

2015

# Business Governance Best Practices of Virtual Project Teams

William James Hamersly  
*Walden University*

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# Walden University

College of Management and Technology

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William Hamersly

has been found to be complete and satisfactory in all respects,  
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2015

Abstract

Business Governance Best Practices of Virtual Project Teams

by

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MBA, Northcentral University, 2006

BS, American Intercontinental University, 2005

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

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## Abstract

The steady increase in project failure rates is leaving businesses searching for better integration techniques to virtualize their project environments. Through virtualization, organizations may have positive impacts on communities across geographical boundaries and resource constraints. The focus of this phenomenological study was to explore, via the experiences of successful project management practitioners, best practice strategies for integrating virtual project teams through data analysis. The conceptual framework included von Bertalanffy's general systems theory, decomposition model of business process and project management frameworks, and the recomposition approach. Twenty-two senior project managers with more than 5 years of experience managing virtual project environments participated in semistructured telephone interviews. The van Kaam process employing normalization and bracketing approaches in data analysis resulted in the emergence of 10 thematic categories. The 10 themes culminated in the identification of strategies for implementing best practices relevant to the integration of successful virtual project teams. The major themes pertained to 3 broad areas: (a) structure that accommodates skills and technology for virtual team success, (b) governance leading to efficient virtual project team management, and (c) collaboration practices across diverse environments. Findings may help leaders improve project management leadership practices involved in adopting a virtual project management framework for business infrastructure. Suggestions for future research include additional attention to virtualization problems with respect to the transferability of the systems theory models.

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## Dedication

I would like to dedicate this doctoral study to my mother, Barbara Helman, of Lakeland Florida. She has been there through the entire process, providing moral support and providing good spirits through the rough times. I would also like to dedicate this doctoral study to my martial arts instructor, senior master Tracy L. Thomas of Virginia Beach, Virginia. Your inspiration has stuck with me throughout my life and has given me the strength to do what I thought I could never accomplish. I would also like to dedicate this doctoral study to my two sons, William Hamersly II and Jacob Hamersly, who have given me the most incredible purpose in life anyone could ever imagine. I hope this is an inspiration to you as well.

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## Section 1: Foundation of the Study

This research project involved an exploration of business strategies for the implementation of virtual information technology (VIT) project teams into standardized project management (PM) methods. Brandt, England, and Ward (2011) stated VIT PM is a new technology with undiscovered best practices in business. Requirements for virtual teams (VTs) represent a business necessity. Accordingly, a paradox emerged between the need for best practices and the lack of knowledge about optimal strategies for technology management (Madsen, 2013; Martinic, Fertalj, & Kalpic, 2012). The combination of virtualization and VIT project teams provides an alternative to older, technologically-structured metrics, that significantly impacts an organization's overall cost savings and ability to invest (Gaan, 2012). Research broadens the perspectives of project team members and primary stakeholders regarding issues surrounding the integration of virtual project management (VPM) using new technology (Andersen, 2012). The strategic and tactical advantages for organizations that virtualize PM frameworks include improved incorporation of technology to advance foreign trade and optimize business dynamics (Riemer & Vehring, 2012). The benefits of virtual project teams (VPTs) include dynamic work environments that enable cross-synthesis of cultures, values, and work ethics (Richards & Bilgin, 2012).

### **Background of the Problem**

All projects require governance. Whenever possible, project governance must keep up with the evolution of innovative, strategic, integration alternatives for businesses (Cooper & Edgett, 2012). The heightened complexities of integration of new



technologies into standardized business frameworks led to the requirements for comprehensive solutions to advance these aspects of program governance (Devos, Hendrik, & Deschoolmeester, 2012). This integration of advanced technology within the virtual community may help solve complex problems that involve cost-savings efforts, reductions in excessive workforces, and adaptations to changes in global markets (Martinic et al., 2012).

Strategies for best practices involving modern technology stem from a combination of VIT project governance and business best practices that continue to evolve (Martinic et al., 2012). At the same time, less than adequate governance practices involving modern technology undermine efforts to solve complex problems (Ofori, 2013). Hence, a collaborative organizational structure facilitates the flow of information, rational decision-making, clarification of responsibilities, and coordination between departments (Wesner & Hobgood, 2012).

Building such a governance system requires intense planning with the support of relevant stakeholders throughout the organization (Smet & Mention, 2012). Furthermore, integration of advanced virtual technology into legacy environments requires the research-driven understanding of stakeholders about the issues that are important parts of an innovation strategy (Coughlan, 2014). The identification of those issues as they relate to successful strategies with VITPM practices is a critical aspect of stakeholders' project governance responsibilities (PMI, 2014).

### **Problem Statement**

Project management (PM) and business governance (BG), linked to corporate

frameworks, have repeatedly contributed to the fluctuations in project success (Belassi, 2013; Harding, 2014; Ofori, 2013). Moreover, the lack of governance and business knowledge in PM organizations has led to project failure rates as high as 80% (Kovach & Mariani, 2012). The general business problem was the lack of business acumen with respect to the governance of the incorporation of new technology to execute projects using virtual project teams in changing PM environments. The specific business problem was that some senior PM practitioners lacked business and PM strategies relevant to implementing best practices for virtual project team governance.

### **Purpose Statement**

The purpose of this qualitative phenomenological study was to explore the business and PM strategies relevant to best practices of virtual project team governance. The semistructured interview process included seven open-ended questions with 22 senior-level PM practitioners from throughout the United States. There were approximately 235 possible participants with a participant pool of 30 potential interviewees. Twenty-two participants who qualified for the research project provided interview data that led to data saturation. This study involved the exploration of the BG and PM experiences of the participants. Using the van Kaam method for normalization of the data and clustering like experiences into thematic statements, the study provided a plethora of new information concentrated on 10 themes that emerged. This study culminated in significant thematic statements based on project professionals' lived experiences, with a focus on strategies for the best practices of virtual team integration (Jerbrant & Gustavsson, 2013). The study depicts information for businesses to enhance

their operability during virtual project team integration involving workplace diversity and knowledgebase business systems to increase organizational effectiveness and profitability.

### **Nature of the Study**

An in-depth understanding of the information was necessary to establish comprehensive, conceptual, fact-finding, research questions (Bulley, Baku, & Allan, 2014; Jarratt & Thompson, 2012; Maylor, Turner, & Murray-Webster, 2013). Miles and Huberman (1994) stated qualitative research was consistent with exploratory research when literature is nonexistent or may come from a variety of sources (MacKenzie, Buckby, & Irvine, 2013; Wu & Passerini, 2013). The choice of a qualitative method over a mixed-method or quantitative methods was because of the need for the inclusion of the lived experiences of the participants (Bulley et al., 2014; Chan, Fung, & Chien, 2013; Echambadi, Campbell, & Agarwal, 2012). Therefore, quantitative and mixed-method research projects contain the element of testing of predetermined hypotheses that does not align with the exploratory nature of this study (Echambadi et al., 2012; Marabelli, Rajola, Frigerio, & Newell, 2013; Mishler, 1986).

The use of qualitative research methods provided information and data to build on strategic concepts and an understanding of current best practice technologies, allowing business concept innovation on business plans to expand. The constructivist approach aligned with the interpretative method to determine processes, programs, and plans for new technology industry frameworks (Moustakas, 1994; Turkson & Coffie, 2013). Sustainability performance affects social, environmental, and economic aspects of

society. Additionally, the analysis of technological advances in project engineering impacts the organizational processes required for making sound operational and capital investment decisions. Thus, a balance between operational capacity and pioneering technology integration provides businesses the ideas and theories that can lead to competitive advantages and positively affect organizational and stakeholder objectives (Yasir & Majid, 2013).

The nature of this phenomenological study encompassed an exploratory focus. The lack of literature defining the business concepts and strategies drove the study from a governance perspective (Marabelli et al., 2013; Mathur, Jugdev, & Tak, 2013; Yu et al., 2013). The chosen phenomenology-based approach of qualitative research depicted a grounded design based on the systems theoretical model of differentiation (Abraham, 2013; Morris, 2012; Söderlund, 2012; von Bertalanffy, 1972). The model of differentiation built on a modularized approach to describing the literature review and business acumen of PM frameworks (von Bertalanffy, 1968). Miles and Huberman (1994) stated that the phenomenological approach was consistent with exploratory research when literature may be lacking or from a variety of personal and professional experiences such as experiences related to technology.

The choice of the phenomenological design over other qualitative designs was due to the need for the lived experiences that PM practitioners experience when managing virtual environments (Echambadi et al., 2012; Mishler, 1986). An understanding of professional experience of PM practitioners working in a virtual environment was critical to identifying foundational structure and best practice strategies

for the new virtual technology (Lohle & Terrell, 2014). The narrative design was not appropriate because it focuses on biographical information (Egginton, 2012; Mishler, 1986). The case study designs focus on single phenomena guided by static parameters and would not provide the opportunity to pursue business accumen information needed for strategic alternatives to practices (Hays & Wood, 2011; Hoss, Zenci, & Alvaro, 2012; Yin, 2012). Ethnography is a cultural, behavioral design and does not focus on the operational characteristics relevant to the exploration of lived experiences to identify strategies for virtual best practices (Bernard, 2013; Soh, Chua, Huang, & Singh, 2011; Stout, 2012).

### **Research Question**

The perspective was from the senior-level management division. In order to explore these perspectives, a qualitative, exploratory research effort focused on the implementation of VPM into standardized PM groups. Therefore, the focus of the study was on exploring the processes required for VPM integration, the decisions required, and operational heuristics of the total implementation process. Review of current and past PM literature culminated in the identification of the collective foundational research and gaps in the literature on project governance and general best practices used for localized PM frameworks. To help fill the gap in knowledge, a pursuit of the answer to the following research question occurred: What are the business and project management strategies relevant to best practices in virtual, project management, team governance?

### **Interview Questions**

The interview questions for this study were the instrument for collection of

information from the participants about their lived experiences on PM and strategies pertaining to best practices relevant to VPM. These interview questions were also open-ended and allowed for slight deviations and flexibility through the interview process (Allen & Geller, 2012; Mathur et al., 2013; Yu, Chen, Klein, & James, 2013). The seven original interview questions that guided the semistructured interviews were as follows:

1. What are some of the dynamic changes you have to make to your current business infrastructure to integrate virtual project teams?
2. What types of operational constructs would be required to integrate virtuality in your organization?
3. What are the strategy integration points in the business infrastructure that virtual project teams will yield advantages over standard local project management?
4. What are the communication concepts that have assisted with the integration of virtual project teams?
5. What project management concepts added significant value to the implementation of virtual project teams?
6. What major diversity elements and issues, such as personal, professional, and knowledge-based information, qualify as most important when integrating virtual project teams?
7. What additional concepts can you provide that will add significant value to the integration of virtual project teams?

## Conceptual Framework

General systems theory grounded the conceptual framework of this study. The focus was operating with enterprise governance best practices using a general systems approach (systems thinking) to BG (Medvedeva, 2012; Stephens, 2013; von Bertalanffy, 1968; White & Fortune, 2012). The structure of the literature review formed a hierarchical configuration approach to building an understanding of the project governance topic through a system theory lens (Mostafavi, Abraham, & Lee, 2012). Sheffield, Sankaran, and Haslett (2012) stated the systems approach represents a strategy defining the overall organization's support, segregated by operational entities, and defined by particular characteristics. There are five concepts of general systems theory. Hierarchical structures must exist in all systems, all systems have defined boundaries, and all systems have internal relationships to the other parts of the super system. Additionally, each system is defined as a whole, and all systems have a feedback loop for self-communications (von Bertalanffy, 1972). The systemic approach to innovation identifies operational elements to determine the internal and external dependencies of innovation (Ludovic-Alexandre & Marle, 2012; Mulej et al., 2004; Stephens, 2013).

Huffman, Beyer, and Schellenger (2012) indicated that the modernization of PM or business frameworks requires significant changes to BG. For example, changes will align the latest technology with the organizational objectives and core values of the corporate structure. Furthermore, adaptability to new technology needed a basic structure with an open-source technological approach to innovation (Allen & Geller, 2012). Thus, integration of an open-source management system accounts for the adaptability of the

business processes with futuristic technology (MacKenzie et al., 2013; Rahmansyah & Ford, 2013). This organizational support included all systems and subsystems within the enterprise in technical, operational, and business areas (Weiss & Thorogood, 2011).

Segregating the internal processes of a governance system provides accurate focus on a subsystem (subtopic) within the governance super system (Söderlund, 2012). Additionally, boundaries define, support, and control the operations of the subsystem, that also influence objectives, structures, and operations in a standalone mode. Coevolution of subsystem processes may strengthen the focused system while maintaining design capacity and operability of the organization (Nilsson & Gammelgaard, 2012). Mattessich (1982) identified the systems approach as a systematical method to determine and define different parts of the system. Moreover, the use of a systematical method to approach the literature led to a baseline understanding of previously documented plans, policies, and governance procedures used by standard PM groups (Jerbrant, 2013; Morris, 2012; Söderlund, 2012).

When defining organizational entities as subsystems, differentiated from the larger organizational overarching super system, those subsystems represent the organizational infrastructure (Jerbrant, 2013; von Bertalanffy, 1972). The concepts of hierarchies, established through feedback (PMI, 2013b; White & Fortune, 2012), account for levels of organizational significance within the system (Johnson, Krast, & Rosenzweig, 1964; von Bertalanffy, 1972). The hierarchy model, resources, and policy centralize the infrastructure alignment with the corporate objectives (Lundberg, 2011; PMI, 2013b; Staadt, 2012; White & Fortune, 2012). Separation of data into six subtopics



aligned with the linear system theory of decomposition (Chen, Lin, & Shamash, 2004).

This constructivist approach aligned with a systems process to generate ideas from a knowledge-generating system involving the lived experiences of PM practitioners (Marabelli et al., 2013; Mathiassen & Nannette, 2013; Stephens, 2013). The comparative analysis method involved procedural structured analysis, coding of the data, and a systematic comparative analysis (Levin & Schrum, 2013; Mathiassen & Nannette, 2013). The segmentation of data occurred with consideration for the redundancy of data during the collection and analysis process (Krajik, 2013; Mishler, 1986; Tuma, Decker, & Scholz, 2011). Normalization to remove redundancy and irrelevant data from the transcriptions occurred by subtopics; normalization led to key concepts, representative of the lived experiences of the participants, considered in light of the conceptual framework (Bazeley & Jackson, 2013; Miles & Huberman, 1994).

In qualitative research, an understanding of the information was relevant to develop comprehensive, conceptual, fact-finding, research questions (Bulley et al., 2014; Jarratt & Thompson, 2012). The significant lack of literature on virtual project team integration led to the search for a conceptual framework that could apply to a group of integrated VPM systems (Bullen & Love, 2011; Kornfeld & Kara, 2011; Wu & Passerini, 2013). Qualitative research was consistent with the type of exploratory research (Miles & Huberman, 1994; Wu & Passerini, 2013). This approach was suitable for the study of technology because the in-depth subtopic information for analysis and comparisons originated from a variety of informed sources. The development of an innovation-based conceptual design combined with an extensive literature review, and this combination led

to the appreciation of the comprehensive experiences of informants, that pertained to virtual design, business strategies, and best practices (Hazen & Terry, 2012; Li, Zhang, & Zhang, 2013).

The subject of study, seen through the system theoretical lens, is a structure of the enterprise, comprised of a modular framework of elements that make up project and BG (Mishler, 1986). The use of a systems lens with the semistructured interview process assisted in building a database of lived experiences focused on strategic project governance best practice elements. The interview process included seven open-ended questions addressed by 22 senior-level PM practitioners based throughout the United States. Saturation took place when the data obtained from many participants were similar (Bernard, 2013; Glaser & Strauss, 1999; Lohle & Terrell, 2014). The study findings, in light of the conceptual, theoretical concepts discussed, provided operability information for virtual project team integration. The information also included strategies for businesses to improve their workplace diversity and expansion of their business and operational processes to increase organization effectiveness and business profitability (Brandt et al., 2011).

### **Definition of Terms**

The following terms are part of the scope of the topic but rarely used in nontechnical discussions. Technical discussion topics expressed through nontechnical definitions support the readability of this study.

*Business aspects of project management:* Commonly used business issues known as collaboration points between the enterprise processes and practitioners of virtual

project teams (Payne, 2012).

*IT infrastructure:* A set of organizational service-based systems budgeted by management. The IT infrastructure incorporates both human capabilities and technical requirements. These include computer hardware, applications, telecommunications, database, IT education services, IT research, and development (PMI, 2013a).

*Project:* A temporary set of tasks undertaken, related in some way that will create a unique product or service (PMI, 2013b).

*Project baselines:* Baseline represents all elements of a project plan (cost, schedule, scope) at their starting point values (PMI, 2013b).

*Project charter:* A document issued by the project manager or sponsor who formally authorizes organizational resources to project activities (PMI, 2013).

*Project constraint:* A project constraint is an applicable internal or external project restriction or limitation of the project or process (PMI, 2013a).

*Project lifecycle (PLC):* The PLC refers to the complete lifecycle of a project from start to finish. The lifecycle would include the initiation, planning, execution, monitoring or controlling, and closeout phases (PMI, 2013a).

*Project governance:* The project governance processes included an alignment of project strategies with the other strategies of the larger organization. Defining the project's governance and requiring that it fit within the charter context of the sponsoring program or organization is essential, but it is separate from organizational governance (PMI, 2013b).

*Project management body of knowledge (PMBOK):* The total project management

body of knowledge includes both published and unpublished proven traditional practices and innovative practices emerging in the profession (PMI, 2013).

*Project management institute (PMI):* A community of global project managers from over 100 countries who together share knowledge and thinking to advance the project management field and practices (PMI, 2013).

*Project management office (PMO):* An organizational body related to the centralized management of projects under its domain (PMI, 2013b).

*Project managers:* The person assigned by the performing organization to achieve project objectives (PMI, 2013a).

*Project support office (PSO):* An office in a business infrastructure generated to support the requirements of the project management framework (Young, Owen, & Connor, 2011).

*Traditional environments:* A structured PM environment that primarily uses localized resources (Tsai, Hwang, Chang, & Lin, 2011).

*Triple constraint:* A combination of project management metric variables that control the administration and operations of projects (PMI, 2013).

*Virtual team:* VTs are multiple individuals working together on a project, geographically separated, but using communication technology to collaborate (Lohle & Terrell, 2014).

### **Assumptions, Limitations, and Delimitations**

This section covers topics related to the assumptions, limitations, and delimitations of this study. Assumptions were facts considered true but unverified

(Anders, 2013; Eskerod, 1996). Limitations included technical and social potential weaknesses of the study that limited the research area of consideration (Madsen, 2013). This study related to the understanding of the interrelationships between VPM teams and business management through the governance lens. The PM structure is in accordance with the PMI's PMBOK framework, using the PMI's PMBOK for its baseline governance policies. All participants of the study worked using this framework as part of their governance procedures (PMI, 2013). Delimitations were choices made that describe the boundaries set for the research project (Bartoska & Subrt, 2012).

### **Assumptions**

There were several assumptions for this study. First, the communication between the participants and me was open and honest because the participants had the assurance of privacy; their participation, responses, and identities were confidential. The second assumption was participants worked in both conventional PM structures and VPTs in order to provide a comprehensive view of the standard and practical project governance in business organizations. All participants actively worked in a VPM organization and had adequate knowledge of collocated teams and disparately operational characteristics. The assumptions existed that participants knew enough about the subject to understand the questioning and were capable of providing adequate answers through their conceptualizations about the study questions. The fifth assumption was that the responses provided were specific to the organizational structure. However, questions also offered an element of unpredictability, due to the varying levels of education, technical and business experiences, and technology knowledge expressed in participant's answers. Another

assumption pertained to the fact that each participant was a certified senior project manager and worked as a senior-level manager in a business-oriented organization, actively applying PM frameworks. Accordingly, the assumption was that information from each participant related to the study topic and enriched the data for optimal results.

### **Limitations**

Qualitative methodology worked well with the scope of the study. The study's limitations pertained to the professional characteristics of a senior project practitioner, a virtual environment manager who had over 3 years of experience. Accordingly, the results are limited to the senior practitioner level and may not be fully representative of the complete data that could arise from a broader approach to the PM field. Nine subtopics were the focus of this study. The choice of subjects applied to the implementation of VPTs, thereby limiting the depth and breadth of the research results. A phenomenological approach led to a better understanding of the phenomenon from the perspectives of the sampled virtual team practitioners. However, there was risk of misrepresentation of self-concepts or personal characteristics relevant to the business acumen or PM concepts.

### **Delimitations**

This phenomenological study involved surveying 22 individuals from a senior certification level who were senior-level PM practitioners who supported VPTs. All study participants were over 21 years of age. Each participant had 5 years of PM experience as certified project managers at a senior level. Furthermore, all participants who held or had held a senior level position in a PM organization for 3 years or longer. Moreover, all

participants who worked in self-managed virtual climates, but specific positions and specialties of the employees varied. All participants who worked for at least 3 years with a PMO or enterprise PM office (ePMO) and actively supported VPTs. There was no limit to the PM experience or to a particular type of project experience (for example, software development, infrastructure, or communications projects).

### **Significance of the Study**

VPM is a new technology with little reference in the literature (Madsen, 2013; Martinic et al., 2012). The standardized project frameworks and governance perspectives described in the literature with respect to virtual structure elements enhanced the current literature review about virtual technology. Several authors have suggested that the virtual project team was a new type of entity; boundaries differed from those found in the standard localized project team (Bressers & de Boer, 2013; Burström, 2011; Leif, 2011). Consequently, the lack of literature on virtual project innovation and strategies for best practices was the deciding factor for research of the subtopic selections. The open-ended research questions generated data that allowed conceptualization of themes specific to the framework in order to provide further information on the subject (Mathur et al., 2013; Yu et al., 2013). Qualitative research provides the ability to explore complexly textual descriptions of how people experience a given research problem (Ng, Siew-Hoong, & Tong-Ming 2013). The exploratory nature of this research was to uncover the ideas related to strategies for implementing best practices. Decision processes, programs, and policy elements could be a part of the strategies required of organizations to best integrate to VPM frameworks (Marabelli et al., 2013; Wu & Passerini, 2013).

The significance of this study was that the study results provided pertinent information for business leaders who want to integrate VPTs into their business infrastructure. The associated findings pertained to business leaders who want to generate the diversity through global-oriented team collaborations and build on social and systemic partnerships. A 2013 study estimated that outsourcing costs of business process engineering (BPE) were \$309 billion in 2012 and increased at 25% annually (Lacity & Cocks, 2013). The innovation capability of an organization was dependent on internal and external communication (Gressgård, 2011). The added benefit of networking partnerships in business was one of the highest valued advantages of virtualization (Lacity & Cocks, 2013). The strategic partnering practices associated with business performance outcomes, including labor productivity, innovation levels, and employee well-being, remain transparent (Pot, 2011). Additional findings related to diversity, equality systems, and workplace partner systems; these concepts were positively and synergistically associated with significantly higher levels of labor productivity, workforce innovation, and reduced employee turnover (Pot, 2011).

### **Contribution to Business Practice**

Expanding the business into progressive working conditions requires different opportunities for growth. For instance, innovative, progressive expansion enables cost-cutting strategies when aligned with best practices and open-source features enhancing social and business communications (Allen & Geller, 2012; MacKenzie et al., 2013; Rahmansyah & Ford, 2013). Furthermore, understanding and conceptualizing research-driven business approaches to virtual innovation benefits customers, employees, business



owners, alliance partners, and communities. Research-driven approaches to strategies and best practices help advance value and improve service offerings, service processes, and service business models (Smet & Mention, 2012). Corporate managers often find it difficult to recognize the value of VTs compared to conventional units. Therefore, adding research information that can help leaders objectively conceptualize business processes for virtualization promotes necessary executive support for this aspect of business growth (Anantatmula & Shrivastav, 2012). Knowledge transfers among partnerships enhance confidence in the business development model and overall operability of the company plan (Bulley et al., 2014; Chan et al., 2013; Madsen, 2013). The added knowledge of this research provides organizations with perspectives on business acumen and project leadership views pertaining to the operational complexities of implementing VPM (Jerbrant, 2013; Raluca-Olguta, 2012).

### **Implications for Social Change**

The study contributed to positive social change by increasing the knowledge base of information needed to integrate VTs into structured BG practices. With the increasing failure rate of projects to over 80%, businesses need to both find alternatives to failed conventional practices and upgrade to cost-effective business models (Kovach & Mariani, 2012; Raluca-Olguta, 2012). Organizations can use the research information relative to the virtual concept and implementation of best practice strategies to seamlessly transform standard organizations into virtual organizations (Gallego-Álvarez, Prado-Lorenzo, & García-Sánchez, 2011; Raluca-Olguta, 2012). With a clear understanding of multiple perspectives on business concepts, leadership can improve their abilities to

provide more highly competent strategies for business. These strategies could pertain to human relations, communication, diversity, ethics codes, and the development of personal characteristics necessary for optimal outcomes (Zhang, Chen, & Latimer, 2011). Leadership implement strategies for best practices by placing personnel by strengths to projects, enhancing the success rate of projects (Kapoor & Sherif, 2012; Vinayan, Jayashree, & Marthandan, 2012). Moreover, political and technological knowledge exchange has had social influence on diverse project teams' adaptability to progressive, innovative techniques (Andersen & Dag, 2013).

Virtual collaboration, important to modern organizations, involves social skills as the primary prerequisite for effective teamwork within virtual environments (Brandt et al., 2011; Gressgård, 2011; Paolucci, 2014). VPM advances possibilities capable of complying with the demands of the new business conditions (Fruchter & Bosch-Sijtsema, 2011; Gressgård, 2011). PM frameworks with a broader social consideration are vital for increasingly complex project success (Kitano, Ghosh, & Matsuoka, 2011; Salminen-Karlsson, 2014). Social collaboration and understanding among members of VTs is critical in this respect; a network of external contacts increases the social capital of the organization (Gressgård, 2011; Salminen-Karlsson, 2014). Additionally, open collaboration involves participants with different motivations and interests, enhancing social dynamics within the collaboration process of diverse workforces (Paolucci, 2014).

### **A Review of the Professional and Academic Literature**

In this section, the research pertains to PM governance practices in current business frameworks. Burström (2012) suggested that, for qualitative research, the

chronological method of literature analysis provides a history of the problem. Chen (2011) promoted a reflection of the research in a group context for an orderly approach. Because VPM pertained to a new technology, the literature review resulted in the identification of background for understanding the traditional, standardized, local, PM business characteristics and policies that govern those systems.

The lack of literature that defined the business concepts and strategies for implementing best practices for virtual project team integration drove the study from a governance perspective (Brandt et al., 2011). The main subtopic for this study was BG. Focus was on six subtopics--structure, operations, strategy, communication, PM concepts, and diversity. Two perspectives were PM and business management. The central research question formed through the constructive approach to the research design, and the inquiry's framework encompassed general systems theory, designed around a systems thinking method of constructs, related to project governance performance (Mahaney & Lederer, 2011; Medvedeva, 2012; White & Fortune, 2012). The research pertained to modularizing the business operations through considerations of PM decision-making relative to the strategies for best practices to implement VPM (Mishler, 1986).

The literature review consisted of peer-reviewed articles less than 5 years from the estimated publication date of December 2014, project materials, texts, research documents, and dissertations relevant to the constructs of the research question. Table 1 depicts the article counts and percentages for references used in the doctoral study. The table includes the categorized total amount of articles and materials with the total

percentage of peer-reviewed articles that met the DBA Doctoral Study requirements (Walden, 2012).

Table 1

*Source Identification and the Accountability Table*

Total documents	Total 2011 or newer	Total peer-reviewed documents	Total peer-reviewed documents 2011 or newer	% of total peer-reviewed documents 2011 or newer
267	246	246	246	92.14%

The general systems theory and systems approach, grounded in the literature review, pertained to the fragmenting of the enterprise model into different technology parts and processes involved in business and PM governance. This fragmentation process then led to a comprehensive understanding of the elements of the technology (Mostafavi et al., 2012). The alignment of the system's dynamics of conventional organizational development with the strategies for the VPM best practices occurred after the recognition of thematic elements in the data (Moustakas, 1994). The use of a systems approach for the literature review led to the organization of segregated modules or subtopics present in business and PM frameworks (Kruger & Mavis, 2012). Therefore, the literature review encompassed PM business topics to provide a foundational understanding of PM strategies. Resources also included literature about implementing governance practices that support standard business operations (Hanson, Balmer, & Giardino, 2011; Morris,

2012).

### Selection of the Literature

The literature review consisted of peer-reviewed articles, published no more than 5 years prior to the graduation date of December 2014. Sources included seminal resources of PM books, dissertations, and publications for grounding the theories and approaches. The contents of the literature review provided a solid baseline understanding of PM governance (Gressgård, 2011). The business need described in this literature review supported the phenomenological study. The hierarchical literature map (Figure 1) indicates the structural breakdown of all subtopics relevant to the research focus.



Figure 1. Literature review accountability matrix.

### History of Project Management

Since the emergence of educated man, projects have been part of daily lives,

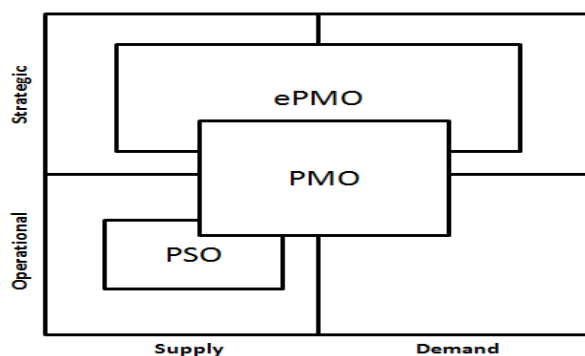
focusing on survival, food, or a strategic advantage in battle (Meredith & Mantel, 2011). Some of the most notable projects were the creation of the Egyptian pyramids in 2550 B.C. and the Great Wall of China in 205 B.C. (Cantwell, Sarkani, & Mazzuchi, 2013). The industrial revolution eventually made way for large-scale, modern projects, such as the Polaris missile systems and the AGIS missile defense system, generated for national security (Cantwell et al., 2013). Researchers signify current technological times of PM as between 1955, when the first users of modern PM terms and procedures began, and 1970, after the creation of the first PM organization (PMI, 2013). History, determining current business methods and models, indicates how people adapt to changing times throughout lifetimes (Chiu, 2012). The acceleration of business and economics require adaptive methods to provide support to deliver products and services of quality and as soon as possible (Aubry, Sicotte, Drouin, Vidot-Delerue, & Besner, 2012). From a global perspective, records provide information about how a company adapts to changes in the business environment (Chiu, 2012).

### **Structure**

The operational acumen of a control position depends on the veracity of relationships and dependencies between other business concepts of the organization. The objective of a control office is to structure and support the execution of projects to gain a competitive advantage in the marketplace. Additionally, the organizational plan provides a conceptual approach to the administrative, political, and operational aspects of the organization (Cavaleri, Firestone, & Reed, 2012). Furthermore, the mission statement ensures the clarity, reliability, viability, and the necessity of business operations.

