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Dynamic Capabilities to Evolve an Ambidextrous IT Organization

Douglas Redden

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Dynamic Capabilities to Evolve an Ambidextrous IT Organization

By

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ACCEPTANCE

This dissertation was prepared under the direction of the Dissertation Committee for Doug Redden. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Executive Doctorate in Business in the J. Mack Robinson College of Business of Georgia State University.

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ABSTRACT

Dynamic Capabilities to Evolve an Ambidextrous IT Organization

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Digital disruptions are changing the healthcare ecosystem, requiring organizations to rethink IT strategies and develop new IT competencies. This study focuses on the exploitation and exploration tension that managers face within an IT organization of a global pharmaceutical company, and their response to the related environmental exigencies in healthcare. Dynamic capability theory (DC) provides the overall framing, while ambidexterity provides an understanding of top management's response to the exploit–explore tensions that arise. This engaged scholarship longitudinal case study takes a shifting stories methodological approach to elicit participants' reflections and interpretations of significant events, including their own role in evolving the ambidextrous posture of the IT organization. Through rich description stories, process related decisions have been revealed, and have provided an understanding into organizational reconfiguration of IT resources. Subsequently, this resulted in a situated grounded model for understanding DC and OA for this case. Practical insights are offered on how dynamic capability theory could be applied for IT management to be smarter at becoming more ambidextrous.

I CHAPTER 1: INTRODUCTION

"Success in the future will be measured not only by production but also by the ability to adapt. Changes in the health care environment and a global economy that assert new pressures on our business require a nimble, scalable, and adjustable organization. . ." **(Chairman and CEO, PharmaCo.)**[1]

Digital disruptions are changing business landscapes, requiring organizations to reconsider IT (Information Technology) strategies and develop new competencies in order to obtain some level of competitive advantage. The healthcare industry is experiencing this challenging phenomenon at an extraordinary pace. Particularly within the United States, policy change such as the Affordable Care Act (ACA), optimizing patient outcomes, and electronic health records are fundamentally redesigning the delivery of healthcare, with a tight connection to IT competencies, and consequently pushing pharmaceutical companies to develop dynamic IT capabilities that will endure and be competitive over the long haul. The CEO of PharmaCo unmistakably stated the context, and therein the task at hand for the leadership team of its IT organization. IT PharmaCo's strategic response to this challenge provides the focal point for this dissertation.

This dissertation draws on two streams of research, both of which contribute to the prevailing thinking on how organizations survive in the face of change, applying a process perspective to zero in on how top management contributes to becoming more ambidextrous.

The first stream of research is organizational ambidexterity. The generic use of organizational ambidexterity simply means the capacity to do two things simultaneously.

[1] Quote made by the Chairman and CEO of a major global pharmaceutical company. PharmaCo is a pseudonym.

Interest in ambidexterity refers to the capacity of the firm to exploit existing resources for the good of the firm while simultaneously exploring new opportunities, technologies and markets as examples, and reconfiguring its resources to, at minimum, survive, and optimally to obtain competitive advantage (Helfat and Raubitschek, 2000; March, 1991; Holmqvist, 2004). It is arguably March's (1991) seminal work on exploration and exploitation that spurred interest in ambidexterity. Exploitation focuses on efficiency, increasing productivity, defending and extending core operations. Exploration focuses on search, discovery, and innovation resulting in building emerging capabilities and creating viable options for the future. Ambidexterity is about doing both, exhibiting the capability to resolve the tension between exploration and exploitation in the quest for competitiveness and firm survival (March, 1991; O'Reilly and Tushman, 2004, 2008; Nosella *et al*., 2012).

In managing these tensions, it is also necessary for organizational culture to evolve and be grounded in promoting both innovation and discipline (Ghoshal & Bartlett, 1994; Gibson & Birkinshaw, 2004; Jelinek & Schoonhoven, 1993; Simsek, Heavey, Veiga, & Souder, 2009). Cultural evolution is necessary to address the dual demands of exploration–exploitation tensions and provide cohesion among the organization (Eisenhardt & Schoonhoven, 1990) and introduces contextual ambidexterity as a mechanism for managing resource reconfiguration. This is particularly relevant in the IT realm where it is necessary to exploit software products for existing customers and simultaneously explore innovative, new technology options (Napier, Mathiassen, & Robey, 2011). Successful IT companies have demonstrated development of coping strategies that establish appropriate rigor and discipline in software development

activities while also addressing flexibility and agility when faced with important external environmental changes (G. Lee, Delone, & Espinosa, 2006).

The second stream of research is the dynamic capabilities framework. Dynamic capabilities are defined as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece, Pisano, and Shuen, 1997, p. 516) or "the capacity of an organization to purposefully create, extend, or modify its resource base" (Helfat *et al.,* 2007, p. 4). The dynamic capabilities construct is intended to answer the question of how firms can achieve, and maintain, competitive advantage *in the context of rapid technological change* (Teece *et al.*, 1997). There is a clear separation between operational capabilities, ongoing tasks for making a living, and the processes that help bring about change and require managerial action in order to do so (Helfat, 2007). Interest lies in examining the strategic response of IT PharmaCo in light of its environmental challenge.

Organizations that have a certain level of dynamic capability can lead to becoming more ambidextrous. In Nosella *et al.'s* (2012) review of this body of work, they found almost all studies agreed that dynamic capability and organizational ambidexterity co-exist. O'Reilly and Tushman (2008) reported over 40 studies on organizational ambidexterity and a deeper examination on the content and process of change in organizations. Several studies explicitly acknowledge the linkage between organizational adaptation and dynamic capabilities (e.g. Harreld *et al.*, 2007; He and Wong, 2004; Tushman *et al.*, 2007; Venkatraman, Lee, and Iyer, 2006) while others focus more on outcomes such as organizational performance associated with ambidexterity (e.g. Gibson and Birkinshaw, 2004; Markides and Charitou, 2004). Taken

as a whole (see O'Reilly and Tushman, 2008, p. 192-193), they provide strong support for the linkage between organizational ambidexterity and dynamic capabilities. They report that organizations are adaptive systems and in continuous interaction with their opposing demands in their environment, an aspect that is particularly relevant in IT software functions.

As a result, organizations must continuously reconfigure and rebalance their activities in order to adapt to the external challenges and resolve the tensions that continuously re-present themselves. Therefore, it is the combination of the organizational ambidexterity and the dynamic capabilities framework that set the boundaries for this study with common elements of survival and competitiveness, and the adroit management of its IT resource base in the face of rapid change. IT PharmaCo is situated in a rapidly changing environment with its strategy involving integration, building, and reconfiguration of its resources in order to transform itself from a core–operations, cost–focused model to a nimble, scalable, adjustable, differentiated organization as described by the CEO. At the same time, it is possible to obtain and offer insight on how dynamic capability theory could be applied for IT managers driving exploitation and exploration activities, the two opposing sides of organizational ambidexterity capability.

Therefore, the research objective is to further understand how an IT organization's dynamic capability leads to increasing organizational ambidexterity in a rapidly changing environment. What renders this study distinct is its use of the ambidexterity conceptual framework to unwrap the resource configuration decisions occurring at IT PharmaCo. Focus is placed on "how" IT leaders adjust the organization's resources to tightly align with the CEO's strategic intent. While leaders may successfully

orchestrate resource allocation between routine and innovation, there is little understanding on *"how"* they actually do this. Organizations rely on leaders, managers, to orchestrate resource allocation, successfully demonstrating ambidexterity, by addressing the routine and opportunistic new business domains. However, how managers actually go about doing this, and identification of the decisions has not been addressed (Adler, Goldoftas, & Levine, 1999; Gibson & Birkinshaw, 2004). This study adopts a qualitative, engaged scholarship methodology that includes a longitudinal, single case study. The case study permits a deep dive to investigate how ambidexterity emerges as explained by the strategists–management team. As a longitudinal study, it affords the opportunity to provide an understanding on how a certain level of dynamic capability leads to increasing ambidexterity, while co-evolving with the changes in the environment.

This research provides an in-depth look into an IT function within a global pharmaceutical company faced with a changing healthcare industry landscape, that has determined that its survival rests on redefining itself as more than just a pharmaceutical company, but rather transforming[2] itself into a healthcare company. A key tenet for this shift is a dependency on IT capabilities for future products and services. This leads to the research question "How does an IT organization build and reconfigure its resources[3] over time to become ambidextrous in the way it services the firm?" Therefore, the research is intended to peer into leadership–management teams' decision-making processes and

[2] The term "transformation" is defined as "a major change occurring along three possible dimensions: changes in goals, boundaries, and activities" (p.16) (Aldrich, 1999)

[3] This research has adopted Barney's (1991) definition of resources. Resources include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness.

interactions to contribute to the strategy of ambidexterity as well as the processes and activities used while reconfiguring organizational–human resources needed in the production of new output configurations (Avital & Te'eni, 2009), and technological–IT systems intended to offer innovation opportunities (Zittrain, 2005).

To provide a jumping-off point, this case begins with the IT organization and its leadership–management team in the throes of their transformation effort seeking an adjustment from primarily a structural–exploitation disposition to one which attempts to re-balance the exploit–explore structural disposition. This dissertation has been generated by using engaged scholarship in its purest form, with the author having been on the core team responsible for driving resource reconfiguration decisions. In addition, this dissertation takes advantage of Lanzara's Shifting Stories approach (p. 285) (Schön, 1991) and adapts its participant observation approach to provide an in-depth account of event–sequence recounting over a two and a half-year period, beginning in 2012. The contextual nature of the method elicited six stories that provide a deep understanding as to how managers reconfigure resources to become more ambidextrous in the way they service the firm. Finally, lessons are offered for IT managers faced with addressing tensions of exploration–exploitation, with ambidexterity informing how these changes occur, and the decisions involved in organizational reconfiguration.

This dissertation proceeds in the following manner. The next section provides the case background of PharmaCo and the challenge set forth for IT PharmaCo. Then, the existing literature on organizational ambidexterity and dynamic capabilities are reviewed in order to provide theoretical background for this dissertation. Subsequently, the engaged scholarship qualitative methodology is outlined, describing the longitudinal,

single case study and data collection process. Then, the results are presented as six interdependent stories chronicling the two-and-a-half-year process of reconfiguration. In closing, a discussion of the key findings, study limitations, and implications for future research are offered.

II CASE BACKGROUND

PharmaCo is a global pharmaceutical company with a mission to develop innovative products and services that save and improve lives globally. In order to deliver on this mission, the organization has been adapting its strategy to the changing healthcare ecosystem. External factors such as patient outcomes, real-world evidence, digitization of information, electronic health records (EHR), and public policy enactments (Affordable Care Act) have fundamentally reshaped the delivery of healthcare. Consequently, pharmaceutical companies have looked to redirect themselves and become more a developer and manufacturer of drugs. PharmaCo's response was to redefine itself as a *healthcare* company–existing to serve the needs of patients and healthcare providers across many channels and in times of both sickness and health, consistent with their mission. Stated by the CEO of PharmaCo, *information will be the competitive differentiator in the marketplace*, thereby placing increased importance on the IT capabilities the company possesses. Beginning in 2012, IT PharmaCo began a deep, fundamental transformation to support PharmaCo's redirection to that of a healthcare company.

> *Chief Information Officer (CIO)*: "We are competing in an IT-intensive industry. This means that information and technology are increasingly embedded as part of our products, services, and top-line growth initiatives…We care because we know that companies who learn to leverage information and technology to drive better decision-making are leaders, creating uncommon profit gaps with their closest competitors."

Prior to 2012, IT PharmaCo had already begun setting the foundation for its transformation journey. Beginning in 2006, the rationalization and consolidation of storage, processing, and network capacity had begun. This effort led to the launch of a new data center that provided a focal point for unified data and standard processes that

supported the implementation of a single instance of SAP, an Enterprise Resource Planning (ERP) capability, delivering central management of PharmaCo's business processes. In 2009, PharmaCo acquired an equally sized organization as its own, meaning system and team integrations between the two companies were top order for the IT group. The acquisition resulted in both cost and efficiency gains once completed in 2011. Coming into 2012, IT PharmaCo (roughly 3,000 employees out of 80,000) was wired for efficiency and consolidation. IT had been configured such that the majority of the organization was focused on activities driving efficiency and responding to functional organization demands (Figure 1), while a very small portion was exploring innovative, game-changing, opportunities.

Figure 1: IT PharmaCo organizational structure pre-transformation[4]

With the retirement of the CIO in early 2012, PharmaCo leadership promoted the Vice President of Research IT, a leader regarded as delivering innovation within a core division of the company, to *interim CIO*. The importance of this announcement was two-fold: it was disruptive to a long, relatively stable episode of consolidation and integration; and, it signaled to the IT organization that success would rely not only upon operational excellence, but innovation as well. These shifts would necessitate a new strategic course.

[4] Consumer division was divested in 2014.

