002). Members with an internal locus of control tend to actively engage in influencing outcomes within their environment (Boone, Van Olffen, & Van Witteloostuijn, 2005). Members with proactive personalities tend to take the initiative in problem solving as change agents (Brown, Cober, Kane, Levy, & Shalhoop, 2006).

The mediating variables are generated from the internal team processes. They include the "cognitive," "affective," and "motivational" team processes (Hoch & Dulebohn, 2013, p. 121). Cognitive team processes are mental models (Hoch & Dulebohn, 2013) developed through enhanced information sharing (Solansky, 2008). Affective team processes (Hoch & Dulebohn, 2013) include conflict control (Zaccaro, Rittman, & Marks, 2001) and member well-being (George, 1990). Motivational team processes include: team "cohesion" and "potency" (Hoch & Dulebohn, 2013, p. 121). Potency is the members' views that the team is capable to address tasks in different situations (Gully, Incalcaterra, Joshi, & Beaubien, 2002).

The moderating variables include "interdependence, task complexity, and team virtuality" (Hoch & Dulebohn, 2013, p. 122). Teams with tasks that are highly interdependent and complex will have an increased need to share information and coordinate efforts between members thereby increasing the propensity for shared leadership (Pearce & Manz, 2005). Teams with geographical dispersed members tend to share leadership (O'Leary & Cummings, 2007) since virtual teams

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

typically have reduced centralized vertical leadership structures in comparison to routine in person organizations (Bell & Kozlowski, 2002).

Model Impacts

The variables posited by Hoch and Dulebohn (2013) impacts the emergence of shared leadership within project management teams that are responsible for complex projects. The successful completion of these projects requires highly skilled team members capable of sharing expertise through cooperation and coordination to perform interdependent tasks (Hoch & Dulebohn, 2013). The intricacy of the decisions associated with these complex projects promotes the use of shared decision-making and leadership (Hoch & Dulebohn, 2013). Consequently, shared leadership can be expected to improve team performance on complex projects with interdependent tasks (Day, Gronn, & Salas, 2004; Carson et al., 2007).

METHODOLOGY

Since prior studies suggested that team performance (Carson et al., 2007), member commitment (Linden et al., 2000), cooperation (Kirkman & Rosen, 1999), and job satisfaction (Wood & Fields, 2007) are improved in teams with shared leadership, it was posited that shared leadership should probably be applicable for use in DoD's multi-functional acquisition IPTs even though shared leadership is not espoused within the DoD. Consequently, a qualitative case study was conducted since empirical field studies on shared leadership have not been published on teams within a project management context. The study was conducted by examining the leadership experiences and perceptions within an IPT. A qualitative research methodology was selected for the study since it provided a means to examine in depth a team's leadership experiences to capture a wealth of detailed information (Patton, 2002) from a purposeful intensity theoretical-based sample that participated in the semi-structured focus group interview using the open ended questions contained in tables 1 and 2. These questions were adapted from the shared leadership scale that was used by Wood and Fields' (2007) study of leadership within an ecclesial context. Since Carson et al. (2007) posited that shared leadership can be enhanced through an antecedent of external support from external supportive coaching, a question on external support was included in the interview guide even though it was not included in Wood & Fields (2007) shared leadership measure.

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

TABLE 1
Interview Guide – Shared Leadership in Acquisition Integrated Product Teams

Characteristic	Questions
Collaboration	1. How does your team establish its goals? 2. How was the vision for your team generated? 3. How is information shared within the team? 4. How are team members' evaluated or held accountable for their responsibilities? 5. How does your team handle circumstances like members being overwhelmed, which could impact meeting obligations?
Decision Making	6. How are problems identified, and diagnosed within the team? 7. When faced with a problem, how does the team resolve problems or decide on the best course of action? 8. How are differing opinions and perceptions handled within the team? 9. How are resource allocation priorities decided within the team?
External Support	10. What support is provided by external leadership when needed by the product development team?

The focus group consisted of eight individuals from a ten member IPT that was nominated by the project manager. The IPT members varied in age from 23 to 60. The majority of the study participants were in their thirties. The team included a mix of members: two military, five civil servants, and three contractors. The team leader (personal communication, April 14, 2015) noted that within the defense acquisition community his team members' could be considered more mature in physical age than members in most other teams. The team was gender balanced with all members having at least a bachelor degree. Eight of the ten members, four women and four men, were available to participate in the study's focus group interview. The members' defense acquisition experience varied considerably. One military member had only one year of experience, while one senior civilian had 19 years of experience. The average experience of the team members was eight years. The test engineer (personal communication, April 14, 204) pointed out that the team members' professional experience could be categorized as mature in comparison to the experience levels in other project management teams.