The hierarchy of infrastructure supports the different levels of the organization, and policy and programs govern the operational framework (Mathur et al., 2013). The organizational structure defines the executive plateau and organizational goals, and clearly identifying the mission will produce a template for the development of the support features (Bergman, Gunnarson, & Räisänen, 2013).

Figure 2 depicts the operational control of the three main control offices: the PSO, PMO, and ePMO. The PSO is the restrictive level of governance directly related to project support. The PMO reaches into the four sectors of the industry but does not cover the entire operation. The ePMO focuses on the strategic objectives of the business plan that includes demand management.



*Figure 2.* Organizational structure of project support offices.

Historically, the hierarchical structure allowed for integrations at many levels. For example, larger organizations could integrate governance committees into their project governance infrastructure to manage the rapid-paced sets of operational compliance requirements (Oktavera & Saraswati, 2012). Moreover, change management, configuration management, prioritization, and steering committees contributed to the

management of projects, their selection, funding, and execution (Young et al., 2011). Additionally, communication protocols acknowledged in the project management plan (PMP) identified stakeholder requirements, reporting structures, and management entities within the project teams (Ofori, 2013). Furthermore, systematic approaches that followed rigorous metrics, role, and responsibilities became successful tools to enhance the overall health of a project. Hence, the use of matrix resources in PM emerged as ways of acquiring needed talent while minimizing impacts on organizational resources (Mathur et al., 2013).

Organizational structure planning required a combination of senior management. The senior management provided the innovative perspective and alignment of the strategic and tactical paradigms (Hutchins & Muller, 2012). Then, the architectural review committee was charged with drafting the business structure. Janssen and Klievink, (2012) said, aligning the project and portfolio management structures with the enterprise architecture (EA) requires consideration of all elements of business and operational management. Therefore, direct support for governance, communication, alignment, prioritization, and optimization were essential elements of a well-defined EA (Cooper & Edgett, 2012).

Consistency in program management is attributable to the concept of governance (Macnaghten & Owen, 2011). Project governance is one of the most essential elements of management that controls all facets of business operations (Cooper & Edgett, 2012). Building a governance structure to manage projects involves a variety of levels, and the size of the company and task workload determines the levels of involved governance



(Espinosa & Porter, 2011). For example, building a portfolio system required serious planning at all levels of the organization with buy-in from all relevant stakeholders (Naro & Travaillé, 2011).

Alignment of the organizational departments, mission, and vision became a valued necessary step because of the interdependencies that allow stabilization and growth (Smet & Mention, 2012). The organization's mission statement reflects the overall objectives and direction. Clearly identifying the mission creates a template for the development of the vision and associated PM support features (Jerbrant & Gustavsson, 2013). A business model describes the overall business requirements and provides a mold that defines the integration process of a PMO (Bergman et al., 2013). Therefore, the complexity of the alignment of strategic, tactical, and operational levels of the organization depends on how large or complex the organizational business infrastructure becomes (Young et al., 2011).

### **Operations**

Grounding this study in the PMI PMBOK Guide version of PM was essential (PMI, 2013). A number of ways apply to how operational philosophies are relevant to the management of projects; however, the dominance of the PMI process throughout the United States evolved into a global system of project governance (Whitty, 2011). Well-defined enterprise designs enable modular type systems to operate as an individual entity while governed by the larger corporate organization (Janssen & Klievink, 2012). The population sector selected for this study followed the PMI PMBOK, so the literature review research focused on articles that apply the PMI frameworks. The PMI framework

included collaborative modules of project governance. The modules encompassed collaboration through a variety of infrastructure subsystems, thereby enabling execution of governance and process engineering to deliver products or services (Gertrude & Madupalli, 2011; PMI, 2013). The general systems theory models depict modularization of business and PM entities as decomposed finite elements of the processes. The framework aligns the PMI philosophy of construction with systems theory models for segmentation and differentiation (Jerbrant, 2013).

The internal governance of a project or program include the organization's operational capabilities, value systems, objectives, and decision support systems required to sustain the organizational goals and vision (Demirag & Khadaroo, 2011). Multiple levels of PM have different characteristics and objectives but commonly consider decentralized subsystems within the control hierarchy (Gunnarsson & Wallin, 2011). In conventional business and PM architectures, program level will be immediately superior to the project level, and portfolio level superior to the program level. The portfolios exist in a hierarchy of business processes that regulate project support services, PMO, or ePMO (Soh et al., 2011).

The generation of PMOs or PSOs is paramount for organizations that engage in PM techniques on a regular basis (PMI, 2013). Project Portfolio Management (PPM) aligns independent PM with operations and business management (Sánchez & Toscana, 2012). The concept of a PSO, PMO, or ePMO is to provide support for project setup, definition, execution, and transfer for maintenance or closeout (Allen & Geller, 2012). Furthermore, establishing a management infrastructure provides established avenues for

communication dedicated to centralizing restructuring and integration of new technology (PMI, 2013). The PSO provides operational support essentials to achieve and maintain the project's success while the PMO and ePMO direct a higher level of the portfolio and executive steering support system (Jerbrant & Gustavsson, 2013).

Leveling business strategy with project governance and decision support systems becomes a high priority requirement for organizational leaders who decide on and control their investments (Wang & Moon, 2013). Constant technology environment change created the need for a centralized control vector in the organizational hierarchy (Moutinho & Kniess, 2012). The project governance system allowed value tactics to provide stability and sustainability to the organization (Ziemba, 2013), thus employing diverse business infrastructure with a strong sense of accountability and reliability.

The operation of a new organizational entity, such as a project control office (PCO), depends on clearly defined roles and responsibilities, practical avenues of communication, and support of operational metrics (Pande, 2012). The operational model of the organizational framework described the different levels of governance, starting with the corporate vision statements. First, the mission statement ensures the reliability, viability, and the necessity of its operations. Moreover, the hierarchy of infrastructure supported the different levels of the company, and policy and programs define the organizational structure (Aubry, 2011). Allen and Geller (2012) added that the PCO supports the processes associated with defining, designing, and executing parts of the systems development lifecycle (SDLC).

Organizations require development of a system of management processes. As a

result, networking all processes into an easily governed centralized model enabled business operations. Organizational flexibility to adapt to such requirements is especially important for improvements in an organization's ability to innovate (Taticchi, Cagnazzo, Beach, & Barber, 2012). The variations of frameworks are endless, but all frameworks for a PSO or PMO require stability, clarity, and sustainability of operations. The PCO, as part of the corporate infrastructure, maintains the responsibility for all projects and works with internal and external stakeholders to maintain alignment of project requirements (Wysocki, 2012). The PPM is a governance practice that employs a variety of elements focused on controlling the input and output of the areas of responsibility (PMI, 2013). Figure 3 depicts the different levels of business management integration when applied to the PMO. Careful project selection is necessary for strategic alignment of current and future growth plans (Nuntamanop, Kauranen, & Igel, 2013).

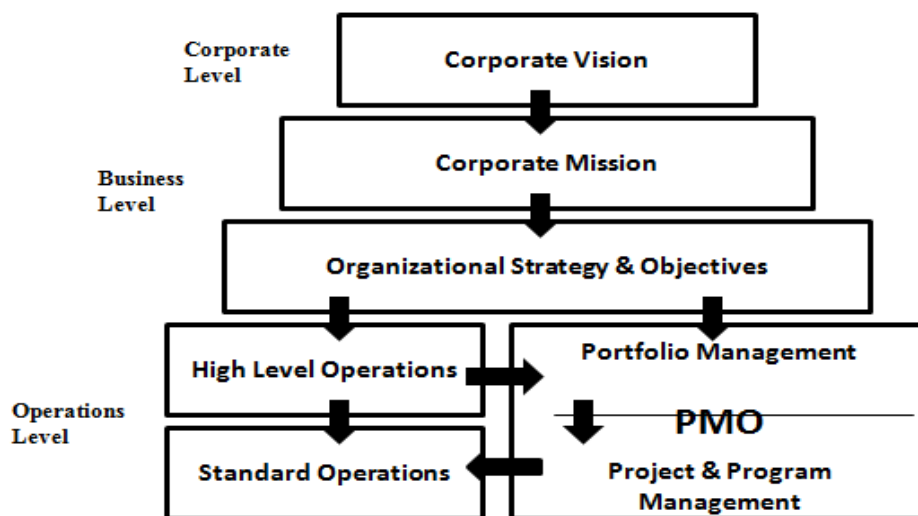
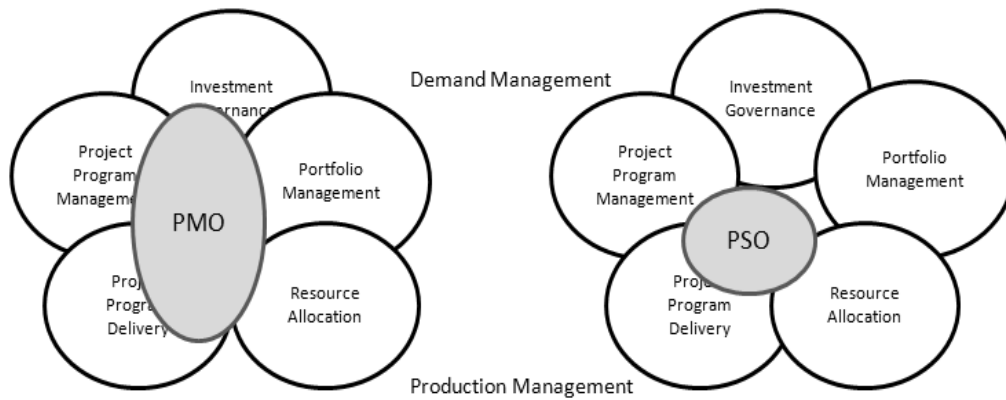


Figure 3. PMO Infrastructure in an organizational framework.

Construction of any office requires the need for the understanding of the priorities

surrounding the organizational goals, objectives, and vision. Furthermore, the proper process for building the infrastructure, involving both physical resources and conceptual perspectives, requires the alignment of the rest of the team (PMI, 2013). Additionally, developing a project control systems requires comprehensive planning at all levels of the organization with buy-in from all relevant stakeholders (Kawas & Thiele, 2011). Prior to the enterprise development, organizations will develop the business and operational constructs to support the company's values and decision-driven support systems. The modularization of the departments and divisions are specific to their organizational framework and provide an advantage for innovative construction (Galeana-Zapién et al., 2012).

Although there are different models of project governance frameworks, clearly identifying the direct support processes will augment the design of a complete business model involving support components of integration (Allen & Geller, 2012). The operational perspective of a PSO differs from a PMO in that the direct support process for the PSO is not as complex as the PMO (Cooper & Edgett, 2012). The PSO is a subset of the larger PMO and directly supports PMO project functions. The responsibility of the PSO, PMO, or ePMO reaches into various parts of the enterprise model. Figure 4 depicts the interrelationships of each office in relation to the operation (Allen & Geller, 2012).



*Figure 4.* Enterprise frameworks for a PSO or PMO.

Aligning business functions and support functions with a communications infrastructure support a collaborative business model (Marabelli et al., 2013). Similarly, using an integrated systemic process will ensure the company supports critical resources required for sustainment (Sadvandi, 2012). Under the portfolio management level are the support mechanisms, for example risk management, configuration management, resource management, asset management, IT management, and budgetary control (Young et al., 2011). An essential binding element to the structure of a PMO is the regular reporting relationships throughout all levels of the company's management hierarchy (Rankin, Windsor, & Wahyuni, 2011). Moreover, the complete definition of each entity of the group, a collaborative atmosphere throughout the organization, and support structures help define the levels of transparency for seamless operational stability (Kawas & Thiele, 2011).

### **Strategy**

Strategy is the cornerstone of innovation and is one of the foundational system

infrastructure elements that depict the organization's prioritization and execution of project implementation (Yeow & Edler, 2012). It methodically links to general systems theory as it provides a model of operations controlling the implementation of business processes in a systemic relational or aggressive nature (Kruger & Mavis, 2012). Strategy is visible at all levels of project, portfolio, and enterprise PM (Smith & Sonnenblick, 2013). It relates to organizational, foundational, and business processes. Strategy provides a competitive advantage in the market-based, service-oriented architecture (SOA), and oversight of the operations of business processes (Schoemaker, Krupp, & Howland, 2013). Project practitioners align their project and portfolio management systems with corporate values and goals, and short and long-range strategic plans focus on the selection of the best projects to meet the strategic objectives (Kruger & Mavis, 2012).

Strategic policy makers provide guidance and direction for production of governance structures pertaining to processes that design, develop, test, and deliver products and services (Braun, Avital, & Martz, 2012). Organizational strategy from a systems approach includes all systems and subsystems within the enterprise's technical, operational, and business areas (Mostafavi et al., 2012). The sustainment cause-and-effect theory also pertains to approaches by providing an efficient method of execution (Weiss & Thorogood, 2011). Furthermore, strategic plans that include global scales of innovation significantly affect all communities associated with the operations (Hauc, Vrecko, & Barilovic, 2011). Efficiency and reliability are common drivers for corporate strategies that apply to PM groups (Tabor, 2012). This cyclical activity is beneficial to all

participants and provides essentials and opportunities for business growth.

When conceptualizing strategic plans, the practitioner must consider all factors associated with the process. Additionally, strategy builds on decision systems that provide a balance between theory and operations (Carden & Boyd, 2011). Moreover, executive directors make most strategic decisions for the organization to support the organizational value systems, decision systems, and business constructs (Smith & Sonnenblick, 2013). The complexity of organizational internal and external dependencies also relates to strategy and the drivers of policy. Conceptualization of strategic plans can align with the systems theoretical model of differentiation (Abraham, 2013; Morris, 2012; Söderlund, 2012). It is also important to note that the range of possible single-business strategies is wide, including differentiation, low-cost leadership, acquisitions, mergers, and liquidations; they cannot be configured or analyzed solely using the standard business models (Abraham, 2013; Jerbrant, 2013).

Leaders use governance policy to oversee the operations of companies processes, provide an advantage in the marketplace, or run a service-oriented organization (Schoemaker et al., 2013). However, innovation portfolios focusing on early-staged tactical ideas are still evolving in situations where project managers focus on managing complex projects (Chatzimichailidou et al., 2013). Nixon, Harrington, and Parker (2012) found leadership is a core factor in effective management and PPM structures. Pedersen and Jeppe (2011) added that sound analytical decision-making frameworks in organizations were, in some aspects, counterproductive for nonroutine decision-making. Instead, the primary concern for the growing PM environment is the ability to manage



dynamic environments (Clarke, 2012). Hierarchical strategies structure organizational frameworks using a top-down approach, with each lower level in the infrastructure supporting senior levels (Huffman et al., 2012). This integration strategy provides a framework for an open process control, supporting the ability to incorporate other elements into the company, develop the foundational design, and support that projects require (Kruschwitz, 2012). The strategic management approach to PM entails a number of strategic operations, governance, and strategy elements that simultaneously provide a seamless transformation of information, eventually producing business value (Naro & Travaillé, 2011).

Essential skills for project managers include communication, stakeholder collaboration, interteam skills building, negotiating, strategy implementation techniques, and leadership skills, to name a few (Schoemaker et al., 2013). There is a need for project managers and project leaders who can operate in multifaceted, multicultural, multidynamic reorganizations of processes, metrics, and policies (Braun et al., 2012). Therefore, the most efficient and safe way to protect corporate strategy is through considerations of these needs for leaders of PM methods (Tabor, 2012). Employing strategy models may provide essential elements of policy generation (Loosemore & Chandra, 2012). The design and analysis of practical and accurate information when investing in projects (Hoss et al., 2012) must accommodate strategic uncertainty and change management (Carden & Boyd, 2011). In addition, technical and process engineering of projects must strategically align with IT-business processes (Weiss & Thorogood, 2011). Thus, the system of approach is applicable to almost anything that

exists, from social media planning, to behavior characteristics, or running personalized daily lives (Carden & Boyd, 2011).

### **Communications**

Operational stability of PM demands clear direction and consistency of communication (Reed & Knight, 2013). A 2011 survey by Datsenko and Schenk (2013) aimed at identifying the most important personal characteristics of ideal project leaders. Participants reported the critical elements of project governance with (a) 44% communication, (b) 38% personal characteristics of leaders, and (c) 34% having clear goals (Datsenko & Schenk, 2013). However, statistics from a global survey of 10,000 projects at 35 Fortune 500 companies found 70% of projects were unsuccessful due to lack of communication (Hulya, 2011). The increased level of project failures was reportedly because of the lack of ideal communication about the risks and related issues leading to such failures (Hulya, 2011). Crossman and Bordia (2011) also found communication studies shifting toward intercultural communications because of the demographic implications of globalization and business collaborations.

Therefore, managing communication issues is paramount for the successful completion of projects. The alignment complexity of the strategic, tactical, and operational levels of the organization depends on the size or intricacy of the organizational business infrastructure (Young et al., 2011). However, according to Young et al. (2011), the principal components consistent throughout all levels of the project-oriented management were communication, cooperation, and collaboration. Pryor, Humphreys, Taneja, and Tooms (2011) used communications theory to link project

elements together, justifying their means and ratifying their enhancing components with respect to project governance and business management. Hence, communication theories provide frameworks or models focusing on personal and professional images, individual entities involved for operational and commercial purposes and political and community driven organizational involvement (McDonald & Crawford, 2012).

Studies published within the last 15 years depicted the impact of information communications technology (ICT), and expanding globalization has increased the importance of interactions of global partnerships (Walters, Bhattacharjya, & Chapman, 2011). Authors also highlighted the subjectivities of social interaction embedded in the communication processes (Crossman & Bordia, 2011). In similar research, Fox, Ehlen, and Purver (2011) researched communications development of diverse initiative systems, focusing on distributed digital communication and the use of the project team members' manual skills. Fox et al. found human communication limitations might decrease by using technology compatible with the varying factors of the participating work environments. Moreover, Morris and Williams (2012) reported that strategy development and communication skills led the list of key leadership competencies in 2005 and expressed the expectation that they will continue to be necessities in the future. In addition, Morris and Williams said although policy and communications have differences in their concept, these leadership competencies are consistent around the world and in all sizes of organizations.

Several key performance indicators (KPIs) relate to project leadership, project teamwork, project lifecycle, and project experience. The KPIs provide measures to

evaluate the performance of information dissemination. Indicators reflect operational and business tactics—the architectural foundation of successful business systems (Humaidi & Nor Azilah, 2012).

Hilton and Sohal (2012) reported six-sigma master black belt technical and interpersonal skills related to leadership, communication, behavior characteristics, policies, culture, and organizational support and system. Dynamics of systems thinking involve a mastery of operational and business processing as well as the application of social and emotional intelligence competencies (Stephens, 2013). Wu and Passerini (2013) showed sharing tacit knowledge in the traditional workplace is common for successful integration of various PM practices. Additionally, Stephens (2013) indicated systems thinking is of utmost importance when dealing with solutions to conceptual strategic problems with respect to organizations, managing processes and people, networking, organizing, and designing.

Communication techniques influence PM success through the interactions of individuals, projects, teams, and organizational elements; competencies affect the value of teamwork (Müller & Jugdev, 2012). Furthermore, cultural differences between disparate project teams play a fundamental role in PM (Richards & Bilgin, 2012). Collaborative communications are a direct result of the willingness to share information related to cultural dynamics from internal and external environments (Friesl, Sackmann, & Kremser, 2011). Consequently, project managers must be cognizant of cultural differences. Regardless of how well the organizations' functions work, without the right team dynamics, the project can still fail (Richards & Bilgin, 2012).

Communication is also vital to the understanding of project objectives. When difficulties in communication among different team members appear, obscuring of the critical points of the project could occur. These operational misunderstandings may cascade into disruption of the project team (Jerbrant & Gustavsson, 2013). Managers and employees in international projects, therefore, need to understand not only about the diverse cultures of their teammates but, foremost, they must become culturally and politically sensitive (Alfons, 2011). Proper communication of assurances of well-defined roles addressing processes, management, skills, and abilities, enhances collaboration and provides documented boundaries in which to operate. Accordingly, establishing a management infrastructure provides avenues for communication dedicated to centralizing innovation and integration of new technology (PMI, 2013).

Communications can boost a company's business performance relative to increased competitiveness through cost savings and growth (Hulya, 2011). Trust is an essential concept of communications and allows an organization to operate under uncertain or segregated conditions (Mun et al., 2011). Hence, internal and external communications promote stability of operations. Stability stems from leveling the reporting systems through a centralized platform. This process assists transformation facilitation of the work environment through centralized, knowledge-based, communication activities (Warkentin, Allen, & Shropshire, 2011).

Hulya (2011) found that organizations who promote project visibility, transparency, collaborative communications, and productive work environments typically offer better project results. The steep decline in costs for Internet and communications

helped companies stifled by high communications costs. Those companies could reduce higher capital requirements and gain the opportunity to take advantage of necessary resources to improve their business portfolios, reducing overall costs (Vitolo & Cipparrone, 2014).

Principled action is winning the right way. Project managers eventually find themselves in project situations where things seem out of control; however, working conditions and synthesizing the elements at one's disposal frequently creates a new state of equilibrium (Sheffield et al., 2012). Organizational value systems are parallelisms of principals' actions (San Diego, Aczel, Hodgson, & Scanlon, 2012). PMOs that operate with high standards of ethics and fair play, mainly in negotiations and collaboration, provide a high-expectation performance environment for project teams (Gupta, 2012). The principled actions of partners serve as a core shaping force for a social order in business practice (Winter, 2011).

### **Project Management Concepts**

Organizational development focused on value delivery, creating the organizational structure of a business focused on the market niche of relevance (Chabowski, Mena, & Gonzalez-Padron, 2011). Additionally, the assimilation of processes into the enterprise structure requires open-ended frameworks. These frameworks encompass control mechanisms to (a) oversee the business, (b) provide adaptation to the scope, (c) lend enlightenment to the vision, and (d) stimulate support for the approach (Allen & Geller, 2012). Although the levels of the organization differ, regarding complexity, all organizations need a systematic business approach to prosper

and grow (Yoda & Yoshida, 2011). Finally, unilateral processes provide some stability, but some processes of project portfolio governance apply interdependent strategies adapting to changing business strategies and customer markets (Moutinho & Kniess, 2012).

Conceptualizing the PM hierarchy at the project level, each work package has its focus. Within each project, each phase of the *system development lifecycle* (SDLC) has predefined conditions (Richards & Bilgin, 2012). Problem definition, although not always the first step in SDLC, is one of the principal parts of a project. Problem definition will help the project and create an understanding of why the project exists (Yusof, Khodambashi, & Mokhtar, 2012). The system development life cycle includes the definition phase, the analysis phase, design phase, development or build phase, test phase, implementation phase, and the termination or maintenance phase (Wysocki, 2012). All stages have their interdependencies and most have a set of external dependencies. Each phase of a project is relevant to the overall project; when broken into smaller manageable sizes of project work, called work packages, an entire process emerges (Chatzimichailidou et al., 2013). The symbiotic relationship that requirements have with the project is the foundational structure of the project. Requirements must be clear and concise to support project functionality (Ranganath, 2012). The entities of the project are interrelated and depend on the successful execution of predecessors (Baird & Frederick, 2012).

Organizations have a variety of *system metrics* to govern the resources, programs, and projects they run. A scorecard is a metric with weighted scores to identify strengths

and weaknesses in resource leveling and to measure the dissemination of information and resources throughout the company (Naro & Travaillé, 2011). The scorecard provides strategic and evolutionary types information to discover the developmental and sustainment information about corporate growth (Naro & Travaillé, 2011). Scorecard metrics reflect measures of what matters, aligning the organizational strategy and increasing organizational performance by idealizing issues that offer higher levels of value to the business strategy (Tache & Ispasoiu, 2013). Consequently, balancing the scorecard aligns enterprise elements (Allen & Geller, 2012). According to Allen and Geller (2012), these elements include communications, relationships, collaborations, effective reporting structures, and well-defined scope statements. These elements can provide clarity and direction for project controls (Allen & Geller, 2012). Integration of business processes is paramount to creating a comprehensive and collaborative environment (Cooper & Edgett, 2012).

*General systems theory* and systems thinking encompasses centralized accountability for tasks, procedures, policy constraints, conditions, and boundaries (Medvedeva, 2012; von Bertalanffy, 1972; White & Fortune, 2012). One of the most significant obstacles to creating a revolutionary organization is changing the oppressive way of thinking (Medvedeva, 2012). Moreover, understanding and executing an advanced approach and implementation of a systematic pattern of thinking require some cultural and process changes (Luiz & Sbragia, 2011). Thus, advantages associated with organizational dominance include promoting excellence and decreasing costs, giving empowerment to the creator to recognize the change leaders in the company (Chia-Ling,



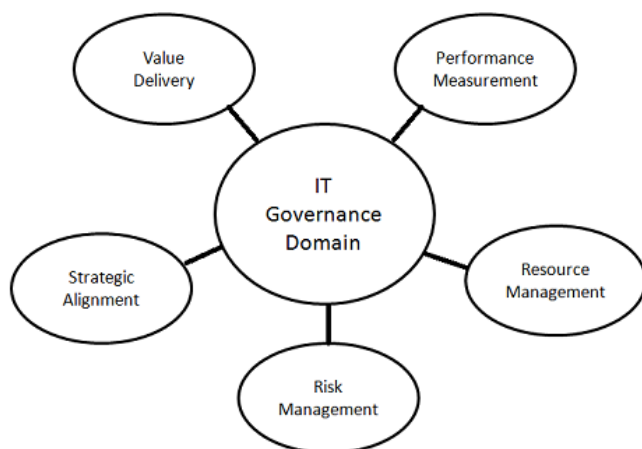
Wang, & Tsai, 2013).

The basic definition of a system is that it must have three things – an input, a process, and an output (Sheffield et al., 2012). There are modifiers to systems that can change the output, but the essential elements of the system are still the same (Senge, 2006). All the results processes, processes validations, and quality controls constitute segments or subsystems of the larger system (Levin & Schrum, 2013). A sophisticated approach can apply to any size. However, definition of the principal knowledge of the basics of systems dynamics provides awareness and understanding of how granular plan changes can alter the operational stability of a project (White & Fortune, 2012). In addition, the key to running any project is the knowledge of the independent characteristics of every subsystem in the project area of responsibility (AOR). Knowledge of the AOP subsystem interrelationships facilitates necessary support for the entire project domain, or super-system (Krajcik, 2013).

*Performance measurement* is any source that will provide evidence of production and bottom line progression in the company. Stage-gate systems model the SDLC approach for assisting firms with the product development process (Barringer & Gresock, 2008). Consequently, the SDLC design provides for an initial assessment, a thorough investigation, development, testing and validation, and full production and market launch (Madritsch & Ebinger, 2011). Similarly, the stage-gate model depicts processes, emphasizing recognition of the business areas for governance and ideas to determine initial feasibility (Harding, 2014; Jerbrant & Gustavsson, 2013). The feasibility study determines the viability in writing a business plan or strategy. Although the stage-gate

model is a useful technique for management, in the 21st century, the model has come under scrutiny from companies that focus on product development (Hutchins & Muller, 2012).

Investing in *system governance* is a vital approach, but a well-designed portfolio management system is not enough to ensure proper business strategy alignment. Strong governance is essential to the success of an efficient portfolio management organization (Cooper & Edgett, 2012). Governance is part of the EA, binding all the other parts together and providing the constraints by which the EA scheme operates (Ouedraogo & Boyer, 2012). Figure 5 illustrates elements of a governance process; governance processes become more complex as the business grows.



*Figure 5.* Governance model depicts the various components of a standard governance model of PM.

All the cogs of governance will have their unique features, but work together to move within the governance constraints and metrics of the organization. According to

Pande (2012), the operational governance approach integrates a PSO program. In addition, the operational approach applies structure to the operations of PM, sets boundaries to the PM processes, and establishes a framework in which collaborative systems and services operate (Pande, 2012).

*Balancing the scorecard* is part of the corporate strategy (Tache & Ispasoiu, 2013). Focusing on the company's goals and vision, the scorecard framework supports interest in justifying the approach with the scorecard depicting information relevant to strategic innovation to support organizational sustainment (Naro & Travailé, 2011). The scorecard metrics measure *what matters*, to provide information to align the organizational strategy for increasing organizational performance by idealizing issues that provide higher levels of production from the business plan (Allen & Geller, 2012).

*Risk management* is a fundamental part of IT projects; unfortunately, events rarely go according to plan, requiring the project manager to adapt to the project environment (Zecheru, 2013). Risk and issue escalation are the most striking features of project governance. According to Preda (2013), the implementation of risk management models benefits the business. Consequently, a failed process could result if an applied process does not have buy-in from all the key stakeholders of the management's infrastructure (Preda, 2013). Furthermore, the resolution of risks and issues depends on precise mitigation strategies executed in a timely and efficient manner (Yu et al., 2013). Leadership must also ensure that all stakeholders are aware of this process and agree to follow it.

Governance systems evolve from the regulation and deregulation of policy to

guide accountability. Governance involves identifying milestones, requirements, and specifications. Governance holds the project manager responsible for a number of operational policies, guidelines, and metrics (Fuerth, 2013).

### **Diversity**

Diversity is an essential part of the organizational strategy. Senior managers effectively managing their organizations embrace diversity in all its forms: organizational environment, business processes, managerial tools, and most importantly, the people in the organization (Hans, 2011). Both strategic and planned evolution of the organization involves dynamic approaches to standardized processes to sustain itself (Anantatmula & Shrivastav, 2012). Conversely, a significant knowledge-sharing approach requires a diverse array of custom elements to overcome the technical difficulties of informal communication (Marabelli et al., 2013). Consequently, a PMI's knowledge management influences a project manager's ability to organize, understand, and implement the system, PM, and associated cultural knowledge (Hahn, Bredillett, Gyeung-Min, & Taloc, 2012).

Project managers working in their culture tend to be more expressive in their skills than when working in another culture (Hahn et al., 2012). With the integration of agile, extreme design styles and rapid development methods, projects have significantly increased in complexity. The increase in complexity leads to the requirements for diverse collections of culturally and functionally adapted individuals for integration into project teams (Alfons, 2011). According to Hahn et al. (2012), project teams include several parties with different interests, such as the IT team, business users, and other internal and external organizational groups. Each may operate with specific objectives; accordingly,

conflict within project teams may be inevitable (Hahn et al., 2012).

Traditional functionalist and instrumental PM methods failed to provide sufficient insight into the cultural differences in global IT projects (Alfons, 2011). According to Hahn et al. (2012), an increase in one's capacity to collect, consider, and respond to information will help the project manager reposition as the environment continues to evolve unpredictably. Additionally, significant cultural diversity issues in international projects may vary from the different social problems that multi-value models represent (Alfons, 2011). According to Hahn et al. (2012), interpersonal knowledge is the ability to relate to others. Furthermore, interpersonal interactions include negotiating, influencing and motivating others, managing conflicts, displaying assertiveness, and using the power effectively in delegating (Hahn et al., 2012). Understanding and accepting diversity is the first step to the successful implementation and maintenance of a diverse organization.