III THEORETICAL BACKGROUND

III.1 Ambidextrous Management of IT Resources

III.1.1 Overview

Ambidexterity is a topic that has been studied extensively over the past two decades. Organizational ambidexterity (OA) is defined as: "*The ability to simultaneously pursue both incremental and discontinuous innovation...from hosting multiple contradictory structures, processes, and cultures within the same firm"*(p.24) (M. Tushman & O'Reilly, 1996) which is required for long-term firm survival. Anchored in this definition, literature has been gathered through the use of empirical studies (Nosella, Cantarello, & Filippini, 2012), proposed theory papers (O'Reilly III & Tushman, 2008; Simsek et al., 2009), special journal issues (Academy of Management, August 2006, and Organizational Science, July-August 2009), as well as review articles (Lavie, Stettner, & Tushman, 2010; Raisch & Birkinshaw, 2008; Turner, Swart, & Maylor, 2013).

A longstanding idea within organizational research has focused on a firm's long-term success and ability to exploit current capabilities while concurrently exploring new opportunities as it reconfigures its resources to obtain competitive advantage (Helfat & Raubitschek, 2000; Holmqvist, 2004; March, 1991). Exploitation focuses on efficiency, increasing productivity, defending, and extending core operations. Exploration focuses on search, discovery, and innovation resulting in building emerging capabilities and creating viable options for the future. OA is about doing both, exhibiting the capability to resolve the tension between exploration and exploitation in the quest for competitiveness and firm survival (March, 1991; Tushman and O'Reilly, 1996; Nosella *et al.*, 2012; O'Reilly and Tushman, 2004, 2008). O'Reilly and Tushman (2011) offer an additional

clarification, stating that ambidexterity capability "embodies a complex set of routines and the ability of senior leadership to orchestrate the necessary trade-offs while in simultaneous pursuit of exploration and exploitation. . . " (2011, p. 6).

Organizations seek different strategies based on the environmental conditions being imposed on them (Jensen, 2006; Lawrence & Lorsch, 1967). This is demonstrated by Burns & Stalker (1961), who observe that firms operating in stable environments developed what they referred to as "operational management systems" with organizational hierarchy, clearly defined roles, job descriptions, and responsibilities. In contrast, firms operating in environmental turbulence create "organic" systems lacking formally defined tasks, little formal coordinated processes, and less reliance on formal mechanisms. Research has confirmed that different organizational configurations are associated with different strategies and environments (Aldrich, 1999; Sine, Mitsuhashi, & Kirsch, 2006; M. Tushman & O'Reilly, 1997). In their book, Tushman and O'Reilly (1997) provide a central thesis that organization success requires a balance between stability and change, both incremental and discontinuous, illustrating this based on examples from the Semiconductor industry, FedEx, G.E., RCA, and others.

Additional studies on ambidexterity have documented the effects at the firm, business unit, project, and individual level that have been positively associated with (1) sales growth (Auh & Menguc, 2005; Geerts, Blindenbach-Driessen, & Gemmel, 2010; Han & Celly, 2008; He & Wong, 2004; Nobeoka, Cusumano, & Program, 1994); (2) innovation (Adler et al., 1999; Burgers, Jansen, Van den Bosch, & Volberda, 2009; Eisenhardt & Tabrizi, 1995; Katila, 2002; McGrath, 2001; Phene, Tallman, & Almeida, 2010; Rothaermel & Alexandre, 2008; Rothaermel & Deeds, 2004; Sarkees & Hulland,

2009; M. Tushman & O'Reilly, 1997); and (3) firm survival (Cottrell & Nault, 2004; Hill & Birkinshaw, 2012; Kauppila, 2010; Mitchell & Singh, 1993; Piao, 2010).

A recent study pointed to the positive effect of firm growth, but also demonstrated the differences in ambidexterity between manufacturing and service firms (Geerts et al., 2010). Other studies have shown ambidexterity to be more valuable when under environmental uncertainty (Jansen, Bosch, & Volberda, 2005; Jansen, Vera, & Crossan, 2009; Sidhu, Volberda, & Commandeur, 2004; Siggelkow & Rivkin, 2005; Uotila, Maula, Keil, & Zahra, 2009; Wang & Li, 2008). The firm's ability to adapt has been demonstrated through cases like Polaroid, IBM, NCR and others (Boumgarden, Nickerson, & Zenger, 2012; Holmqvist, 2003; Lovas & Ghoshal, 2000; O'Reilly, Harreld, & Tushman, 2009; Rosenbloom, 2000; Tripsas & Gavetti, 2000). These studies capture the complexities of ambidexterity and help ground the concept in reality.

Honing in on OA based literature for IT organizations, prior studies have demonstrated strategies for coping with necessary consistency and control while also offering flexible and agile characteristics based on external exigencies (G. Lee et al., 2006). IT firms were also able exploit software products for existing customers and simultaneously explore innovative, new technology options (Napier et al., 2011).

Despite OA having received an outpouring of study over the past several decades (O'Reilly & Tushman, 2013), the extant literature remains unclear on the role of leadership teams and behaviors in attending to the contradictory demands of exploration and exploitation (O'Reilly & Tushman, 2013). It is intuitive to believe that the managers and their firms that successfully manage the exploit–explore tension are said to be "ambidextrous" (Tushman and O'Reilly, 1996; O'Reilly and Tushman, 2013). At a high

level, there is some evidence to show that managing these tensions requires leaders who can properly balance competing pressures of different organizational architectures. For instance, Jansen, Vera and Crossan (2009) found that transactional leadership was more associated with exploitative innovation, while transformational leadership was more likely to be associated with exploratory innovation. Other studies linking leadership and ambidexterity have demonstrated that leadership practices can affect the success of exploration and exploitation (Alexiev, Jansen, Van den Bosch, & Volberda, 2010; O'Reilly & Tushman, 2011). Leadership literature is outside the boundaries of this dissertation, however interdependence on leadership characteristics may surface throughout the case results.

III.1.2 Ambidexterity Approaches

Significant attention has been placed on ambidexterity over the past 15 years, and has resulted in extensive research for sequential, structural, and contextual approaches. Firms look to resolve alignment between innovation and efficiency when required to adjust their structures over time and align to the firm's strategy (Duncan, 1976). Duncan argued that structures shift *sequentially* over time, whereas Tushman and O'Reilly (1996) argued that organizations shift in a simultaneous fashion, looking to rebalance by establishing autonomous subunits for 'explore and exploit' that are *structurally* separated. Each subunit has an independent alignment of people, structure, processes and cultures, with a targeted integration that helps to ensure the use of the two types of resources and capabilities. Gibson and Birkinshaw (2004) build on this and subsequently argue that organizations could be ambidextrous by permitting individuals to decide how to divide

their time between exploratory and exploitative activities, known as *contextual* ambidexterity.

Complementarity in *structural* and *contextual* approaches is likely within organizations. For instance, structural boundaries may be implemented while at the same time, shared meaning and new contextual characteristics may be imposed to evolve the culture in understanding *when* and *how* to leverage explore-exploit entities and for *what* value to the organization. For the purposes of this research a deeper dive into structural and contextual ambidexterity are necessary in explaining this complementarity phenomenon within IT PharmaCo.

III.1.3 Structural Ambidexterity

Structural ambidexterity relates to explore and exploit through necessary separation (Tushman and O'Reilly, 1996). This manifests itself within an organization as having distinct divisions or groups that by design only focus on efficiency or innovation. By having structurally separated units, incentives and metrics for success are more clearly understood. Without structural separation, priorities remain unclear, management philosophies become ambiguous, and productivity is expected to wane.

To date, the research on structural ambidexterity is concentrated toward the role of top management teams (TMT) as intermediaries between competing frames of references. Gilbert (2006) demonstrated this when studying USA Today as it entered the digital business. Likewise, Tushman and O'Reilly (1997) explain the importance of special separation integration that occurred at Ciba Visions for top management to address the two groups (explorative and exploitative group), stressing the role

management must play in integration. This has proven difficult for management to harness the role of intra–firm knowledge transfer liaison (Szulanski, 1996).

IBM seized an opportunity to move from a maker of hardware to software to services (O'Reilly et al., 2009) by addressing the tension of fulfilling current customer demand through sufficient exploitation while, at the same time, driving future success through activities that were explorative through structural separation. Another example is how Fuji moved from a maker of camera film to a provider of fine chemicals by having separate R&D activities. In contrast, once great companies like Polaroid and Kodak have shown a failure to adapt, and unable to make these transitions (Danneels, 2011; Sull, 2000; Tripsas & Gavetti, 2000).

In recent years, structural ambidexterity has come under scrutiny due to organizational isolation (Gibson & Birkinshaw, 2004). Having separate exploration–exploitation units can put an innovation group for example, completely out of tune with the required needs of the organization. This compromises the ability to monetize any innovation that may come out of the exploration unit due to an inability to appropriately transfer the innovation to a group that can scale it for the organization. In addition, Gibson & Birkinshaw (2004) note another negative consequence known as "country club culture" that occurs within the explore groups, resulting in lowering expectations on results while having a high level of social support for the greater good of the organization. The gap in structural ambidexterity is the *stickiness* required among the management teams across organizational units of explore-exploit to produce effective results.

III.1.4 Contextual Ambidexterity

More recently, the antecedents of contextual ambidexterity have come to the forefront. Initially Adler, Goldoftas, and Levine (1999) describe workers balancing efficiency (exploitation) and innovation (exploration) in a car plant setting. This example describes the adjustment between different tasks throughout the workday, continually adjusting to conflicting demands. Then, building on Ghoshal and Bartlett (1994), Gibson and Birkinshaw (2004) coined the term "contextual ambidexterity" as a form of ambidexterity that is different from "structural ambidexterity" as structural deals with implementing separate structures. Gibson and Birkinshaw describe contextual ambidexterity as being achieved "by building a set of processes or systems that enable and encourage individuals to make their own judgments about how to divide their time between conflicting demands for alignment and adaptability" (Gibson and Birkinshaw (2004, 211)). In contrast to activities related to structural ambidexterity, contextual ambidexterity requires collective mental-models, a common mindset, and mutual absorptive capacity[5] that share a common set of background knowledge. This becomes a requirement for being able to alternate between exploration and exploitation.

Noted examples of organizations demonstrating contextual ambidexterity are Toyota, IDEO, and TelSoft (Napier et al., 2011). The Toyota production system described by Adler, Goldoftas and Levine (1999) provides a first hand look at how production workers on the production line floor are continually faced with driving highly efficient and high-quality assembly, but also encouraged to voice innovative ideas that

[5] Absorptive capacity is defined as "ability to recognize the value of new information, assimilate it, and apply it to commercial ends" (Cohen & Levinthal, 1990). As this is an entirely separate literature stream, what is important for this research is the ability for IT PharmaCo to take in new and external information in order to evolve the organizational cultural knowledge.

may drive savings, increase safety, and customer satisfaction. IDEO, a product design firm, embeds alignment and adaptability into their cultural fabric by emphasizing creativity and implementation (Andrew B. Hargadon & Robert I. Sutton, 1997). An example within the IT software development space is that of TelSoft. This multi-year action research study demonstrates how TelSoft built contextual ambidexterity capability, and thus improved its firm level coordination of products, projects, and innovation (Napier et al., 2011).

An identified shortcoming of contextual ambidexterity lies in its inability to adjust to discontinuous or disruptive markets. This is illuminated in a case where the print market moved to more digital channels based on customer preferences (Gilbert, 2005). The ability for newspaper companies to compete in the digital world requires reallocation of resources (Gilbert, 2005; O'Reilly & Tushman, 2013). This required management to make decisions around resource allocations and investment in technology-related capabilities necessary to compete.

III.2 Dynamic Capability Theory

In order to fully comprehend the nature of dynamic capabilities, it is important to begin with the resource-based view of the firm (RBV) as its rooted beginnings. The RBV framework provides an influential understanding as to how competitive advantage is attained within firms along with how it is sustained over time (Barney, 1991; Nelson, 1991; Penrose, 2009; Peteraf, 1993; Prahalad & Hamel, 1990; Schumpeter, 1934; Teece, Pisano, & Shuen, 1997; Wernerfelt, 1984). RBV's primary focus is concerned with the internal configuration of firms, parsing out industry and organizational positioning as

possible determinants of competitive advantage (Henderson & Cockburn, 1994; Porter, 1979).

Conceptually, RBV perceives firms as a bundle of resources, distributed over time to provide competitive advantage (Amit & Schoemaker, 1993; Mahoney & Pandian, 1992; Penrose, 2009; Wernerfelt, 1984). These assumptions have driven researchers to theorize that having valuable, rare, inimitable, and non-substitutable (i.e., so-called VRIN attributes) resources can achieve sustainable competitive advantage, not easily copied (Barney, 1991; Conner & Prahalad, 1996; Nelson, 1991; Peteraf, 1993; Wernerfelt, 1984, 1995). RBV however, does not help codify competitive advantage where rapid change is occurring. This brings dynamic capabilities into the mix as an extension of RBV for dynamic situational markets (Teece et al., 1997). Additional criticisms of RBV include its conceptual imprecision for explaining competitive advantage (Mosakowski & McKelvey, 1997; Priem & Butler, 2001; Williamson, 1999), empirical grounding (Priem & Butler, 2001; Williamson, 1999), as well as sustainable competitive advantage in more dynamic environments (Daveni, 1994), creating a boundary condition for RBV.

Dynamic capabilities help explain a shifting competitive landscape as organizational managers 'integrate, build, and reconfigure internal and external competencies to address rapidly changing environments' (Teece et al., 1997: 516).