The study's unit of analysis was selected not only for their exceptional acquisition product management achievements, but also because the group was considered "very collegial, trusting, [and] caring" (project manager, personal communication, April 1, 2015). The project manager (2015) noted that the team was not only filled with "go getters and doers," but "people who work well together." The team members "are truly like close friends," and appear to be "tied together like a chemical bond" (project manager, 2015). Consequently, it was suspected that this exemplary IPT was an intensity sample where shared leadership may be observed if it exists within the context

The Coastal Business Journal
ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

of defense acquisition IPTs.

TABLE 2
Interview Guide – Demographic Questions

Characteristic	Questions
Experience	1. How many years' experience do you have with the acquisition process? 2. How many years' experience do you have as a team leader?
Gender	3. What is your gender?
Functional Expertise	4. What is your functional area expertise? (e.g. program management, systems engineering, test & evaluation engineering, acquisition logistics)
Age	5. What is your age? (e.g. 20-29, 30-39, 40-49, 50-59, 60-69)
Employment Type	6. What is your source of employment? (e.g. military, civil servant, or contractor)

Finally, since leadership is an experiential phenomenon of the leaders' influence with their followers (Yukl, 2013), a thematic analysis (Hartman & Conklin, 2012) of the leadership experiences and perceptions was conducted from the IPT's perspective by analyzing the transcript from the focus group interview with the IPT using a combination of in vivo, descriptive, pattern, and axial coding to identify themes derived from the interview. These themes were used to generate an operational model diagram depiction (Saldana, 2013) of the essence of the product development team's leadership experiences and perceptions.

RESULTS

A thematic qualitative study was conducted on an exemplary integrated product development team (IPT) with a reputation of being highly successful. Study results derived from the focus group interview is contained in the 75 initial codes found in table 3. These in vivo and descriptive codes

Table 3

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

Initial Codes – from the Focus Group Interview of the Acquisition Integrated Product Team

Question	Initial Codes
How does your team establish its goals?	• "It wasn't top down, it wasn't stove piped" (Lead system engineer) • Started with high level Integrated Master Schedule from the PM" (lead test engineer) • "Each function area" came up "with their own goals and objectives" (lead test engineer) • Functional leads identified what "their lines [in the schedule] would look like" (lead test engineer) • Group assembled executable plan from function leader inputs based on "how they would fit together" (IPT Leader) • "Stacked the [functional] lines on top of each other and then moved stuff around where it fit" (lead test engineer) • Brought "it together as a team and modified it from there" (lead system engineer) • Required "independent motivation" by functional leads (IPT Leader)
How was the vision for your team generated?	• "Get everything we need to hit the milestones." (test engineer) • "Don't be the cog in the wheel" (IPT leader) • "Get the warfighter what the warfighter needs" (Scientist) • "Putting the warfighter first" (Team leader)
How is information shared within the team?	• Primarily through emails (system engineer) • "Do not hold anything back copy everybody" (system engineer) • Weekly staff meeting for overviews to keep "everybody up to date" (Test Engineer 2) • "Keep everyone informed on what is going on" (IPT leader) • Talk out shared stuff that is not understood (IPT leader)
How are team members evaluated or held accountable for their responsibilities?	• "More important to hold the program accountable than the individual people because everyone is going towards the same goal" (IPT leader) • "Up down then across the team" (IPT lead system engineer) • "Group reviews" (IPT leader) • IPT leader checks on how the tasks are coming along" (Deputy IPT leader) • "Reciprocated respect for getting the product where it needs to be" (IPT lead test engineer) • Requires communications feedback (test engineer) • Assessment of impacts and priorities (since if everything is a priority, nothing is a priority) (IPT leader)