Globalization of the economy provides additional opportunities for businesses (Ziemba, 2013). Internet-based virtual tools create new possibilities for rapid access to information worldwide (Gaan, 2012). Project managers can use creativeness in their business acumen for managing projects and communicating with project team members to gain a competitive edge to increase the likelihood of global project success (Ziemba, 2013). According to IPMA, competence baseline PM experience skill dimensions include technical, behavioral, and contextual competencies (Hahn et al., 2012; Madsen, 2013). Hence, the ability of the global project manager to negotiate diversity is essential to the success of international projects. Consequently, research on the dynamic abilities of the enterprise leader or global project manager to embrace culturally diverse, knowledge

perspectives has been minimal (Friesl et al., 2011).

### **Transition and Summary**

The central research question conceptualized the constructive approach to research design, grounded in general systems theory, and designed around systems thinking (Medvedeva, 2012; von Bertalanffy, 1972). Thus, the general problem signified that the strategies for implementing strategies as a focus for further research into best practices would revolve around integration of VPTs (Kaganer, Carmel, Hirschheim, & Olsen, 2013). The specific business problem pertained to senior PM practitioners, with a lack of research-driven business and PM strategies relevant to virtual PM team governance (Barnwell, Nedrick, Rudolph, Sesay, & Wellen, 2014; Krajcik, 2013; Pacuraru, 2012). The underlying issue was the increasing levels of project failures. Accordingly, businesses must grasp the concepts and business prowess of virtuality to find alternatives to increase the success rates of their projects (Kovach & Mariani, 2012).

The systems approach to organizational development formed a pervasive background to the early development of project and program management. Bernard Schriever, arguably the founder and promoter of the modern discipline of PM, managed some of the largest national defense projects (Sheffield et al., 2012). His thought provoking theories of systems dynamics integrated into PM forming the general systems theory or systems thinking approach (Morris, 2012).

Implementation of a virtual project office involves the integration of the standard project best practices into a global view of managing business ideas (Allen & Geller, 2012). Using the systemic top-down approach to design, starting with the high-level

conceptual values and directions for critical sustainment enhanced the organizational development. Applying new virtual technology to PM provided a unique technology solution to the most complex and stifling problems (Pande, 2012). However, the open-source management structure became the method of choice for management; the structure enables leaders to adapt to futuristic technology and share resources seamlessly (Bullen & Love, 2011; MacKenzie, Buckby, & Irvine, 2013; Rahmansyah, & Ford, 2013).

From a PM approach, experienced practitioners of modern technology methods involved diversity in most phases of the systems development lifecycle (Richards & Bilgin, 2012). The rapid changes in the economy, technology, and innovative business practices led to new, challenging, business conditions (Khanna & Khanna, 2011).

Richards and Bilgin (2012) emphasized that globalization of business' partnerships led to the need for dynamic methods of creating business products and services. Increasing levels of complexity such as rapid changes in technology require a system of complex business processes (Richards & Bilgin, 2012). Therefore, the cultural differences between project team members affect key elements of the organizational environment and a full understanding of those factors is essential for understanding the values adopted by business practitioners (Günzel & Açıkgöz, 2013).

The literature review resulted in the support for the phenomenology-based methods of qualitative research, designed around the systems theoretical model of differentiation (Abraham, 2013; Morris, 2012; Söderlund, 2012; von Bertalanffy, 1972). Because of the lack of current literature on the subject (Madsen, 2013; Martinic et al., 2012), Section 1 literature review modularized the research topic, focusing on business

acumen of PM frameworks. The literature review led to an understanding of a range of peer-reviewed findings of strategies for implementing best practices used as business supports around the world.

The six subtopics of PM governance are structure, operations, strategy, communication, PM concepts, and diversity. The overarching subtopics of BG, PM and virtuality were added and the communications subtopic was split into two subtopics adding collaboration for a total of nine subtopics for research. Additional subtopics, signified by IQ7, represented the generalized interview topic. A foundational understanding of information on general business best practices was essential for the conceptualization of the issues related to further research about the implementation of new technology (Madsen, 2013; Stagnaro & Piotrowski, 2013; Wu & Passerini, 2013).

Section 2 contains a description of the approach to semistructured interviewing, the identification of the research population and sample, the requirements needed to qualify or disqualify research participants, and any unique characteristics required for research compliance. The semistructured interview process included seven open-ended questions. The questions comprised the tool to acquire the data about the lived experiences of business leaders and PM practitioners (Bulley et al., 2014; Chan et al., 2013; Rubin & Rubin, 2012). The 22 participants, who were senior level, certified, PM practitioners based throughout the United States, discussed their lived experiences by providing answers to the instrument questions based on the topics central to the research questions. Section 3 reports the findings of the participants in detail.



## Section 2: The Project

In qualitative research, an understanding of the existing published body of information leads to comprehensive research questions (Bulley et al., 2014; Jarratt & Thompson, 2012; Maylor et al., 2013). Hence, Section 1 provided a baseline understanding of the research construct, the conceptual framework, literature topics, and six subtopics. A balance between operational capability and pioneering technology integration is an important business concept. Acting on theories and research-driven recommendations leads to competitive advantages that can positively affect organizational and stakeholder objectives (Yasir & Majid, 2013). Qualitative research is consistent with exploratory research (Moustakas, 1994; Wu & Passerini, 2013), especially with respect to studies in technology that are not available or not well documented. Therefore, a phenomenology method facilitated the identification of particular characteristics of personal identity and decision systems, from the lived experiences of participants in the study (von Bertalanffy, 1972).

### **Purpose Statement**

The purpose of this qualitative phenomenological study was to explore the business and PM strategies relevant to virtual project team governance. The semistructured interview process included seven open-ended questions presented to 22 senior-level PM practitioners based throughout the United States. There were approximately 235 possible participants, and a sample pool of 30 potential interviewees. Twenty-two participants qualified for the research project and provided interview information that led to data saturation. This study used the open-ended questioning

semistructured interview approach to explore BG and PM. I used the van Kaam method for analyzing the experiences of the participants. Through normalization of the data and clustering like experiences into thematic statements, the study provided a plethora of new information concentrated on 10 themes that emerged. This study showed significant thematic statements, based on project professionals lived experiences, and focused on the strategies for implementing best practices of virtual team integration (Jerbrant & Gustavsson, 2013). The study depicts information for businesses to enhance their operability during virtual project team integration, considering workplace diversity and knowledge-based systems of business, to increase organizational effectiveness and business profitability.

### **Role of the Researcher**

The role of the researcher included acting as the designer of the study according to University guidelines. In accordance with those guidelines, approval of the research proposal from the Institutional Review Board (IRB) occurred prior to executing the research plan. The Walden IRB approval number for the study is 12-09-17-14-0324082 and it expires on September 16, 2015. Research operations included the execution of ethical and communication boundaries, known as best practices with the participants, while maintaining the confidentiality and anonymity of all participants. All e-mail communications, document communications, and telephony communications associated with the doc study were under my direct control.

A system of self-regulation and oversight required a decidedly developed sense of guarantee and accountability from all participants. Implicit expectations for researchers to

be straightforward, candid, and ethical in their conduct were fundamental tenets of this research project (Gall, Gall, & Borg, 2004; Kerlinger & Lee, 2000). Integrity in scholarship leads to confidence in the accuracy of the information given by a participant. The justice, beneficence, and respect in research pertains to the treatment of individuals in research. Entities involved in research must receive assurances that researchers will act responsibly, as elucidated in the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research [NCPHSBBR], 1979; Sieber, 1992; Vanderpool, 2001).

In accordance with the rules of ethical research, documented in the *Belmont Report* (NCPHSBBR, 1979), the following research procedures applied to the study. Participant contact was by telephone or electronically by email throughout the entire process of this research project. Although some may consider this research study an experiment using humans, there was no physical contact of any kind between any of the participants or by any participant and me. The participant maintained full control of the interview process, and the interviews occurred with honesty and respect to the participants. Their time, their property, and their privacy, both personal and professional, went without violation at all times. All participants understood and signed the agreed consent form prior to engagement in any interview process. Open-ended interview questions provided for flexibility and opportunities for clarity; member checking occurred to validate the understanding of answers to the participant and me.

Following IRB approval of the proposal, personal researcher involvement in this study was with the purpose to complete all parts of the doctoral study research. A single

source of communication helped preserve confidentiality throughout the doctoral research process. The telephone interview process involved using seven open-ended questions to survey each interviewee in a serial arrangement pertaining to the six subtopics that revealed the personal and professional lived experiences of each participant. Collecting data by recording each interview and transcribing each audio file to textual formatted files (Ng et al., 2013) allowed storage of data from each participant in separate files for analysis. Additionally, responsible actions applied to the preservation of each participant's anonymity and security with respect to the collected and analyzed data, ethical personal conduct, and reporting processes. The research artifacts and data files will remain in storage on a secure encrypted file structure on the computer for 5 years (Eftekhari & Akhavan, 2013; Harnish, 2012; Herteliu & Mihai, 2014; Lohle & Terrell, 2014).

Professional relationships with participants are possible when the research question pertains to a generalized problem or the researcher's profession (Lance, Verreynne, & Griffiths, 2012; Swar, Moon, Oh, & Rhee, 2012). Thirty-eight years of personal experience (25 years in PM) produced an extensive research network of personal, professional, and educational contacts, collaborations, and experiences. The criterion of the study's participant pool was restrictive of direct supervisors or chain-of-command personnel.

### **Participants**

Pasian, Sankaran, and Boydell (2012) suggested that a purposeful sampling method is ideal to engage participants for a phenomenological type of study. Thus, the

participant selection process included 30 qualified volunteers on a first-come basis, for the participant pool. Announcements and contact information on a public bulletin board process called *Linked-in* (Appendix A) targeted a broad assortment of project professionals in many business domains. First contact was the participant's acknowledgment e-mail. Then, contact with each potential participant (Appendix B) occurred to welcome him or her to the study process. A day later, a second e-mail (Appendix C) included attachments with instructions and procedural information, along with the informed consent form (Appendix D). After the participant accepted the invitation to participate in the study, and after a signed electronic informed consent form (Appendix D) returned, the data gathering commenced.

Professional qualifications and experience relevant to VPM and BG processes, identified in Appendix A, comprised the requirements for participant qualification. Professional qualifications, screened in the first contact acknowledgment communication, ratified their qualifications to participate in the interview process. The recruiting of research participants continued until the participant pool reached 30 qualified candidates.

Following the participant screening process, unstructured e-mail and telephone communications occurred with participants to establish collaborative relationships for the study process. Open communication, a willingness to answer all questions, and assurances of security and confidentiality led to a trustful environment (Cachia & Millward, 2011; Lohle & Terrell, 2014; Mishler, 1986; Qu & Dumay, 2011). Personal and ethical issues that arose during the interview process consisted of some expressed concerns. The respect for the participants' personal and professional needs and their rights

to withdraw at any time enhanced each participants' willingness to participate (Dincer & Dincer, 2013; Goldblatt, Karnieli-Miller, & Neumann, 2011; Kutsch, Tyson, & Hall, 2014; Mitchell & Wellings, 2013; Rabionet, 2011).

The Walden University ethical research protocols superseded all standard protocols. Comprehensive disclosures of all research practices, policies, and information were actions that led to a trusting atmosphere (MacKenzie et al., 2013; Wisdom, Cavaleri, Onwuegbuzie, & Green, 2012; Yin, 2012). The single source of contact assured privacy and authenticity of information and data. I performed all work for the research project that incorporated the single source concept between the interviewee and me. There was no reference to any personal or professional identifying information in any reporting. Other than the interview recording and transcription process, all information transfer occurred in writing. All data relevant to the research project were on a single encrypted, password-protected system, backed up for security purposes.

MacKenzie et al. (2013) and Pasian et al. (2012) used the purposeful selection method to select participants who shared some common ground. Likewise, Jerbrant and Gustavsson (2013) purposefully selected an initial pool of 24 potential schools based on specific criteria. Moreover, Turkson and Coffie (2013) used the purposeful concept in their study of organizations and systems.

There were minimal anticipated psychological, economic, professional, or physical risks to the participants during the interview process. During the interviews, the participants reported no additional stress than one would expect in private, collaborative, one-on-one conversations, or in their daily lives. The only risk was giving up personal

time for interviews and an additional 30 to 45 minutes to validate transcripts. Member checking was done throughout the interview process to validate my perceptions with the personal experiences of the participant.

The general rule for determining adequate sample size in phenomenological research applied to find a point of saturation (Bernard, 2013). Saturation meant continuous redundancy occurred or no new data provided further insight (Glaser & Strauss, 1999; Lohle & Terrell, 2014). Polkinghorne (1989) suggested five to 25 interviews to develop the possibilities of experiences required to attain the research goal, while van Manen (1990) suggested that using 10 or more interviewees is appropriate. Walden University policy indicated using a minimum of 20 participants was mandatory for a qualitative phenomenological study. Therefore, the process began with 20 participants and continued in a cycle, one interview at a time, for 22 participants, to fulfill the phenomenological requirement of saturation (Chatzimichailidou et al., 2013; Gholami, 2012; Lohle & Terrell, 2014).

### **Research Method and Design**

Research comprised of a qualitative method and a phenomenological design (Moustakas, 1994; Ostlund, Kidd, Wengstrom, & Rowa-Dewar, 2011). The selection occurred after consideration of strategies of inquiry, characteristics of interpretation, flexibility to accommodate multiple sources of data, and the opportunity for me to control the direction of the interview process (Abraham, 2013; Morris, 2012; Söderlund, 2012; von Bertalanffy, 1972). The phenomenology design provided freedom of expression of personal experiences pertaining to the topic. The design was necessary for the

exploratory research approach pertaining to undocumented literature (Miles & Huberman, 1994; Oyegoke, 2011; Wu & Passerini, 2013). This design met the need for understanding and defining processes that PM practitioners use to manage virtual environments (Echambadi et al., 2012; Ihantola & Kihn, 2011; Mishler, 1986).

### **Research Method**

In qualitative research, an understanding of the information was necessary to establish comprehensive, conceptual, fact-finding, research questions (Bulley et al., 2014; Jarratt & Thompson, 2012). Creating a foundational understanding of general business strategies for implementing best practices was essential to conceptualize issues pertaining to new technology (Hanson et al., 2011). Hence, the qualitative method aligned closely to the study objectives. The objectives included gaining access to undocumented strategies for implementing best practices and governance procedures for virtual project team integration (Ihantola & Kihn, 2011; Wisdom et al., 2012). Using qualitative research provided information to build on current best practice technologies, allowing business concept innovation to expand based on research-driven business strategies (Moustakas, 1994; Oyegoke, 2011).

The selection of a qualitative method over a mixed method or the quantitative method occurred because of the need for the inclusion of the lived experiences of the participants. Those lived experiences were held in the minds of PM practitioners (Bulley et al., 2014; Chan et al., 2013; Echambadi et al., 2012). Furthermore, Miles and Huberman (1994) stated qualitative research was consistent with exploratory studies. Additionally, Wu and Passerini (2013) used qualitative research to conceptualize



strategies for implementing best practices in technology where literature was lacking or came from a variety of sources. Therefore, quantitative or mixed-method research contained the element of testing of predetermined hypotheses and was not relevant to exploratory research (Echambadi et al., 2012; Ihantola & Kihn, 2011; Mishler, 1986).

### **Research Design**

Phenomenology was the choice for the research design, that allowed data to emerge from the expressed lived experiences of the participating practitioners (Lohle & Terrell, 2014; Moustakas, 1994). Polkinghorne (1989) identified phenomenology as a method of discovery that aligns with the scenario supporting the research topic and objectives. Additionally, Miles and Huberman (1994) stated that the phenomenological design was consistent with exploratory research. The design can apply to the study of technology when literature and data come from a variety of sources, including expressed personal and professional experiences. Van Manen (1990) proposed phenomenology for subjective and thematic research. However, Moustakas (1994) said that arriving at an accurate definition of a thematic element from research can emerge from the conceptualized lived experiences of others. Meanwhile, Van Manen (1990) indicated that the primary purpose of phenomenology was to reduce the personal experiences from a phenomenon to a description of the universal essence of the meaning of the experiences. This design led to the thematic structure and purposeful identification of the strategies for implementing best practices of VPM.

A foundational structure of information on general business best practices was essential for conceptualizing business strategies for the implementation of new

technology (Madsen, 2013; Stagnaro & Piotrowski, 2013; Wu & Passerini, 2013). Consequently, the lack of current literature on the subject (Bullen & Love, 2011; Kornfeld & Kara, 2011) led to the phenomenology-based exploratory design. The systems model of differentiation (Abraham, 2013; Morris, 2012; Söderlund, 2012; von Bertalanffy, 1972) represented the modularized approach to describing the literature review and capturing the business acumen of PM frameworks.

The choice of a phenomenological design over the narrative, ethnography, or case study design was purposeful. This choice stemmed from the need for the discovery, interpretation, and understanding of strategies for implementing best practices that PM practitioners use to manage virtual environments (Echambadi et al., 2012; Ihanola & Kihn, 2011; Mishler, 1986). There was a lack of confidence in the other designs to accomplish the task. Professional experience of PM practitioners working in a virtual environment was critical to identifying foundational structure and best practice strategies for the new virtual technology integration at similar sites (Lohle & Terrell, 2014). The narrative design was not appropriate because it focuses on biographical information (Egginton, 2012; Mishler, 1986). The case study designs would have worked to a point. However, the facts of previous case studies were already documented, and the approach would not provide the depth and breadth of new, meaningful information for unrecognized practices (Hays & Wood, 2011; Hoss et al., 2012; Yin, 2012). Ethnography is a cultural behavioral design, and diversity may pertain to cultural differences. However, the focus of the study was on the lived experiences with respect to strategies for implementing best practices rather than the observation of behavioral characteristics

of diverse environments (Alfons, 2011; Bernard, 2013; Stout, 2012).

### **Population and Sampling**

The participant pool was an essential part of this phenomenological study. Each participant went through a screening process for qualification for the study. Project Management certifications were requirements for eligibility to participate in the interview process, confirmed through e-mail and telephone contacts.

#### **Population**

The semistructured interview process included seven open-ended questions, with 22 senior-level PM practitioners based throughout the United States, from an estimated population of approximately 235 possible participants. This target population consisted of senior PM practitioners based throughout the United States. The population pool led to the identification of 30 potential participants who agreed to participate, either as primary study participant or as backups for cancelations. Interviews continued past the minimum of 20 participants resulting in an additional two interviews, totaling 22 participants, when data saturation occurred.

The participant recruiting method was through a public domain (Linked-In). Participation was restricted to virtual practitioners who manage virtual projects or project managers, or those that write, or have written a policy for the integration of virtual project team governance and integration. Although public and private companies have common objectives and goals, the business strategies of organizations vary, so there was no exemption of business type for the qualification of potential participants. Additionally, the organization of their employment must have integrated a virtual project environment,

and must have been operating in this environment for over 3 years. After initial contact with the participant, the purposeful selection method for recruiting potential participants applied to the selection of the sample. In acknowledgment to the Linked-In posting, participants willing to participate provided first contact. Then next contact was by e-mail (Appendix B) for acknowledgement. Secondary contact (Appendix C) was by e-mail to discuss and deliver the informed consent form (Appendix D) to each participant. After gaining each acceptance, each name became a part of the participant pool, totaling 30 potential participants.

### **Sampling Method**

The purposeful sampling method for this study encompassed the selection criteria to normalize the population to virtual practitioners and aligning with a criteria-based selection processes. Additionally, the method facilitated the use of participants who could provide the particular perspectives needed to answer the research questions (Borrego, Douglas, & Amelink, 2011; Dincer & Dincer, 2013; Levin & Schrum, 2013). The organization of the study process, coupled with the depth and breadth of the information available, suggested the purposeful sampling method for random sampling for selecting focused participants (Lee & Rhim, 2014; Levin & Schrum, 2013; White & Fortune, 2012). Therefore, using purposeful sampling methods throughout the technology study aligned project best practices with organizational goals and strategies expressed by informed leaders (Turkson & Coffie, 2013), and were a part of the purposeful sample needed to be able to discuss certain concepts. Those concepts included aligning risks and mitigation procedures, interagency dependencies, organized communication pathways,

and balanced operational efficiency. Therefore, a purposeful sampling approach was ideal for selecting participants who were likely to be informed by their experiences (Levin & Schrum, 2013; Vega, Brown, & Chiasson, 2012). Janssen and Klievink (2012) showed that the purposeful selection approach provides for study participants who can share experiences such as how performance measures provide optimum results and enhance the ability to assign and reassign work.

### **Sample Size**

The concept of saturation in phenomenology pertains to the adequacy of the research sample size (Bernard, 2013; Glaser & Strauss, 1999; Lohle & Terrell, 2014). Redundancy of information received and the lack of new data presented by the sample was relevant in determining the likelihood of saturation (Lohle & Terrell, 2014). Walden University policy states that a minimum of 20 participants qualifies for a qualitative phenomenological study. Therefore, starting from the mandatory 20 participants, a cyclic process continued with the addition of one interview at a time, for a total of 22 interviews. Thus, the sample size fulfilled the phenomenological requirements leading to data saturation (Chatzimichailidou et al., 2013; Lee-Kelley et al., 2014). Interviews of 22 of the 30 potential participants in the participant pool led to data saturation.

The general rule for determining sample size was to find a point of saturation - the point at which no new data provides further insight on the topic (Bernard, 2013; Lohle & Terrell, 2014). Discovering best practice information required substantial information about policies and procedures that enhanced the integration of virtual project governance (Lundberg, 2011; Richards & Bilgin, 2012; Stadt, 2012). Therefore, a sample size of 22

participants was an acceptable sample size for qualitative research (Chatzimichailidou et al., 2013; Marshall & Rossman, 2011). Polkinghorne (1989) and Rocha-Pereira (2012) suggested five to 25 interviews could fulfill the goals of phenomenological research, while van Manen (1990) suggested using 10 or more interviewees. Additionally, Yarmohammadian, Atighechian, Shams, and Haghshenas (2011) conducted a successful research study of managers from a variety of management levels. They began with five participants, and selectively added six more, to broaden the depth and breadth of their results. Data saturation occurred through the non-randomized sampling approach, consistent with the purpose of this study.

### **Participant Criteria**

The criteria used for the participant selection process included being a certified senior project manager with 5 years or more experience. Each participant went through a screening process. Participants were experienced working in or managing virtual project domains for 3 years or longer. Additionally, each participant was part of policy generation projects or teams relevant to the operations of a virtual project environment. The screening process immediately followed the participants gathering process, prior to acceptance of participation.

There was no classification of individuals, other than the selection criteria, recruited for the study, by design. Underage children and prisoners would not be holding any senior management position in any company that eliminated those categories. There are disabilities of all kinds that apply for and obtain jobs in IT; accordingly, the study criteria did not exclude any individual for any disabilities. Nor were race, ethnicity,

creed, religion, pregnancy, or advanced age reasons to exclude participants.

Consequently, there was no expectation that the process of the study would reveal any criminal activity or child or elderly abuse necessitating reporting. There are disabled and elderly personnel employed in IT departments, but disabilities or advanced age was not disqualifying factors for a willing participant. Participation came from project-oriented businesses that had PM frameworks.

All certification credentials came from the PMI (PMI, 2013a), a civilian agency used to set policy and certify project and program management professionals. Other avenues for certification are the Federal Acquisition Certification for the Program and Project Managers (FAC-P/PM), the Defense Acquisition Workforce Improvement Act (DAWIA), certification through the defense acquisition university, or any university that provides certification credentials. The evidence of experience came from a screening process by electronic correspondence and telephone calls to validate each participant's credentials. Conversely, the original correspondence for screening confirmed the level of knowledge and policy generation experience and abilities.

The selection criteria indicated that all individuals 21 years or older may participate as interviewees. Although some individuals may have been older than 65, age was not a factor or condition of participant selection. All participants of the study provided evidence as a senior-level project manager that indicated they held a virtual leadership position in a project-based organization for 3 years or longer. The senior qualified project managers had at least 5 years of experience and worked in self-managed virtual climates. Position definitions, roles, and responsibilities varied, but all potential

participants met all qualifications to participate. Virtual environments are a new technology that will limit the exposure to recent experience. The informed consent form (Appendix D) contained verbiage pertaining to the detailed study background, methods, a voluntary nature of participation, risks, benefits of joining the study, reward information, and privacy assurances. In addition, the informed consent forms with the potential participant occurred prior to scheduling the interview. At that time, the provision of answers to any additional questions ensured that the participants remained willing to participate in the research.

### **Sample Size Justification**

Phenomenological research relies on different sample sizes, but must remain consistent with the concept of saturation (Chatzimichailidou et al., 2013; Glaser & Strauss, 1999; Lohle & Terrell, 2014). Walden University policy states that a minimum of 20 participants qualifies for a qualitative phenomenological study. The figure is consistent with other recommendations for sample sizes between five to 25 participants (Hare & Cameron, 2012; Lohle & Terrell, 2014; Polkinghorne, 1989; van Manen, 1990). Although the idea of saturation was helpful at the conceptual level, the data collection leading to coding involved notations of the frequency of textual references. The process made the identification of saturation less possible at the initial data collection phases, but more obvious during analysis (Levin & Schrum, 2013; Mathiassen & Nannette, 2013).

The minimum size of the participant list was 20 possible interviewees. Due to the procedural implications of a phenomenological approach, the participant pool consisted of 30, screened, potential participants. Moreover, recruitment occurred until data



saturation occurred. The actual number of participants interviewed started at 20. The addition of one interview at a time lead to two additional participants, totaling 22 participants, that led to the phenomenological requirement of saturation (Chatzimichailidou et al., 2013; Glaser & Strauss, 1999; Lohle & Terrell, 2014). The interview sequence followed a first come order, identifying the participants as they acknowledged and accepted the broadcast and consent terms for participation. Lastly, no other criteria beyond that previously stated compromised this selection process for interviews.

### **Interview Setting**

All interviews were scheduled, conducted, and approved at the convenience of the participant. The telephone interviews, at scheduled times, lasted 60 to 90 minutes each, without interference, and were free of distractions. Interview locations from which phone calls initiated were in personal, permanent residence, home-office space, free of all distractions, with privacy behind closed doors. Furthermore, the interview times were Monday through Sunday, between 8:00 a.m. and 9:00 p.m. in the Eastern Standard Time (EST) zone. Participants provided their interview locations in places where they felt most comfortable, and were free of distractions; for example, a conference room, or closed personal home-office space were reported locations. All efforts occurred to accommodate the suggested interview domain of a non-interrupted session of one-on-one telephonic communications. Daytime interviews agreed to by a participant did not interfere with normal daily routines.

The interview process entailed a structured environment with formal

introductions, reiteration of the study purpose, and formalized gestures of thanks for their participation. Recording captures all interview question answers that provided clarification of the interview questions, when necessary. Using an open-ended question approach allowed some flexibility of interview operations, and redirections were rarely required to keep the interviewees focused and on topic. Each interview recording underwent a member checking process. During that process the data were compared with the intended ideas expressed by participants during interviews. The participants reviewed the transcribed, documented data and validated answers before data were loaded into the Nvivo 10.0 database for analysis.

### **Ethical Research**

The ethical research parameters, mandated by Walden University Institution Review Board (IRB) applied to this research project. The parameters were consistent with the highest protocols of research ethics processes. Application of the parameters demonstrated thoughtful assessment of ethical considerations and safeguarded participants (Morton et al., 2013). Walden's IRB is a global system of institutional ethical oversight, with a goal to safeguard participants and communities from undue harm arising out of research. The study had official IRB approval before research began (Bhattacharya, 2014; Hall, Casstevens, & Fisher-Borne, 2013; Lohle & Terrell, 2014; Simon, 2014). The Walden IRB approval number for the study is 12-09-17-14-0324082 and it expires on September 16, 2015. The informed consent form is in Appendix D.

Ethical issues often occur when the human element is part of the research plan (Mitchell & Wellings, 2013). Hence, ethical research includes considerations of the

unique characteristics, personalities, and perceptions about what is proper protocol.

Ethical research guidelines apply to the gathering and dissemination of information as well as communications techniques (MacKenzie et al., 2013; Morton et al., 2013). A complete and comprehensive disclosure of all research practices required maintaining a trusting atmosphere (Hall et al., 2013; Lohle & Terrell, 2014; Morton et al., 2013).

Additionally, full disclosure of Walden University protocols and best practices accompanied the introductory correspondence between the potential participants and me.

### **Consent Process**

The research domain was a person-to-person civilian event, using a public domain for announcements and participation. Permission to interview participants was with the informed consent form each participant signed prior to any interviews or questioning to gather data (Bhattacharya, 2014; Morton et al., 2014), and the informed consent form depicted the study provisions. All participating employees required full disclosure of the voluntary basis for the study, and the process did not interfere with the regular business of the organization. Willingness to rescheduling meetings as necessary and appropriate also mitigated the risk of interference and distraction.

### **Withdraw Process**

IT work is occasionally a high-stress job and managers are used to the level of effort to sustain their positions. Managers at the level required for participant qualification tend to work as highly inundated seasoned professionals. This helped them qualify for the research study, but may have led to withdrawal for personal or professional reasons. Therefore, first contact was not an issue in reference to withdrawing

from the doctoral study process. The option to refrain from participation was strictly dependent on the participant, and the opportunity to withdraw from the process, for any reason, at any time, was available and executable by the participant.

Participation in the research study was strictly voluntary, reflected in the Public Board Posting (Appendix A), First Contact E-mail (Appendix. B), second contact e-mail (Appendix C), and informed consent form (Appendix D). The withdrawal process encompassed any correspondence by e-mail or any other written correspondence. If a participant aimed to remove their participation from the study, a return acknowledgment e-mail would complete the withdrawal process (Bhattacharya, 2014; Rabionet, 2011; Rolf, 2011).

### **Incentives**

Incentives for participation are a recruitment motivator (Bhattacharya, 2014; Brewer et al., 2013). However, each participant received notification that there would not be any incentive system for the voluntary participation. The exception was that each study participant would personally receive a free, published, full copy of the study results.

### **Data Security**

The informed consent form (Appendix D) specified the information security process and anonymity of all data and resources throughout the doctoral study process, and beyond. The relatively long history of informed consent and data security extended to 21st century PM contexts. For example, Lohle and Terrell (2014) provided an informed consent letter to study project managers for impact of authentic projection. White and

Fortune (2012) obtained 11 EPA consent letters to start designing a bridge. Ethics Forum (2013) restricted access to resources and services until the proper consent forms were available and signed. Documentation or recording of personal identifiable information required strict controls (Gajewski, 2013; Lohle & Terrell, 2014; Mitchell & Wellings, 2013). Consequently, strict controls involved a single source process of linking a particular participant to their file code number. The file code number, assigned upon recording of the interview process, represented the participant. Additionally, the file code number in the analysis stage of the doctoral study process contained no references to any participant's personally identifying information (PII). No PII included in any media reference other than in one-on-one communication between the participant and me.