Managerial routines that strategically reconfigure the resource base, either by acquiring new talent or through functional integration activities, looking to create new value (Grant, 1996; Pisano, 1994), provide early indicators to competitive advantage (Henderson & Cockburn, 1994; Teece et al., 1997).

Dynamic Capabilities is broad in its applicability, however the focus of this dissertation is on a firm's capabilities to drive strategic change within an IT organization. More specifically, this dissertation focuses on the organizational and technological resource reconfiguration changes. The DC literature related to IT offers a key portfolio of such dynamic capabilities that are useful for this case (Teece et al., 1997). Teece et al. (1997) articulated dynamic capabilities as having three foundational elements: sensing, seizing, and reconfiguration. *Sensing* applies to the organization's capacity to identify and measure opportunities and threats in the competitive environment as well as within its own capabilities. *Seizing* is the ability of the firm to develop resources and identify opportunities and threats and respond to them. *Reconfiguration* is the ability of the firm to organize existing as well as new resources for maximum value. Managerial discretion drives all three activities.

Turbulent markets require firms to be highly adaptable. As market boundaries continue to blur in healthcare, the pace of change has made the path to a successful business model unclear to the market players. There is regulatory scrutiny, rightfully imposed on healthcare organizations, which limit the pace of product development and market entry directly into pharmaceuticals. Nevertheless, healthcare is seeing a faster pace of change than seen in the past, with information communication technologies helping to facilitate this and creating turbulence that is forcing organizations to adapt at a rate not seen within the healthcare sector in years prior.

Such conditions support driving for competitive advantage through dynamic capabilities as a firm integrates, builds, and reconfigures its internal and external competencies to address this ever-changing environment (Eisenhardt & Martin, 2000;

Teece et al., 1997). Managers must therefore adjust to new information and changing conditions in order to support new value creation for their company. By engaging in experiential actions to learn quickly and thereby to compensate for limited relevant existing knowledge, managers are able to create new knowledge about the current situations. The repeated process of sensing, seizing, and reconfiguration allows the organization to continuously renew itself in light of its changing landscape, exploring innovative, sometimes uncertain, opportunities for future viability while engaging in appropriate exploitation to ensure current viability. Dynamic capabilities manifest themselves through managers leading re-configuration of resources to exploit existing capabilities while developing new viable options (Benner & Tushman, 2003; O'Reilly & Tushman, 2008; Taylor & Helfat, 2009).

III.3 Bridging OA to DC

Various scholars have argued the connection between DC and OA. Teece (2007) emphasize the role of coordination, reconfiguration, and learning as "orchestrative processes", and building on this, O'Reilly and Tushman (2008) develop an explanation that links dynamic capabilities and ambidexterity conceptually, by observing how firms learn and adapt to shifting environmental contexts. O'Reilly and Tushman argue that this occurs in two ways. One, by reconfiguring assets and capabilities, DC emerges and supports long-term competitive advantage. And two, by designing the organization to explore and exploit simultaneously, offering adaptability, which in turn makes the organization ambidextrous. This study offers an understanding between DC and OA as it relates to organizational transformation, and offers indication toward competitive advantage. OA is further identified to be linked in the reconfigure phase of DC as

resource decisions are taken that impact the adaptability of the organization as it determines whether to exploit existing resources or to explore and build-out new opportunities.

Returning to PharmaCo's case, IT PharmaCo is very clear about what it needs and wants to do. The PharamCo Chairman and CEO stated it clearly; they need to adapt and adjust, and develop a capability to be nimble, scalable . . . with a [new] culture that values innovation. IT PharmaCo articulates its intended response as the following: "adjust IT from primarily exploitation, or efficiency, to one which attempts to re-balance the exploit–explore disposition for innovation and revenue opportunities" (Town Hall, February 2012 transcription) which is to say OA. Bringing the research question back into perspective, this study must fundamentally answer: "How does an IT organization build and reconfigure its resources over time to become ambidextrous in the way they service the firm?"

An analytical model has been developed to facilitate the results for each case study story (Figure 2). For DC, the stage of Sense->Seize->Reconfigure is captured, as well as the resource type, either organizational or technological. Evidence of ambidexterity is identified based on explore-exploit, and structural-contextual dimensions. This model is applied for each of the stories in the results section.

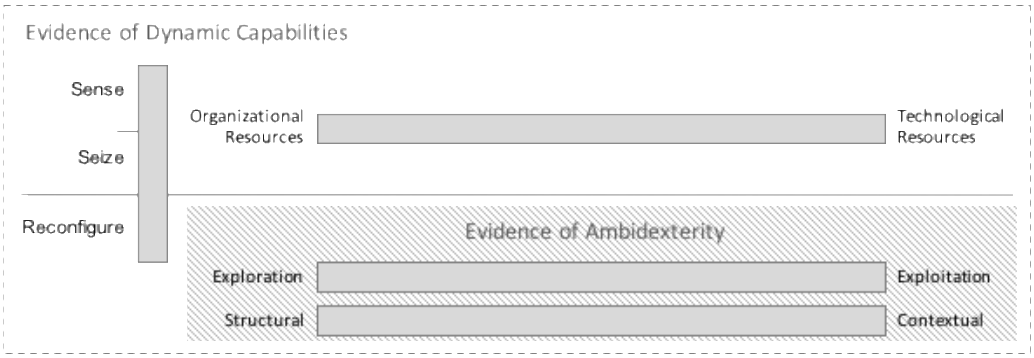

Figure 2: Analytical Model for DC and OA Evidence

IV METHODOLOGY

IV.1 Qualitative Case Study

To appropriately understand *how* the IT organization reconfigures and evolves its resources, a single longitudinal case study approach was chosen. This research design further enhances the understanding of managers making resource re-allocation decisions that position the group to exhibit dynamic capabilities, while managing conflicting exploration-exploitation tensions. The aim is to expose critical resource decisions by describing and explaining the sequence of events involved in re-balancing the ambidextrous nature of the organization (Van De Ven & Huber, 1990). This supports the longitudinal case study method, using the nature of tracing activities in its natural contexts (Pettigrew, 1992; Van De Ven, 1992; Yin, 2009).

In terms of analytic generalization, multiple cases have been predominantly the accepted method, but single case studies have been used to advance theory building (Narasimhan & Jayaram, 1998) as well as theory refinement (Hyer, Brown, & Zimmerman, 1999). The importance of single case study research, as described by Yin (2009), therefore helps to confirm and extend current understanding or falsifies an existing rationale. Additionally, Siggelkow (2007) posits that research involving case data can usually get much closer to theoretical constructs and provide a much more persuasive argument about causal forces than can broad empirical research. Generalizability, particularly within the information systems realm, but also more broadly, identifies opportunities for empirical findings to lay claim to generalizability (A. S. Lee & Baskerville, 2003).

The organization under study is a global pharmaceutical IT organization. Their transformation journey began in the fourth quarter of 2012 and is expected to last through 2017, with several organizational design changes having occurred in the first 18 months. This topic was also chosen for topical relevance given the rapid IT–related changes occurring in the healthcare industry.

IV.2 Data Collection

Data for the case was obtained from the author's place of employment. Data collection comprised of participant observation, semi-structured interviews, and secondary data sources that included IT Annual Reports for 2013 and 2014, IT strategy documentation, organizational announcements, transcripts and videos of important IT meetings, and executive presentation materials. Six interviews were conducted with senior members of the IT leadership team. The individuals chosen for interviewing have a deep understanding of available resources as well as the competitive pressures to which they need to respond in an urgent manner for this transformation period of fourth quarter 2012 to March 2015. These individuals voluntarily engaged in face-to-face interviews, 60 minutes in length, with additional follow-up time as needed.

Phase	Name	Collection method
First-Order Inquiry	Secondary Data & Participant Observation	• Participant Observation • Participant included emails • Archival Documents • Videos of organizational communications • Strategy produced documentation
Second-Order Inquiry	Chief Information Officer (CIO)	• Interview – 2- 60 minute sessions
	AVP Planning & Innovation Exec. Director,	• Interview - 2- 60 minute sessions and follow-up conversations
	Planning & Realization	• Interview - 2- 60 minute sessions and follow-up conversations
Third-Order Inquiry	Exec. Director, Portfolio & Project Management	• Interview - 2- 60 minute sessions and follow-up conversations
	Exec. Director, Information Security & Risk Management	• Interview - 2- 60 minute sessions and follow-up conversations
	Director, Advanced Technology	• Interview - 2- 60 minute sessions and follow-up conversations

Figure 3: Data Collection

The interviews followed a semi-structured question guide designed to identify and deduce the key decisions made throughout the first twenty-four months of the transformation. The questions were adapted from Klein's "Intuition at Work" (Klein, 2002) recommended set of questions that aim to fully tease apart aspects of leadership actions to further understand the underlying motivation.

The interview guide consists of three sections and is provided in the Appendix. The first section gathers basic information regarding the interviewee's organizational role and their involvement in this transformation. The responses provide validation that the individual had relevant experience, and in fact had a deep understanding of the IT transformation. The second section asks the interviewees to elaborate in detail on the transformation process, including but not limited to their identification and evaluation of key events, allocation of resources and explanations for those (re)-allocations, consideration of possible future roadblocks that the interviewees believe may challenge

the transformation within the coming months. The final section asks the interviewees if there were additional items worth discussing to help inform about the process, which may not have been specifically covered.

IV.3 Shifting Stories

The data collection process included participant observation as well as an adapted method from Lanzara's *Shifting Stories* (p. 285) (Schön, 1991), intended to capture multiple views and perspectives about the same event and capture shifting interpretations from multiple participants (Figure 4).

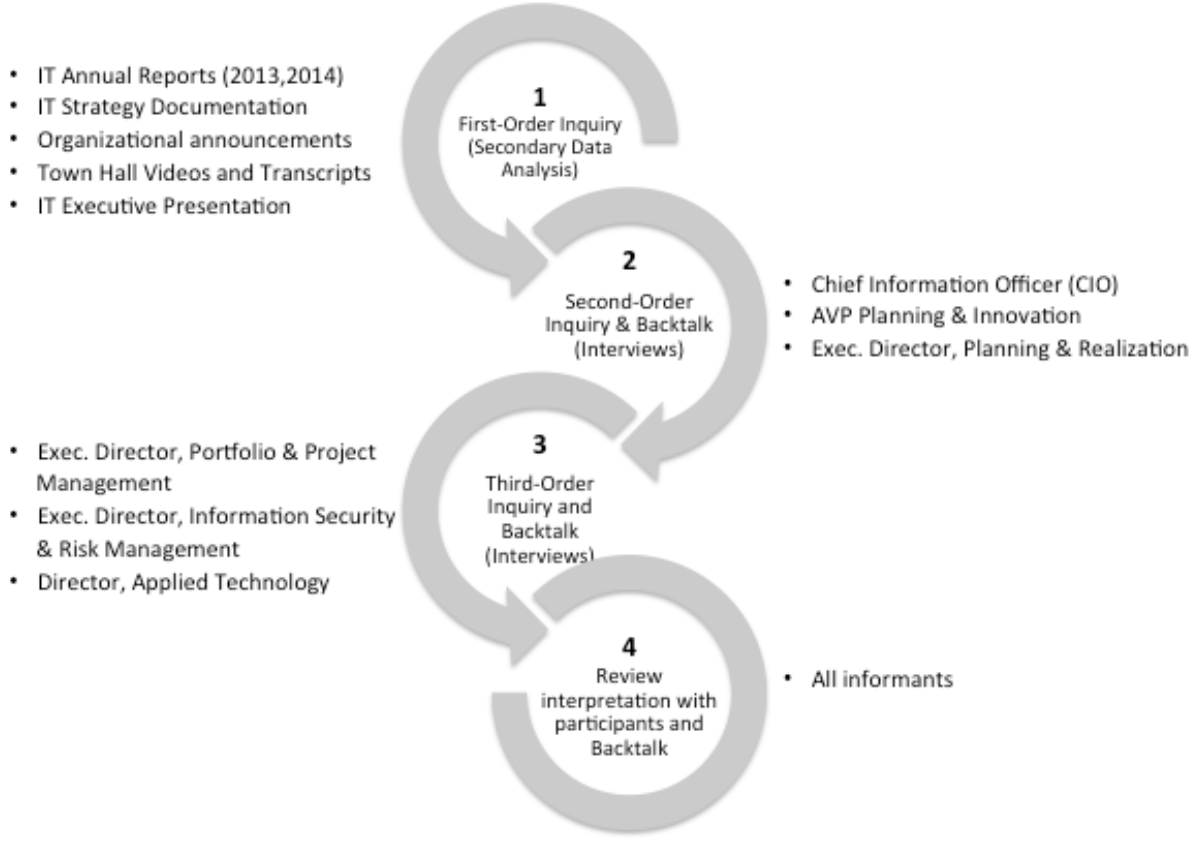

Figure 4: Shifting Stories approach, secondary data, and informants

Beginning with the assembly of an event timeline, based on secondary data and participant observation, the event timeline became the focal point for conducting interviews. The timeline allowed for the creation of a heavy description of the storyline during the second-order inquiry phase. Participants would reflect on the timeline of events, including the resources needed to support the strategy, while generating *backtalk*. This process was guided by the interview protocol as well. As Lanzara describes, backtalk provides reflexivity for the participant and empowers participants by allowing them a greater role in the research development, a sort of *fingerprinting* that occurs by modifying the timeline based on participants' observations. Through the discussion and backtalk, many events that have been lived through and many behaviors that have been acted out unreflectively become objects of analysis and reflection, providing an iterative build-out and baked in validation for a complete story. The method is carried out to facilitate further validation with a second set of participants in the third-order inquiry phase, while the final phase brought the informants together to review decisions around resources and the sequence of events timeline, allow for additional and final backtalk.