The Coastal Business Journal

ISSN: 2163-9280

Spring 2016
Volume 15, Number 1

Question	Initial Codes
	• "To worry about accountability usually means the person isn't a very good self-starter" • Team is filled with "real good self-starters" (IPT leader) • Accountability facilitated by having structure that includes detailed assignment, resources, and suspense (IPT lead test engineer)
How does your team handle circumstances like members being overwhelmed, which could impact meeting obligations?	• Team members offering help when others are overwhelmed (test engineer) • "The majority of the team was overwhelmed" (IPT leader) • "We depend on each other and we know it" (IPT lead system engineer) • "Everybody is dedicated to getting it done" (test engineer)
How are problems identified and diagnosed within the team?	• "As we go" (IPT leader) • "It wasn't a lot we did ahead of time" (IPT leader) • "Going head first into something and then when it comes up identify and adjust" (IPT leader) • The IPT has "a strategy laid out. . . and a path of steps you are going for to know when you are out of line" (IPT lead systems engineer) • When the team sees "an issue coming up" they "don't sit on it;" instead the team comes "up with ways to address it" (IPT lead systems engineer) • Requires both technical leaders as well as programmatic leader to ensure that the IPT gets accurate technical information required to make adjustment (test engineer) • IPT leader "sees the big picture" "to make sure that things are on track and" help "where needed" (test engineer)
When faced with a problem, how does the team resolve problems or decide on the best course of action?	• Be "truthful about it" (IPT leader) • Don't "try to hide problems" (IPT leader) • Being communicative (IPT leader) • "Communication is the hardest thing to do" (IPT leader) • "The key is no one is afraid to voice their opinion" (IPT leader) • Getting help from the team and bouncing ideas off people to get different perspectives to formulate a way to resolve the issue (IPT lead test engineer) • "Can't be afraid to ask questions, and can't be afraid to be wrong" (test engineer)

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

	• Succinctly explain ideas (IPT lead systems engineer) • Communicate the problem in terms appropriate for the audience (IPT leader) • Build alliances through relationships (IPT lead systems engineer) • "Take time with them" (IPT lead systems engineer) through "one on one in person" discussions (IPT leader) • Talk to stakeholders and "see what is important to them" (IPT lead systems engineer) in order to "figure out what makes them tick and what they are really interested in" (IPT leader) • The IPT leader "makes the final decision based on everyone's input" (IPT lead systems engineer) • "I don't like to disagree with the function areas" leads since they "know what they are talking about" (IPT leader) • Communicate rationale for decisions (IPT leader) • Each functional area lead influences the entire decision making process (IPT leader)

Question	Initial Codes
How are differing opinions and perceptions handled within the team?	• "Talk everything out" (IPT leader) • "People are honest with their opinions" (IPT lead test engineer) • "Lot of strong opinions" (IPT lead test engineer) • "People are not afraid to say their opinions" (IPT lead test engineer) • The IPT leader "allows us to have our opinion and speak our opinions" (IPT lead test engineer) • The IPT leader "hears us" (IPT lead test engineer) • Team supports the IPT leader's decisions (test engineer) • Professional differences of opinion on tasks (IPT leader) • "I think the worst thing you can do if you have a difference of opinion is to hold it in. And a good thing about the team is that I don't think that anybody holds it in" (IPT leader) • There are some unresolved conflicts with some external stakeholders due to differences in agenda and motivation (chief scientist) • To resolve these conflicts must understand what "principles and motivating factors" drive these stakeholders (chief scientist) • Must try to frame problems in "language that is important to them, which is not necessarily the most straight forward language that we would use" (chief scientist)
How are resource allocation	• Based on "the strategy we all agreed on . . . you realize from there that here is where we need to prioritize" (IPT leader)

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

priorities decided within the team?	• Products "take a lot of coordination." If the product "is going to drive us so we need more resources to get these things done" (IPT leader) • Based on "meshing" together of functional area strategies as a "building block" (IPT leader)
What support is provided by external leadership when needed by the product development team?	• The project manager puts "the people first" (IPT leader) • He is concerned about the people's wellbeing (IPT leader) • The project manager "is not autocratic" (IPT leader) • The product manager is not insulated but interacts with his people (test engineer) • "I appreciate the management's allowance and empowerment of the people to do and complete" the tasks (IPT lead test engineer) • "I have liberties to execute it without constantly having to check in" (IPT lead test engineer) • Resources from the PEO help the team to prepare the right way and to address issues that can't be resolved at the PM level (IPT leader) • "The number one thing I appreciate from management" is that they "have your back" (IPT lead systems engineer) • The project manager "doesn't under value anybody" (IPT deputy leader) • "Everyone's valued no matter what their level is" (IPT deputy leader) • The project manager "would work with us and was understanding, he didn't admonish us for being honest" (IPT deputy leader)

were derived from the focus group interview with the study's purposeful intensity theoretical-based sample.