The computer used to process all data was behind an encrypted firewall, with random IP addressing, and password-protected securities. Additionally, the computer was on a continuous framework for data and system security and virus protection, and all data files, folders, reports, and information pertaining to the research study will remain in a private lock box in a controlled environment for a period of 5 years (Eftekhari & Akhavan, 2013; Harnish, 2012; Herteliu & Mihai, 2014; Lohle & Terrell, 2014). No individual, other than me has access to any of the research data, including data that contains e-mails, demographics, or other identifying information.

### **Data Collection**

According to Moustakas (1994), phenomenological research encompasses a number of theoretical elements and procedures related to the research question, that ultimately leads the interviewees through the interview processes. Semistructured

interviewing allows the fluidity to collect in-depth, often unanticipated information about a particular phenomenon and related experiences. Gholami (2012) used the semistructured interview process to gather data to determine the risk factors in IT projects outsourcing. Nixon and Pillay (2014) used the semistructured approach to investigate the power of politics and leadership exercised by project leaders within virtual project environments. Dincer and Dincer (2013) used the semistructured approach for interviews to explore the factors and priorities considered by SME executives in CSR decisions. Chan et al. (2013) used the semistructured interviews with open-ended questions and data analysis using bracketing techniques, among other steps common in phenomenology designs (Zenobia, Yuen-ling, & Wai-tong, 2013). This bracketing approach of analysis aligns with the goals pertaining to the subtopic approach of this study. The study involved 22 interview participants who answered seven open-ended questions that guided the initial semistructured interview process, at the same time, the member checking process validated the participants' replies to verify the data and guide the perceptions of the interviewer throughout the interview process.

### **Instrument**

The interviews evolved in a semistructured manner. They began with introductions. An assessment and clarification of understanding of the process followed. A reiteration of the goals occurred. The participants answered the seven interview questions. Recordings captured verbatim data from all answers (Lohle & Terrell, 2014; Morton et al., 2013). Moustakas (1994) indicated that, in the course of phenomenological research, it might be necessary to conduct follow-up interviews to ensure clarification or

expansion of data. The interview questions were open-ended and non-restrictive. The approach allowed freely flowing participant answers. Participants had opportunities to provide a complete description of their experiences, including their perceptions of the meaning of those lived experiences (Lohle & Terrell, 2014; Moustakas, 1994; Wisdom et al., 2012). Member checking helped validate the replies from the interviewees, to mitigate bias or errors in the data resulting from the instrument.

Wilton, Paez, and Scott (2011) noted that semistructured interview instruments provided an opportunity to obtain information about the different professional experiences through the discussion of relevant topics pertaining to the research of the business problem. Consequently, the pursuit of discussion-type replies to obtain the personal and professional lived experiences of the interviewee was the goal of the instrument design. Each open-ended question directly relates to one of the six subtopics that were the focus of this research study. A seventh question was a general question relating to anything on the general topic that would add value to the research data. Research-driven business frameworks need answers from the open-ended question to help stimulate innovation to manage business structures. Mishler (1986) claimed that open-ended semistructured interviews lead to the alignment of the optimal breakdown and realignment of system-structured frameworks. Mun et al. (2011) indicated that the concept of a virtual organization was a rapidly growing technology. As such, business decisions pertain to rapidly changing circumstances and are identifiable through the free-flow of information pertaining to innovative approaches.

Mattessich (1982) identified the semistructured approach to discovery as an

excellent method of identifying and defining the various part of the system.

Semistructured interviews permitted flexibility and control in the data collection process (Abraham, 2013; Morris, 2012; Söderlund, 2012; von Bertalanffy, 1972). Gholami (2012) used the semistructured interview process to collect data regarding risk factors in IT projects outsourcing. Nixon and Pillay (2014) applied a semistructured approach to investigate politics and leadership related to project leaders in a virtual project environment. Additionally, Dincer and Dincer (2013) explored the factors and priorities of SME executives in CSR decisions, using a semistructured interview approach, and Chan et al. (2013) applied a semistructured, planning interview approach guided by open-ended questions. Data analysis from this type of data often incorporate bracketing techniques. Such approaches align with the intentions of this study (Zenobia et al., 2013).

### **Concepts**

In qualitative research, the outcomes from the approach depend on the research characteristics and design (Petty, Thomson, & Stew, 2012). The concept of saturation was a part of phenomenology that defined the adequacy of the research sample size (Chatzimichailidou et al., 2013; Glaser & Strauss, 1999; Lohle & Terrell, 2014). The primary source of data collection in this qualitative phenomenological study was the semistructured interview process using telephone interviews with 22 participants queried with seven open-ended questions (Allen & Geller, 2012; Gholami, 2012). Furthermore, the phone interview process was a serial method of questioning about the six subtopics. The intent was to capture the personal and professional lived experiences of the participants (Mathur et al., 2013; Yu et al., 2013).



The base idea of the interview questions was the exploration of lived experiences of seasoned PM practitioners who manage virtual environments. Moreover, building a foundational structure of information on general business best practices was an essential goal in conceptualizing issues and business strategies for the implementation of new technology (Madsen, 2013; Wu & Passerini, 2013). Each interview question related to a subtopic of the study. Each line of inquiry about the subtopic (subsystem) related to BG of PM (super system) (Medvedeva, 2012; von Bertalanffy, 1968; White & Fortune, 2012). The exploratory concept of this study pertained to the conceptualized, expressed, lived experiences of the participants; then data led to the identification of strategies for implementing best practices for virtual project integration (Marabelli et al., 2013; Riemer & Vehring, 2012). Using senior-level managers provided a focused approach to the gathering of information about the plans, policies, and operational strategies that may assist other organizations when implementing VPTs (Wilton et al., 2011).

Saturation was the measurement concept of the research topic. The lack of literature on virtual project innovation and strategies for implementing best practices was the deciding factor in research design framework. The framework could include open-ended questions leading to conceptualized information representing data about the subject shared by the sample (Mathur et al., 2013; Yu et al., 2013). Discovery to the point of comprehensiveness required data that was topic-driven, conceptual in nature, and thorough to the point of redundancy.

### **Scoring**

Scoring of the respondents' answers required the use of Nvivo v.10 software

(QSR International, 2012). The use of Nvivo v10 software aided the coding and representation of thematic data scoring (DaMota-Pedrosa, Näslund, & Jasmand, 2012; Dincer & Dincer, 2013). Data were partitioned into nodes (subtopics). Normalizing the data involved consideration of answers from a single question, grouping by questions, and analysis as a whole. This approach included a scoring process required for this study (Bazeley & Jackson, 2013). Nvivo and Excel helped cross-reference the data to reveal where major and minor relevance existed (Bazeley & Jackson, 2013). Nvivo provided accumulation scores (number of occurrence) for keywords and phrases. Those scores helped in the identification of trends in the data. The steps led to other references by cross synthesizing the information with other subtopics of relevance to conceptualize strategies for implementing best practices in virtual technology.

### **Reliability and Validity Assessment**

The reliability of the data collection process improved through personal transcribing of the interviews into text files, then sending the transcriptions to each interviewee for validation. Member checking throughout the interview process to validate data relevant to the topic helped eliminate biased perceptions and errors in data collection. Lance et al. (2012) used member checking as a validation procedure by summarizing and comparing ideas during interviews, transcribing, and validating the transcript files with the interviewees. Additionally, accurate reflections attained through member checking validated the professional experiences of PM practitioners working in a virtual environment. The validation process was critical to identifying foundational structure and best practice strategies for the new virtual technology (Ali & Yusof, 2011;

Lohle & Terrell, 2014). Similarly, a process of single source processing (researcher and interviewee), was used to maintain the integrity of files and data. Member checking processes also occurred in summarizing and discussing further ideas during interviews to validate my perceptions with the personal experiences of the participant (Jerbrant, 2013). The redundancy in the replies provided additional evidence of the data's validity.

The trustworthiness of qualitative research involves four metrics: (a) credibility, (b) transferability, (c) dependability, and (d) confirmability (Lincoln & Guba, 1985; Marshall & Rossman, 2011). Credibility improves when authenticated data by member checking occurs via summarizing and comparing ideas during interviews (Houghton, Casey, Shaw, & Murphy, 2013; Marshall & Rossman, 2011). Transferability pertains to transferring the study results to other widespread forums (Goldblatt et al., 2011; Thomas & Magilvy, 2011). Dependability was similar to reliability in quantitative research (Borrego et al., 2011), and pertains to if the researcher was aware of all changes affecting the research process and documentation of those changes (Marshall & Rossman, 2011). During the research process, the use of a research log established an audit trail. The log included tracking of the processes involved with each participant, data collection, and analysis procedures (Ben-Ari & Enosh, 2011; Borrego et al., 2011; Lincoln & Guba, 1985). Confirmability's real value was in large part the bias-free research processes. The personal log reflected the logical, procedural, and personal issues and assets relevant to the research quality. The log represented a means to recognize and reduce bias (Ben-Ari & Enosh, 2011; Dymont & O'Connell, 2011; Lincoln & Guba, 1985).

### **Participant Processes Needed**

The informed consent form had multiple approval methods. The procedures required of participants included reading and signing the informed consent form. Participants notified me in a return e-mail with the signed informed consent form (Appendix D). Participants took part in the interview process only after signing the form. Participants checked their transcript file for accuracy. Each participant received a copy of their transcription to validate their input to the research project. A separate password protected electronic media storage device and excel spreadsheet stored the PII information isolated from the study information. Retention of all data (electronic and paperwork) remains in storage for 5 years. Storage is in a locked box in a personal vault at a public bank. Destruction of data will occur after 5 years (Eftekhari & Akhavan, 2013; Harnish, 2012; Herteliu & Mihai, 2014; Lohle & Terrell, 2014).

### **Raw Data Availability**

I stored the raw data in three places. Interview question data were in the Nvivo database and the Excel tables, used for the analysis generated a folder hierarchy on the analysis computer. The transcript files remained in a hierarchy of folders. All data loaded into the Nvivo database for analysis, leading to the reporting structure. Reporting structures included Nvivo reports and statistics from Excel spreadsheets (Harnish, 2012; Herteliu & Mihai, 2014; Lohle & Terrell, 2014).

### **Variables**

This study involved raw data from semistructured interviews. Categorizing thematic references and normalizing the data led to the identification of strategies for

implementing best practices (Bazeley & Jackson, 2013; Miles & Huberman, 1994). The focus was on building of pertinent operational and policy references to business and project governance (Ihantola & Kihn, 2011; Moustakas, 1994; Oyegoke, 2011; Wisdom et al., 2012). Business governance and PM strategies evolved from the study of six subtopics (structure, operations, strategy, communication, PM concepts, and diversity), employing two perspectives (PM and business management). The central research question pertaining to governance of enterprise frameworks aligned with the general systems theory. A systems thinking method of constructs applied to the recognition of project governance performance (Mahaney & Lederer, 2011; Medvedeva, 2012; White & Fortune, 2012). The research design centered on modularizing the business acumen of PM considerations, decisions, and focus points required to implement VPM (Mishler, 1986).

### **Threat Strategies**

Consistency of operations in performing the interview and data gathering process enhanced the quality of the study. Well-documented processes and advanced notification for any process provided clarity to the environment. Strict adherence to all University policies pertaining to the research protocol produced enhancement of the operability of the study process. Documentation involved in the audit trail of pertained to all decisions and activities and included all notes, memos, logs, journal, computer files, and associated data (Branthwaite & Patterson, 2011; Oleinik, 2011).

### **Instrument Adjustments**

Adjustments to the interview questions occurred periodically. Adjustment was to

provide clarity of the interview question or keep the interviewee focused on the interview questions, to gather information about the interviewee's experiences pertinent to the subtopic of reference. Additionally, deviations from the standard interview question were occasionally required to explore other data possibilities referenced by answers to the interview questions.

### **Data Collection Technique**

The telephone-based interview process was the data collection method for this phenomenological study. The primary interview list consisted of 30 potential participants, from which a selected 22 participants based on their credentials, constituted the sample for scheduled phone interviews. Semistructured interviews occurred according to an agreed schedule and at the convenience of the interviewees. The telephone interview times were between 8:00 a.m. and 9:00 p.m. that reduced the amount of personal fatigue for the interviewee and enhanced the quality of the interview question replies. Two hand-held recorders used to record interviews, using 128-Bit recording mode for the exceptional clarity, prevented issues of device failure.

Conducted interviews started with a formal introduction, followed by a short briefing of the information queried. The interview began when the interviewee had no additional questions concerning the process. Member checking provided a tool to validate the understanding of the participants' replies. The semistructured interview process used open-ended questioning allowing flexibility to discuss anything pertinent to the research question. The entire process included the recording of all discussion content. Discussion content included all interview replies, comments, and clarifications from start to finish.

The recordings underwent transcription and validation for accuracy. Data transferred to the Nvivo database for further analysis. Each interviewee had the right to make changes to the transcript file, using Microsoft Word using the track changes feature, returning the changes for revalidation.

### **Data Organization Technique**

The organization of the research data was paramount in providing the best results for the research problem. Storage of the data through the Nvivo database for each subtopic supported a bracketing framework. Data were organized during the interview, data collection, and analysis processes to preserve data integrity (Moustakas, 1994; Zenobia et al., 2013). The raw data remained segregated within the Nvivo database throughout the cyclical process. Redundancy of information or data that provided no additional insight signled data saturation (Bernard, 2013; Chatzimichailidou et al., 2013; Glaser & Strauss, 1999; Lohle & Terrell, 2014). A normalization process removed redundancy of data and removed irrelevant data from the raw data (Bazeley & Jackson, 2013; Miles & Huberman, 1994). Data and information pertaining to the research study will remain in a private lock box in a controlled environment for a period of 5 years (Eftekhari & Akhavan, 2013; Harnish, 2012; Herteliu & Mihai, 2014; Lohle & Terrell, 2014).

The Nvivo version 10 served as the configuration management tool and the formal keeper of the data, for the transcribed research data files. The file system for Nvivo was structured in a hierarchical arrangement. The subtopic was at the top level and subfolders had names, such as named reports, files, correlations, cross-references,

internal, external, and miscellaneous (Hatchuel, Masson, & Weil, 2011). Nodes in the Nvivo database represent the six subtopics and a generalized area for discovered data not grounded in the six subtopics. Statistics reports from Nvivo provided insight into the commonalities and patterns of the research data. Additionally, the normalization process indicated redundancy of data by subtopic and commonalities in the data logged in a spreadsheet categorized by specificity (Bazeley & Jackson, 2013; Miles & Huberman, 1994). Spreadsheets helped to segregate the data according to relevance of subject, distributive characteristics, or applicability to alternative thematic analysis. Additional literature such as electronic journals remained in mind as a means for comparisons of information that will enhance the research process by reporting on best practice methods and common issues found during the process.

### **Data Analysis Technique**

Moustakas' modified van Kaam method for analysis included systematic steps in the data analysis procedure following guidelines for assembling the textual and structural descriptions (Moustakas, 1994; van Kaam, 1966). The process in the van Kaam method represented a conceptual view of the phenomenon. Hence, the structural context of the analysis aligned with the overall general systems theory of differentiation, decomposition, and recomposition (Morris, 2012; Söderlund, 2012). The normalization process eliminated outliers irrelevant to the essence of the meaning of the experiences related to the phenomenon, and the defining processes aligned with the general systems theory for conceptualization of process elements.



**Interview Questions**

1. What are some of the dynamic changes you have to make to your current business infrastructure to integrate virtual project teams?
2. What types of operational constructs would be required to integrate virtuality in your organization?
3. What are the strategy integration points in the business infrastructure that virtual project teams will yield advantages over standard local project management?
4. What are the communication concepts that have assisted with the integration of virtual project teams?
5. What project management concepts added significant value to the implementation of virtual project teams?
6. What major diversity elements and issues, such as personal, professional, and knowledge-based information, do you qualify as most important when integrating virtual project teams?
7. What additional ideas can you provide that will add significant value to the integration of virtual project teams?

**Software**

The transcription process included the use of audio recordings and Dragon 10.0 software for transcribing the audio interview files. Each audio file and transcript sent to the participants underwent validation and gained legitimacy by this validation and sign off (Houghton et al., 2013; Marshall & Rossman, 2011). Following the validation of the

transcription file, each transcription file was loaded into Nvivo 10.0 database for analysis. Nvivo is a software package used for the organization and categorization of data that permits analysis and coding of the data (Dincer & Dincer, 2013; Gogarty, 2013). Coding refers to the Nvivo functions that qualify data by subtopics, categories, patterns, and thematic concepts for future analysis (DaMota-Pedrosa et al., 2012). Nvivo provided scores (number of occurrence) for keywords and phrases. Using Nvivo and Excel to segregate, organize, cross-reference, and validate the data, the process of continuity checking and redundancy of data produced the reliability (Bazeley & Jackson, 2013). Identification of trends in the raw data led to other references by cross-synthesizing the information with other ideas relevant to strategies for implementing best practices in virtual technology. The redundancy of information collected and the lack of new information presented in a sample size was relevant to determining the probability of saturation of data from the selected candidate list (Hare & Cameron, 2012).

### **Coding Techniques**

Coding was a method used to segregate and organize data. Coding referred to the part of the analysis where labeling and categorizing of data concepts occurred (DaMota-Pedrosa et al., 2012; Dincer & Dincer, 2013). Coding of the data at multiple levels resembled the hierarchical structures of systems dynamics. Business governance and PM were the two high-level subtopics (first-level concepts) of the research and coded at the top of the hierarchy (1.0, 2.0). The subtopic level was the second-level coding with identifiable data elements that referenced the six subtopics (1.1...1.6 or 2.1... 2.6). There were six or more Level 2 subtopics, depending on the amount of different thematic

references found during analysis. Consequently, references found in the analysis of the data reached four levels of the hierarchy. Additionally, a single thematic reference was relevant to more than one coded element, both at the first and second levels of the normalization process.

Each interview question represented a different subtopic. The seventh interview question was a generalized question not directly related to the six subtopics (DeLuna, 2011; Dincer & Dincer, 2013). Statistical reports describing occurrence of the object indicated repetitiveness as indicators of relevance when performing the Level 3 analyzes to establish conceptualized thematic references pertaining to strategies for implementing best practices. Lowest levels of coding represented statistics for redundancy or saturation points. The cataloging of occurrence of elements, codes, and categories referenced the decisions of best practices by redundancy within their respective levels of coding. Analytical coding of the data separated the different questions and coding of the participants separated the questions from any other participant (Xie, Wu, Luo, & Hu, 2012).

### **Subtopics**

The driving focus of this study was BG and PM. The focus was on six subtopics (structure, operations, strategy, communication, PM concepts, and diversity). Two perspectives were PM and business management. A foundational structure of information on general business best practices was essential for the conceptualization of issues and business strategies for the implementation of new technology (Madsen, 2013; Stagnaro & Piotrowski, 2013; Wu & Passerini, 2013). In contrast, the top six subtopics were the

culmination of the review of hundreds of peer-reviewed articles on PM, business frameworks, and organizational development.

Six major subtopics (focus areas) emerged because they were all essential elements to business operations and for integration of technology. Structure plays an important part of an organization's competency and process flow (Jiang & Carpenter, 2013; Kapoor & Sherif, 2012; Vinayan et al., 2012). Operations pertains to business and production environments used to produce goods and services (Brown, Hyer, & Ettenson, 2013; Fitzgerald, Kruschwitz, Bonnet, & Welch, 2014; Mohamed, 2013). Strategy is the element of business acumen that provides a directional focus for the organization (Bulley et al., 2014; Jiang & Carpenter, 2013; Mohammad & Asadollahi, 2012). Communications play a significant and diverse role of business operations, strategic advancements, and information flow (Erasmus & Khera, 2012; Jiang & Carpenter, 2013; Ovanessoff & Purdy, 2011). Project management concepts are all processes, policies, and features of the organizations political, operational, and production environments (Kaganer et al., 2013; Pal & Håkan, 2011; Portz, 2014). Diversity is the human and operational element that signifies cultural and individualistic differences in working environments (Günsel & Açıkgöz, 2013; Jiang & Carpenter, 2013; Kapoor & Sherif, 2012; Verbos & Humphries, 2012). The population was open to worldwide access to integrate a plethora of alternatives to best practices and to gain access to organizations that the researcher might not normally have had access.

When defining organizational entities as subsystems (subtopics), differentiated from the larger overarching super system, the subtopics represent the organizational

infrastructure (Jerbrant, 2013; von Bertalanffy, 1972). Separation of data into six subtopics aligned with the linear system theory of decomposition (Chen et al., 2004). Hence, the segmentation of data using redundancy during the data collection and analysis process aligned with normalization (Massa & Testa, 2011; Mishler, 1986), with the constructivist approach aligning with a systems process. The process occurred to generate ideas from the lived experiences of PM practitioners (Marabelli et al., 2013; Mathiassen & Nannette, 2013; Stephens, 2013). The systemic approach applied to the identification of operational elements, or departments in an organization. Additionally, the identification helped to determine the internal and external dependencies that innovation may promote in a business or community (Ludovic-Alexandre & Marle, 2012). Segregating the internal processes of a governance system provides accurate focus on a subsystem (subtopic) within the governance super system (Söderlund, 2012). Boundaries define, support, and control the operations of the subsystem. Moreover, the boundary characteristics lead to changes in objectives, structures, and operations in a standalone mode. (Söderlund, 2012). Concurrent evolutionary processes strengthen the system while maintaining design capacity and operability of the organization (Erasmus & Khera, 2012; Nilsson & Gammelgaard, 2012).

Each of the first six interview questions focused on a different topic of the study (structure, operations, strategy, communication, PM concepts, and diversity). Interview question seven represented any other pertinent information that the interviewee felt valuable to the research project. The conceptual framework combined the general systems theory with types of differentiation and decomposition. General systems theory

decomposition and recomposition models were research approaches of analysis focused on a system broken into subsystems (Barbaroux, 2012). Each system can be broken into an infinite number of levels to determine the compatibility or relevance to the objective that governs the particular task (Jerbrant, 2013; von Bertalanffy, 1972). Then the analysis of any level subsystem was done as part of a larger system or as a system within itself (Sadvandi, 2012). The differentiation model was a method used to define a task based on the characteristic of the subject (Stout, 2012). The model linked dependencies to other process points that work as a functional collaboration point of the process (Abraham, 2013; Söderlund, 2012; von Bertalanffy, 1972).

### **Data Analysis**

Data analysis included member validation prior to data processing. Each interviewee received a copy of their transcription file for review and approval of accuracy (Bernard, 2013; Houghton et al., 2013; Jerbrant, 2013; Marshall & Rossman, 2011). The participants' reviews allowed for clarification and modifications that increased the validity of the data (Lee-Kelley et al., 2014). Use of a systems approach to analysis allowed for the capture of the meaning of the data that emerged to appreciate better the phenomenon.

All information on individual cross reference charts underwent reorganization to provide a conceptual view of thematic points of interest. Tables displayed combined results from all 22 participants (Bazeley & Jackson, 2013; Gholami, 2012; Marshall & Rossman, 2011; Miles & Huberman, 1994). The master matrix indicated saturation of data related to the six subtopics. The cyclical process added one interview at a time to

fulfill the phenomenological requirement of saturation of data (Chatzimichailidou et al., 2013; Glaser & Strauss, 1999; Lohle & Terrell, 2014).

Each subtopic was a separate focus of analysis. Together the data from all subtopics underwent data reduction techniques to normalize data, that reduced the amount of redundancy. Charting these items involved use of a multi-dimensional table structure for cross-thematic research (Bazeley & Jackson, 2013; Miles & Huberman, 1994). The transcendental analysis process provided a focus on the descriptions of the raw data rather than on the self-interpretation of the data, that reduced or removed personal and professional bias. Because of the high levels IT education and professional experience of the researcher, using the transcendental analysis method was appropriate.

Moustakas' (1994) modified van Kaam method for analysis offered systematic steps for the data analysis procedure and guidelines for assembling the textual and structural descriptions. The product of the van Kaam method had a conceptual view of the phenomenon with a structural context of the analysis. Furthermore, the process aligned with the overall general systems theory for differentiation, decomposition, and recomposition (Morris, 2012; Söderlund, 2012). Therefore, the reduction process eliminated outliers with respect to data about the phenomenon, and the processes aligned with the systems theory for conceptualization. The procedural steps of analysis were as follows:

1. One generalized open-ended question asked for each of six subtopics related to the phenomenon, exposed by the comprehensive review of the research literature (Moustakas, 1994).

2. Data collected from individuals who have experienced the phenomenon occurs. Polkinghorne (1989) recommended that researchers interview from five to 25 individuals who have all experienced the phenomenon.
3. Reduction and elimination of the data was essential to remove unrelated data. The screened data included significant statements, proof of concept for the known items.
4. Clustering was a process bringing the items found in the normalizing process to thematic relevance by clustering the major statements. Moustakas (1994) called this step horizontalization.
5. Textual descriptions developed from the significant statement clusters. The textual descriptions also called structural descriptions led to definitions of the holistic view of the phenomenon.

The final identification or definition process included identification of the composite descriptions of the phenomenon from the textual and structural statements that showed the invariant structure of the phenomenon. Final analysis identified trends within each interview data set. The research questions applied to a particular subtopic and the segregation of the raw data matched the subtopic approach. Processing of raw data using thematic references occurred within the interview data domain. Crosschecking of the themes took place at the top level and second level to build a cross-sectional reference of relevance. Similarly, the systems approach ratified structural integrity within the data and relevance to redundancy. Redundancy levels of the data support stronger integrity or value of information; the higher the redundancy of a thematic idea, the more relevance



the data had to the subtopics and to best practice information. After the analysis process was complete for all six subtopics, the generalized folder containing the progressive set of conceptual ideas indicated general elements for best practice identification.

Conditionally, the findings were specific to the topic of research, but the total personal and professional experiences of the interviewees provided a benefit from the results of research.

### **Conceptual Link**

The systems theoretical model of differentiation depicts a structural and systemic view of an organization. It allows appreciation of the breakdown into subsystems. The system provides for a baseline understanding of literature, documented plans, policies, and governance procedures used by standard PM organizations (Jerbrant, 2013; Morris, 2012; Söderlund, 2012). Using the same model applied to idealize the elements of the subsystem and tie them back to the super system, control deviations, and define organizational and strategic systems (Jerbrant, 2013; von Bertalanffy, 1972). Defining organizational entities as subsystems differentiates them from the larger organizational overarching super system. Component entities represent the organizational infrastructure and concept of structural hierarchies, with the addition of feedback loops of communication (Moustakas, 1994; White & Fortune, 2012). Additionally, the differentiation of the elements of subsystems represented the levels of organizational significance to the system (Johnson et al., 1964; von Bertalanffy, 1972). The hierarchy model described the operational and control components, the system dynamics of the framework further related the internal and external dependencies, while the elements of

any system connected back to the overarching super system. Furthermore, the hierarchy model, resources, and policy, centralized the infrastructure alignment with corporate objectives (Lundberg, 2011; Stadt, 2012; White & Fortune, 2012).

### **Reliability and Validity**

Reliability and validity of methods, data, and tools used in this research project were essential in establishing reliable conclusions. A clear understanding of ethical and procedural control mechanisms, that describe research boundaries, was my primary focus, prior to engaging in the research project (Ali & Yusof, 2011; Branthwaite & Patterson, 2011). Protocols are standard operating elements with human involvement in the research process. The alignment of the data collection and analysis procedures with the research problem was also a requirement (Ihantola & Kihn, 2011).

I used checkpoints and recovery points to maintain reliability throughout the research project. The data validated by the participant provided trustworthy continuity. Member checking occurred during the interview process to validate the data and align the perceptions of the researcher with the actual, expressed, personal experiences of each participant. Following the transcription of an interview, e-mail delivered a copy of the transcript file to the participant to validate and sign off (Houghton et al., 2013; Lance et al., 2012).

In qualitative research, validity refers to ensuring there is a dynamic application process to address the research questions. The research methodology provides measures intended by the planned research (Lohle & Terrell, 2014). Collections, transcription, analysis, dissemination of all data followed defined steps that ensured continuity of

research steps based on protocols and consistency (MacKenzie et al., 2013; Rennie, 2012). Internal validity pertains to comprehensive research findings relative to the research problem and questions (Ali & Yusof, 2011). The level of accuracy of the findings was a reflection of the raw data obtained from the open-ended interview process (Çakir, 2012). Personal performance of all work was by a single researcher who made all decisions for this study. Goldblatt et al. (2011) suggested that researchers should be honest when presenting findings, so a sole source for data analysis assured that end. During the analysis part of the study, a single set of files prevented older data from corrupting files. Furthermore, there were no data fabrications or recovery processes in the data gathering or analysis procedures of this research project. Windows Office, Nvivo 10.0, and Dragon Naturally Speaking Software tools were the tools for managing data. Cross checking, member checking of data, and accuracy checkpoints applied to avoid common issues related to obscuring data (Lohle & Terrell, 2014).

Using credibility, transferability, dependability, and confirmability helped to establish the trustworthiness of this study and improve the quality of the outcomes (Thomas & Magilvy, 2011). Credibility involved ensuring the research findings were authentic from the study participants' viewpoints (Lohle & Terrell, 2014). This study established credibility using a process called member checking that allowed participants to compare their ideas expressed during interviews to the actual transcripts. Then the process led to validation of the accuracy of the data, and validation ensured correctly formed perceptions about the personal experiences of the participants. Each transcript underwent the validation process by the interviewee and signed off as authentic, ensuring

reliability in the study (Houghton et al., 2013). Transferability focuses on transferring the research results to other populations or settings on a widespread basis (Marshall & Rossman, 2011).

Using a semistructured interview process with open-ended questions concerning six subtopics provided a significant amount of items for future research. This study focused on a broad sector of public and private business. The VPM team paradigm is a global phenomenon, indicating that the transferability of this study has a large number of possibilities (Thomas & Magilvy, 2011). Dependability of this research was researcher bound and concerned with ensuring the researcher was aware of all changes affecting the research process and documented these changes (Marshall & Rossman, 2011). During the research process, the use of a research guide and journal generated an audit trail for process checking and validation (Ben-Ari & Enosh, 2011; Dymont & O'Connell, 2011).

### **Transition and Summary**

Section 2 provided a detailed account of the research topic, research plans, associated tools and techniques used for the data collection and analysis. Summarized was the role of the researcher in the procedures and processes. The doc study boundaries identified the key steps to follow and the population included 100% senior project managers or virtual management practitioners, from which the sample emerged from a purposeful approach. Candidate selection process depicted a systematic process of selection while maintaining an appreciation for the minimum number of participants required. The details surrounding the research design include specifics of protocols, methods, and research boundaries, that reduced the levels of personal bias leading to a

comprehensive report of findings from the research to help solve the stated problem (MacKenzie et al., 2013).

This research process and design included the procedural specifications used during the research process. Decisions concerning the research methods included security, justification, validity, and the ethics of research, data collection procedures, and analysis protocols of the research plan. The research instrument encompassed the items, as subtopics, that emerged from the synthesis of the peer-reviewed information collection and evaluation phases of the project. Additionally, the section also included details about the data privacy and security to protect and preserve the research data.

Section 3 of the study includes the detailed results. Discussions of the results are in eight components. These components include the introduction, presentation of the findings, implications to social change, recommendations for further action, a recommendation for future study, the researcher's reflections, and conclusions.