The method of shifting stories allows for an interesting instance of transient constructs, having an important reflective function built into the process. The stories heard by discussing the resource decisions and their evolution across time as management dealt with obtaining the best possible organizational outcomes embody transient knowledge — what the actors know about the transformation and the actions taken to execute the strategy. Once created and told, a story becomes a reference entity and a tool for future action.

V CASE RESULTS

The case results are presented as six stories offering thick descriptions (Lanzara, 1991) and occur in the following order: key managers orchestrating the transformation; IT strategy developed to drive common meaning and intent; reconfiguration process employed for decision-making and organizational change; organizational events related to exploiting existing capability; organizational events driving exploration of new value options; contextual changes required for cultural evolution.

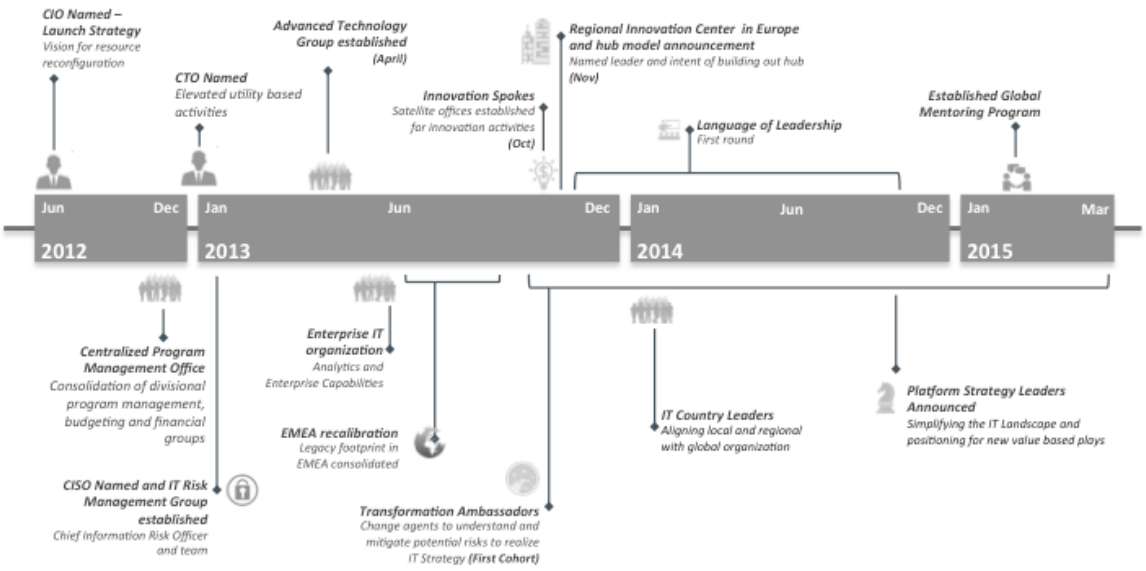

Figure 5: Resource reconfiguration decision events

V.1 Orchestrate Transformation

In direct response to the CEO's stated challenge, the new CIO needed to create a strategy for the IT organization that identified a set of appropriately timed, specific activities that were actionable, measurable, and attainable. Given the size of the IT organization, this began with appointing an Associate Vice President (AVP) of IT Planning and Innovation. This individual reported directly to the CIO and focused on embedding the appropriate procedural and interactive activities necessary for strategic

change. The intent of the group was to operate as a small, independent team, that would imbue the cultural elements of the future IT organization. Initially, the IT Planning and Innovation group was very small and had an Executive Director of Strategy Realization that was instrumental in transformation activities, and over time allowed for other groups that were deemed central to the IT functions to move under the Planning and Innovation umbrella. One such group was Portfolio & Project Management. This group was started in late 2012 with the goal of driving central portfolio prioritization and governance.

> *Chief Information Officer*: "IT PharmaCo delivers a diverse family of business services, and choosing where we make investments requires a new strategic framework to guide us in enabling and leading the business."

By centralizing the financials and project related activities, there would be opportunity to have one "single source" of IT spend, work, resources, and results. The Executive Director that led the Portfolio & Project Management group recognized the importance of his role in shaping strategic activities. He not only focused on making his area successful, but worked closely with others in the Strategy & Planning team to ensure IT was on the right path. This also included regular meetings with the CIO to stay abreast to the latest thinking around the mechanics of realizing the strategy.

Like other functions within an organization, IT investments must be prioritized, and good business practices require an objective and consistent prioritization process. This central portfolio team prioritizes programs and projects objectively, providing a holistic picture of which IT investments will be made based on the available budget in a given investment cycle.

By the second quarter of 2013, an additional central group was formed to drive innovation, known as the Advanced Technology group.

> *AVP IT Planning & Innovation*: "We must focus on building emerging capabilities and experimenting—figuring out new sources of productivity and the adjacencies to disrupt and create new businesses."

The creation of this group helped to solidify the investment becoming a high–performance IT organization, intended to help create new businesses supported by a foundation of technology and deliver innovative solutions strategically aligned to business needs. The leader of the group came from the high–tech industry, and was an expert in innovation, and creating enterprise value.

In addition to internal managers driving the strategy forward, management consultants were brought in to provide thought leadership in areas such as IT transformation, analytics, change management, and enterprise architecture. Getting outside industry opinions, external case studies, and literature pertinent to the ongoing changes, helped to prevent IT PharmaCo from falling into the trap of groupthink.

V.1.1 Orchestrating transformation evidence

The managerial focus required to orchestrate the organizational transformation was exemplified in the story as being within the sense phase of DC, while setting the stage for re-positioning organizational resources that would help centralize necessary activities for the CIO to carry out a new strategic agenda as well as drive new innovative activities. By implementing the new structure and role that would focus on strategy and innovation, exploration would be vital for the success of this group and is integral for putting in place ability to "sense" moving forward.

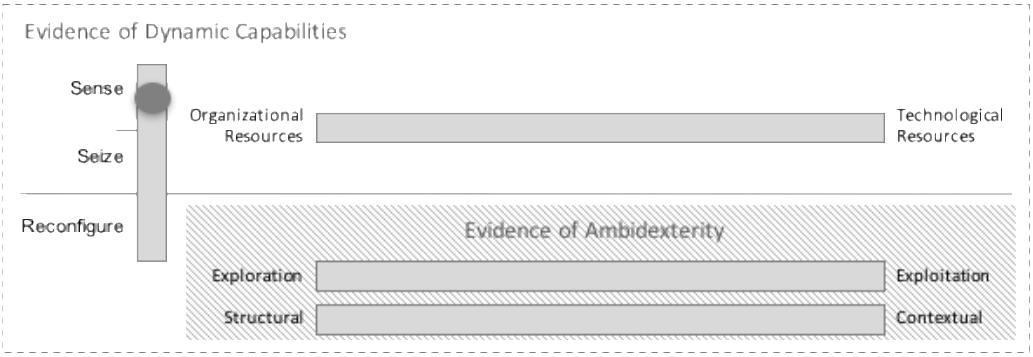

Figure 6: Orchestrating Transformation evidence

V.2 Driving Common Intent

Sessions with all of IT were vital for the CIO to expand on his strategic intent, and to introduce the new head of IT Strategy and Planning. The two would work together closely to articulate what the future IT organization would need to do in order to answer the CEO's call to action. This occurred over several weeks meeting with internal leaders in the business, IT groups, as well as external firms that could share market trends, perspective on organizational readiness, and thoughts on execution plan. As the strategy began to firm up, communications were ramped up to share with IT. The CIO shared with IT organization that they must fundamentally redirect effort into being a healthcare company, and asserted:

> "Today, we are industry leaders in leveraging the cloud and mobilizing applications. But the digerati are playing a different game—90% of the data collected by Twitter is on the context of the message (metadata), rather than the content, and all of it used to fuel new services and improve the customer experience. In relative terms, we are providing dial tone in the midst of a revolution."

In order to help convey the redirection in strategic priority, a set of five guiding principles was developed by the CIO and the AVP of Planning & Innovation to convey how IT PharmaCo conducted business in the past to a new model of how it would need to

conduct business in the future. The definition of these five guiding principles emerged through a set of strategy sessions with the CIO's direct reports and the Strategy Realization lead. Referred to as the *Five Shifts,* these were meant to provide a concrete understanding as to *what* would need to change to rebalance from primarily a bottom-line, operational efficiency model, to realize a much greater contribution from higher-value IT work.

> *AVP, Planning & Innovation:* "These strategic shifts have far-reaching and very real implications for the business by driving revenue and ROI across divisions."

The "Strategic Shifts" (Figure 7) have five identified guiding shifts. These shifts were descriptors for IT PharmaCo to understand the magnitude of the change required.

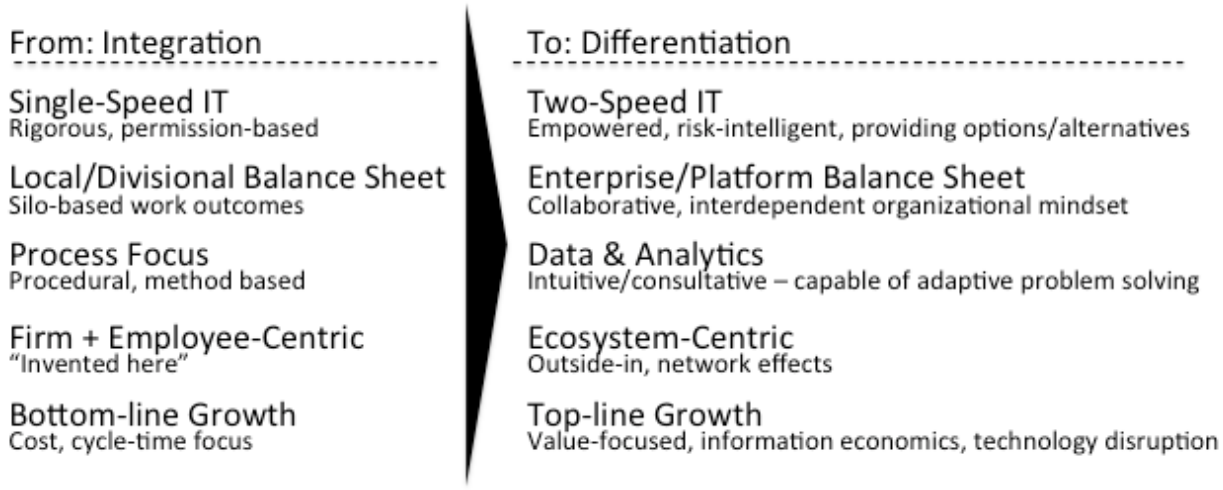

Figure 7: Strategic shifts

The first shift recognized that the technology development process positioned all projects to be risk-averse. Moving forward, IT PharmaCo would enable two-speed IT, offering risk-intelligent options for development. The second shift looked to reduce division-specific IT programs and increase investment in enterprise-based programs that provide value across the organization. The third shift addressed the process focus that IT

was familiar with, requiring development of information and analytic capabilities for the organization. The fourth shift was meant to drive new thinking into the organization. With a culture of "invented-here" for technology solutions, this shift recognized the need to be plugged-in to the outside high-tech ecosystem in order to compete in the future. The final shift was directed toward the economics of IT. IT PharmaCo did not intend to be purely a cost-center for the organization, but rather also to provide technology that was much more closely supporting the top-line growth of the organization and even direct revenue contribution.

Managers also sought to create a broad, common understanding of how IT would look at investments and the underlying economics of the organization as necessary. A simple model that could represent PharmaCo's IT's portfolio holistically and account for the Five Shifts was developed and depicted as a two-by-two model. Referred to as the Four Quadrant model (Figure 8), it defined four opportunity spaces for IT PharmaCo to be competitive within the rapidly changing environment. Central to this model was the recognition that the contributions from IT would be to the financial bottom-line in the forms of productivity enablement and utility, and also for IT to contribute to top-line growth through revenue enablement and higher-value IT work. This model served to provide an economic representation of investments and reinforce moving from an integration agenda to that of an innovation agenda with a targeted disposition of investments moving forward.