The analysis of the 75 in vivo and descriptive first cycle codes contained in table 3 using pattern coding (Saldana, 2013) revealed 48 different categories. The analysis of these categories using axial coding (Saldana, 2013) generated seven different themes. The themes listed in table 4 included shared purpose, social support, voice, internal self-leadership, external positive personalized leadership, enhanced team processes, and shared decision-making. The findings from the focus group interview comments illustrated how this purposeful intensity theoretical-based unit of analysis exhibited these seven themes.

TABLE 4

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

Shared Leadership Themes of the Defense Acquisition Integrated Product Team

Theme	Description
Shared Purpose	Shared understanding and efforts on team's goals and objectives
Social Support	Reciprocal attachment and support between team members
Voice	Participation and input of team members to group activities and decisions
Internal Self-Leadership	Member self-regulation generating self-motivation and self-direction
External Positive Personalized Leadership	Empowerment based on high-leader member exchange relationships and individualized consideration
Enhanced Team Processes	Cognitive, affective, and motivational team processes resulting from shared leadership
Shared Decision Making	Collective decision making

The team leader (2015) pointed out that the group's purpose was collaboratively developed based upon agreed upon goals that were a conglomerated "meshing" of the team's functional objectives. These functional area objectives were "assembled" together by the entire group and modified using a "tailorable process" to develop an executable plan (team leader, 2015). This collaboration appeared to generate a shared purpose within the team, which Carson et al. (2007) noted "exists when team members have similar shared understandings of their team's primary objectives and take steps to ensure a focus on collective goals" (p. 1222).

Additionally, the lead system engineer (personal communication, April 14, 2015) indicated that team members depend upon one another. They reciprocally support (lead test engineer, personal communication, April 14, 2015) and help one another (test engineer, 2015) especially when team members are overwhelmed (test engineer, 2015). This is because "everybody cares about everybody" (project manager, 2015). These interview responses suggested that social support is probably demonstrated by the IPT members, who have a reciprocal attachment based on mutual support and care for one another as posited by Hoch and Dulebohn (2013).

Furthermore, member comments strongly suggested that the IPT leader not only allows but encourages members' active participation and input. The IPT members were not "afraid to voice their opinion" (team leader, 2015). The lead test engineer (2015) noted that IPT members "are honest with their opinions (lead test engineer, 2015). The IPT's lead test engineer (2015) also pointed out that the team leader "allows us to have our opinion and speak our opinion," which includes bouncing ideas off people to get different perspectives to formulate a way to resolve issues. The team leader (2015) maintained that "the good thing about the team is that we talk

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

everything out and everybody comes to a consensus." As a result, it appeared that the team exhibited what Carson et al. (2007) referred to as voice, which "connotes participation and input" "into how the team carries out its purpose" (p. 1222).

Team member responses suggested that the members possessed strong internal self-leadership traits. The IPT leader (2015) noted that his team is filled with "real good self-starters" who are "dedicated to getting it done" (test engineer, 2015). The team leader (2015) pointed out that his functional area leads are independently motivated. The team members "don't sit on" problems waiting for guidance once problems are recognized, instead they proactively come "up with ways to address" the problems (lead systems engineer, 2015). Consequently, the team members seemed to display internal self-leadership that consists of the self-regulation activities that results in self-motivation and self-direction as posited by Houghton and Neck (2002).

The lead system engineer (2015) noted that the biggest support to the IPT comes from the project manager who established the team. Instead of being autocratic, the project manager listened to people's concerns (team leader, 2014). The project manager did not admonish the team for being honest and open about issues (deputy team leader, personal communication, 2015). This was because the project manager values everyone "no matter what their level is" (test engineer, 2015). The project manager is concerned about the well-being of the people within his organization (team leader, 2015). The project manager empowered his "people to do and complete the tasks" (lead test engineer, 2015) while simultaneously protecting them by watching their backs (lead systems engineer, 2015). Therefore, it appeared that the project manager, who established the IPT, displayed positive personalized leadership traits. Personalized leadership includes high-leader member exchange relationships and empowerment (Hoch & Dulebohn, 2013), which is similar to the leadership behaviors portrayed by the project manager.