### Section 3: Application to Professional Practice and Implications for Change

The purpose of this qualitative phenomenological study was to explore the business and PM strategies relevant to virtual project team governance. Interview questions represent six general subtopics (structure, operations, strategy, communications, PM concepts, diversity, and a broad inclusive subtopic for any other relevant discussion points). The overarching focus of the research findings encompass BG (represented by the governance subtopic) and PM (represented by the PM and virtual subtopic). Collaboration was a constant discussion throughout the data gathering process, so a collaboration subtopic was also present in the analysis and findings. There were 1,233 thematic statements identified by Level 1 research, normalized, and then divided into 10 unique themes that emerged from Level 3 data analysis. Likeness of categories spread across multiple subtopics, indicating relevance of interview questions to various subtopics. Broad range categories received many notations. Example categories included manage, collaboration, structure, skills, understanding, and environment (Figure 26). Due to their relevance to BG and PM practices, these categories crossed the boundaries across multiple subtopics throughout the interview data (Figure 25).

#### **Presentation of the Findings**

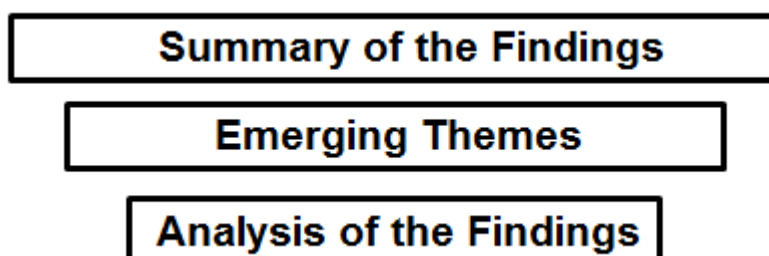
The study had one overarching research question: What are the business and project management strategies relevant to VPT governance?

The data analysis resulted in 10 major emergent themes, represented by associated metrics and tables related to the data that support the themes and discussed in the presentation of findings. The analysis was in accordance with the modified van Kaam

method. Data were retrieved from interviews and were analyzed removing the redundancy and irrelevant data (Level 1) and normalized (Level 2). Clustered statements were articulated factual textual statements relevant to the research topic (Level 3). Nine subtopic categories represented unique components to BG and PM that required consideration when integrating virtual project teams into a business infrastructure or PM organization. This section is broken down into the three major sections. The first section is generalized findings; the second section includes the relevant subtopic findings for each interview question; the third section includes the emergent themes. Each section contains explanations of data analysis steps that led to the findings.

Figure 6 depicts the relationship and conclusions format. The general findings represented the total amount of findings for all nine subtopics that were representative in the interview questions. Each interview question focused on a single subtopic. For example, IQ1-IQ6 focused on the structure, operations, strategy, communications, PM concepts, and diversity. Project management and virtual governance were additions because they were the two overarching focus points of the research. The collaboration subtopic was an addition because of the amount of data in the communications subtopic and the close relationship of communications with collaboration. Generalized findings represented all nine subtopics with participation counts and thematic references identified from the raw data from the interviews. Ten themes emerged from the combination of all data gathered during the participant telephone interviews and data analysis. The analysis led to the thematic references in the research data by subtopic category, and the process addressed the importance of the findings in relation to the individual participants. Final

steps included discussion of the findings in light of the conceptual framework of the study.



*Figure 6.* Research findings reporting architecture.

### **Summary of the Findings**

Interviews with 22 participants to attain saturation led to coding all participants with a 702-xxxx serial sequence and a reference number; for example, 702-0180...702-0204 were participant codes for confidentiality. The concept of saturation was a part of phenomenology that defines the adequacy of the research sample size (Bernard, 2013; Glaser & Strauss, 1999). Redundancy of data and lack of new information from the sample were relevant in determining the likelihood of saturation (Chatzimichailidou et al., 2013; Glaser & Strauss, 1999; Lohle & Terrell, 2014). Table 2 depicts the saturation elements and percentages obtained from the raw data analysis of three levels of analysis. Redundancy of information indicator in the far right column depicts the thematic saturation levels of the data. The communications subtopic split into two subtopics (communications and collaboration) due to their size and discussion impacts, and the general subtopic divided into two subtopics (governance and PM and virtual) to provide a greater scope and definition of the interview questions and relevance to the research



topic. Direct references percentages indicated the overall direct representation of the category discussion statements with direct representation to the IQ and Subtopic.

Table 2

*Thematic References with Subtopics (Overall)*

Subtopic	IQ	References	Avg.	Theme reference	Direct reference	Redundancy variance
Structure	IQ1	248	16.53	20.84%	35.94%	34.66%
Operations	IQ2	133	11.08	11.17%	35.29%	52.00%
Strategy	IQ3	79	7.9	6.64%	29.41%	55.38%
Communications	IQ4	138	11.5	11.60%	35.29%	56.95%
PM concepts	IQ5	116	10.55	9.75%	32.35%	58.83%
Diversity	IQ6	142	10.92	11.93%	38.25%	61.05%
PM and virtual	IQ7	156	14.18	13.11%	23.53%	46.21%
governance	IQ7	82	8.2	6.89%	35.29%	45.63%
Collaboration	IQ4	96	7.39	8.07%	38.25%	65.86%

*Note.* Participant reference counts for each subtopic, average of subtopic participation to total, thematic reference percentage, direct reference to the subtopic for all references, and redundancy factor when comparing direct reference participation to the total participation.

Analysis of each of the nine research subtopics led to an opportunity to construct graphs. Graphs included the important concepts that emerged from each subtopic and the contributions of each of the participants to the categories and show the significance of a statement to the topics in the research.. Additionally, the subtopic participation graphs represent the cross-synthesis of the participation and subtopic relevance to the rest of the

subtopics in the study. The interview questions directly related to seven of the research categories. Table 3 depicts this significance.

Table 3

*Interview Question Relevance to Subtopic and Research Category*

IQ #	Interview question	Subtopic	ID
IQ1	What are some of the dynamic changes you have to make to your current business infrastructure to integrate virtual project teams?	Structure	R
IQ2	What types of operational constructs would be required to integrate virtuality in your organization?	Operations	O
IQ3	What are the strategy integration points in the business infrastructure that virtual project teams will yield advantages over standard local project management?	Strategy	S
IQ4	What are the communication concepts that have assisted with the integration of virtual project teams?	Communications	C
IQ5	What project management concepts added significant value to the implementation of virtual project teams?	PM concepts	P
IQ6	What major diversity elements and issues, such as personal, professional, and knowledge-based information, qualify as most important when integrating virtual project teams?	Diversity	D
IQ7	What additional concepts can you provide that will add significant value to the integration of virtual project teams?	Generalized	G

*Note.* Interview question number, interview question, subtopic reference category, and ID code for each subtopic.

Table 4 depicts the level of participation for each subtopic after completion of the final analysis. The subtopics represented by columns 3 through 8 and columns 9 and 10 represent BG and PM. Column 11 represents collaboration.

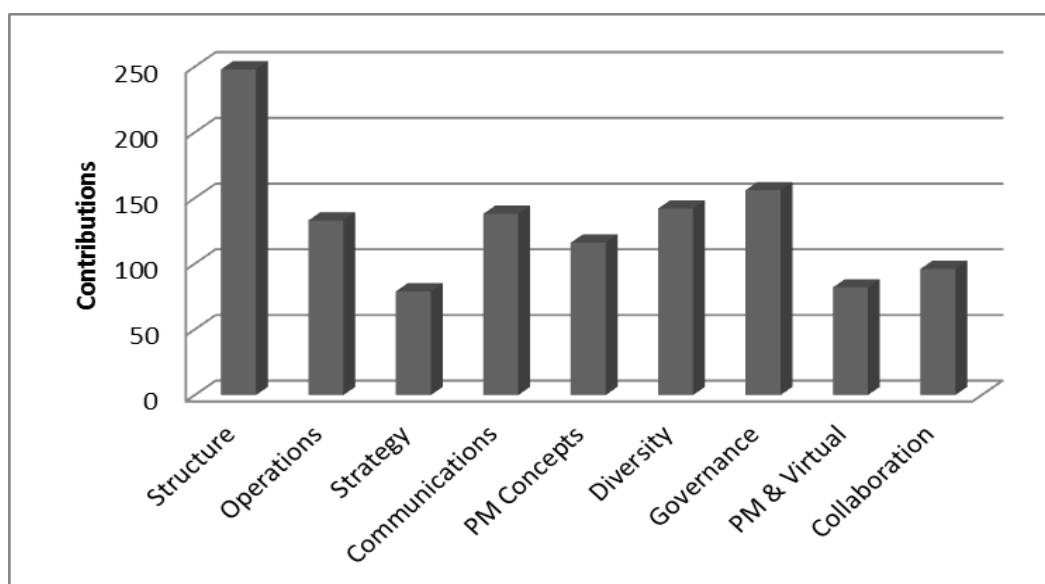
Table 4

*Theme Significance Cross Reference Table*

Reference Category	Total	Subtopic Category								
		R	O	S	Com	P	D	V	G	Col
Accountability	22	4						6	12	
Collaboration	66	9	12	10	10	4		9	6	6
Communications	68	14	7	5	17		6	12		7
Consistency	8									8
Contribution	8									8
Culture	12						12			
Diversity	31		4		11		9	7		
Efficiency	66	6	13	9	10	16		12		
Environment	122	18	13	12	7	21	15	23		13
Expectations	18	14								4
Governance	31	10		7		6			8	
Infrastructure	18	18								
Language	19						19			
Location	12						12			
Manage	147	17	27	9	16	21	13	33	16	10
Methodology	5					5				
Metrics	13								13	
Mindset	24					13	6			5
Objective	6			6						
Operations	31	16	7		8					
Personnel	13						13			
Policy	11								11	
Preparation	8									8
Procedure	25	17						8		
Productivity	31		14				10			7
Professional	14							14		
Proficiency	10				10					
Risk	4					4				
Skills	77	17	7	6		12	19	16		
Standards	38	21			11					6
Strategy	9			9						
Structure	89	37	5	6	13	7		9	12	
Technology	36		18		11		3			4
Understanding	83	30	6		14	7	5	7	4	10

*Note:* Subtopic categories: R = Structure; O = Operations; S = Strategy; Com = Communications; P = PM concepts; D = Diversity; V = PM & virtual; G = Governance; Col = Collaboration.

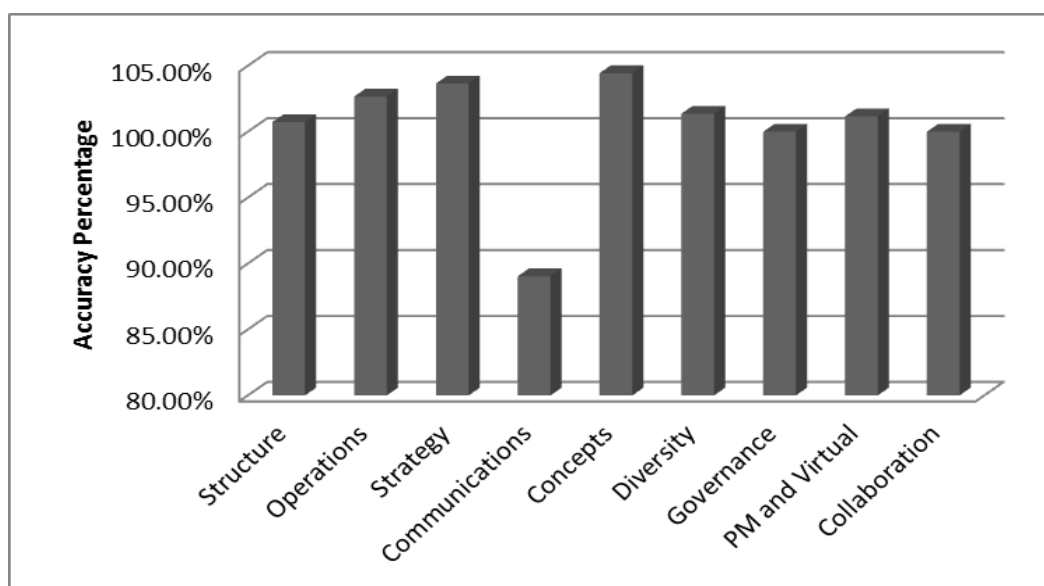
Figure 7 depicts the summary of overall thematic statements for each of the nine subtopics. Structure was the main discussion topic of the research. PM and virtual subtopics encompassed a plethora of related issues leading to the identification of a dozen other thematic categories relevant to BG, PM, and virtual environments. The remainder of the subtopics represented approximately 150 relative statements identified for further analysis, and the combination of subtopic references indicated in Figure 6 totaled 1,233 relevant statements identified from the Level 1 analysis.



*Figure 7.* Summary of raw data references by subtopic.

Figure 8 depicts the accuracy levels obtained during the analysis. Project management and BG are broad topics. Synonyms within the Nvivo 10 software analysis tool were among the word reference categories and subtopics. Although the synonyms generated a broader field of relevance to the research topic, the accuracy of the thematic references remained high. Figure 8 represents the subtopic levels of accuracy throughout

the data gathering process. The communications subtopic, although much lower than the other subtopics, was a part of the generalized characteristics of the data, substantial in its right. A lesser percentage of accuracy for communications was due to the culmination of communications and collaboration word references and synonyms, and the collaboration synonyms taken from the relevant communications subtopic. The collaboration subtopic revolved around the frequency of its relevance during the interview discussions linked to the communications topic coverage.



*Figure 8.* Accuracy percentage by subtopic.

Figure 9 depicts the redundancy of the relevant statements articulated throughout the data analysis process. Normalized statements from the Level 2 analysis led to the identification of factual statements conceptualized into pertinent facts pertaining to the research topic. The statements then underwent a comparison for generality, clustered as to their possibility to maintain a unique reference.

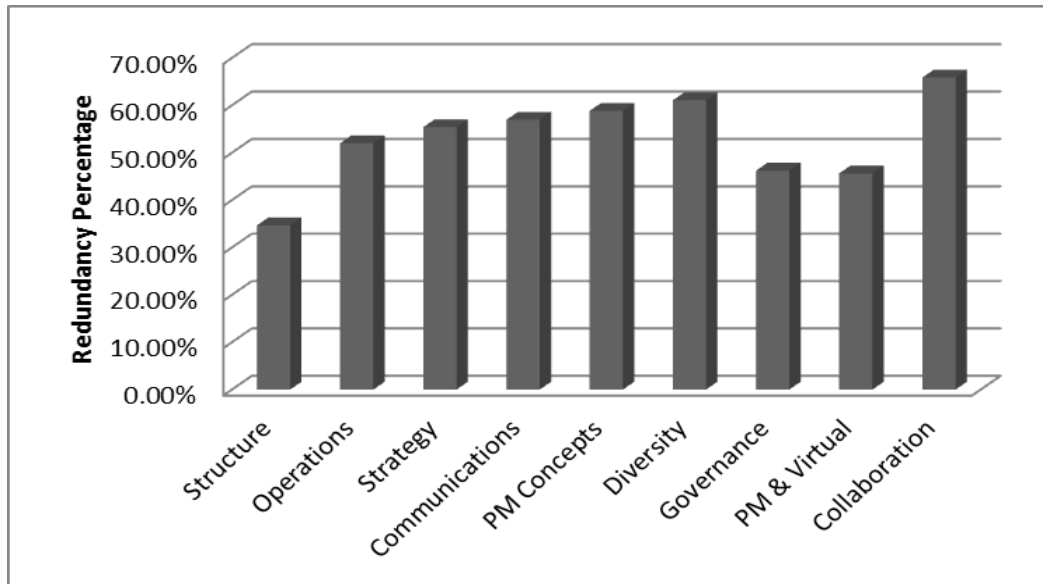


Figure 9. Redundancy variance by subtopic.

## Research Findings

This research resulted in the identification of 10 themes leading to the strategies for implementing the best practices of integration of virtual project teams. Data revealed undocumented thematic references for integrating innovative strategies when businesses are trying to implement virtuality in their PM frameworks. Consequently, the concepts of BG and PM were the overarching focus that controlled the subcategories for the research and thematic statements relevant to each subcategory.

The emergent themes are as follows:

*Theme 1:* Management is the primary component of successful virtual project teams.

*Theme 2:* Environments are diverse for virtual project teams.

*Theme 3:* Collaboration is mandatory for the success of virtuality.

*Theme 4:* Understanding the elements of virtual project management provides clarity to the environment.

*Theme 5:* Structure of virtual project teams is essential.

*Theme 6:* Efficiency is the key to prolonged virtual project team success.

*Theme 7:* Skills are requirements to integrate team members into virtual project teams.

*Theme 8:* Diversity is inherent in geographically dispersed virtual project teams.

*Theme 9:* Governance is a major part of business and project management structure.

*Theme 10:* Technology is a requirement for virtual team collaboration.

### **Emerging Themes**

The emergent themes of this qualitative phenomenological study represent responses identified in Level 1, Level 2, and Level 3 analyses. Each theme represents the findings from answers to one or more interview questions, and each question in the interview reflected a category with potential to influence other data types. Organization of the data allowed evaluation of the nine subtopics of the research to identify essential, critical elements integral to optimal virtual team governance. Each emerging theme in this study represents the culmination findings pertaining to one or more subtopics, where data from the interview question responses were representative of conceptual categories related to BG and PM.

**Theme 1: Management is the primary component of successful virtual project teams.** The primary emerging theme was that management was an integral part

of the integration of project teams. This theme emerged from 100% of the participants, leading to the identification of the major theme. Management totaled 158 thematic statements, 13.28% of the total count of 1,190 references during the interview process. Participant 702-0195 said, "Management of virtual project teams becomes more complicated as the geographic disbursement increases." Logistic is a small part of the management cycle (702-0187, personal communication, September 22, 2014). Participant 702-0190 offered, "But added confusion comes when the team members are not prepared to work in a virtual environment." The majority of the participants agreed. Participant 702-0188 made a significant point by adding, as a leader, that "You have to own the problems and you have to be able to account for your people, account for the problems, and take ownership, and fix what needs to be fixed." Participant 702-0188 said, "Project managers must ensure staff maturity levels will support the integration of virtual product team practices", and participant 702-0188 concluded with "...and all aspects of technical competence are available." Virtual leadership or management styles are different, as Participant 702-0187 described, "So project leaders need to apply a hands-on management style, accountability..." Moreover, support strong PM skills to be able to facilitate a virtual team and keep control of topics (702-0187, personal communication, September 22, 2014). Managers need to be willing to empower the team members to get the job done. They need to ensure that strategic goals and evolving objectives are the focus of routine communication. Managers must facilitate communication that is concise, effective, and inclusive. They apply leadership perspective to develop organizations into mature organizations.



**Theme 2: Environments are diverse for virtual project teams.** The

environment that enables virtual project team integration must be varied and able to support the plans and policies relevant to virtualization. This theme emerged from 100% of the participants throughout the interview themes. Environment concepts appeared throughout 138 statements, 11.60% of the total count of 1,190 references during the interview process. Virtual environments require more processes and procedures in place because you are not in an environment that allows for face-to-face dialog. Participant 702-0194 said, that “Ensuring the effective communication capabilities exist...” that enable conversations with multiple very diverse cultures (702-0194, personal communication, October 05, 2014). Participant 702-0181 said, “Virtual teams offer a different dynamic with both strengths and weaknesses...that provides advantages for standard projects where expectations require consistent metrics for project execution" (personal communication, September 20, 2014). Participant 702-0202 indicated, “The virtual environment is not for everyone.” Participant 702-0194 said, “You have to understand the culture of the organization” to build relationships and communication protocols, and to document and disseminate information effectively, with the rationale (personal communication, October 05, 2014). Management infrastructure should be elaborate enough to manage properly and respond to the issues that come with virtual project teams (702-0195, personal communication, October 08, 2014). Ensuring that each business infrastructure and capabilities exist supports virtuality (702-0195, personal communication, October 08, 2014).

**Theme 3: Collaboration is mandatory for the success of virtuality.** The

primary theme that emerged was the need for collaborative protocols, tools, skills, and management styles to succeed in virtual project teams. This theme emerged from 89% of participants from their interview answers. Collaboration totaled 66 thematic statements, 5.55% of the total count of 1,190 references during the interview process.

Communication, cooperation, and collaboration are an integrated part of communications and the cornerstone of efficiency in business and PM. Without the essentials of communication, such as technology, bandwidth, meeting structures, communications plans, or rules of engagements, virtual project teams will lack numerous critical elements to virtualization. Participant 702-0200 said, “Collaboration brings a sense of team...” that improves the social and political infrastructure of corporate frameworks (personal communication, October 09, 2014). Having and assuring an effective approach to meetings and team collaboration forums is critical (702-0199, personal communication, October 09, 2014). Participant 702-0199 concluded, “Employing centralized resources provides the ability to share information.” Participant 702-0189 added, “To see material over accomplished goals by being inclusive, being able to include people who we might not normally have been able to work with.”

**Theme 4: Understanding the elements of virtual project management provides clarity to the environment.** The primary theme that emerged was the need for understanding the very diverse elements of VPM that provides clarity to the environment. This theme emerged from 89% of the participants' interview answers. There were 88 thematic statements, 7.39% of the total count of 1,190 references during the interview process. Providing a clear understanding of the environment is paramount to the success

of a virtual project team. Participant 702-0204 said, “I may understand what my requirements and my scope and my budget is, but it is hard to understand the environmental direction without clear policy.” Participant 702-0196 said that, “It is hard to know where someone’s coming from, without actually knowing them or their background and their character traits” (702-0193, personal communication, October 05, 2014). The participants elaborated on the importance of identifying a personal and professional need for understanding in project governance. Participant 702-0196 suggested, “Polling them for input if it is a smaller forum.”

Participant 702-0187 emphasized the need to, “Understand the importance of team integration, and communicating.” Participant 702-0196 discussed, “Memorandums of understanding or agreement with staff at those remote sites” (personal communication, October 08, 2014). The participant described those factors as assisting in the selection process and expectations of virtual team members Participant 702-0181 said, “I did not understand the implications of that project.” Participant 702-0187 said, “Understand what your work schedules are and what's going to be expected.” Participant 702-0197 talked about, “Documented roles so all of our team members know how their role interacts with the role of their teammates.” Participant 702-0190 said, “Have a reliable scope of the project or a program that you’re working on.”

**Theme 5: Structure of virtual project teams is essential.** The primary emerging theme was that the structure of a virtual project team is critical to PM success. This theme emerged from 78% of the interviewees who provided answers. There were 104 thematic statements, 8.74% of the total count of 1,190 references during the interview process.

Planning, budgeting, communications, execution, implementation, risk management, governance, even change management, are all necessary components of BG and PM frameworks. Participant 702-0202 said, “Make sure that all the security protocols established so that you do not have any breaches of security.”

Participant 702-0204 said, “A central dashboard should be the one-stop-shop for everything.” Participant 702-0195 claimed, “Meetings and collaboration forums have a certain look and feel, and it gets people comfortable.” Participant 702-0187 said, “Having structured rules of engagement would be essential for structuring a virtual environment.” Participant 702-0197 stressed, “You must start with a plan, plan a framework, and budget for things as collaboration tools and training, including soft skills training.” Participant 702-0195 said, “The policies and procedures need structure in order to make sure that the virtual project procedures adequately address the differences between a local project team and a virtual project team.”

Participant 702-0202 claimed that, “Meeting schedules and the purpose need to be established in front in working with the team.” Participant 702-0198 added, “100% customer support is a requirement.” Participant 702-0181 stressed that, “A defined life cycle developmental process” is essential (702-0181, personal communication, September 20, 2014). Participant 702-0185 said, “Having a single portal that they could go to” would be a significant help (702-0185, personal communication, September 22, 2014). Participant 702-0194 stated that, “The use of agenda, meeting minutes is mandatory.” Participant 702-0193 said, “A weekly team meeting” would enhance the virtual team and communication flow (personal communication, October 05, 2014).

**Theme 6: Efficiency is the key to prolonged virtual project team success.** The primary emerging theme was the need to find ways to heighten efficiency, to engage those elements, and to train others to effectiveness. This theme emerged from 67% of the participants during their interview answers. Efficiency totaled 66 thematic statements, 5.55% of the total count of 1,190 references during the interview process. The consensus of 65% of the participants indicated that the efficiency of virtual project teams is greater than standard localized in-office project teams, and sometimes 50% greater. Participant 702-0189 said, “It takes accountability and an understanding of being self-motivated enough to do what you need to do.” Participant 702-0183 stressed, “Meeting schedules and keeping schedules up to date is an important part of professional efficiency.” Participant 702-0186 said, “Virtual teams tend to be more product focused.” Participant 702-0193 explained the need to, “Concentrate better,” but efficiency requires more standardization and simplification of processes to meet that goal (702-0193, personal communication, October 05, 2014). Data suggested that the savings from commuting and other in-office issues allows team members to place 100% of their time on working on a project tasks. Participant 702-0197 concluded, “With the right focus, virtual teams can conduct exceptionally efficient and meaningful project operations.”

**Theme 7: Skills are requirements to integrate team members into virtual project teams.** The primary theme that emerged was the focus on personal, professional, and managerial skills required to collaborate in virtual project teams. This theme emerged from data derived from 67% of the participants interviewed. There were 64 thematic statements, 5.38% of the total count of 1,190 references during the interview process.

Participant 702-0189 said, “A leader can see the value that a person adds to the project and their able to work with them and bring out that value.” Participant 702-0186 offered, “Know what their strengths and weaknesses are.” Participant 702-0186 added, “VPTs are an enormous professional development opportunity there for people.” Participant 702-0197 said, “Invest in improving leadership and interpersonal capabilities in our managers.” Participant 702-0199 stated, “Clearly show that they have the right skill set and the knowledge to be part of the team.” Participant 702-0197 suggested, “Training to build skills around promoting diversity and inclusion, conflict resolution, team building, meeting facilitation, managing virtual teams, how to give feedback productively, and other topics critical to achieving successful outcomes as a manager.”

Participant 702-0197 claimed, “Individual development plans (IDP) should be a requirement for the organization’s managers and team members.” Participant 702-0197 requires, “Soft skills training for managers and Project Managers.” Participant 702-0197 suggested, “Build relevant training activities around soft skills.” Participant 702-0180 said, “Core competencies are essential.” Participant 702-0186 claimed, “Domain expertise is critical.” Participant 702-0195 expressed the, “Need for super dynamic, influential leaders who garners support,” Participant 702-0197 spoke of a, “Need to remember that everybody has different listening and learning styles.” Facilitators should have received management training on team building, inclusion, conflict management, handling difficult personality types, and specific techniques for effectual meeting facilitation (702-0183, personal communication, September 21, 2014).

**Theme 8: Diversity is inherent in geographically dispersed virtual project**

**teams.** The primary theme that emerged was the need to embrace diversity with all of its inherent benefits and misgivings. This theme emerged from 44% of the interviewees. Diversity totaled 34 thematic statements, 2.86% of the total count of 1,190 references during the interview process. Globalization of business has produced complex diversity issues. Diversity means that project team members may often cover a larger geographic area. Participant 702-0194 suggested, “Allowing companies to include more problems that may occur in the future.” Participant 702-0181 spoke of times that, “Allows you to go out into the organization where there are pockets of excellence and matrix resources.”

Diversity provides a plethora of challenges, but also many social, personal, and financial benefits. Discussion data focused on diversity in work schedules that provides team members the ability to work from alternative worksites, like in their homes. Participant 702-0183 discussed the idea that the approach, “may save a few hours a day by not commuting to work.” Another thematic statement among the participants was that virtual operations allow people to avoid disturbances with typical office environments and enable people to multitask. Participant 702-0198 described a, “focus more on the project objectives...” to modularize tasks for greater efficiency (702-0198, personal communication, October 09, 2014).

**Theme 9: Governance is a major part of business and project management structure.** The primary theme that emerged was the need to delve into the variety of governance practices, understanding that PM is a governance process in itself. This theme emerged from 44% of the interviewees sampled. Governance totaled 31 thematic statements, 2.61% of the total count of 1,190 references during the interview process.

Project governance definitions emerged from 75% of the participants as an essential process for successful project execution. Metrics is an integrated part of governance, used to set milestones. Participant 702-0195 stressed, “Formal prioritization lists”, and Participant 702-0197 emphasized the ideas, “...used to track the assigned actions.”

Stage gate systems are standard in project governance to monitor and approve major milestones or significant deliverables. Participants identified governance metrics used for measuring progress and success factors. Participant 702-0185 said, “Constantly monitor what is working and what is not”, establishing results based checkpoints (milestones), making sure that project systems perform to expectations. Participant 702-0184 described a process that, “...allows the PM team to jump in and course correct whenever necessary.”

Participants believed that there is a need to have the same results-orientated expectation(s) for all project teams. Several participants emphasized standardized project governance metrics. Others expressed feelings that segregation of project by type is required to manage expectations. Another large discussion point pertained to the governance processes for all project domains, communicated to all project teams, so everyone understands what senior leadership from the business organization expects.

**Theme 10: Technology is a requirement for virtual team collaboration.** The primary theme that emerged was the need for the right technology to support the virtual team collaborative efforts. This theme emerged from 44% of the sample throughout the nine interview subtopics. There were 44 thematic statements, 3.57% of the total count of 1,190 references during the interview process. Technology is a cornerstone of



engagement of virtual project teams. Team members must have the supporting infrastructure and technology to maintain any level of efficiency. Participant 702-0196 said, “Critical is enough bandwidth and access.” Participant 702-0198 agreed by saying, “Having a good communication network is the key.” Participant 702-0197 concluded with, “Inefficient use of collaboration technologies results in wasted energy and frustration/alienation of team members.” Participant 702-0180 ended with, “The stability of those virtual communication tools is critical.”

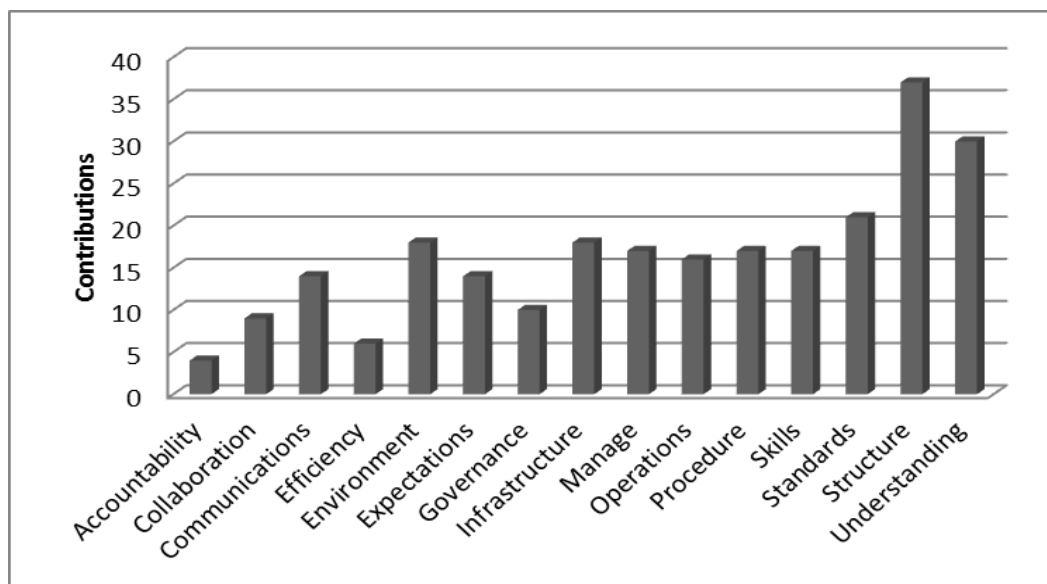
Participant 702-0192 said, “Formal project management tools, like schedule and a project management plan and communication plan” are foundations of policy that enhance the virtuality of an organization (personal communication, October 01, 2014). Participant 702-0195 added, “Develop your managers, your manager’s skills for managing in a virtual environment, and standardized communication practices.” Participant 702-0195 suggested, “A library that has an open architecture configurable design” would add value to the virtual organization (702-0195, personal communication, October 08, 2014).