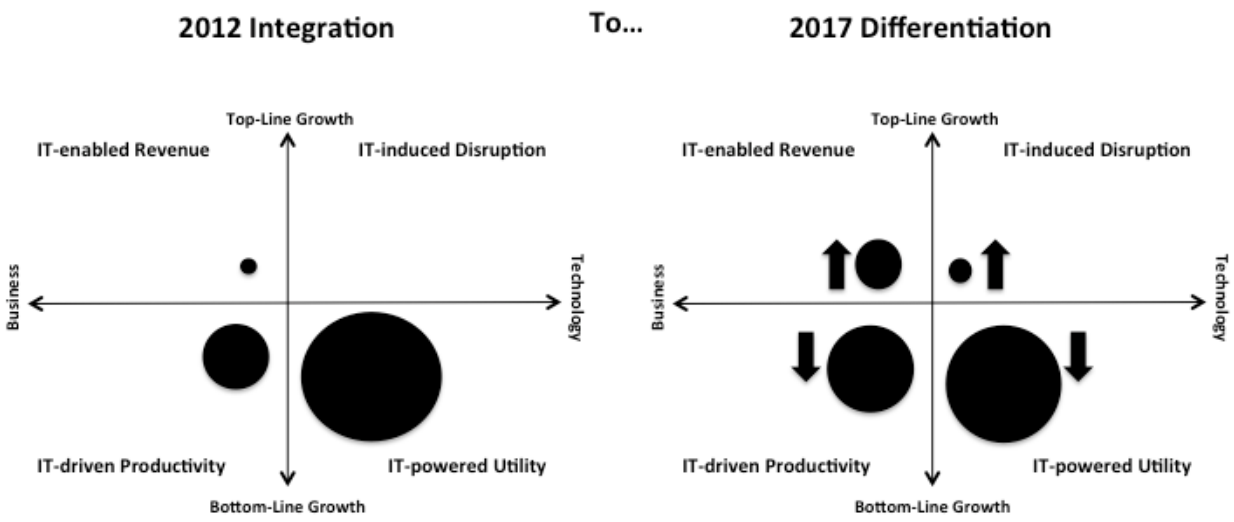

Figure 8: Four-quadrant model investment shift

Third, as communication and interaction of the IT strategy was occurring with the IT community in the third quarter of 2012, an additional lens became necessary to codify the change and provide a more sufficient understanding related to the strategy. For this, the leadership team adopted a McKinsey model of innovation – known as the Three-horizon innovation model (Figure 9), which was adapted to provide clear alignment to OA. This lens was in the representation of technology innovation to help disperse understanding to the greater IT PharmaCo community over time and its value for both the individual employees at the micro level and the firm at the macro level. From a cultural perspective, the Three-horizon innovation model was widely accepted due to the ability for IT PharmaCo community to see themselves and their work in the broader picture.

> *AVP, Planning & Innovation:* "The three horizon model was adopted by their (employees') DNA really, really quickly. That is a really, really important organization construct for people to understand how what they are doing is meaningful, how it fits, and provides value back to the organization."

By having the three distinctly defined levels, resource allocations could be determined that closely matched the commitment to delivering current and future value to the organization. Horizon One represented work to extend and defend the existing environment: simply, solving for what's happening now. Horizon two intends to look at what's next, one to two years out, and looks to either exploit current technologies for further value creation, or provide incremental innovation in the form of generating insights from current data through advanced analytics. This requires looking at the existing environment in new ways to create integrations, unlock, or even generate new data that have not been accessible in the past. Horizon three is completely untapped, and focuses on identifying disruptive trends within the healthcare IT environment that could impact the business within the next three to five years.

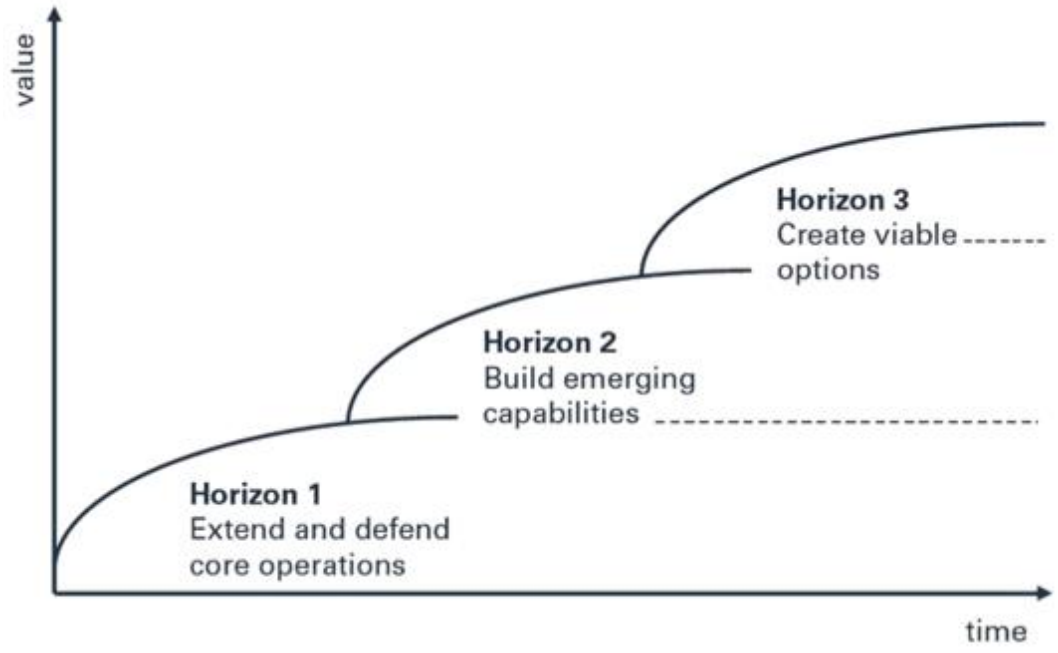

Figure 9: Three-horizon innovation model[6]

[6] IT PharmaCo applied an adapted McKinsey model that was introduced in 2012.

With these three practices (Four-Quadrants, Five-Shifts, and Three-Horizons) in place, the key managers set out to communicate the strategy to the greater IT PharmaCo community and engage in interactive dialogs across the organization, reaffirming the new mission of IT.

> *AVP of Planning and Innovation*: "It is only by shifting the foundation and speed of IT, and weaving innovation into the fabric of our culture, that we will be prepared to meet the future as generators of new insights across divisions, functions, and business perspectives for the company and for the ecosystem."

V.2.1 Driving common intent evidence

Managerial focus is exemplified in the common intent story as being primarily in the seize stage. No resource configuration decisions occurred, however the strategy related artifacts were developed and communicated broadly to IT and necessary business constituents. This was a preamble for what is to come and important to understand as it provided the intended direction of future resource decisions. The implications of the Five-Shifts, Four-Quadrants, and Three Horizons, put leadership on a path toward resource reconfiguration impacting organizational and technological resources, explorative and exploitative change, as well as structural and contextual adjustment. Therefore, it is identified as impacting all of these areas.

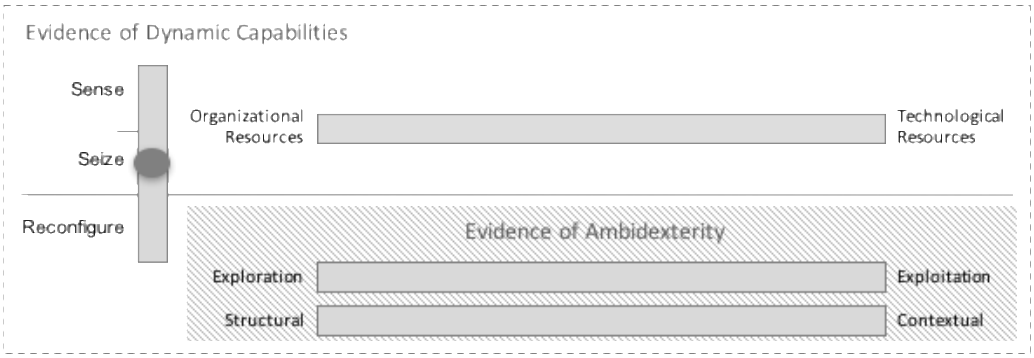

Figure 10: Driving common intent evidence

V.3 Reconfiguring Decision Making and Organizational Change

With the strategy having been socialized with the CEO and gaining full support in December of 2012, the interim CIO was named and announced as permanent CIO. Officially at the helm for IT, a meeting with his direct reporting team was held to answer a fundamental go-forward question: Given the Five-Shifts, Four-Quadrants, and Three-Horizons, how should we take action on this? Simply, what are all of the execution activities to realize the strategy? This question prompted the leadership team to identify areas where change was necessary and could be communicated procedurally with other areas that required more interactive strategizing.

Questions addressed included the following: How do we manage risk of operations, business programs and organizational transformation?; How do we modernize infrastructure and consolidate operations to deliver on end-user experience, world-class service levels and IT productivity?; How do we extract new value from enterprise business platforms enabling robust data, analytics and collaboration to drive year-over-year productivity, as well as data-driven decision-making to drive top-line growth?; How do we optimize the footprint of IT, positioning ourselves for added client engagement, customer value and maximizing access to talent?

As a leadership team, they faced the daunting task of addressing these ambitious questions, many of which fundamentally questioned the "status quo" within PharmaCo's existing IT culture.

> *Executive Director, Planning & Realization:* "We really needed to change the way people thought about these questions and engage IT in a new way. It required taking a completely new approach, and why I see this as a true transformation, because if we knew what the answer was we would have done it already."

The search for a completely new approach resulted in a practice that was referred to internally as "Point-of-View (POV) development". This practice was employed for each strategic question listed above. POV development bundled information gathering, change management, and business case development into an iterative 10-12 week effort with a team of 12-15 initial members that generally grew in size as it neared completion. The team members represented one or two levels below top management, all being deeply intimate with the question subject matter. The purpose of each POV was to drive recommendations on how to reconfigure the current organization based on the questions identified by the leadership team that were congruent with realizing the strategy. The POV team engaged external industry thought leaders to help round out their perspective on topics, share views of other companies facing similar situations, and provide guidance to the teams. The fluidity of the process provided consensus building within the POV team but also through engagement more broadly as the POV teams closed in on recommendations. In addition, the process required educating and gaining support from IT top management. Poster sessions were leveraged where top management and other key constituents from other areas of the business would join for 60-90 minutes, hear about the team's perspective, and allow each session participant to weigh in on the progress and recommendations thus far. These methods of rapid socialization often resulted in deep debates between the many members and ultimately led to adjustments to the POV teams' recommendations. In addition, true buy-in on the recommendations was obtained, meaning stronger sponsorship and endorsement by top management.

> *Executive Director, Planning & Realization:* "The POV activities served as a valuable tool in iteratively getting to the next level of detail for the strategy. It reinforced involvement from a broad set of leaders in the IT

> group, which also set the foundations for managing the change the organization was going to go through."

In effect, each POV team created its own self-reinforced learning, as argued by Jarzabkowski (2002) that led to simultaneous recursive or exploitative, and adaptive or explorative activities. While each of the POV teams alone might be viewed as a micro-level activity, the cumulative effect of the POV teams' activities were situated, socially accomplished flows of activity that were consequential for effectively advancing the macro-level organizational change. Furthermore, the insights and recommendations from one POV team frequently served as the starting point for another POV team's activity, iteratively moving to the next level of detail of the strategy, as noted by the Executive Director for Planning & Realization. The POV approach effectively created a stream of activity that interconnected the micro actions of each POV team and its individual members with the different levels of management and organization. It is this connection between and across levels that POV's provided necessary shared meanings for the organization, meanings that ultimately resulted in decisions occurring between 2012 and 2015, thereby driving the reconfiguration of IT PharmaCo (Figure 5 - Resource reconfiguration decision events).

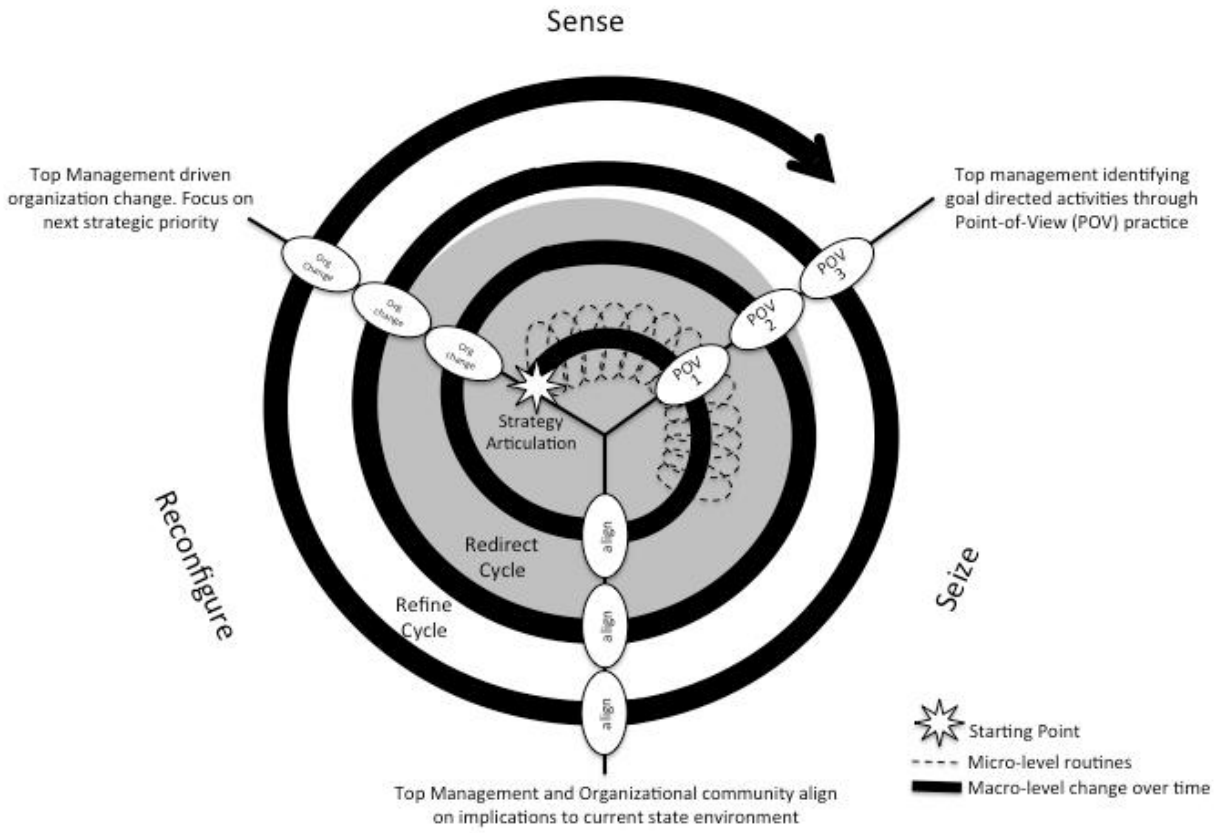

Figure 11: Iterative decision making through Point of View development

Throughout the reconfiguration, three types of decisions emerged and strictly aligned the strategic intent (Strategic shifts, Four-quadrant model investment shift, Three-horizon innovation model). Resources directly aligned to investments made and were intended to advance the IT agenda of innovation. Therefore, the Four-Quadrant model (Figure 8) is best suited to plot decisions when looking at the new disposition of the organization. Figure 12 (Decision types against the Four-Quadrant model) represents how events since strategy inception (identified in Figure 5 - Resource reconfiguration decision events) plot against the Four-Quadrants. Evident in this is the direct alignment of explore-exploit to top-line and bottom-line growth respectively, but also the necessary decisions required that drive common meaning and understanding as to how investment decisions

and subsequent interaction of functions is necessary. Each decision is explained in detail within the following results sections.