The focus group interview revealed that even though knowledge is power, the team leader was willing to share the power with the entire team. Within the IPT everyone is kept "informed on what is going on" (team leader, 2015) by copying everybody (lead system engineer, 2015). Nothing is held back (lead system engineer, 2015). The team talks out information "that is not understood" (team leader, 2015). Information sharing allows the team to see "an issue coming up" and to proactively develop "ways to address it" (lead systems engineer, 2015). The information sharing within the IPT seemed to generate what Solanksy (2008) referred to as cognitive team processes that are developed through enhanced information sharing.

In addition to the team members caring about one another (project manager, 1995), the IPT noted that it manages task conflicts by allowing members to share professional differences of opinion (team leader, 2015). Within the IPT these differences of opinion are always kept at a professional level (team leader, 2015) so that they do not degrade into relationship conflict that is characterized by member hostility and poor morale and motivation within a group (Miranda & Bostrom, 1994). The care and concern members have for one another and the team members' ability to keep conflicts at the task level appeared to generate affective team processes, which leads

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

to "enhanced understanding, improved decision making, greater team confidence and effectiveness, higher quality ideas and innovation, greater affective acceptance of group decisions, and increased constructive debate" (Anderson, 2009, p. 83).

Furthermore, the team seemed to be filled with motivated self-starters. The team leader (2015) noted that his functional leads exhibited "independent motivation." The lead test engineer (2015) pointed out that "you have to support each other" to be successful. This included commitment to make the IPT leader and function leads successful (test engineer, 2015). The lead test engineer (2015) contended that we "have a group of people that don't want to screw it up;" they have personalities "that want to do well and don't want to fail." Consequently, it appeared that the IPT displayed what Zaccaro et al. (2001) referred to as motivational team processes. The combination of cognitive, affective and motivational team processes exhibited by the unit of analysis can be considered as enhanced team processes as posited by Hoch and Dulehohn (2013).

Lastly, the IPT indicated that the team leader "makes the final decisions based on everyone's input" (lead systems engineer, 2015). The lead test engineer noted that the team leader "allows us to . . . speak our opinions" and "hears us." In this way each of the functional area leads influenced the entire decision making process (team leader, 2015). Although the team leader (2015) stated, "I don't like to disagree with the functional area" leads since they "know what they are talking about," at times non-consensus decisions are required to be made. The lead test engineer (2015) indicted the group's support for the IPT leader's decisions even if we "may not agree." When a non-consensus decision had to be made within the IPT it included a feedback loop where the team leader communicated the rationale for his decisions back to the team members (team leader, 2015). The information feedback from the IPT lead seemed to have helped to maintain group cohesion and made this project management office different (test engineer, 2015) despite the inherent stress of continual cost, schedule, and performance pressures. Although the team leader was ultimately responsible, decisions within the IPT were collective and cooperative, which suggested the existence of shared decision-making within the team. Since shared decision-making can occur in an organization with a designated leader (Carson et al., 20007), shared-decision-making is not necessarily equal among all team members (Seibert et al., 2003), which is what appeared to occur within the IPT.

DISCUSSION

An examination of the themes and their interrelationships generated from the analysis of the results strongly suggested that shared leadership was probably practiced within the study's unit of analysis. The seven themes derived from the analysis of the focus group interview transcript was used to create an operational model diagram.

Shared Leadership in the IPT

The results of the analysis of the team's responses to the research questions during the focus group

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

interview strongly suggested that the team exhibited the following characteristics of shared leadership, which appears to be the synthesis of some but not all of the parts of the two shared leadership models (Carson et al., 2007; Hoch & Dulebohn, 2013) found in scholarly literature. The team appeared to display a shared purpose as evidenced by the team's description of how they collaboratively developed their goals and objectives, and how they allocated resources based on the strategy the team "all agreed on" (team lead, 2015). Carson et al. (2007) contended shared purpose is a "dimension of an internal team environment enabling shared leadership" (p. 1222). The team also seemed to provide social support to its members, which Carson et al. (2007) maintained is another "dimension of an internal team environment that supports shared leadership" (p. 1222). This support was exhibited by the care members have for one another (project manager, 2015), and their willingness to reciprocally support one another especially when team members are overwhelmed (lead test engineer, 2015). Additionally, the team's leadership encouraged members to voice their opinions and provide inputs (lead test engineer, 2015). IPT members are not "afraid to voice their opinion" (team leader, 2015). Carson et al. (2007) posited that a dimension of an internal team environment that enables shared leadership is voice.