### **Supporting Discussion**

Figure 10 is a summary of the structure of subtopic references that coalesced into thematic categories relevant to the subtopic structure. Analysis of Level 1 references led to Figure 10 that represents the number of statements found in the discussion pertaining to the structure. Level 2 analysis normalized the structure subtopic statements and placed them into 15 categories. Structure subtopic groups show an application to BG and PM. The level of discussion around particular categories relates to the number of references

(left side of the Figure) in the structure subtopic graph.

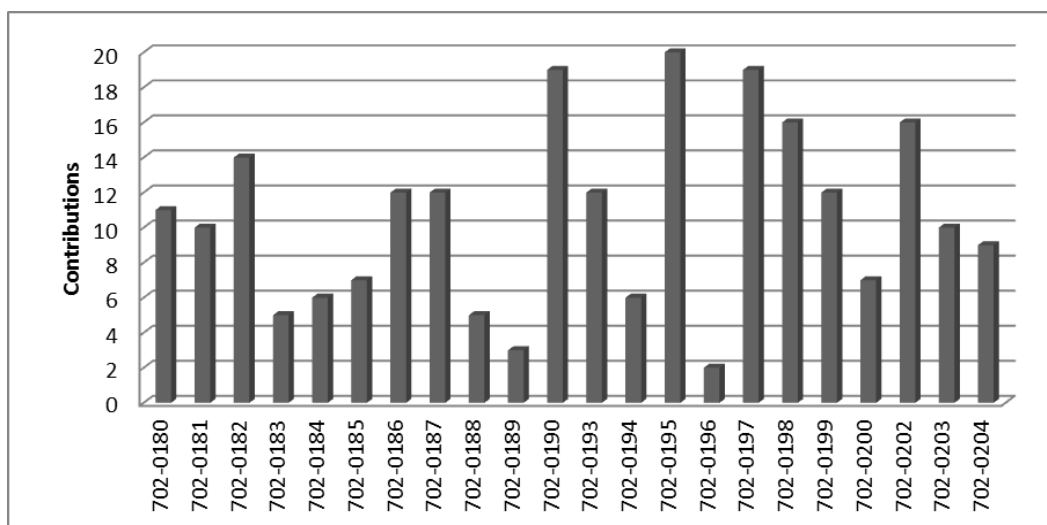
The main subcategories (across the bottom of the Figure) represent the thematic statements (depicted on the left of the Figure). These include the structure-related subtopics including accountability (4), collaboration (9), communication (14), efficiency (6), environment (25), expectations and objectives (14), governance (10), infrastructure (18), manage (20), operations (16), procedures (17), skills (7), standards (21), structure (42), and understanding (30). The dominant theme emerged from 78% of the participants' interview data. There were 248 thematic statements, and 35.94% of the total count of 1,190 qualified as direct references.



*Figure 10.* Structure subtopic contributions by number of thematic statements that emerged from the interviewee participation.

Figure 11 is a depiction of the participants' contributions for other subtopics of relevance to the structure of PM in businesses that continue to support the driving focus

of the research question (IQ1). The focus of this theme was the necessity for particular structures in business infrastructures that apply to PM and virtualization of the organization. Structure-related subtopic synonyms from the data are relevant to IQ1 focus. Participants' contributions to the structure theme were significant and above levels of standard (16.53 statements per discussion) for 13 of the 22 participants. The majority of the participants discussed policy and procedural structure, operational structure of tools and methods, and structure of communications protocols.



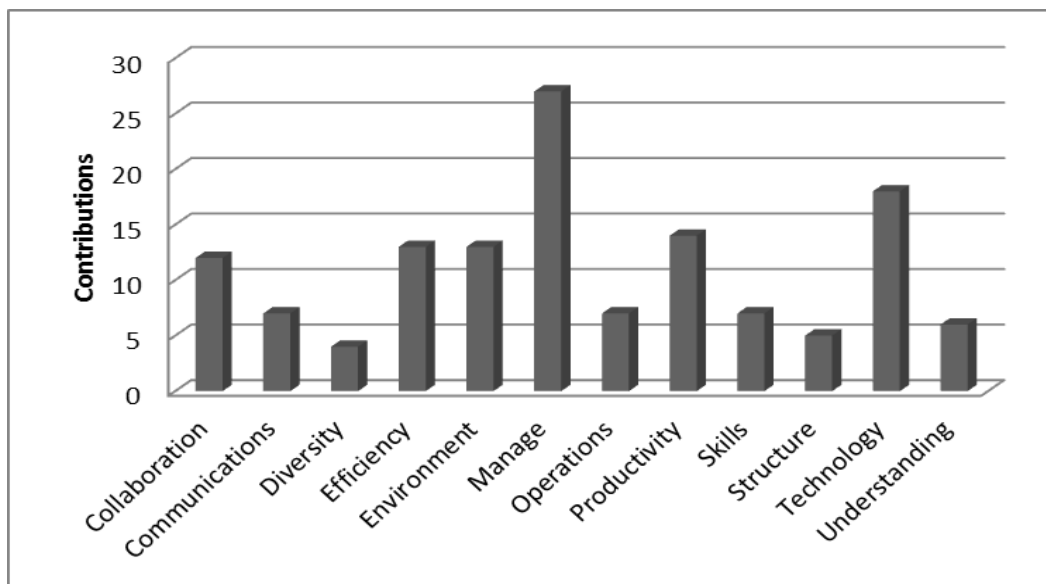
*Figure 11.* Structure subtopic contributions by participant code.

The majority of the participants discussed structure as a major implementation and governance factor of virtual project teams. Structure of virtual teams, plans and policy, and infrastructure regulation and standard operating procedures topped the list of important elements. Other essentials were standards in communications, e-mail, protocols, and collaborative efforts with stakeholders and management. Centralized infrastructures, where sharing is a top priority for communications, pertained to file

structures and dissemination of project-oriented information and artifacts.

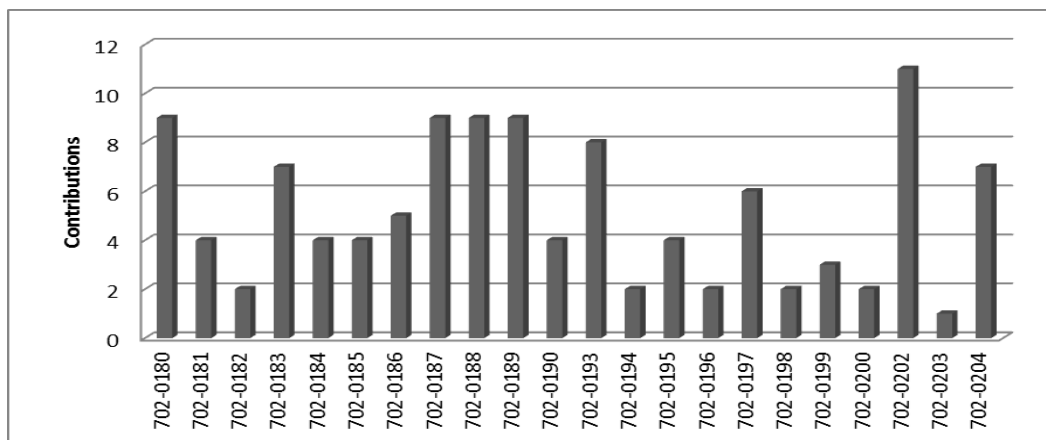
### **Operations Subtopic**

Figure 12 summarizes the operations subtopic thematic references into thematic categories relevant to the operations subtopic. Analyzed from Level 1 references, Figure 12 is a depiction of the number of statements found in the discussions pertaining to operations. Level 2 analysis normalized the operations subtopic statements and placed them into 12 categories. Operations-related subtopic categories related to BG and PM. The level of discussion around particular statement categories refers to the number of references (left side of the Figure) in the operations subtopic graph. The main subcategories (across the bottom of the Figure) represent the thematic statements (listed on the left of the Figure) of the subtopic. They include collaboration (12), communication (7), diversity (4), efficiency (13), environment (15), management (33), operations (7), productivity (14), skills (7), structure (5), technology (22), and understanding (6). This theme emerged from 78% of the participants' contributions to the data, forming research subtopics with 133 thematic-related statements, 35.29% of the total count of 1,190 qualified as direct references.



*Figure 12.* Operations subtopic contributions by number of thematic statements that emerged from the interviewee participation.

Figure 13 depicts the other subtopics of relevance to activities of PM businesses that support the driving focus of the intent of the research question (IQ2). The focus of this theme was the operations necessities in business infrastructures that apply to PM and virtualization of the organization. Figure 13 depicts the operations subtopic contributions for all participants interviewed during the IQ2 discussion and the number of relevant statements captured. Operations subtopic synonyms emerged from the data, relevant to IQ2 focus. Participant contributions to the operations theme were significant and above levels of standard (11.08 statements per discussion) for 15 of the 22 participants.



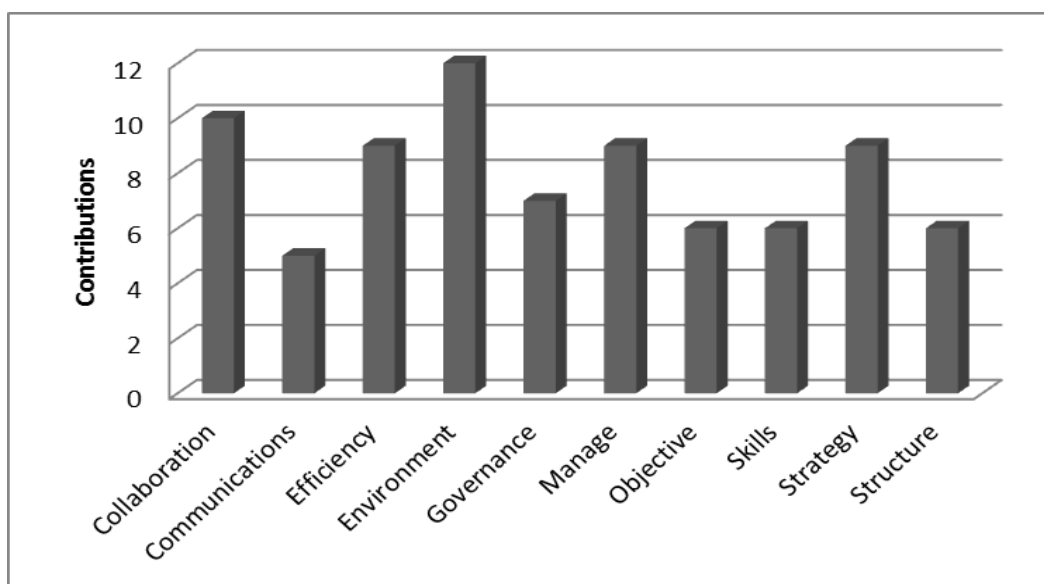
*Figure 13.* Operations subtopic contributions by participant code.

The majority of the participants discussed operational assignments, periodic meetings, different types of communication strategies and tools needed for virtual environments. Data also included information about the processes already in place to bridge the gap between local and virtual project teams to assist in the implementation of comprehensive communication strategies. Participants noted that it was important to make sure that documented decisions are widely communicated and to make sure that everyone on the project team understands what their goals are to conduct business.

### **Strategy Subtopic**

Figure 14 is a summary of the strategy-related subtopic references that organized into thematic categories relevant to the strategy subtopic. Analyzed from Level 1 references, Figure 14 represents the number of statements found in the discussions pertaining to strategy. Strategy subtopic categories apply to BG and PM. The level of discussion around a particular category relates to the number of references (on the left side of the Figure) in the strategy subtopic graph. The main subcategories are depicted

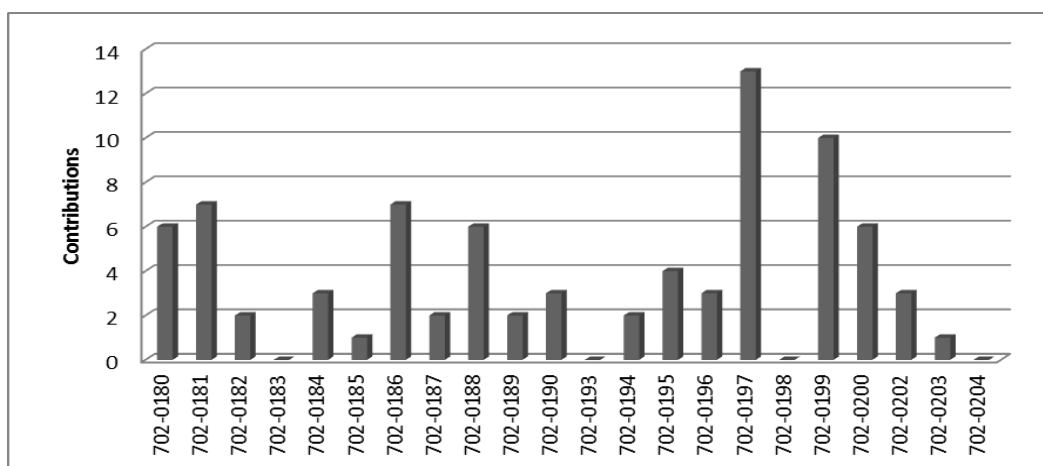
across the bottom of the graph. The thematic statements (shown on the left of the Figure) of the strategy-related subtopic include collaboration (10), communication (5), efficiency (9), environment (12), governance (7), manage (9), objectives (6), strategy (9), structure (6), and skills and technology (6). This theme emerged from 78% of the sample. There were 79 thematic statements, 6.64% of 1,190 qualified as direct references.



*Figure 14.* Strategy subtopic contributions by number of thematic statements that emerged from the interviewee participation.

Figure 15 depicts the strategy subtopic contributions for all participants interviewed during the IQ3 discussion and the number of relevant statements captured. Figure 15 depicts the availability of other subtopics of relevance to the strategy of PM businesses, results pertinent to the driving focus of the research question (IQ3). Strategy subtopic synonyms used to qualify the data are relevant to the IQ3 focus. Contributions to the strategy-related theme were significant and above levels of standard (7.9 statements

per discussion) for 13 of the 22 participants.



*Figure 15.* Strategy subtopic contributions by participant code.

The focus of this theme was of medium relevance across all subtopics. Elements focused on productivity as a strategy, strategic challenges that need addressing like strategy about team forming, storming, performing, norming, and strategy as it would be an advantage in project governance. Other issues were strategies on international projects and projects that would come together without a strategic plan.

### **Communications Subtopic**

Figure 16 is a summary of the communications subtopic references to categories relevant to the communications subtopic. Analyzed from Level 1 references, Figure 16 represents the number of statements found in the discussion pertaining to communications. Level 2 analysis normalized the communications subtopic statements and placed them into 12 broad areas. Communications subtopic categories further apply to BG and PM. The level of discussion around a particular category relates to the number



of references (represented on the left side of the Figure) in the communications subtopic graph.

The main subcategories (across the bottom of the Figure) correspond to the thematic statements (listed on the left side of the Figure). Communications-related subtopics are Collaboration (10), Communications (22), Diversity (11), Efficiency (10), Environment (7), Management (18), Operations (8), Proficiency (10), Standards (11), Structure (13), Technology (12), and Understanding (14). This theme emerged from 78% of the interviewees in the sample. Communications totaled 138 thematic statements, 35.29% of the total count of 1,190 qualified as direct references.

Figure 16 depicts the emergence of other subtopics of relevance to communications of PM businesses, the focus of the research question (IQ4). The theme pertained to the necessity for communications in businesses infrastructures that apply to PM and virtualization of the organization.

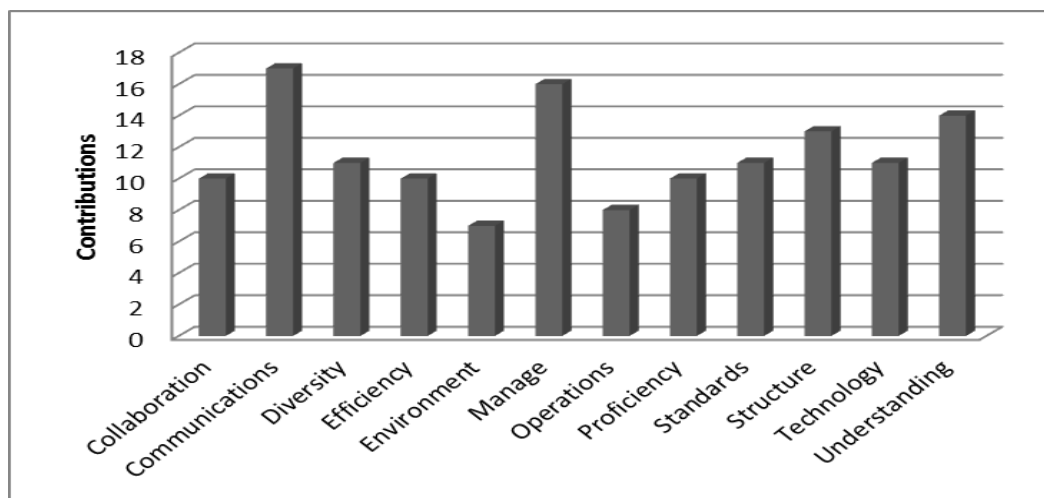
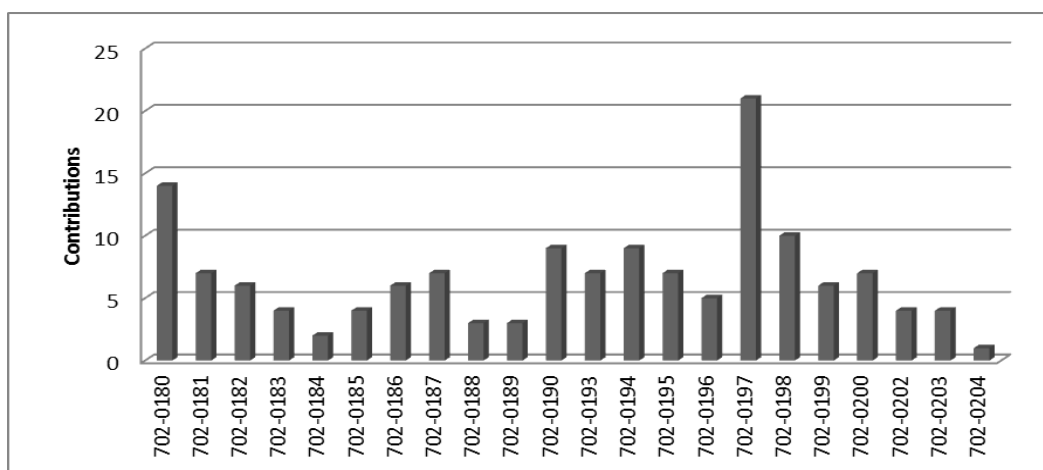


Figure 16. Communications subtopic contributions by number of thematic statements that emerged from the interviewee participation.

Figure 17 depicts the communications subtopic contributions for all participants interviewed during the IQ4 discussion and the number of relevant statements captured. The communications subtopic synonyms were pertinent to the IQ4 focus. Contributions to the communications theme were significant and above levels of standard (11.50 statements per discussion) for 9 of the 22 participants.



*Figure 17.* Communications subtopic contributions by participant code.

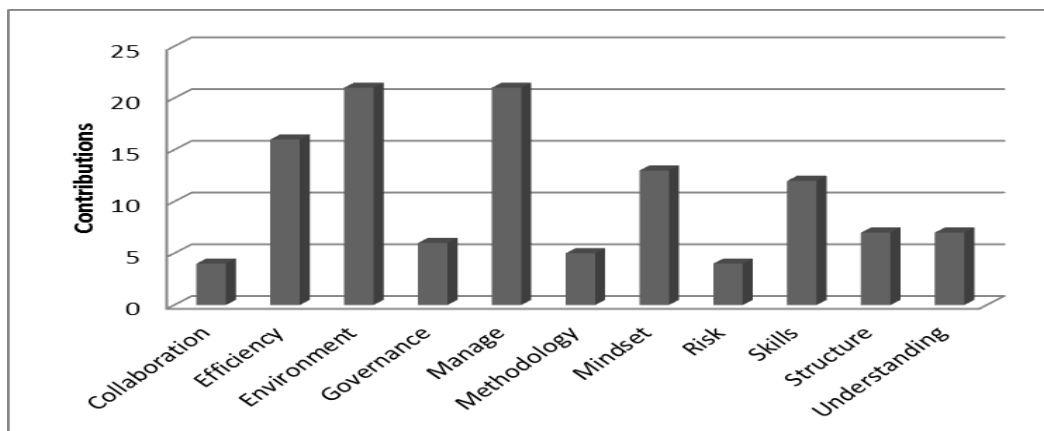
The majority of the participants discussed the ability to communicate accurately with a diverse set of individuals. Virtuality provides worldwide access to resources that complicates communications of many kinds. Social communications, such as getting to know people in a virtual environment or to identify with individuals from different cultures, have alternative customs of communications that can present particular challenges. One of the key components of project infrastructures is communication. Communication with people is necessary, but in a virtual environment, there is much

talking over one another during meetings; individual protocols and respect need to be a requirement for performing business. One of the problems in virtual environments is a lack of optimal communication.

### **PM Concepts Subtopic**

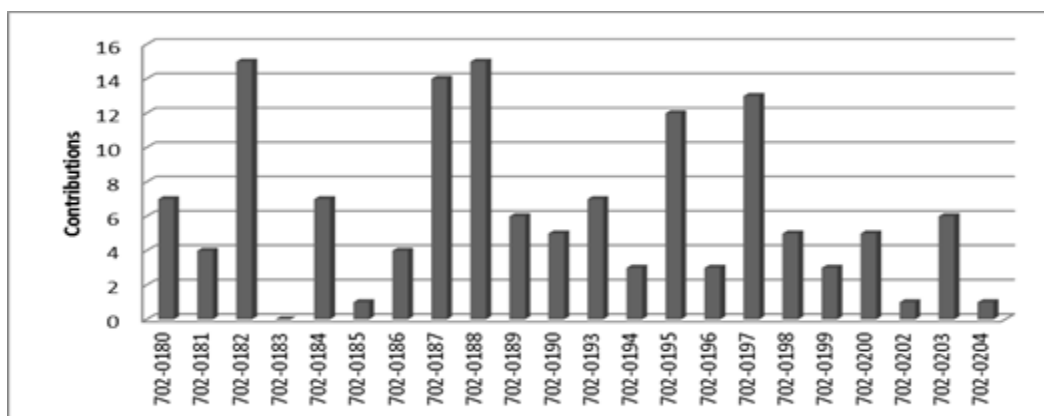
Figure 18 represents a summary of the PM concepts subtopics leading to thematic references from categories relevant to the PM concepts subtopic. Analyzed from Level 1 references, Figure 18 represents the number of statements found in the interviewees' discussions pertaining to PM concepts. Level 2 analysis normalized the PM concept subtopic statements. PM concepts-related subtopic categories applied to BG and PM. The level of discussion on a particular category relates to the number of references (on the left side of the Figure) in the PM concepts subtopic graph.

The main subcategories (across the bottom of the Figure) represent the thematic statements (on the left side of the Figure) of the subtopic related to PM. They include collaboration (4), efficiency (16), environment (24), governance (6), management (23), methodology (5), mindset (27), risk (4), skills (12), structure (7), and understanding (7). This theme emerged from 78% of the sample. There were 116 thematic statements, 32.35% of the total count of 1,190 qualified as direct references. Figure 18 depicts the other subtopics of relevance to PM concepts of PM businesses resulting from answers to the research question (IQ5). The focus of this subtopic was necessary for the understanding of PM concepts in businesses infrastructures that apply to PM and virtualization of the organization.



*Figure 18.* PM concepts subtopic contributions by number of thematic statements that emerged from the interviewee participation.

Figure 19 depicts the PM concepts subtopic participation for all participants interviewed during the IQ5 discussion and the number of relevant statements captured. The PM concepts subtopic synonyms qualified the data as pertinent to IQ5 focus. Participants' contributions to the PM concepts subtopic was significant and above levels of standard (10.55 statements per discussion) for 8 of the 22 participants.



*Figure 19.* PM concepts subtopic contributions by participant code.

The majority of the participants discussed a broad range of BG and PM concepts.

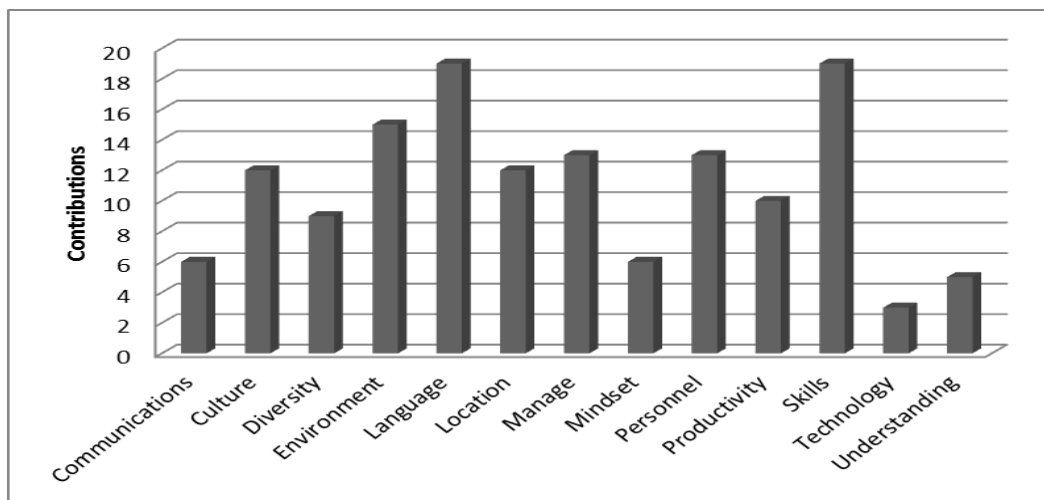
Some of the main discussion points were the use of common sense when you are building a project. PMs need to think beyond the immediacy of what they were trying to accomplish. They need to understand that VPTs require a different emotional effort - an unusual personal effort. Additionally, requiring a unique mindset to be successful in the virtual world, you need to have a trust-based team, to enhance the work ethic of the organization. Finally, you also want to make sure you have the available funding, periodic face-to-face meetings, support your resources, and have a dynamic understanding of virtual environments.

### **Diversity Subtopic**

Figure 21 represents a summary of the diversity subtopic thematic references from categories relevant to the diversity subtopic. Analyzed from Level 1 references, Figure 21 represents the number of statements found in the discussion pertaining to diversity. Level 2 analysis normalized the diversity subtopic statements and placed them into 14 subcategories. Diversity subtopic categories apply to BG and PM. The level of discussion on a particular category relates to the number of references (left side of Figure) in the diversity graph.

The main subcategories (across the bottom of the Figure) representing the thematic statements (left of the Figure) of the structure subtopic are communications (6), culture (12), diversity (9), environment (15), generation (4), language (19), location (12), management (13), mindset (6), personnel (13), productivity (10), skills (19), technology (3), and understanding (5). This theme emerged from 44% of the interviewees. Diversity totaled 142 thematic statements, 38.25% of the total count of 1,190 qualified as direct

references. Figure 21 depicts the availability of other subtopics of relevance to the diversity of PM businesses driving focus of the research question (IQ6). The focus of this subtopic was the necessity for diversity in businesses infrastructures.



*Figure 20.* Diversity subtopic contributions by number of thematic statements that emerged from the interviewee participation.

Figure 21 depicts the diversity subtopic contributions for all participants interviewed during the IQ6 discussion and the number of relevant statements captured. Diversity subtopic synonyms used to qualify the data is relevant to IQ6 focus. Participants' contributions to the diversity subtopic were significant and above levels of standard (10.92 statements per discussion), for seven of the 22 participants.

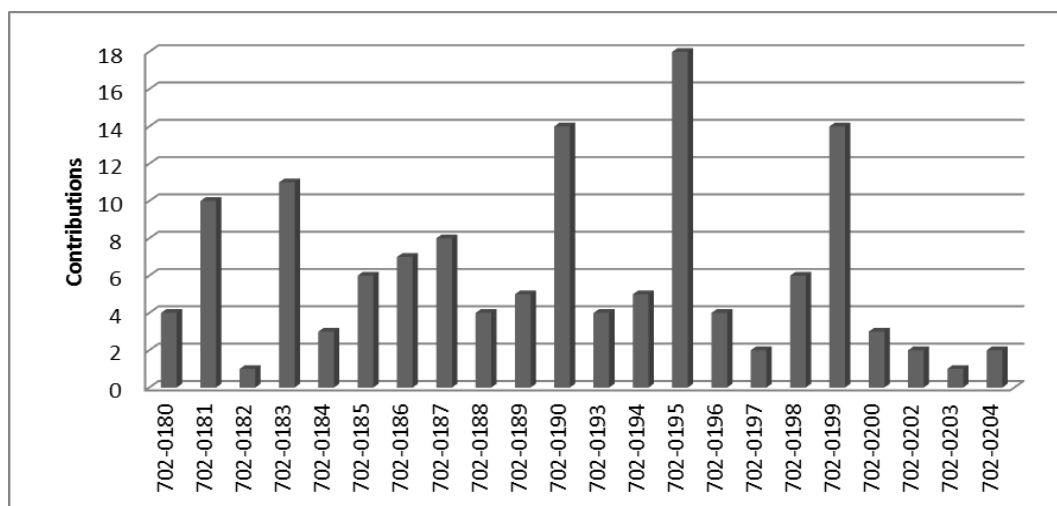


Figure 21. Diversity subtopic contributions by participant code.

The majority of the participants discussed communication issues that plague virtual project teams. They consisted of bandwidth issues, communications protocols, and issues of communicating with personnel in other countries or who speak a first language other than English. Diversity includes working with other cultures that require a dynamic understanding of the nuances of other religions, beliefs, and customs. Environmental diversity is the consideration of alternative workplaces. Generation gaps between individuals that are a few decades apart in age are prone to perception diversity and work ethic differences. Management styles are always a factor to all project teams, but in a virtual world, there is a concern for a management style that is adaptable to the environment.