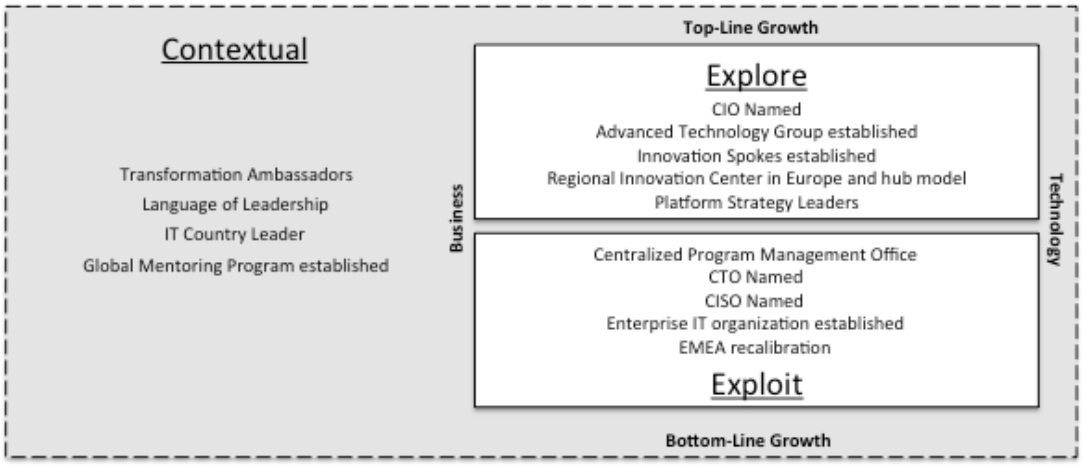

Figure 12: Decision types against the Four-Quadrant model

In addition, the organization structure of IT PharmaCo changed as a result of the decisions with new groups identified in red in Figure 13, with two new exploit groups – IT Risk & Compliance and Enterprise IT, and two new explore groups – Planning & Innovation (Advanced Technology Group resides in this new group) and the Regional Innovation Center.

Figure 13: IT PharmaCo organization structure post transformation

V.3.1 Reconfiguring decision making and organizational change evidence

By addressing how decisions were being made, managerial focus exemplified in this story or reconfiguring decision making and organizational change focused on the

third phase DC (reconfigure). By instantiating a new way of making future decisions, teams engaged in developing POVs, landing on a recommended direction to move forward that aligned to the strategic intent. This phase exemplified re-contextualizing the necessary reconfiguration of resources intended to drive efficiencies (exploitation) and innovation (exploration). Subsequent stories offer a richer description to some nuances that were uncovered during the process, and are articulated in "exploring new technology options" and "evolving the culture of IT PharmaCo".

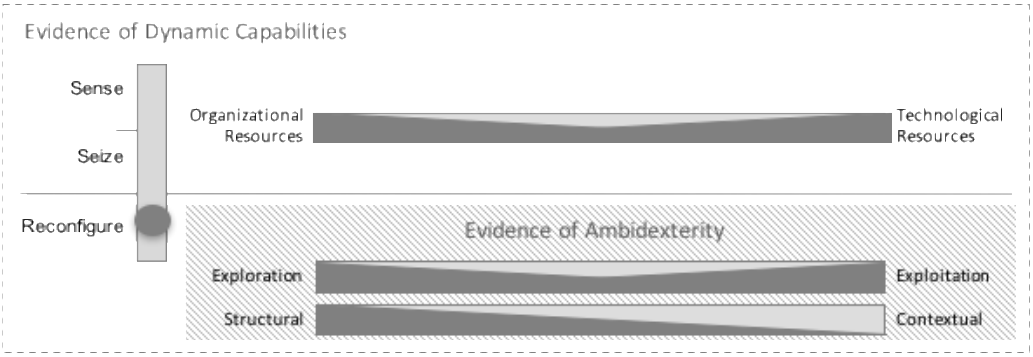

Figure 14: Reconfiguring decision making and organizational change evidence

V.4 Exploiting Existing Capabilities

Decisions to protect and defend current operational IT capabilities occurred early on in the transformation. These included centralizing portfolio management, naming the Chief Technology Officer (CTO) and the Chief Information Security Officer (CISO), establishing an enterprise IT function, and recalibrating the European footprint (Figure 5 - Resource reconfiguration decision events). Some opportunities to reconfigure for efficient IT operations were clear, and the CIO moved quickly on making changes, while others required employing a routine of self-reinforced learning (Jarzabkowski, 2002), known as the POV practice within IT PharmaCo.

The CIO decided in late 2012 to centralize the IT portfolio and project management, reporting into the AVP of Planning and Innovation. The intent was to drive efficient financial investments with central prioritization. Stated in the 2013 IT Annual Report:

> "Financial realities dictate that IT investments must be prioritized, and good business practices require an objective and consistent prioritization process. A prioritization framework gives IT PharmaCo the ability to prioritize individual portfolios objectively."

Another change the CIO made in late 2012 elevated the role of IT Operations, resulting in the promotion of the existing VP of Operations to Chief Technology Officer (CTO). The structure of the group did not change, but would seek to drive IT Utility cost efficiencies.

> *Chief Information Officer*: "Operational excellence is our commitment to our colleagues, customers, and the enterprise that our IT environment will have higher percentages of availability and continue to run as smoothly as possible."

By February of 2013, the first POV was nearing completion for IT risk management, seeking to answer: How do we manage risk of operations, business programs and organizational transformation? In response to this question and consistent with Horizon one "extend and defend", the POV team recommended the centralization of the IT risk and security function and the creation of a Chief Information Security Office (CISO) position reporting to the CIO. This served as the first time top management took a POV recommendation and made organizational changes based on it. This was an early signal to IT PharmaCo that activities done by the POV team were steering the transformation, and reinforcing that collectively, IT PharmaCo was responsible for its destiny.

In June of 2013, top management was faced with assimilating the outcomes of the next POV which responded to the following: How do we extract new value from enterprise business platforms enabling robust data, analytics and collaboration to drive year-over-year productivity, as well as data-driven decision-making to drive top line growth? Subsequently, this resulted in the announcement of a newly formed group, referred to as the Enterprise Technology group, also reporting to the CIO.

> *AVP of Planning & Innovation*: "We chose, if you will – we decided to make enterprise productivity an issue for the company, and we basically said that we have a lot of business programs in IT that have enterprise value across divisions."

Enterprise Technology consisted of teams looking to standardize existing divisional technology suites into scalable platforms intended for use across the organization. It also provided global IT support to the organization, everything from help-desk related support to technology kiosks in high-traffic facilities, looking to provide a unified customer experience consistent with what consumers were used to outside the company.

> *Chief Information Officer*: "Our challenge lies in simplifying the transactional face of IT—amplifying user experience, integrating with operations, and facilitating engagement with our colleagues and customers."

Enterprise Technology was also focused on delivering value through analytics, a process of collecting large amounts of data, and used to help make strategic business decisions.

> *Chief Information Officer*: "The information function has moved out of its divisional silos and are now part of a more comprehensive entity that encompasses the enterprise, with potentially broad use across the entire business. We can deliver projects with high, measurable ROI in all of the divisions"

During this same time, significant attention on the IT employee footprint in Europe was necessary. Given the past several years of merger activities, little attention was put on reporting relationships. This meant that the POV team had to provide a current state map of the footprint and reporting relationships. After analyzing this map, top management agreed with the opportunity to place limited resources in each country based on business demand. Established European countries have strict governing bodies around labor unions that tend to favor the employee and not the employer. IT PharmaCo spent considerable time obtaining in-country works council (labor governing body) support and took three to twelve months to execute the footprint reduction depending on the country.

The decisions to move early for these events, particularly the program management office, CTO, and CISO, set the rock-solid foundation of operational effectiveness into motion. This reaffirmed to IT and the broader organization that IT will continue to play to their strengths, build on them, and position for future differentiated activities.

V.4.1 Exploiting existing capabilities evidence

In this story related to exploiting existing capabilities, managerial attention is primarily focused on reconfiguring existing organizational resources. Re-branding these groups and elevating value proposition to the organization helped to reassure that reliability (CTO naming) and safety (CISO naming) continue to be top priorities. This is a necessary step to set the stage for any type of innovation work moving forward. In fact, without that, the business would not trust the work done by IT PharmaCo, and would seek support from outside vendors.

Figure 15: Exploiting existing capabilities evidence

V.5 Exploring New Options

Decisions to extend and adapt new innovative IT capabilities started with the CIO being named. Additional decisions included establishing the Advanced Technology Group, establishing a hub model with regional innovation center in Europe, and naming platform leaders (Figure 5 - Resource reconfiguration decision events).

In the middle of 2012, PharmaCo leadership promoted the Vice President of Research IT to *CIO,* a leader regarded as delivering innovation within a core division of the company. The importance of this announcement was two-fold: it was disruptive to a long, relatively stable episode of consolidation and integration, and it signaled to the IT organization that success would rely not only upon operational excellence but on innovation as well.

Fast-forward to the second quarter of 2013, after key foundational decisions had been made (early exploitative ones). A decision was made by senior leadership to establish the Advanced Technology group and to provide dedicated resources for Horizon-Three innovation model (Figure 9), translating into investments related to the revenue enablement and disruption in the Four Quadrants model (Figure 8). This group reported to the AVP of Planning & Innovation. The significance of this central

establishment allowed for existing innovation teams that were in divisional areas to come together centrally and help mitigate constraints of existing organizational processes, thus allowing the group to have a separate structural disposition. The group looked to identify future business scenarios by leveraging disruptive innovation.

> *AVP of IT Planning and Innovation*: "The key to predicting these scenarios in Horizon 3 is to think about what the business could achieve in an unconstrained world and then work to eliminate these constraints through disruptive innovation. … what if patients could get healthcare information in a way that is geared to their personal learning styles? What if there was a way that we could collect all of our code and make it openly available for repurpose and reuse to avoid starting from scratch?"

These are just a few examples of Horizon three projects that were launched in 2013 and into 2014.

By the second half of 2013, the leadership team shifted attention to the Global/Regional model POV. This POV was concerned with answering how IT PharmaCo could best optimize the employee footprint in Europe, a position for added client engagement, customer value, and regional talent, all while setting up for global optimization? The POV team, consisting of roughly twelve subject matter experts in IT delivery, financial modeling, and talent management, came up with a four step approach: (1) create a global hub-and-spoke model with a regional hub in the Americas, Europe, and Asia; (2) establish a greenfield innovation hub in Europe that could also provide "global quarterbacking" across regions given the time-zone advantage with Americas and Asia; (3) appoint IT country leaders intended to drive single-point of accountability to the business area where IT staff were necessary in major business markets; (4) consolidate and standardize the IT footprint in-country where staff were necessary, and have them report to the IT Country Lead.

Top Management agreed with the recommendations, but recognized the importance of staging the changes primarily to limit business disruptions. A way to ease into these changes was to begin in the third quarter of 2013 with communicating to managers the intent and value of implementing a global hub-and-spoke IT model. The model would allow for a concentration of IT staff in a regional center, with pockets or spokes of activity occurring outside the hubs.

Shortly after introducing the formal hub-and-spoke model, the search for a leader and specific location for a regional European hub was underway. The Global/Regional POV went as far as making the recommendation to launch a hub in the Europe region, but it did not specify where exactly. For this, a small POV team was identified, and tasked with analyzing seven country specific opportunities, with four in the western regions and three in the eastern regions of Europe. Analysis was conducted across the following dimensions not in priority order: sovereign and political risk; business readiness; regulatory & legal environment; infrastructure readiness; and cost.