Furthermore, Hoch and Dulebohn (2013) suggested that self-leadership is associated with shared leadership. It was noted by the IPT leader (2015) that his team was filled with self-starters who proactively addressed issues immediately after they become apparent. Hoch and Dulebohn (2013) also posited that shared leadership in teams is facilitated by positive personalized leadership by managers external to the teams. The project manager that oversaw the study's unit of analysis was noted to put his people first, show concern about his people's well-being (team leader, 2015), and empower his subordinates (lead test engineer, 2015).

Hoch and Dulebohn (2013) also posited that the results of shared leadership are cognitive, affective, and motivational team processes. The IPT appeared to have open inclusive information sharing processes, and managed task conflicts effectively so that they do not degenerate into destructive relationship conflicts (Anderson, 2009). Furthermore, the IPT leader (2015) noted that his people are self-starters who are independently motivated and committed to the success of the group.

Lastly, it seems that the IPT employed a collaborative inclusive decision-making style that: encouraged the sharing of member ideas and perspectives (lead systems engineer, 2015), and included leader feedback on the rationale for decisions once they are made (team leader, 2015). This decision-making approach appeared to be driven by the empowerment of the functional leads and team members by the team leader to influence the decision-making process through their inputs based on their expertise, which allowed a member with expertise to "predominate" whenever the team addressed technical areas requiring explicit expertise (OUSD, 1998a, p. 2). Since shared decision-making is not necessarily equal among all team members (Stagnaro & Piotrowski, 2014), it can occur within a group such as this exemplary IPT that had a designated leader who encouraged the empowered collaborative participation of team members.

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

Since the primary characteristics of shared leadership are collaboration and shared decision-making (Stagnaro & Piotrowski, 2014), both of which the IPT appeared to have displayed, the results and findings from the focus group interview strongly suggested that the IPT probably practiced shared leadership based on the concept posited by Gibb (1954) even though the terminology is not included as part of the lexicon within the DoD. This is because "leadership may be exhibited both by formally selected leaders," like the IPT lead, "and by informal leaders" (Yukl, 2013, p. 3) that emerged from within the group through their expert or referent power. Based on the expertise of these informal leaders, they "influence what the group does, how it is done, and the way people in the group relate to each other" (Yukl, 2013, p. 3). The expertise of various group members appeared to have resulted in the emergence of informal leaders within the IPT. Since the IPT leader seemed to not display the characteristics normally found in an autocratic leader, the informal leaders within the team have been able to use their expertise to significantly positively influence the group based on the group members shared purpose by predominating over discussions whenever the team addressed technical areas within the project that required the informal leaders' explicit expertise (OUSD, 1998a).

Operational Model Diagram.

The thematic analysis of the focus group interview transcription suggested that these seven themes are probably interrelated as depicted in the operational model diagram portrayed in figure 1. Shared leadership within an IPT was facilitated by the non-autocratic positive personalized leadership of the project manager who founded the team. Shared leadership appeared to emerge when the team was empowered by the project manager who used a coaching and mentoring style of leadership. Second, the emergence of shared leadership within an IPT appeared to be enabled when the team leader established a culture of cooperation and collaboration within the team. This culture can be described as one that: enabled the development of a shared purpose embraced by the entire team, encouraged voice with the unfettered sharing of opinions that are heard and seriously considered by the team leader and the group, and provided social support within the team. Third, shared leadership seemed to have materialized when the group contained members that displayed internal self-leadership characteristics.