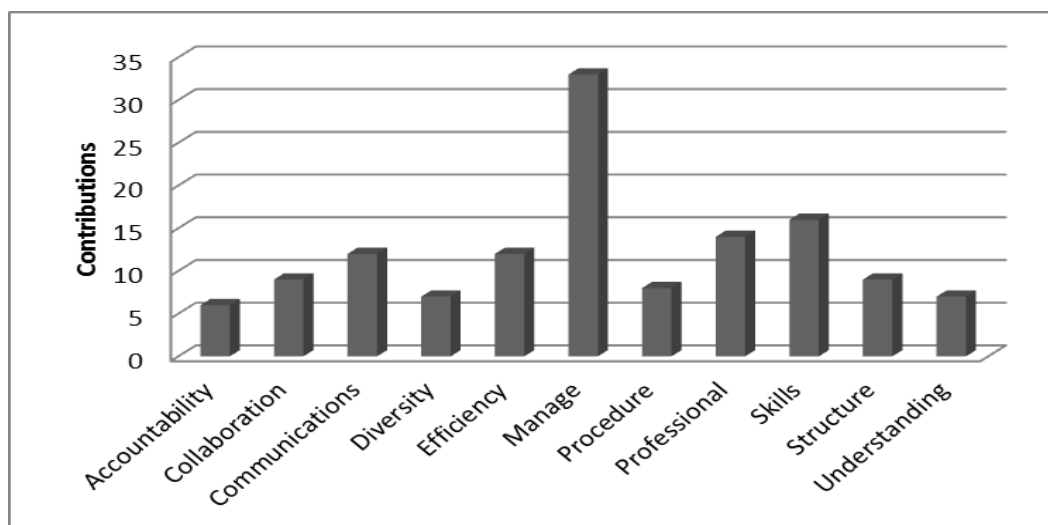
### **PM and Virtual Subtopic**

Figure 22 summarizes the PM and virtual and PM subtopic thematic references into subtopic categories relevant to the governance subtopic. Analyzed from Level 1

references, Figure 22 represents the number of statements found in the discussion pertaining to virtual and PM. Level 2 analysis normalized the virtual PM and virtual subtopic statements into 13 categories. PM and virtual subtopic categories further apply to BG and PM. The level of discussion on a particular group relates to the number of references (left side of the Figure) in the virtual and PM themes graph.

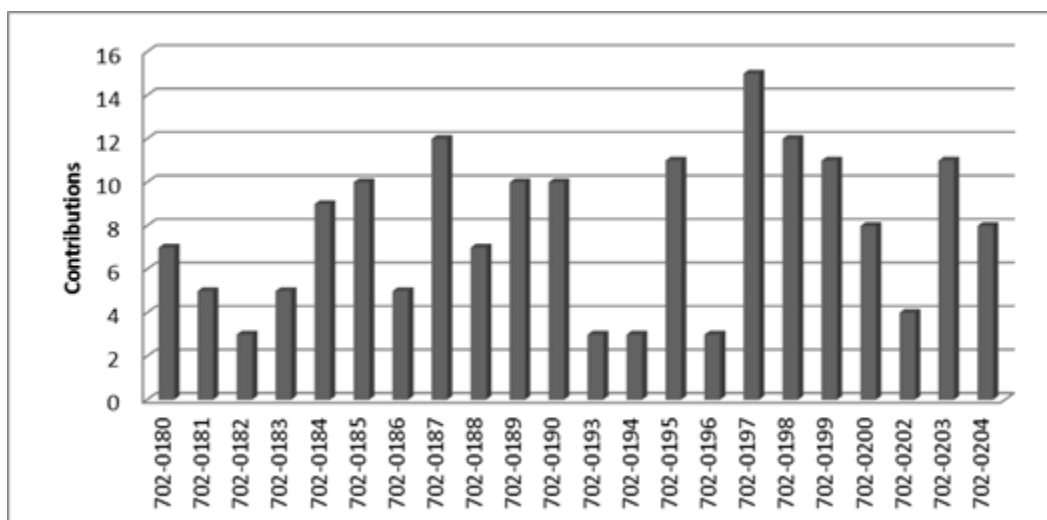
The main subcategories (across the bottom of the Figure) representing the thematic statements (left of the Figure) of the structure subtopic are accountability (6), communication (12), collaboration (9), diversity (7), efficiency (12), environment (27), management (21), procedure (8), professional (14), skills (16), structure (13), understanding (7), and virtual (15). This subtopic emerged from 100% of the interviewees in the sample. Environment totaled 156 thematic statements, 14.18% of the total count of 1,190 qualified as direct references. Figure 22 depicts the referenced facts of other subtopics of PM and virtual components of PM businesses related to the driving focus of the research question (IQ1-IQ7). The focus of this subtopic was the necessity for PM and virtual structure in business infrastructures that apply to PM and virtualization of the organization.





*Figure 22.* PM and virtual subtopic contributions by number of thematic statements that emerged from the interviewee participation.

Figure 23 depicts the PM and virtual subtopic contributions for all participants interviewed, emerging from the IQ1-IQ7 discussions and the number of relevant statements captured. The PM and virtual subtopic synonyms in the data are pertinent to the IQ1-IQ7 focus. Contributions for the PM and virtual subtopic were significant and above levels of standard (14.18 statements per discussion) for 14 of the 22 participants.



*Figure 23.* PM and virtual subtopic contributions by participant code.

The majority of the participants discussed PM or virtuality at a broad level. Participants' focus was not on idealizing an individual aspect of PM but rather on its relevance, compatibility with, and its advantages for virtual project teams. Participant consensus was that virtualized teams could be a significant advantage. Participants indicated that over time, one becomes more accustomed to virtual meetings, the risks of being virtual, the sacrifice required to work in a virtual environment, and the benefits of virtuality. Over two-thirds of the participants indicated that managing a virtual environment comes with its inherent issues of managing a team that one rarely knows. The personal touch is not there, so the understanding of staff members is not clear in most cases.

Virtual project managers (VPM) need to be more outgoing or extroverted types of people, willing to take charge and articulate communications, and in most cases, be very politically perceptive. Additionally, VPMs need to have appropriate knowledge levels

when establishing a project team, need a super dynamic, strong leadership quality to their management style, and need to have better than average communications skills.

Furthermore, VPMs need to know the virtual environment and be knowledgeable about team member selection processes, qualifications, and constraints that hinder productivity.

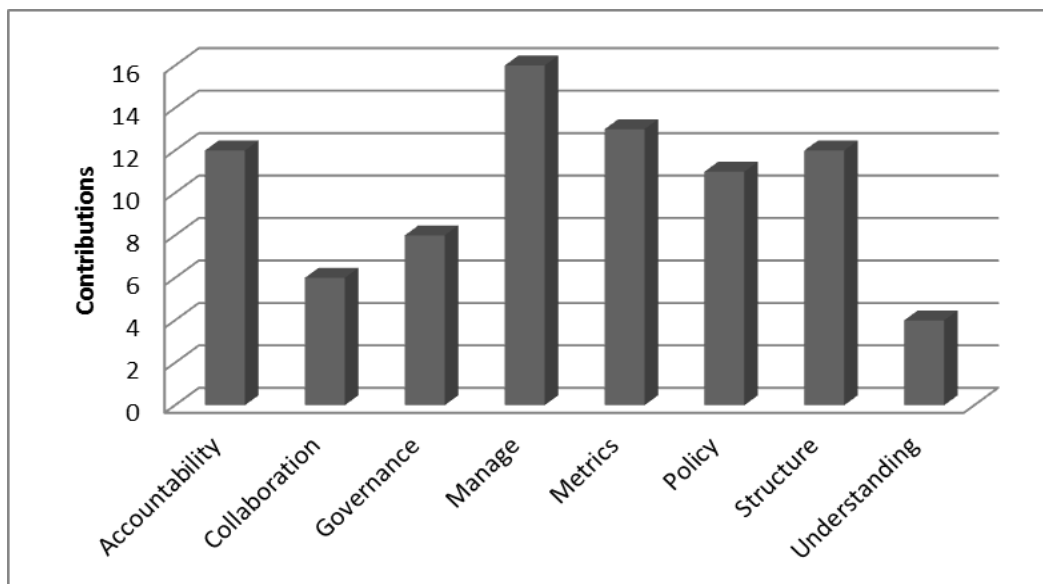
A majority of participants claimed that virtual employees tend to act more professional because they are not prone to the usual disturbances and social life that comes with localized project teams. One-third of the participants also confessed that employees work well if left alone for a long time. Benefits or savings to working virtually included gas and dry cleaning costs, daily commuting time and costs, personal time spent with their families, and having private time to focus on work. Eighteen percent of the participants indicated the productivity of the virtual worker is much higher than that of a local team member. About 25% of the participants also reported that virtual workers tend to feel isolated because of the lack of the human factor and camaraderie that frequently accompanies localized project teams and often feel a relative leadership void.

Approximately two-thirds of the participants believe there should be a consistent training program for virtual employees, project managers; consistent training programs should include executive management as well. The primary goal is to mature the working community to enhance collaboration among the team members, stakeholders, and clients. Additionally, about 30% of the participants felt that sharing of information sometimes hinders collaboration; people need to centralize their communications, documentation, and resources to allow other team members to use or reuse materials and resources.

## **Governance Subtopic**

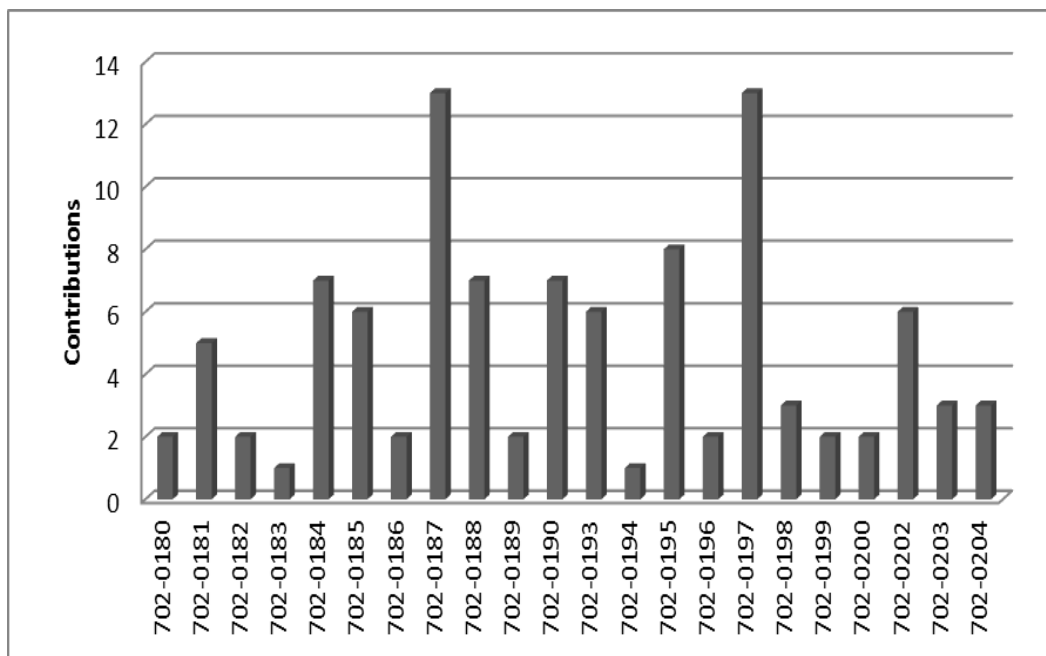
Figure 24 summarizes the governance subtopic thematic references into categories relevant to the governance subtopic. Analyzed from Level 1 references, Figure 24 represents the number of statements found in the discussion pertaining to governance. Level 2 analysis normalized the governance subtopic statements and placed them into eight categories (across bottom of the Figure). Governance subtopic categories further apply to BG and PM. The number of references (left side of the Figure) in the governance themes graph depicts the level of discussion around particular statement categories.

The main subcategories (across the bottom of the Figure) represent the thematic statements (left) of the structure subtopic. These include accountability (18), collaboration (6), governance (8), leadership and management (16), metrics (13), policy (11), structure (15) and understanding (4). This theme emerged from 44% of the interviewees in the sample. Governance totaled 82 thematic statements, 35.29% of the total count of 1,190 qualified as direct references. Project governance definitions emerged from 82% of the participants as an essential process for successful project execution; the remaining four participants offered no comments on the governance requirements. Figure 24 depicts the other subtopic relevance to governance of PM businesses, the driving focus of the research question (IQ1-IQ7). The focus of this theme was the necessity for governance as an integrated process in businesses infrastructures that applies to PM and virtualization of the organization.



*Figure 24.* Governance subtopic contributions by number of thematic statements that emerged from the interviewee participation.

Figure 25 depicts the governance subtopic contributions for all participants interviewed during the IQ1-IQ7 discussion and the number of relevant statements captured. The governance subtopic synonyms qualified as data relevant to IQ1-IQ7 focus. Participants' contributions to the governance theme were significant and above levels of standard (8.20 statements per discussion), for 3 of 22 participants.



*Figure 25.* Governance subtopic contributions by participant code.

The majority of the participants discussed the accountability and collaborative value of governance procedures. Leadership and management metrics were evident in the research discussions but played a support role in the asset relevance. Consensus identified that virtual project team members require the trust. Trust involves being professionals in their jobs and performing to the levels of expectations. If the results of decisions are less than anticipated, then there must be acceptance as a team. Virtual project team members require total ownership of the tasks assigned; the organization has to operate with a certain level of maturity and accountability and completion of assigned tasks needs to accurate and efficient.

Governance processes require flexibility to adapt to virtual environments. One size fits all was not relevant because there are many differences between local and virtual

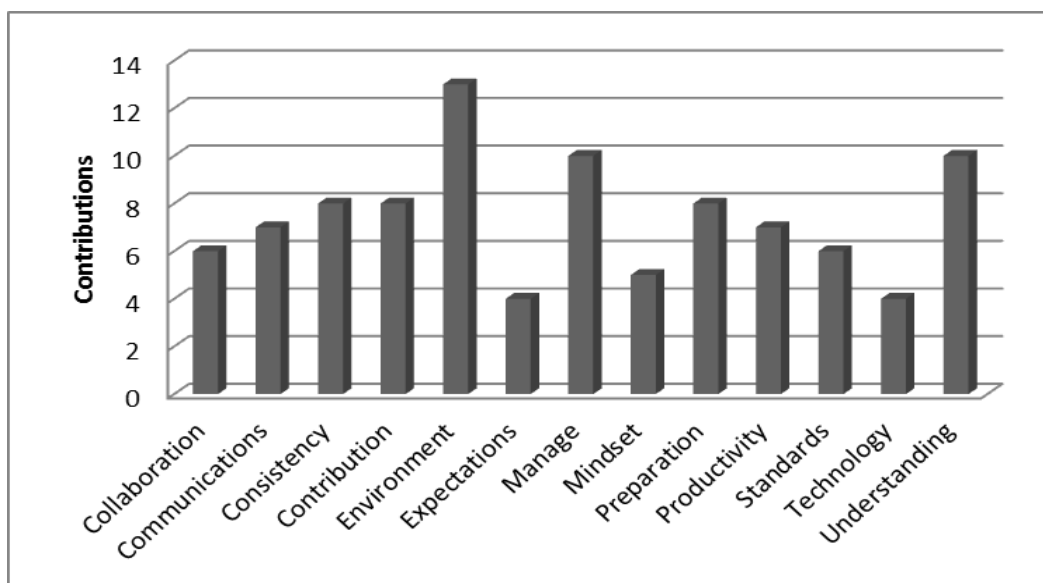
project teams. The outcomes are the same, but the processes and protocols are different; one must adapt to the VPT style of management, communications, and collaboration. Governance plans and policies need documentation, need to be understandable and disseminated to everyone to let people know what to expect. Eighteen percent of the participants agreed that the virtual workforce has positively contributed to an on-time rate and project success. Additionally, eighteen percent of the participants said managers should look at performance standards and make sure that the duties and the monitoring are performance-based. Virtual Project Team leaders need to communicate with their team members consistently, receive and provide feedback to senior project managers for senior leadership to grow the organization. Leaders must take active control, not hesitate to audit and provide constructive feedback, communicate necessary information in a timely manner, and provide the related, necessary information at the beginning of the project.

### **Collaboration Subtopic**

Figure 26 is a summary of the collaboration subtopic thematic references depicting categories relevant to the collaboration subtopic. Analyzed from Level 1 references, Figure 26 represents the number of statements found in the interview data pertaining to collaboration. Level 2 analysis normalized the collaboration subtopic statements into 13 categories (across the bottom of the Figure). The collaboration subtopic categories apply to BG and PM. The level of discussion around particular statement categories relates to the number of references (left side of the Figure) in the collaboration themes graph.

The main subcategories (across the bottom of the Figure) represent the thematic subtopics. These include collaboration (6), communication (7), consistency (8), contribution (8), environment (13), expectations (4), management (10), mindset (5), preparation (8), productivity (7), standards (6), technology (4), and understanding (15). This theme emerged from the data of 89% of the interviewees in the sample.

Collaboration totaled 96 thematic statements, 38.25% of the total count of 1,190 references during the interview process. Figure 27 depicts the other subtopics of relevance to collaboration pertaining to PM businesses, resulting from focus on the answers to the interview questions (IQ1-IQ7). The focus of this theme was the necessity for collaboration in businesses infrastructures that apply to PM and virtualization of the organization.



*Figure 26.* Collaboration subtopic contributions by number of thematic statements that emerged from the interviewee participation.



The majority of the participants discussed collaboration as part of other subsystems in BG and PM. Collaboration is a process that requires resources, metrics, and governance policies to organize and execute projects in team environments. Project teams need much interaction, and leaders must bring people together to govern how folks interact and work in a virtual environment and how they respond to people in the field. VPT members need to learn to accept equal partners and players contributing to the entire team; it keeps the team integrated, cohesive, and involved, and it allows folks to hear from everybody.

Figure 27 depicts the collaboration subtopic participant contributions for all participants interviewed during the IQ1-IQ7 discussion and the number of relevant statements captured. The collaboration subtopic synonyms among the data were relevant to IQ1-IQ7 focus. Participants' contributions to the collaboration theme were significant and above levels of standard (7.39 statements / discussion) for 11 of the 22 participants.

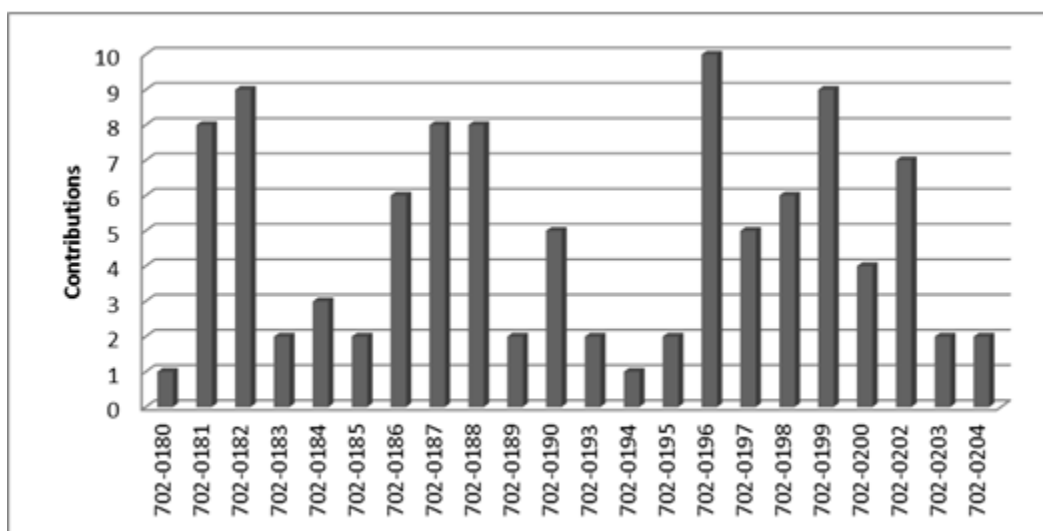


Figure 27. Collaboration subtopic contributions by participant code.

Communication is an integrated part of governance and managers should make sure to follow up rigorously with integrated commitments. Difference of opinions within the organization will occasionally occur, but a professional demeanor and focus on the goal of the team is paramount to keep order. Sometimes, people are more open and willing to speak on the phone as opposed to face-to-face and can be more open and productive in the virtual environment making it easier to get buy-in and to participate. Participants reported that inefficient use of collaboration technologies results in wasted energy and frustration/alienation of team members; there is a need to be skillful in quickly addressing those items. Managers and team members need to understand the importance of team integration through communicating, team building sessions, and interactions to get to know people. Getting to know others involves acknowledging capabilities and skill sets that they may bring in solving the problems.

### **Additional Findings**

The emerging themes of this qualitative phenomenological study represent responses identified with a 40% or greater contribution level to the major thematic development. The remainder of the significant statements discovered in the data analysis included significant textual categories directly relevant to BG and PM frameworks. The following paragraphs include detail about the 24 main topics that emerged repeatedly throughout the data gathering process that had less than 40% significance value. These are in addition to the 10 themes that emerged with higher levels of participatory relevancy or that specified particular elements of significant interest to the participants.

Figure 28 depicts the total relative statements after Level 2 analysis. All 34

subtopics represented in this graph (at the bottom of the Figure), shown in combination with the percentage of statements relative to the total 1,190 references during the interview process that qualified as direct references. The remaining 24 ideas that emerged in this research, discussed in this section, included 17 of the most significant categories that had relevance and characteristic elements essential to BG and PM.

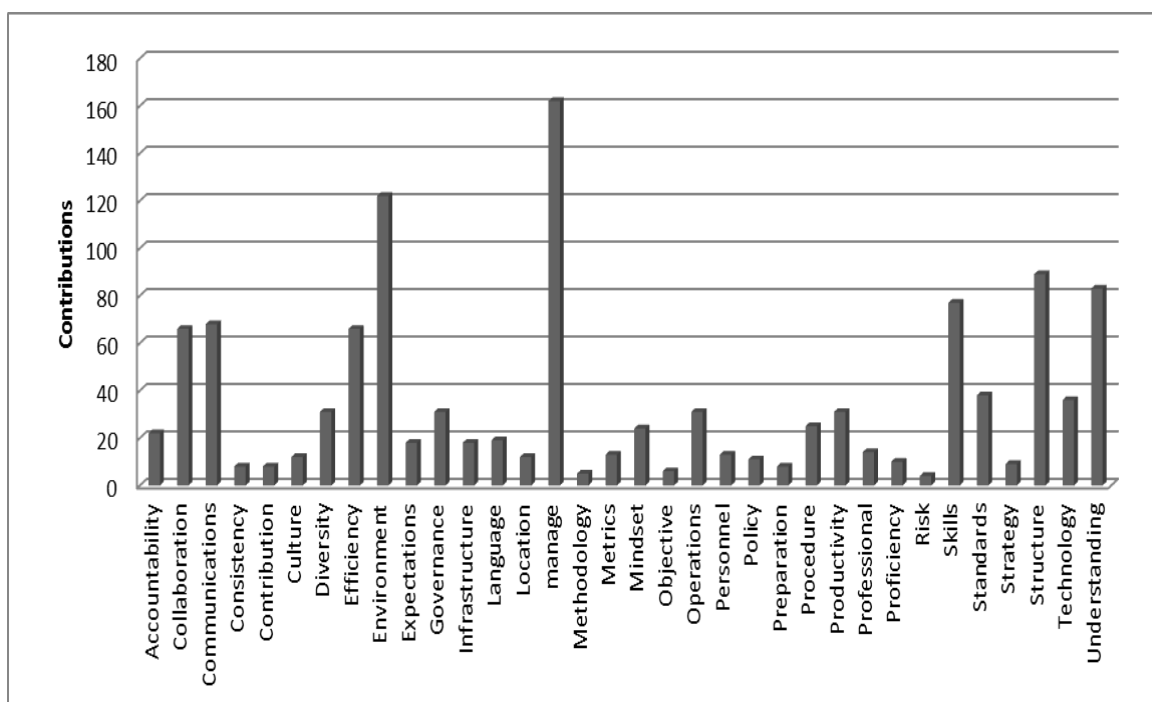


Figure 28. Summary of subtopic percentage of overall statements.

Accountability concepts occurred throughout 28 statements; 2.35% of the total count of 1,190 references during the interview process qualified as direct references, where participants referenced accountability in 33% of the interview responses. The focus of this category was on the accountability of personnel that are in VTs. The majority of the statements focused on the person being mature enough to be an asset to a

virtual organization when left alone. There was a consensus that there should be a screening process or a probationary period around virtual team human resource selection. According to participants in the sample, there needs to be an inherent trust factor relevant to the selection process. Each person on the virtual team needs to provide accountability for consistency of operations. They must be willing to take ownership of a task, group of duties, or an entire project. Conditionally, the trust factor needs to be mature enough to believe that personnel are going to be professionals in their jobs and perform to the levels of expectations. Furthermore, if results of a decision become less than anticipated, then one must be able to accept the outcome of the actions of the team and work to mitigate any risk factors that arise from those decisions.

Communications concepts represented 45 statements that led to major themes. Exactly 3.78% of the total count of 1,190 references during the interview process qualified as direct references, where participants referenced communications in 22% of the interview themes. The driving theme of discussions was the ability to communicate accurately with a diverse set of individuals. Virtuality provides worldwide access to resources that complicates communications of many kinds. Social communications, such as getting to know people in a virtual environment or to identify with individuals from different cultures who have alternative customs of communications present challenges. Without the visual cues, VTs would have to rely on visual technology to see colleagues, that makes managing VTs more complex. Communication across VTs is a unique challenge; having a reliable communication tool and an excellent PM tool is reportedly more necessary than with local project teams.

Consistency concepts were in the data from eight central statements. These statements represented 0.67% of the total count of 1,190 references during the interview process that qualified as direct references. Participants referenced consistency in 11% of the interview responses. Discussions concerning consistency focused on the management structure of the organization. Being able to get reliable stakeholder involvement is essential. Having an infrastructure that is consistent with its decision systems provides adequate support and allows the project professionals to take ownership, critical to virtual team integration. Organizations need to have everybody employing the same communications and collaboration tools that keep the team integrated, cohesive, and involved, allowing members to hear from everybody in the same forum. Lastly, always having buy-in or acceptance from both the customer and the project team regarding a schedule of deliverables becomes a necessity.

Contribution concepts were among eight statement areas; 0.67% of the total count of 1,190 references during the interview process qualified as direct references, and participants referenced contribution in 11% of the interview responses. Assuring consistent input from all virtual team members becomes a challenge if there is little structure in the management style, if the facilitator is not welcoming feedbacks from other participants or making sure follow-up is rigorously controlled. Building relationships with team members is difficult to accomplish in a virtual environment, so one must foster sharing openly and encouraging interaction, enabling team members to attend as warranted and be prepared to discuss planned topics.

Culture concepts emerged from 12 central statements, representing 1.01% of the

total count of 1,190 references during the interview process that qualified as direct references; participants referenced culture in 11% of the discussion themes. The culture of a virtual team is a crucial factor and a complex part of PM governance. Every team member is an individual. Project leaders need to become familiar with each team member to find the commonality in the team and recognize the proactive elements of the diversity with respect to their communication styles. Additionally, the project leader needs to be cognizant of the team, its personal and professional issues, and what the team members face in their daily lives. Countries have unique customs, structures of business acumen, and different beliefs; therefore, the project leader needs to have dynamic adaptabilities to the issues concerning the virtual project teams.

Expectations concepts emerged throughout four statement groups, representing 0.34% of the total count of 1,190 references during the interview process that qualified as direct references; participants referenced expectations in 22% of the interview answers. Discussions about expectations indicated that expectations are critical for virtual project teams, focused on trust and collaborative skills. Clear understanding of the personal and professional expectations requires documentation, in most cases, signoff of a contractual agreement that can undergo updates and re-signing regularly, by each virtual project team member. Furthermore, virtual team members should have a sense of ownership of an activity or a project, setting rigor and goals, and meeting expectations and understanding of what the customers' requirements are of each deliverable.

Infrastructure concepts totaled 18 significant statements, 1.51% of the total count of 1,190 references during the interview process that qualified as direct references;

participants referenced infrastructure in 11% of the interview statements. Standardized, centralized, and authoritative infrastructures were significant aspects of the discussion on this topic. The majority of participants indicated that a well-organized infrastructure is most important for all phase of the system development life cycle of any project. Participants expressed that a common repository of information ensures all team members have access to the same information and have one-stop shopping for information, artifacts, and policy. Indications of a central records center would be helpful to assist with the management of the information. A fully integrated tool would require all team members have access to and can modify the data repositories. The idea of online sharing tools as is another requirement for VTs emerged from the data.

Language concepts occurred throughout 19 statement areas, representing 1.60% of the total count of 1,190 references during the interview process that qualified as direct references; participants referenced language in 11% of the interview answers. The main discussion concerning language was that with virtual project teams come diverse language issues. Understanding team members whose English is a second or third language can be difficult when issues with broken English create communications that are very hard to comprehend. Virtual project team members need to be cognizant of other languages and accents to reduce things like language barriers among those that do not speak English very well. Managers need to screen for this issue so not to place anyone in a precarious position that may hinder the team or a person of interest but should allow all possible opportunities for each.

Location concepts were among 12 significant statements. This represented 1.01%

of the total count of 1,190 references during the interview process that qualified as direct references. Accordingly, participants referenced location in 11% of the interview answers. Geographic location was reportedly an asset and a hindrance to virtual project teams. Allowing people to work in multiple time zones requires additional coordination for meetings and other logistical issues. Travel budgets are restricted and cost savings of having a virtual team decreases when team members are required to travel frequently. Geographic dispersion of groups encompasses unique challenges in leading people and leading teams. But, according to the concepts from the sample, the added benefit of team members that can work 24X7 based on time zones provides extended support for customers without the expense of overtime costs.

Methodology concepts emerged throughout five significant statements, representing 0.42% of the total count of 1,190 references during the interview process that qualified as direct references; participants referenced methodology in 11% of the interview themes. There was a significant discussion about standards, that indicated methods of PM and governance require standardization throughout the organization. The focus on methodology is that a well-documented SDLC require strict enforcement of all governance process. Disparate processes need integration into plans and policies to reduce redundancy and level of effort (LOE).

Metrics concepts were present in 13 significant statements, representing 1.09% of the total count of 1,190 references during the interview process; accordingly, participants referenced metrics in 11% of the interview responses. According to those participants' contributions, metrics are crucial. Having metrics is a critical aspect of a PM governance



system. Metrics require adaptation to the environments, allow the project facilitators to skillfully run meetings and allow the project manager to make decisions concerning project performance by monitoring performance-based systems used to strategize project components or tasks. The main finding for this category is that metrics are useful for safeguarding the project from failures, guiding performance-based projects, and providing utilities to guide decisions for support systems.