As the country hub analysis was underway, so too was the leader search for the new location. Before 2013 came to a close, the CIO announced the location of an eastern European country and the newly appointed Associate Vice President of the Regional Innovation Center. An excerpt from the 2013 IT Annual Report comment on the expected value from the new Center:

> "As a driver of innovative client and customer solutions, the Center will serve as a centralized hub dedicated to advancing IT's technical, functional, and service-oriented competencies. Devoted to digital initiatives, the Center will give us further agility to rapidly build customer-facing innovations."

The third step in the Global/Regional POV recommendation was to shift attention to the role of IT Country leaders. This was a newly identified role to be played by a senior IT member that would have IT responsibilities for delivering business value in a specific country such as France. Given this newly created role, top management decided that the jobs would be posted for interviewing each position. A consistent hiring process was applied and the announcements of newly appointed IT country leaders were made beginning in January of 2014.

> *Chief Information Officer*: "We created the role of an IT Country Leader who would become a mini-CIO and provide a single point of contact for colleagues in each country, as well as address all IT topics across divisions. Reporting into this leader is a small but potent team that partners with the business and links intuitively with the regional hub."

The last spep was to place significant attention on the IT employee footprint in each European country, and given the past several years of merger activities, little attention was put on reporting relationships. This needed to be addressed to not only drive new efficiencies, but set up for innovative activities.

In April of 2014, a new POV team was established to help answer "How can IT platforms simplify the technology landscape, what technologies make sense to bundle together into a platform, which regional hub do they belong in, and who should lead each?" To get things started, the POV team collected as much current state information as possible around the application footprint. This was a highly collaborative effort that required engagement of over 100 IT members. At the same time, since the definition of technology platforms was nascent, the team socialized a common definition and characteristics that were agreed upon with the leadership team. The result was defining a technology platform as "A set of *highly-related information and technology capabilities*

that *when combined,* provide economic value to PharmaCo's business *through faster speed to market and reduced unit costs.* They *should be planned, delivered and managed as a whole set of capabilities* (rather than independently)". The technology should be developed such that innovation can occur more openly and in-tune with customer preferences.

> 2014 IT Annual Report: "Hubs and platforms are rooted in economics – enabling us to address shrinking returns on assets and relentlessly pursue productivity. They aren't merely a concept, but rather an actionable path to optimizing the number of users, developers and business applications in the enterprise, while eliminating complexity and minimizing one-off solutions"

Platform characteristics included the following: Platforms are not individual technology products, although a product may serve as the foundation of an IT Platform (e.g., SAP, Veeva CRM, MS Office); An IT Platform should be extensible through a standard application programming interface (API); Platforms are constantly evolving, and require a strong internal focus; Platforms can exist as a business capability (ex. digital manufacturing shop floor), support application delivery (ex. knowledge management), or as infrastructure (ex. network); Platforms should embrace open industry standards. The team drew from external examples, such as the iOS platform (Apples flagship operating system platform) as it provides mobile devices functionality today, but also has expanded its value through adding capabilities like HomeKit and HealthKit. An example that resonated well in IT was that of the Enterprise Resource Planning (ERP) Platform. The foundation for this platform was SAP, but there were many other technologies tightly integrated with it (such as financial tools like JD Edwards) that in their totality exist to provide value to the organization. The POV also shed light on the need to have a single

leader drive the future roadmap for the ERP platform, having intimate knowledge of this technology suite and how it should mature over the next several years. And so the team began bundling thousands of applications and technologies into 43 “platforms” over a period of roughly 4 months with countless conversations, workshops, and alignment discussions.

> Executive Director, Advanced Technology Group: “The team put together a set of information about our technologies that had never been done before. It’s like when the United States decided to conduct its first census. Was it all right the first time? No. But it was far better then anything it had before it.”

As the third quarter of 2014 was coming to an end, the leadership team was closing in on a first version platform list, platform hub location and leader identification. The CIO asked to schedule a special IT meeting (Town Hall) in the beginning of November 2014 for all of IT to hear the outcomes of the Platform work and to formally announce the leaders of each Platform. This was important given that throughout the process there were signals of the IT organization not understanding the full intent of platforms and what they meant for the future of the group:

> Chief Information Officer: “Platforms was the hardest thing for people to get their heads wrapped around. But when you talk about the platform like SAP, people understand the common single thing that we're driving through the organization.”

Another significant hurdle was around understanding the value a platform would bring to the business. The CIO discussed how the digital Electronic Lab Notebook, used by scientists to record their activities in the lab was beneficial to leverage in another division:

> “Here's the animal health division who spent year after year proposing this multimillion-dollar program that never got funded even though it was the

> right thing to do. Now all of a sudden they were able to extend the human health platform to animal health for a minimum amount of cost and they literally got a thousand percent return for the investment."

The town hall event in November allowed for all of IT to hear how platforms would foundationally affect how IT would operate moving forward, and closed the gap in understanding how several changes to date came together to provide a simpler operating model for IT that leverages regional hubs and teams, IT country leaders, and evolving technology platforms intended to drive innovation.

Staggering explorative events throughout the transformation allowed for the IT organization to acclimate to all of the change occurring during this period of transformation. As 2013 progressed it was time to address innovation by establishing the Advanced Technology group, naming platform leaders, and implementing a three-hub model with a regional center in Europe. These structural activities would propel new capability development and value creation strategies.

V.5.1 Exploring new options evidence

Managerial attention focused on creating new explorative options for the organization. Reconfiguration occurred both organizationally (regional organizational changes) as well as technologically (technology platforms), and was necessary to adjust the posture for explorative activities, and create new innovative options for the future. All activities resulted in structural change and led to naming leaders that would be responsible for the future advancement of each platform.

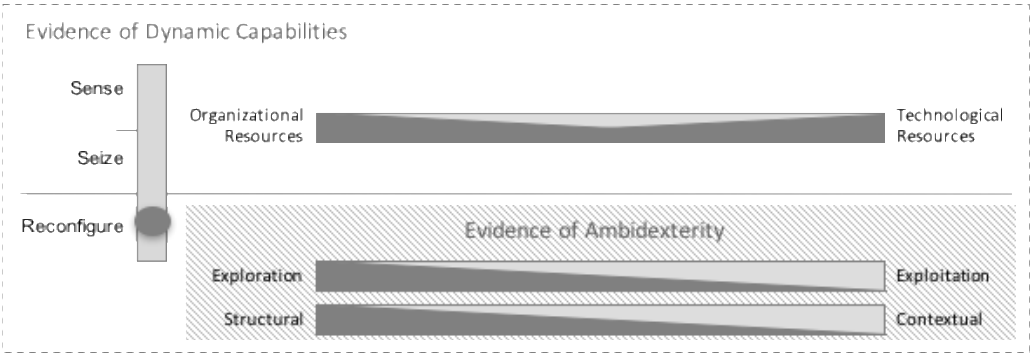

Figure 16: Exploring new options evidence

V.6 Evolving Culture through Context

Throughout the transformation, decisions were made to prepare and develop a common understanding of how the strategic intent impacted the organization. Only through shared understandings will the organization understand and begin to provide value based on the new operational model driving top and bottom line work and shift to a differentiated organization (Figure 5 - Resource reconfiguration decision events). By implementing Transformation Ambassadors, the Language of Leadership, IT Country Leaders, and a Global Mentoring Program, IT would be better equipped in attending to explorative-exploitative tensions.

Communication and support of the strategy takes time in such a large organization. Soon after the strategy was communicated to the IT organization in early 2013, there was no question that the IT group was beginning to embrace its new mission. But most of the positive momentum was coming from top and middle management. It took time to realize this, but by the middle of 2013, management realized there was a gap in framing meaning around the strategy for the entire IT organization. This framing gap was identified through open feedback sessions with members from all levels in the IT

organization. As a result of these sessions, a Transformation Ambassador program was conceived and subsequently implemented.

> *AVP of IT Planning and Innovation*: "The IT Transformation Ambassadors have a role to be change agents for the new IT Transformation. They are part of the many "eyes and ears" of the organization; helping us to understand and mitigate potential risks that would prevent us from realizing the full potential of our new IT Strategy. "

Candidates for the Transformation Ambassador program were solicited through the company internal project posting board. To be considered, the candidates submitted a traditional resume as well as an essay that answered why they should be chosen to be part of this program. Responses were received and the IT Planning & Realization team reviewed and ranked the responses. Twenty members were chosen for the role, representing about half of the applicants.

Once chosen, the Transformation Ambassadors were put through a group orientation to develop shared meaning and provide contextual story telling of *how* the strategy was actively being executed. Ambassadors would help drive an understanding of the strategy, actions toward realizing the strategy, and provide the catalyst for culture evolution. These change agents were carefully selected because they had passion and commitment toward successful strategy realization.

Throughout 2013, open feedback sessions with top and middle management identified a gap in IT Strategy interpretation among these groups. This was seen as a risk that could degrade the intent of the strategy and cause significant drift. The key managers engaged a third party vendor specializing in transformational activities and evolving organizational cultures, first starting with a two-day workshop with the CIO and his direct reports. Because top management found the workshop to be so effective in helping

with each other's interactions, it quickly scaled into a program for mid-level management referred to as Language of Leadership. Top management recognized the power in taking time to create common ground among them and form new appreciations for each person's role that resulted in open dialogs that developed and reinforced common meanings around the IT strategy. The CIO stated in an email invitation to the group:

> "While we are still formulating as one cohesive leadership body, we have the opportunity to come together at this early stage of our transformation to align on shared principles and practices."

Middle management attended a four-month program consisting of four general sessions followed by four small-group coaching sessions. These sessions required in-person attendance for all group and coaching sessions.

Outcomes from these workshops resulted in the following: clarity about culture evolution required and empowerment to fulfill a unique role in enabling the transformation; an approach for engaging and coaching direct reports; common meaning and strategic vision for IT in a way that speaks to and inspires the whole organization to generate an aligned and collaborative culture; leveraging inevitable breakdowns as part of any major change effort as a mechanism for acceleration rather than derailment; observing their own habits of operating individually and as a team; discover what works and limits effective action for the new culture.

> *Excerpt from attendee*: "When I first attended the Language of Leadership program, I began to question what the program was about. One concept discussed was how individuals apply listening filters. At first I didn't think this was a topic worthy of spending so much time on as it was more behavioral in nature rather than technical, and I wondered what value it would bring to the program. Over time and after additional sessions, I began to see and understand how important it was and how it applied to the whole of the program.

As the end of 2013 was nearing, a search for IT Country leaders in Europe was underway (an outcome of the Global/Regional Model POV), and with roughly 20 of them identified, an initial announcement in January of 2014 was made. Stated in the 2014 IT annual report:

> "We created the role of an IT Country Leader who would become a mini-CIO and provide a single point of contact for colleagues in each country, as well as address all IT topics across divisions. Reporting into this leader is a small but potent team that partners with the business and links intuitively with the regional hub."

The role of IT country leads would fundamentally advance the efficiency of in-country IT work. But even more importantly, this role would be on the front line, working with business colleagues and external parties, managing the demand for the IT organization. Resolving tensions of explorative-exploitative activities would occur every day for these folks.

As PharmaCo IT entered 2015, there were important steps taken to establish a global mentoring program rolled out to help advise and educate new employees, particularly the growing population in the new regional hub, and provide a fast track for employee assimilation into the IT environment and even the organization more broadly.

Having key managers in-tune with how the structural changes were affecting the cultural fabric of the IT organization, appropriate actions were taken to mitigate drift from the intent of the IT strategy. Implementing Transformation Ambassadors, the Language of Leadership, IT Country Leaders, and a Global Mentoring Program, IT helped address explorative-exploitative tensions in real-time while the complex transformation unfolded.

V.6.1 Evolving culture through context evidence

The reconfiguration that is exemplified in this cultural evolution story focuses managerial attention on the contextual nature of interactions among and throughout the IT PharmaCo organization. Necessary for all members in IT, is the recognition that work must be done to exploit and explore, and managers must wrestle with which of the two makes sense at any given point in time. Through programs like Language of Leadership, you see this play out in such a way that culture change must occur in order for the structural changes to truly stick.

Figure 17: Evolving culture through context evidence

VI DISCUSSION

Re-configuration and centralization of groups is inended to drive efficient IT delivery and simultaneously provide new innovative solutions occurred between mid-2012 through early 2015. This course of action directly involved the leadership team making choices and trade-offs in a continuous, evolving fashion, seeking to resolve the opposing exploit-explore tensions. Each POV informed the decisions and subsequent actions which then invariably led to another POV. Early on, by centralizing the Portfolio & Project Management Office, elevating the importance of the CTO and the Technology Operations, and the Risk & Security group, as well as consolidating the footprint in Europe, the CIO reinforced the commitment to efficient IT operations, the bottom two quadrants pictured in Figure 8 (Four-quadrant model investment shift). During this same time frame, three new organizations were formed to help create new realms of possibilities, an exploratory action. The Enterprise Group, Advanced Technology, and Regional Innovation Hub positioned the IT group on a course to realizing IT disruption and revenue enablement (see Figure 5 - Resource reconfiguration decision events). As 2013 and 2014 unfolded with organizational architecture changes, top management recognized the importance of creating a mechanism that addressed leadership and culture. Activities were set forth to adjust the contextual aspects of evolving the culture that would best fit the new organizational changes. This was demonstrated through the Language of Leadership, the Transformation Ambassador program, IT Country Leaders, and Global Mentoring.