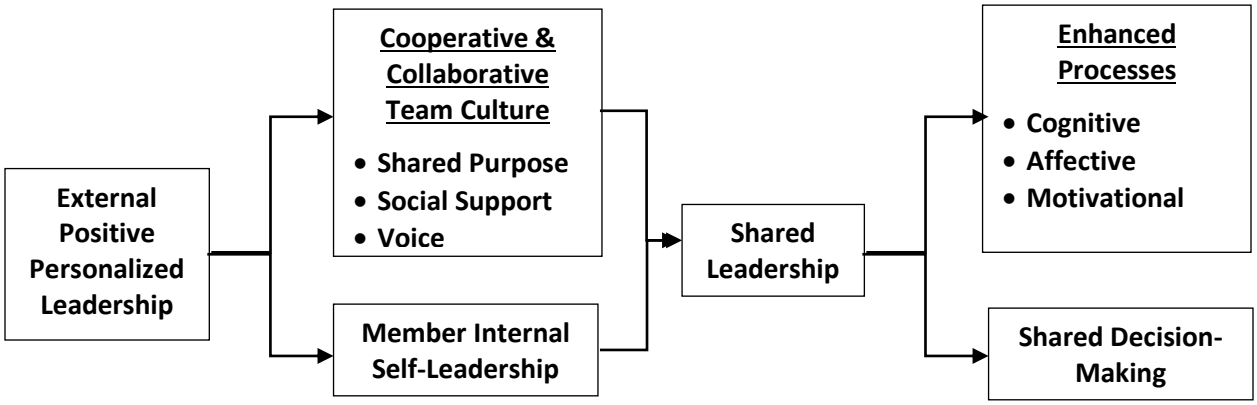
The outcomes of shared leadership within the IPT appeared to include enhanced team processes and shared decision-making. These enhanced cognitive, affective, and motivational team processes encouraged conflict control, and the open sharing, rather than the suppression, of ideas. These seemed to support member well-being based on the fact that members feel valued when they are encouraged to participate and their opinions are heard and seriously considered by the team leader and the group. Since it has been posited that affective team members have increased organizational commitment (Eizen & Desivilya, 2005; Meyer & Allen (1991), these members tended to display greater motivation "to work hard to achieve team goals and desired outcomes" (Zaccaro et al., 2001) especially when group participation was facilitated by such motivational processes as empowerment.

The Coastal Business Journal
ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

Shared leadership within an IPT may also have possibly occurred as a result of the team's cooperative collaborative culture that encouraged team discussions about impending decisions related to emerging issues and problems. This seemed to occur around a shared purpose in an environment where members feel safe based on the team's socially supportive environment. Finally, this appeared to have possibly improved team decision-making by enabling the team to examine all the possible alternatives thereby seemingly reducing the risks of groupthink (Cosier & Schwenk, 1990) or the team taking an inadvertent trip to Abilene (Harvey, 1988).

Figure 1

Operational Model Diagram of the Shared Leadership and Group Dynamics of an Exemplary Defense Acquisition Integrated Product Development Team



Comparison of the Operational Model Diagram with Models in Scholarly Literature

An examination of the operational model diagram of the IPT members' responses during the focus group interview revealed that it has some similarities to portions of the shared leadership models posited by Carson et al. (2007) and Hoch and Dulebohn (2013). The operational model diagram antecedents of external positive personalized leadership and member internal self-leadership have many similarities with the external vertical leadership and team member characteristic antecedents suggested by Hoch and Dulehohn (2013). The operational model diagram antecedent of cooperative and collaborative team culture is not one of the antecedents in either Carson et al.'s (2007) or Hoch and Dulebohn's (2013) models, but is similar to one of the principle characteristics of shared leadership posited by Stagnaro and Piotrowski (2014). Additionally, the cooperative and collaborative team culture antecedent exhibited by shared purpose, social support and voice is comparable with Carson et al.'s (2007) internal team environment antecedent. Finally, although shared decision-making is the other primary characteristic of shared leadership posited by Stagnaro and Piotrowski (2014), it appears to also be an outcome of shared leadership within the unit of analysis as depicted in the operational model

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

diagram.

The operational model diagram not only has some similarities with but is also different than the two previously published models. The study results provided no indication that rewards or information sharing were antecedents of shared leadership even though they are two of the important aspects of the structured support antecedent that were posited by Hoch and Dulebohn (2013). Additionally, the operational model diagram did not provide any indications of the existence of possible mediating or moderating variables as was posited by Hoch and Dulebohn (2013). The enhanced team processes were not mediating variables within the unit of analysis but appeared to be outcomes of shared leadership as depicted in the operational model diagram. Unlike either of the previously published shared leadership models, the study results also suggested that external positive personalized leadership may be more than just simply one of several antecedents to shared leadership. Instead, external positive personalized leadership, which was the biggest support to the IPT (lead systems engineer, 2015), appeared to serve as the foundation that facilitated the establishment of: a cooperative and collaborative culture within the team, and an environment that did not inhibit but encouraged the display of member internal self-leadership.