Mindset concepts occurred throughout 38 significant statements, representing 3.19% of the total count of 1,190 references during the interview process that qualified as direct references; participants referenced mindset in 33% of the nine interview subtopics. According to those participants that discussed the concept of mindset, there was a consensus that the personal and professional characteristics of individuals are unique. The mindset of a virtual team is quite different from the local project teams, but the personality and training attitudes of the management structure can influence conventional perspectives of the team members. Participant consensus was that the mindsets of virtual project team members involve a trust-based ethic, where people embrace the power to make decisions and accept the responsibility for those decisions. Twenty percent of the participants expressed that people were generally of the mindset reflecting an open willingness to speak on the phone as opposed to face-to-face. Given the chance to show themselves, they will tend to volunteer for additional tasks.

Objective concepts were present in six significant statements. This was equal to 0.50% of the total count of 1,190 references during the interview process that qualified as direct references. Participants referenced objectives in 11% of the interview answers.

There were a variety of objectives mentioned in the research. But the consensus among the participants who discussed objectives was that working in the dark is nonproductive. Knowing the end goal makes productivity excel. Interviewees who spoke about objectives claimed that sometimes, the project scope is limited. However, working towards a common purpose, integrating retrospectives or lessons learned, and using an integrated master schedule, brings clarity to the project objectives. Experiences expressed were that project requirements should directly relate to the project objectives, and understanding of the requirements must include an understanding of the composition of the projects primary deliverables.

Operations construct appeared throughout 31 significant statements, representing 2.61% of the total count of 1,190 references during the interview process that qualified as direct references. Accordingly, participants referenced operations in 33% of the interview responses. Project activities, according to the expressions from the sample, define the project execution and include any process that will assist the project team in obtaining their goal. Participants indicated overwhelming consensus that periodic meetings on a regularly scheduled basis facilitate successful collaboration and communications chains. Different types of communication strategies and tools need special support and the implementation of comprehensive communication strategy makes ensures that everyone on the project understands their goals.

Personnel concepts were present throughout 13 significant statements, representing 1.09% of the total count of 1,190 references during the interview process that qualified as direct references; participants referenced personnel in 11% of the

interview themes. Personnel issues can be a hindrance to project teams if not properly managed. The main topic that pertained to personnel concepts expressed by participants was that project teams do not always get the right people with the right skills. Matrix resources are common in large project organizations, but personnel availability is just as common. VTs provide a solution to availability; but at the same time, issues may surface with respect to national or global business arrangements. Items expressed by the members of the sample pertaining to personnel include the need to get the right people in the right roles. Other items suggested include the need to reach out to a broader and more diverse group of individuals. There was a need to consider personality and competency. A suggestion was to entice a lot more people to interact with a national virtual team and to hire all over the whole United States or worldwide.

Productivity concepts emerged from 31 significant statements; 2.61% of the total count of 1,190 references during the interview process qualified as direct references. This resulted in participants' references to productivity in 33% of the interview responses. The main topic of the discussions pertained to the productivity of virtual project team members in remote locations. Participant 702-0188 indicated, "Productivity level of development team and personnel has skyrocketed." Participant 702-0189 added, "Productivity of virtual teams once again is very high." Participant 702-0189 concluded, "Some of them more than 50%, more than, their productivity has increased more than a 100%." Other participants expressed statements consistent with the idea that the ability of the project manager to keep the team focused and moving through an agenda is more complex when people tend to multitask during meetings. The practice could result in

misunderstandings of soft issues such as importance of topic. Participant majority indicated that productivity greatly increases in remote locations because team members have no one around them for distractions. Most participants also offered that it is common for them to work several additional hours, at no cost, to meet deadlines.

Standards-related concepts were present in 35 significant statements, representing 2.94% of the total count of 1,190 references during the interview process that qualified as direct references. Accordingly, participants referenced standards in 33% of the interview responses. Standards have implications for any number of components of BG and PM frameworks. Without standards, according to the sampled leaders, there would be chaos, misunderstandings, and lack of control on almost all fronts. Components such as structured organizational vocabulary, communications infrastructure, or standard operating procedures for conducting virtual meetings are very few, but important for operational capabilities and performance. Without structured conversations, many informal interactions end up becoming formal communications. Templates for project artifacts, identifications of clear and concise e-mails, and the etiquette that goes along with that become necessary to the provision of a cohesive work environment. Standard naming conventions for files and consideration for standard operating procedures for project governance emerged from several participants, who claimed those standards were mandatory. Participant 702-0195 said, “I think having a standard meeting protocol is critical” Participant 702-0195 stressed the importance of, “standard procedures and standard order of businesses” as essential to conducting business.

### **Systematic Approach to Analysis**

The conceptual framework encompassed the general systems theory (von Bertalanffy, 1972). Use of the decomposition model (Chen et al., 2004) broke BG and PM into nine subtopics (structure, operations, strategy, communications, PM concepts, diversity, PM and virtual, governance, and collaboration). Participants in this study were senior PM practitioners that managed or governed virtual project teams and expressed an understanding of the necessity for strategies pertaining to the implementation of best practices for integration of virtual project teams. Brandt et al. (2011) stated VIT PM is a new technology; the related virtual-based globalization has increased the need for relevant best practices of business. Furthermore, requirements for VTs have become more of a business focus to expose unknown practices in a new territory of technology management (Martinic et al., 2012).

The recomposition model of general systems theory (Abraham, 2013; Morris, 2012; Söderlund, 2012; von Bertalanffy, 1972) was a consideration in the evaluation of data and search for thematic statements to answer the overarching research question. The data reengineering, or recomposition model, represented the hierarchical representation of conceptual relevance. The literature review using the top-down hierarchical approach led to resultant understanding of the conceptual basis of the constructs under study. Analysis results represent the opposite, decomposition, or recomposition. Each thematic statement related back to a particular subtopic, and each subtopic related back to a particular interview question. Generation of the interview questions followed application of the general systems theory of decomposition. Additionally, the reverse engineering of

the themes and thematic statements that represented the major thematic findings directly related back to the overarching research question.

The perceived benefits of this study are to provide businesses a list of best practices for the integration of virtual project teams. Research findings stemming from the inquiry into the nine subtopics include 10 major themes resulting from the data analysis. VPM is a new technology, leaving documented best practices in contemporary literature scarce for integration models (Kornfeld & Kara, 2011). The lack of literature defining the business concepts and best practices for VPT integration drove the study from a governance perspective (Bullen & Love, 2011; Kornfeld & Kara, 2011).

Application of VPM and the strategies for implementing best practices that emerged from the data derived from a combination of VIT project governance and business experts. Practices continue to evolve while less than adequate governance practices involving modern technology could undermine the process of solving complex problems (Cavaleri et al., 2012). Furthermore, the requirements for comprehensive solutions to advance program governance become more demanding with the integration of new technologies into complex business frameworks (Devos et al., 2012).

Level 1 analysis categorized each textual reference into best practice categories through the identification of characteristics of the data relevant to the overall goal of the study. Although Level 1 analysis started with 1,233 statements, the relevance of a statement to multiple subtopics increased the number of related statements to 1,312.

Level 2 analysis included approaches to normalizing the data by reducing the redundancy and irrelevant data to arrive at pertinent, factual statements used to generate best practice

thematic statements. Level 3 analysis clustered relative factual statements into conceptual best practice facts. Clustering of data of Level 3 analysis led to major thematic statements following from Level 2 analysis that focused on 1,190 condensed statements. The Level 3 categories, grouped by subtopic with the other subtopic findings, normalized into single textual statements, converted into strategies for implementing best practices for the integration of virtual project teams, BG, and PM. The following sections include additional discussions of findings from the detailed analysis of the data the study.

### **Alignment to Conceptual Framework**

The overall research question was: What are the business and project management strategies relevant to best practices in virtual, project management, team governance?

The specific business problem was that *some senior project management practitioners lack business and project management strategies relevant to virtual project team governance.*

The purpose of this qualitative phenomenological study *was to explore the business and project management strategies relevant to virtual project team governance.*

The general systems theory grounded the conceptual framework of this study, focused on strategies to articulate best practices, using a hierarchal systems approach (systems thinking) to BG (Medvedeva, 2012; Stephens, 2013; von Bertalanffy, 1968; White & Fortune, 2012). Hence, the general systems theory approach to innovation encompasses operational elements to pertain to the internal and external dependencies that innovation involves in a business or community (Ludovic-Alexandre & Marle, 2012). The structure of the literature review represented a hierarchical topology of project

governance to build an understanding of the research topic that helped to build an understanding of the research topic (Mostafavi et al., 2012). Sheffield et al. (2012) stated systems approach represents a strategy defining the overall organization's support, segregated by operational entities, and defined by particular characteristics.

The hierarchical approach and the general systems theory of decomposition bound the components of PM inquiry. This approach led to the literature review structure that provided a baseline understanding of PM and the associated governance processes and strategies of operations. Emergent themes evolved from expressed lived experiences from the sample about best practice components of BG and PM that reflected the characteristics of critical components of BG and PM. Furthermore, the recomposition model of the general systems theory with the hierarchical approach used to reverse engineer the findings incorporated the relevance of each subtopic. Finally, identification of the emergent themes helped answer the overarching research question and produced a more comprehensive governance strategy for integrating virtual project teams into a BG process or PM framework.

### **Applications to Professional Practice**

There was a significant lack of literature on virtual project team integration (Bullen & Love, 2011; Kornfeld & Kara, 2011). VPM was a new technology, without documented best practices in contemporary literature, especially for integration models (Kornfeld & Kara, 2011). A lack of literature on virtual project innovation and strategies for implementing best practices was the deciding factor for research of the six topic selections. These selections were structure, operations, strategy, communications, PM



concepts, and diversity. The two overarching topics (BG and project management) and (collaboration) were additions to the six subtopics. They added to the qualitative, conceptualized, research framework to provide further information to answer the research question (Mathur et al., 2013; Yu et al., 2013). Appropriately, the seven interview questions were open-ended, and using the semistructured interview approach allowed for slight deviation and flexibility throughout the interview process (Allen & Geller, 2012; Mathur et al., 2013; Yu et al., 2013).

With the increasing failure rate of projects, business communities need to recognize alternatives to conventional business practices, and upgrade to cost-effective business strategy models (Kovach & Mariani, 2012). The business world needs options, pre-empting best practices to avoid failures when attempting integration of virtual project teams. Brandt et al. (2011) stated VIT PM was a new technology, and associated undiscovered practices in the age of globalization increased the need for relevant best practices of business. Furthermore, requirements for VTs have become more of a business necessity developing under a paradox of unknown territory in technology management (Martinic et al., 2012).

Businesses can use the research information to manage business processes that are relative to the virtual concept and implement best practices that seamlessly transform standard organizations into virtual organizations (Gallego-Álvarez et al., 2011). The combination of virtualization and VIT project teams provides an alternative to older technologically-structured metrics previously defining business strategy. Moreover, the combination can have a significant impact on an organization's overall cost savings and

ability to invest (Gaan, 2012). VTs provide increased social impact on companies requiring additional business acumen to build high-performance teams for operation on a global scale (Riemer & Vehring, 2012). Furthermore, discovering best practice information from within the organizational hierarchy can lead to the application of research-driven, substantial information. This information can serve to conceptualize policy and procedures that enhance the integration processes of virtual project governance (Lundberg, 2011; Richards & Bilgin, 2012; Stadt, 2012).

Organizations may use the findings from this study to integrate practices to reduce the costs of innovation by learning what the senior practitioners think is most valuable for the research topic. A clear and comprehensive understanding of best business practices requires the consideration of the surrounding issues. Development of mitigation methods to potential problems is essential. The process involves the acknowledgement of advancing research on best practice evolution that parallels advancing technology (Brandt et al., 2011). The revelation of professional experiences of PM practitioners working in a virtual environment is critical to identifying foundational structure and best practice strategies for the new virtual technology (Lohle & Terrell, 2014). Participants revealed a plethora of information, culminating in 10 major themes that emerged through the research study data analyzes processes.

Management (prominent in the first theme) is an integrated subsystem within business frameworks used to implement the governance to monitor the various processes. The elements of leadership, management style, perceptions, aggressiveness, and understanding are all tools that are part of the management infrastructure. Many factors

identified in the theme discussion indicated the primary items that had a significant presence in the interviews of the study. Regardless, the statements in this study would require prioritization when implemented and represent the higher levels of concern as perceived by the participants.

The environment (prominent in the second theme) of a virtual project teams is much different from localized project teams. Each member details his or her workspace to a level of liking because normally the individual is in his or her home. The virtual environment encapsulates many facets of PM and directly relates to the efficiency of the organization. Whether the team meets face-to-face or telephonically, the environmental conditions add value, or deter from, the efficiency; those environmental attributes need comprehensive thought, governed and idealized for the optimal situation of the project team.

Collaboration (prominent in the third theme) of the organization is the cornerstone of success. People collaborate about all components of the PM framework, resources, management decisions, and essential resources required for the projects. Employing the collaborative efforts of a virtual team requires added effort on many fronts and requires diverse abilities applied to governance and management. Decision makers will use the elements prominent in the third thematic statement to train, mold, and communicate with their staff. Collaboration is much more than working together. It is a way of being, a way of thinking, and a way of operating in disparate environments.

Understanding (prominent in the fourth theme) is such an important factor in BG and PM. It provides the basis of how people work and conduct business. The virtual team

may understand concepts in local organizations but may not understand the essential nuances of the business for optimal virtual team success. Variety is almost mandatory in business; having an infrastructure built to allow this to happen may be considerations for an infrastructure that provides high-performance teams. The participants' statements that led to the fourth theme relate an understanding and point out the more important elements of the business and PM communities.

Structure (prominent in the fifth theme) is one of the most valuable assets to a virtual team. The fifth theme encompasses the idealization of some of the structure components that are relevant to the best practices of business systems. Integrating virtuality into those conventional systems leads to many organizational infrastructure changes to accommodate the new environments. The more structure that is available, the stronger the virtual team will be. Findings related to the fifth theme indicated 248 different elements of structure requiring some consideration when trying to integrate virtual project teams into business frameworks. An understanding of the characteristics of structure, capabilities, assets, and virtuality, and what makes them work improve the confidence in decisions that are important to businesses that want to engage in virtual project teams.

With virtual project teams being a new technology, becoming more prevalent during the 21st century, to operate successfully, the metrics of businesses that govern those processes must incorporate efficiency as part of the decision-based metrics. Companies cannot succeed if they fixate on the loss columns of financial reports. The efficiency theme (prominent in the sixth theme) indicates the many components of

effectiveness, as seen by senior practitioners of the BG and PM fields. Applying those efficiency factors to the business frameworks will enhance the application of the virtual project teams, thus ratifying their efficiency by increasing the bottom line of profit margins.

A virtual team, or any team, requires the necessary skill sets from human resources to operate efficiently. The seventh theme related a number of messages that directly pertained to the selection processes of skilled individuals, how the proper strengths provide the essential foundation for virtual project team operations, and the importance of adaptability skills. There are a number of assets identified in association with the theme that, when applied to a business infrastructure will heighten the abilities of the organization and broaden the niche perspective of the entire business. Skills are so diverse, complex, and simple at the same time, but remain at the top of the list of essentials for the successful integration of virtual project teams.

When an organization wants to go beyond the usual in business, they need to consider the effects of diversity. Diversity (prominent in the eighth theme) is significant to virtual team development in many ways. The related discussions represented by the interview data included 142 major statements relative to diversity. This level of contributions to the data from the 22 participants elevates diversity well above an average consideration. Diversity of language, diversity of location and customs, diversity of thought processing, and diversity of business acumen are just a very few of the necessary considerations that deserve thought when designing a virtual environment. Organizations cannot get away from diversity if they want to grow; globalization of the trade industry

almost mandates the use of diversity. Without embracing diversity, organizations severely limit their resources, narrow negatively the business niche, and cripple their infrastructure. Research results indicated that diversity needs embracement, acceptance, and must be incorporated effectively into virtual communities.

Governance is an integrated part of the business. Without governance, there would be chaos. Organizations grow by using governance. They use metrics that are part of governance, to make the primary decision about what to invest in, where to expand, or why a product is no longer useful. Policy helps to govern businesses; when a company wishes to expand into the virtual community, they need to look at their plans and policies as well as their governance process that support them. The governance references emerged with respect to theme nine about new technologies. Making changes to monitoring processes, efficiency processes, and productivity are all parts of the virtual project integration process.

Technology (prominent in the tenth theme) is what businesses use to operate their companies. Virtual integration will require expanded technology adaptable to changing environments; leaders must be able to provide the essentials for operations. Theme 10 emerged from discussions of the many conditions where the virtual design process would require management consideration and decisions to align the virtual community to collective business infrastructures. Virtualizing brings new requirements for technology, like increasing bandwidth, collaboration and communications tools, engagement protocols, and consideration for the stability of the virtual technology and environment. Management must consider the expense of virtualization and must be willing to accept

the associated expenses for their increasing business forums.

### **Implications for Social Change**

Ten major themes emerged from the interviews with 22 participants. All of the recognized themes provide insight into how PM businesses can understand in order to address better the phenomenon. The study contributes to positive social change by increasing the practical knowledge base of information to integrate VTs into structured BG practices. With a clear understanding of multiple perspectives on business concepts, leadership has the ability to provide smoother transitions throughout a company. These transitions apply to changing human relations, communications, diversity, ethics codes, and practices relative to their own personal leadership characteristics (Crespo, Pedamallu, Özdamar, & Weber, 2012). Consequently, these business processes directly relate to job retention with respect to business expansion of virtual operations. They are essential for increasing the availability of suitable jobs and addressing skills necessities among job types, thus possibly reducing the level of unemployment during virtual development in an age of globalization.

Businesses that are trying to increase their standard of business engage with distant organizations and use resources that are available throughout the world. Accordingly, the themes, derived from real-world experiences, can help with the formulation of strategic decisions and prepare models for business operations. Leadership can screen candidates and implement best practices by placing personnel based on their characteristically similar strengths. These strengths-based placements can align with projects and staff members' professional traits, enhancing the success rate of projects

(Kapoor & Sherif, 2012; Vinayan et al., 2012). Political and technological knowledge exchange shows social influence of diverse project teams adds a benefit linked to adaptable, progressive, innovative techniques (Andersen & Dag, 2013). International competition, fragmented and challenging markets and various rapidly changing technologies indicate the necessity of expansion outside traditional PM boundaries (Lind, 2013). Virtual collaboration, regarded as an essential futuristic technology in modern organizations, requires social skills as a primary prerequisite for effective teamwork within virtual team environments (Iverson & Drake, 2014). The indication is that the personal and social skills of business individuals will become more dynamic in nature and more diverse when challenged with international business clients. Core competencies training will enhance the collective capabilities of the company that will enhance the local community through associated education about key adaptations to new business tactics. Social collaboration and understanding among members of VTs are critical in this respect; a network of external contacts will increase the social capital of the organization (MacKenzie et al., 2013). Additionally, open collaboration involves participants with different motivations and interests, thereby enhancing social dynamics within the collaboration process of diverse workforces (Jang, 2013; Madsen, 2013; Pacuraru, 2012).

### **Recommendations for Action**

It is questionable that the decline in project success will increase with the expanding possibilities of business frontiers. Global identification of business partners provides a stress not unique to organizations; however, the possibilities that businesses will encounter globalizing or virtualizing requirements of their enterprises are



exceptional. Decision-making at many levels in organizational frameworks require business managers and decision-makers at all levels that embrace research-driven recommendations, such as those presented in this study. The participants of this study were from purposeful selection of senior project practitioners. Their accumulated business acumen, shared by their described lived experiences, led to the conceptualization of data into thematic ideas to enhance business practices (Bulley et al., 2014; Chan et al., 2013; Morton et al. 2013).

The results of this study indicate a plethora of strategies for implementing best practices and points of interest, depending on the business infrastructure. The essentials of PM are very similar throughout the PM world; but the uniqueness of the business will determine the elements to apply to enhance best business practices. This study resulted in the address of 10 different thematic areas of consideration used to mold just about any project-oriented virtual structure in any business. Generalizing the business efficiency of virtual innovation involves innovation, customers, employees, business owners, alliance partners, and communities. The practice can advance value and lead to improved service offerings, service processes, and service business models (Smet & Mention, 2012). Efficiency and reliability are common drivers for corporate strategy, applicable to PM groups (Tabor, 2012).

Recommendations for action will depend on the current business infrastructure model. The amount of consideration for process or policy change depends on the new virtual infrastructure model. Recommended areas of consideration include leadership should be a requirement for all virtual project team members and company management

should provide the training for VPT members to sustain successful progression. Virtual environments are very dynamic. Business decision makers should ensure there is progressive training, support, and select personnel trained for this working engagement. Collaboration is an essential element of successful PM.

Virtual project teams require aggressive leadership to enforce this concept. Infrastructure architects of the corporation or business need to allow funding to put the technology and structure for collaboration in place prior to starting any VPT. Clear and concise policy and direction require communication. Executives need to make sure the direction is clear and well documented, providing proactive feedback loops whenever possible, making sure people understand their expectations and direction. Structure is mandatory for success. Virtual Managers need to be direct, consistent, and able to provide the tools and techniques for the VPT to operate successfully.

Centralize structure whenever possible and provide a more productive, efficient, and collaborative working environment. Skills for VPTs are different from those of local project teams, with communications and collaboration among the most prominent differences. Provide the avenues, training, and essentials required working seamlessly throughout the project domain. Globalized business will encounter diversity. Organizations embracing diversity can benefit by integrating strategies to overcome the difficulties through proactive, compassionate, and understanding approaches to all employees. Governance is an integrated part of all businesses. Leaders should be accurate, consistent, proactive, and clear with direction and decision processes.

### **Recommendations for Further Study**

The identification of 10 themes pertaining to BG and PM resulted from this study. There are a number of other topics available for study in many other diverse locations or businesses. Using a generalized population provided a broad view of the research topic; however, localizing the research question and interview questions will most likely bring diverse results. This study is reproducible in any forum, with any population, and a wide variety of other themes and components could emerge that are more specific to the industry, size, or location. Recommendations include inquiry into different populations involved with governance pertaining to VTs; the same study approach could apply in these diverse yet specific settings to further generalize or localize the information to conceptualize best practices.

Further inquiry to investigate the phenomenon on multiple levels could provide a more focused result for a particular organization pursuing virtualization. Consideration of business type could enhance and direct the results for a particular business. Recommendations include involving other researchers in the study of various individual industries to compare emerging themes.

Additional suggestions for future research include using a mixed method approach to a Likert scale and both close-ended and open-ended questions as part of a survey with a larger sample. Researchers may distribute the survey to various business partners of like organizations. Use of statistics through a quantitative approach that can narrow findings of specific constructs can add to the baseline understanding of further focus toward the development of likable business framework models.

## **Reflections**

This process has been enlightening as a scholar and researcher. The energy would take to secure interviews with focus on a particular audience was an underestimated reality. Confidentiality was a primary concern; but because of working with security procedures throughout an entire career, maintaining confidentiality was not a problem. Very few of the participants were apprehensive and a majority of the participants had no problems with the questions or recordings. The data collection process evolved from theory into practical applications that were clear and concise. Understanding of the research protocols and procedures through the in-depth, advanced contemplation of planned events led to the ability to overcome issues during the interview processes.

The confidentiality agreement provided evidence that applied to the level of confidentiality for each participant. Questions and concerns about the process were the focus of discussions prior to data collection and personal reservations avoided. The quality of the participants' answers increased as each interview proceeded with the improved interviewer's ability to redirect and explain the interview questions through tactics that helped improve response quality. Participants occasionally drifted from the topic of the question; however, redirection and member checking confirmed responses and helped keep members of the sample focused on the topic.

## **Summary and Study Conclusions**

Businesses struggle with technology adaptation and their niche in a focused area of business. Globalization of markets has opened up many doors for progress; with this newfound application in business comes many issues when dealing with other people.

Project management has been around for millennia and became a more formalized concept in the last 60 years. With this formalization is a requirement for governance to provide structure to new business processes and using those processes for the integration of PM frameworks; combining into a single structure are operational, personnel, policy, and process changes that take on entirely new meanings.

Organizations have been failing with projects for many reasons. With this failing rate is a decrease in the bottom line or returns on investment; therefore, businesses are scrambling to find new and innovative ways to do business. Components, or subsystems, must operate within their area of consideration, but also integrate with other subsystems, to provide the total business the framework to support virtuality. The benefits of virtual project teams (VPTs) include the creation of dynamic work environments that enable cross-synthesis of cultures (Richards & Bilgin, 2012). Virtual technology provides communications infrastructure. This infrastructure allows businesses to thrive in remote areas, thereby integrating cultures, ethics, collaboration theories, and techniques to form prominent, innovative, business portfolios (Lohle & Terrell, 2014).

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## Appendix A: Linked-In Posting for Participants

### Senior Project Managers or Practitioners

Notice for Participation in a Doctoral Study – Seeking 30 individuals to participate in and open-ended, seven question, interview to discuss the: Best Practices for Integration of Virtual Project Teams. Completely confidential, 60-minute discussion type interview. Criteria: (a) certified senior project manager (5 years or more experience), (b) experience working or managing virtual project teams for 3 years or longer, or (c) have been part of policy generation relevant to operations of a virtual project environment. Please contact Bill at or send a private note to my account.

## Appendix B: Initial Contact E-mail

Good Morning/Afternoon <<*Participant Name*>>,

I would like to sincerely thank you for volunteering to participate in my Doctoral Study Field Research. My topic is a new technology that has little literature, but is quickly becoming a necessity in business and project governance. Virtuality is a fast growing technology and I want to document the best practices when organizations integrate their infrastructures with virtual project teams.

The focus of my study is integration of virtual project teams and my goal is to document, through your knowledge and my research, the best practices that organizations can use when integrating.

Attached to this e-mail is the Informed Consent Form for you to review. If you want to participate in my research project, please either sign the form, or send me a return e-mail indicating, "I will participate". Once this is done, I will send a second e-mail to you to schedule the interview and answer any questions you may have. My contact information is and my phone numbers are (Day)

Thanks Again, I want to Welcome you to the research project.

Sincerely,

William J Hamersly, DBA (c), MBA, PM<sub>3</sub>, FAC-PPM<sub>3</sub>  
Walden University Doctoral Candidate

## Appendix C: Second Contact E-mail

Hi <<Participant Name>>,

Thanks again for participating. The interview process will start early next week. Let me know what the best times would be for us to talk for approx. 60-90 minutes. I will be conducting interviews from 8:00 a.m. EST to 9:00 p.m. EST Monday through Sunday at your convenience.

The interview format is an open-ended question semistructured interview process. The semistructured process means that I will have a set of questions that I will ask all participants. I the open-ended part of the study and that I can ask leading questions to extract additional information pertinent to the research question or doc study topic. The questions are structured, but your responses are like story telling/discussions of your lived experiences that you have grown with during your career. I will be integrating other validation questions or statements into the Q & A, called member checking, which is where I will reiterate, or summarize your answers and relate them to the topic to validate the my perceptions with your experiences,

Following the interview, I will transcribe the interview, and send it to you to verify/validate. You have the options to make changes to the transcription prior to starting my analysis. When you are done checking the document, please send it back to me attached to an e-mail, and please indicate, "I concur". After the doctoral study is published, I will send you a personal first copy of the entire doctoral study for participating in my research project.

If you have any additional questions, please let me know and I will answer them for you. Feel free to call me 8:00 a.m. EST to 9:00 p.m. EST Monday through Sunday

Sincerely,

William J Hamersly, DBA (c), MBA  
Walden University Doctoral Candidate

## Appendix D: Informed Consent Form

Good Morning <<Participant Name>>,

My name is Bill Hamersly, and I work as a Senior Project Manager. I am seeking individuals to participate in a phenomenological qualitative research project for my dissertation process. The process is voluntary, will take no longer than 90 minutes for the interview, done at your convenience, and any participant may cancel their participation at any time during the process. An additional 30-45 minutes effort is required to validate the transcript. Member checking will be done throughout the interview process to validate the perceptions of the researcher with the personal experiences of the participant.

The process is completely confidential and no record of any personal data, organizational affiliation, or reference will be made of the interviewee before, during, or after the research and publication process. I will schedule interviews over a three-week period, following approval from the Walden University IRB to go-ahead with the project. I chose to open the population to worldwide access to integrate a plethora of alternatives in best practices, and to gain access to organizations I would normally not have access. Recruitment of participants is from different companies or different chain-of-command to avoid conflict of interest.

Single source of contact will assure privacy and authenticity of information and data. The researcher does all work for the research project. Communication, data gathering, interviews, transcriptions, analysis, and reporting will have a single source concept between the researcher and the interviewee. There will be no references to any personal or professional identifiable information in any reporting.

The subject topic benefit is to build a conceptualization of best practice information on the project and governance issues dealing with the integration of virtual project teams. My problem statement is below. There will be six open-ended discussion questions to the telephone interview, concentrating on six major subtopics of project governance (Structure, Operations, Strategy, Communications, PM Concepts, and Diversity). There will be a seventh question, generalized, for personal additional experiences you feel may add value to the project.

I will be building a research participant pool of 30 senior project managers or practitioners. The project will start by interviewing 20 participants, on a first come basis and using the 10 remaining participants for cancellations/withdraws. The criteria used for the participant selection process include (a) certified senior project manager (5 years or more experience), (b) experience working in or managed virtual project domains for 3 years or longer, or (c) have been part of policy generation relevant to operations of a virtual project environment. Each participant will undergo a screening process, immediately following the participant gathering process, and prior to acceptance for participation.

With the confidentiality measures in place, there are no risks to participating. The benefit for participation is the first mailing of the doc study following publication.

Additional questions concerning the research process, ethics, protocol, data privacy, your rights as a participant, or any other interest that may be relevant to the study, contact the researcher, or the Walden University point of contact, Dr. Leilani Endicott, @ 1-612-312-1210, extension 3121210. The University's Research Participant Advocate? (1-800-925-3368 ext. 1210# from within the USA, 001-612-312-1210).

**REMEMBER:** This process, this document, including all correspondence and communication, is strictly voluntary, and kept confidential in a password protected, encrypted, networked computer. You also have the right to withdraw from the research process, at any time, for any reason; in this case, I will destroy all data and return the transcription file to you.

I would like to participate (YES) (NO) (Please circle one.)

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**NOTE:** Please print a copy of this consent form for your records, and send the signed copy to the researcher or send a concurrence e-mail indicating your participation decision.

#### Problem Statement

Billions of dollars of IT projects fail annually (Soh et al., 2011) increasing business costs and decreasing profitability. IT project failure rates have soared as high as 80%, signifying that projects do not meet their designed specifications (Kovach & Mariani, 2012). Project governance and business governance strategically link project management (PM) to corporate frameworks, but repeatedly contribute to the growing failure rates of projects. With the globalization of business strategy, the use of virtual teams is becoming a common business practice (Gressgård, 2011); the complex virtual project team (VPT) business governance requirements to manage successfully disparate teams remains elusive and widely varied in practice (Brandt et al., 2011). The general business problem is the changing conditions of business acumen required to execute projects with Virtual Project Teams (VPT) is new technology (Kaganer et al., 2013). The specific business problem is that some middle and senior project management practitioners lack business and project management strategies relevant to virtual PM team governance (Barnwell et al., 2014; Krajcik, 2013; Pacuraru, 2012).



## Appendix E: NIH Tutorial Certificate