VI.1 DC reconfiguration: manifestation of OA

IT PharmaCo recognized the need to be responsive to its dynamic environment, which set it on an effort to re-configure resources, evolve the culture, and simplify the IT footprint. The reconfiguration that unfolded at IT PharmaCo provides a firsthand look at how organizational change events led to organizational reconfiguration and how a management team responded to the urgent demand of the discontinuous change, increasingly characteristic of its competitive environment.

By studying managers' ability to address explore-exploit tensions, this study peers into IT PharmaCo during a unique period, and demonstrates how building ambidexterity is enabled by dynamic capabilities, particularly within the reconfigure phase. O'Reilly and Tushman (2011) argue that there are five conditions that, when present, will increase the likelihood of management leading a successful ambidextrous strategy. These five conditions are evident in how the managers reconfigured resources and reconciled explore-exploit tensions at IT PharmaCo.

First, providing the necessary import for a justified explore-exploit strategic intent must be present (O'Reilly & Tushman, 2011). This is exemplified in the Strategic Shifts (Figure 7), and provided the macro-tool to help the leadership team broadly communicate the strategic intent that intellectually justifies the importance of the shifts and their implied actions to the vested organizational members. Without it, there is no rationale as to why a core operations group, for example, would understand the end goal and willingly give up resources to fund exploratory ventures, and to the contrary, create fear that their role and value proposition to the company may be diminished.

Second, both the Strategic Shifts (Figure 7) and the Three Horizon innovation model (Figure 9) were useful practices by the leadership team to articulate a common vision and values to the organizational members, old and new, across the exploitative and exploratory initiatives. O'Reilly and Tushman (2011) speak to the importance of this common vision and values providing common identity across explorative and exploitative units. This common identity was integral to fostering a climate that supported the duality of exploit and explore. This also aligned nicely to the "Seize" phase of DC.

Third, these leaders owned IT PharmaCo's strategy, and communicated it relentlessly to its newly defined eco-system. This case provided an up-close interpretation from the key managers that set forth strategic intent, and enabled the rest of the organization to share "common-fate reward systems" (O'Reilly & Tushman, 2011). The shift from a firm-employee centric world to an eco-system centric view that functions in a networked fashion continues to evolve.

Fourth, O'Reilly and Tushman (2011) expect that there will always be separate, albeit aligned, organizational architectures for the exploitative and exploratory units and targeted integration of the senior and tactical leaders to properly leverage organizational resources. IT PharmaCo's explorative and exploitative efforts demonstrated structural separation as well as combined entities. The Advanced Technology group is purely structural and explorative, while the CTO organization is structural and exploitative. On the other hand, the new Regional Innovation Center is structural and houses both explore–exploit resources.

The fifth and final characteristic involves the alignment between exploitative and exploratory efforts. The leadership team intentionally created bridges across units, and at

both senior and tactical levels, to facilitate the allocation and reallocation of organizational resources in as smooth a manner as possible by reinforcing the communication channels. Several of these involved contextual related ambidextrous events to ensure common meaning, and that shared understanding would be demonstrated by leaders and managers across such a large organization. In addition, the leadership team demonstrated an ability to tolerate ambiguity, not knowing exactly how things were going to work, flexibility to go with the flow, shifting and adjusting yet maintaining the integrity of the strategy, and resolving the tensions arising as a result of these changes. This is demonstrated best through the iterative process of POV development, which in turn stimulated micro-events that holistically offered evidence of fostering ambidextrous capabilities.

The six stories, rich in description, offer a unique vantage point to understand how IT PharmaCo set forth on a path toward being more dynamic and offer insights throughout the sense->seize->reconfigure continuum of DC. Furthermore, the stories also offer insight into how reconfiguration of resources ambidextrously, offers a path toward competitive advantage for an organization.

VI.2 An integrated OA to DC grounded model

The analytical model (Figure 2) helped to summarize the outcomes of each of the six stories. Each story, offering a unique lens into a period of time for IT PharmaCo, alone doesn't provide the full picture of this transformation. However, aggregation of the story evidence does provide a comprehensive view (Figure 18). What emerges is a situated grounded model that identifies the DC phases and resources impacted. Throughout this reconfiguration, three types of decisions presented as either structural-

exploit, structural-explore, or contextual. From this, a situated grounded model can be developed to help reconcile activities dedicated to each type (Figure 18).

Story	Dynamic Capability Theory					Organizational Ambidexterity			
	Sense	Seize	Reconfigure	Organizational Resources	Technological Resources	Explore	Exploit	Structural	Contextual
Orchestrate transformation	X								
Driving common intent		X							
Reconfigure decision making			X	X	X	X	X	X	
Exploit existing capabilities			X	X			X	X	
Explore new options			X	X	X	X		X	
Evolving culture			X	X		X	X		X

Figure 18: DC and OA evolution - situated grounded model

The order of events was critical for IT PharmaCo when considering the organization's absorptive capacity. What occurred early on were simultaneous events to *shore-up* IT PharmaCo that related to structural-exploit. Decisions such as the CISO, CTO, and the centralized portfolio reaffirmed a commitment to operational efficiency and financial transparency. Other events such as the regional center and IT country leaders, had dependencies on each other and required execution in a more sequential fashion.

VI.3 Managerial Insights

This study demonstrated how key managers make organizational knowledge actionable through the use of knowledge artifacts (Five-Shifts, Four-Quadrants, and Three-Horizons) to drive reconfiguration.

For example, the Strategic Shifts (Figure 7) provided a view into the discrepancy of where IT PharmaCo was in 2012 after being tasked by the CEO to be a driver for competitive capability for PharmaCo. The expected consequences of failing to respond to prevailing environmental cues articulated by the CEO would have had a deleterious impact

on future success. Once such gaps were identified, it prompted management to search for and select alternatives and subsequently craft a strategy and associated set of actions responding to the dynamic environment and reconfiguration of resources.

The artifacts were used throughout the transformation as guiderails, particularly during the POV development activities, and helped iteratively sense, seize, and reconfigure the IT organization. Upon strategy articulation, top management continued to address time-sensitive questions using micro-level procedures. Questions such as "How do we manage risk of operations, business programs and organizational transformation?", "How do we optimize the footprint of IT, positioning ourselves for added client engagement, customer value and maximizing access to talent?". This provided a mechanism for goal directed activities that initiated the POV practice with a broader community of subject matter experts.

This practice fed into alignment activities between management and a broader IT community on appropriate reconfiguration choices. Management ultimately was accountable for making the final decisions, but through the POV activity, a large community contributed and gained shared meaning prior to making an organizational change. This also served to limit resistance as people felt as though they had a voice in helping to shape decisions, even if they did not have the final say. As demonstrated in Figure 11 (Iterative decision making through Point of View development), the iterative nature of dynamic capability development allowed for the leadership team to address different aspects of the transformation as it unfolded. This POV process is truly at the core of IT PharmaCo's ability to develop a dynamic capability and is encouraged for other managers in similar situations. Iterative POV Development (Figure 11) provided IT

PharmaCo a practical way in employing strategy development, execution, and cultural evolution.

The POV practice demonstrates key managers' ability to employ *bricolage* (Baker, Miner, & Eesley, 2003) within this organization. Having a holistic understanding of the IT organization, it provided a practical way for "tinkering" to occur. Given the organization's cultural dynamics, lowering the significance of the exercise to more of a "perspective" rather than a formal "business case" allowed participants to feel comfortable generating options without feeling constrained by existing organizational thinking. There is evidence of b*ricolage* and its effects in the practical application of the POV process that was designed to engage a broad community in the strategic conversation, integration of alternative views, and ultimately organizational reconfiguration.

VII CONCLUSION

VII.1 Implications

Through a shifting stories methodological approach, this dissertation elicits management's reflections and interpretations of significant events during an IT change program within a global organization. Managerial decisions affect resource reconfiguration as they addressed *how* best to shift the agenda of IT from one that was integration focused to one that would develop newly identified realms of opportunities. This case provides an up close and personal account through six stories, offering a better understanding of reconfiguration decisions and the managers' situated role in the evolution of responding to a dynamic environment.

This study showcases a real-world setting while combining OA theory nested within the reconfiguration phase of DC. This linkage is unique given existing knowledge on these theories have not been able to draw such a clear connection to date. An in-depth examination in the evolution of the explore-exploit resource reconfiguration peers into one organization and how it executes a strategy in pursuit of incremental and discontinuous innovations simultaneously. Most importantly, the role of management is made transparent in its attending to the contradictory demands of exploration and exploitation as it dynamically engaged the broader IT community in shared learning activities.

Second, it adds to knowledge of how re-configuration of resources contributes to the ambidexterity of an organization. As such, it can help explain how large IT organizations that have solid exploitative foundations can look to add higher-value related capabilities back to their business units. Third, it demonstrates the methodology of case study and a shifting stories approach to obtain a deeper insight and learning into how

the organization responded to its changing environment and developed ambidextrous capability. Other researchers are encouraged to adopt the longitudinal, shifting stories approach to studies of IT–driven change. The study also offers a practical contribution for the IT healthcare sector and its derivation of resource decisions with a desired goal to obtain ambidextrous characteristics resulting in dynamic capabilities.

VII.2 Limitations

The limitations of this study lie in generalizability and success in resource reconfiguration. As stated in the case, situational characteristics condition the generalizability to a broader context (Yin, 2009). An attempt to develop a situated grounded model has been made (Figure 18) that clearly links DC to OA through the dimensions captured. There is opportunity for additional studies to take a similar longitudinal shifting stories approach to provide compare-contrast case studies that may lead to more generalizability. Market, size of organization, as well as organizational and national culture, will likely affect results. It's important to reinforce that the purpose of this case was to capture resource reconfiguration events and the dynamics of reconciling explore-exploit tensions.

VII.3 Closing

This case study provides a first-hand look at how building ambidexterity is enabled by the cycle of DC sense->seize->reconfigure that affords the continuous growth and new organization routine development. In addition, the case illuminates' management's response to the exploit–explore tensions that arise at IT PharmaCo. Taking a shifting stories approach, this longitudinal case study produced contributors' reflections

and interpretations of significant events, including their own role in evolving the ambidextrous posture of the IT organization.

This study provided a number of interesting insights including: 1) significant events involved in reconfiguring a large IT organization within healthcare; 2) key managements' perspective as to *how* the events proceeded; 3) the IT strategy artifacts necessary to drive common strategic intent for IT PharmaCo; 4) the process of dynamic capability development employed using POVs to iterative reconcile explore-exploit tensions; 5) the importance of tinkering or *bricolage* as the reconfiguration events unfold allowing for IT PharmCo to try out possible options but not feel locked-in to a final decision.

The shifting stories approach adapted from Lanzara is an excellent example of "engaged scholarship". This participative research formulation offered the ability for the researcher to obtain critical perspectives from key stakeholders involved in shaping the strategic intent and subsequent reconfiguration activities (Van De Ven, 1992).

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APPENDIX

Interview Protocol[7]

At the beginning of the interview, the participant will be informed about the purpose of the study.

I am researching the actions taken by leaders during times of organizational change. The interview consists of 10 questions. These questions are primarily intended to understand the resource adjustments leaders make that help affect the disposition of the organization moving forward.

Reminder: The consent and questionnaire will be emailed for pre-read. Upon arriving, the interviewee will provide consent.

General		
1.	**Please describe your role in the organization, how long you've been in the position, and you involvement in the current IT transformation.**	
Resource change activities		
2.	**I'm interested in you telling me how resource changes have occurred beginning in Q4, 2012 up to Q1, 2015. What major resource changes have occurred, new resources developed, or reconfigured to drive toward the goal of your strategy? (What are the major events during this time period?)**	
** Based on each major milestone described from question 2, leverage questions 3-9 to investigate further. Use your discretion as not all may apply. Also, based on the discussion show the Draft Timeline to participant for review/comments/edits based on their experience.		
3.	**Based on what you described, what makes the resources change difficult? Please consider challenges, opportunities, caveats/contingencies based on your response to the prior question.**	

[7] Interview protocol adapted from Klein's' "Intuition at Work" (Klein, 2002)

4.	**What kinds of errors/pitfalls/mistakes have you been able to avoid? Can you share ones that have been difficult to avoid? (Provide examples of situations where changes need to be made to ensure groups or individuals weren't impacted negatively)**	
5.	**How did you deal with the situation you described?** ***(Identify the cues, strategies, and tricks of the trade that experts know and employ)***	
6.	**What is the real skill you need to learn in order to become masterful in handling this issue, change or judgment?**	
7.	**When and with whom will you practice and get feedback to help you handle this issue or judgment next time?**	
8.	**How are you measuring the change in resource (possible baseline measures) to ensure a successful end-state and what possible additional measures do you feel would be worth including if not included today?**	
9.	**As a result of the resource change, what have you learned? Are there things that, if you were starting it over again, you would do differently?**	
Closing		
10.	**Were there other elements, changes, key decisions, or aspects worth mentioning that were not covered? (Please share)**	

We are grateful to you for taking the time to complete this survey and assure you that your responses will be kept in anonymity and only reported in aggregate with all the other responses we obtain.