Consequently, it appears that although the antecedents of share leadership within the operational model diagram can be considered a combination of some but not all of the antecedents found in both Carson et al.'s (2007) and Hoch and Dulebohn's (2013) models, the operational model diagram for this study is also different from the two previously published models. Not only does the operational model diagram not include information sharing, rewards, mediating or moderating variables, but it emphasizes the importance of external positive personalized leadership in providing a foundation from which shared leadership can evolve within a team.

LIMITATIONS

This study was limited to a focus group interview with only one unit of analysis that was suspected to be a purposive intensity theoretical-based sample that provided in-depth insights about how shared leadership might be successfully employed within a defense acquisition project management context. Based on this limited sample size, the study did not provide an indication on the possible prevalence of shared leadership in other teams within the specific project management office that was examined, within the program executive office where the team resides, or even across the broader defense acquisition community. Consequently, it was not possible using the results from this study to definitively recommend that shared leadership should be adopted as the norm within the defense acquisition IPTs even though suppositions from previous non-field empirical studies in other contexts suggested that shared leadership enhances team performance (Carson et al., 2007). This is because there is the possibility of the existence of confounding factors (Cozby & Bates, 2012), such as the mix of personalities within the team or the physical and professional maturity of this specific IPT, that facilitated the emergence of shared leadership within the unit of analysis. Consequently, these other factors may possibly have had an impact on the operational dynamics of this successful acquisition IPT.

The Coastal Business Journal

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

Recommendation for Future Research

In order to determine the potential applicability of shared leadership as the potential norm for defense acquisition IPTs, further research is required to determine the impact of possible confounding variables, such as personality mix and member experience and maturity, on the successful implementation of shared leadership. Future studies should also attempt to identify the team leader's source of intrinsic and extrinsic motivation and inhibitions to establish a collaborative culture needed to theoretically facilitate the emergence of shared leadership. Research should also be conducted to determine the incidence of shared leadership within IPTs that are considered successful by the project managers that oversee the IPTs. Additionally, research is required to determine if there is any correlation between shared leadership and IPT success. This might be conducted by identifying the prevailing leadership paradigms that are employed within highly successful, marginally successful, struggling, and unsuccessful IPTs. This should provide credence to the possible supposition that shared leadership should be encouraged within the defense acquisition IPTs to facilitate their success even though shared leadership is not part of the DoD lexicon. Furthermore, quantitative empirical research is probably required to validate this study's conclusions to determine the possible generalizability of the theoretically speculative operational model diagram of these study subjects' shared leadership experiences and group dynamics to other project management contexts outside of the acquisition community. Furthermore, since teams that exhibit shared leadership are posited to have members that display shelf-leadership, which may have some similarities with Kelley's (1992) description of exemplary star followers, future research should also probably include an investigation of followership styles within acquisition project management teams.

CONCLUSION

A qualitative study on the group dynamics and leadership of an exemplary integrated product team within the defense acquisition context was conducted using an in-depth semi-structured focus group interview with open ended questions to address the research question of whether shared leadership can be practiced within a successful defense acquisition integrated product team. A thematic analysis was performed on the data from the interview transcript using multiple coding methods that included in vivo, descriptive, pattern, and axial coding (Saldana, 2013). The results of the first and second coding were further analyzed through a process known as "themeing the data," which identified interview themes and their interrelationships (Saldana, 2013, p. 175), that was used to create an operational model diagram (Saldana, 2013) that depicted the employment of the shared leadership paradigm within the exemplary IPT that was studied. The results of the thematic analysis and the operational model diagram (figure 1) strongly suggested that the unit of analysis portrayed the characteristics that literature attributes to shared leadership. The results of this study suggested that shared leadership may be employed by a successful IPT within the defense acquisition program management context. The construct of this instantiation of shared leadership within the defense acquisition context appears to be an integration of several but not all

ISSN: 2163-9280 Spring 2016
Volume 15, Number 1

of the key parts from Carson et al.'s (2007) and Hoch and Dulebohn's (2013) shared leadership models. Future research is required to determine the possibility that the shared leadership paradigm might have broader applicability within the defense acquisition project management organizations to help facilitate team success and to validate the theoretically speculative operational model diagram derived from the IPT focus group interview.

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Volume 15, Number 1

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