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MANAGERS' NETWORK CHANGE AND THEIR PROMOTABILITY DURING A MERGER

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MANAGERS' NETWORK CHANGE AND THEIR PROMOTABILITY DURING A

MERGER

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DISSERTATION
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A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Business and Economics
at the University of Kentucky

By

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Florence, Kentucky

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ABSTRACT OF DISSERTATION

**MANAGERS' NETWORK CHANGE AND THEIR PROMOTABILITY
DURING A MERGER**

I investigate whether cross-functional or cross-organizational networking following a large corporate merger and acquisition improves managers' career outcomes. Previous research on networks and career success has focused on stable organizational environments, finding that large, open networks with many structural holes are most advantageous because of superior information benefits and control power, while closed networks provide redundant information that is unhelpful career-wise. However, I suggest that while dense, closed networks formed within knowledge (functional) or identity (legacy organization) boundaries might be detrimental to executives' future promotability, closed networks are helpful if they are created across those boundaries. These ties help to facilitate knowledge transfer and develop a new superordinate post-merger identity and are ultimately valued by the organization. I tested this on junior executives' email and survey data collected at two time points (pre-merger and a year later) from a newly-merged organization. Results show that while closed networks with higher constraint in general were detrimental to executive's promotability pre-merger, they lose the negative effect in the post-merger tumult. Controlling for overall network constraint, increasing closed networks across functional and legacy organizational boundaries led to managers receiving higher promotability evaluations from top management, whereas increasing closed networks within one functional and legacy organizational boundary did not have a significant impact. Managers' rank and networking strategy that joins other employees (i.e., having a tertius iungens orientation) 2 moderated the relationships between networks and promotability. Implications are discussed for career and social networks research.

KEYWORDS: Mergers and acquisitions, career, social networks, social capital, organizational change

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July 27, 2017_____
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DEDICATION

To my lovely wife, Hyoungeun, and son, Maru

ACKNOWLEDGMENT

This work was impossible to accomplish without my great advisor Joe Labianca.

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CHAPTER 1: INTRODUCTION

Global mergers and acquisitions (M&A) have become prevalent strategic moves, with deal volumes exceeding $5 trillion in 2015 (Dealogic, 2015). Businesses choose to engage in M&As in order to enhance market competitiveness, but these mergers usually entail extremely disruptive organizational changes, such as organizational restructuring and layoffs, which create a great deal of uncertainty among organizational members. Members can bring with them sudden shifts in roles, routines, intra-organizational relationships, and processes, all of which can precipitate major role change, demotion, or even job loss (Ghauri & Buckley, 2003; Marks, 2005), both for lower-level members, but also for the managers and executives at the heart of this study. There is a wide variety in career outcomes among managers, with some managers experiencing unexpected career crises, while other managers manager to find even greater career opportunities in a larger and more powerful new organization, finding new roles and even being promoted. For example, a regional sales director of a newly merged organization might assume larger responsibilities with the addition of new product lines from the other legacy organization. Unraveling why these different career outcomes occur, therefore, would help managers enhance their chances to survive and succeed during the turbulence of a merger. While most prior work focused on managers' individual characteristics to predict these career outcome differences (e.g., Greenhaus, Parasuraman, & Wormley, 1990; Stroh, Brett, Reilly, 1992), I suggest that the resources managers access through their social ties, i.e., their social capital, might play an important role in predicting which managers succeed career-wise during a merger event.

Previous research on social capital and social networks outside of the disruptive

merger context has examined the relationship patterns managers should have for optimal

career outcomes. Burt's (1992, 2005) structural holes theory has widely dominated the

discourse on maximizing career outcomes among managers and executives. Structural

holes are the lack of relationships between people (Burt, 1992). When your contacts do

not have direct relationships between themselves, you are more likely connecting

different pockets of the organization than when your contacts have direct relationships.

Connecting people from disparate areas that are not directly communicating with each

other can provide three benefits (Burt, 1992): (1) access to diverse information sources

(Gargiulo & Benassi, 2000); (2) early access to useful information; and (3) control over

information flow. Thus, researchers have hypothesized and provided evidence that open

networks with many structural holes are better for career advancement than closed, dense

networks where one's contacts are also communicating directly with each other (e.g.,

Burt, 1992; Seibert, Kraimer, & Liden, 2001). In contrast, being involved in closed, dense

networks has generally been revealed to slow one's career advancement. Because closed

networks tend to create unique cultures and strong identities that are very different from

others (Burt, 2005; Coleman, 1988), they generally serve as impediments to individuals

when they attempt to reach out to other social groups for greater opportunities

(Granovetter, 1973; Krackhardt, 1999; Oh, Labianca, & Chung, 2006; Portes &

Sensenbrenner, 1993).

In spite of the theoretical arguments in favor of open networks full of structural

holes, there has been recent empirical evidence suggesting that closed networks can

indeed bring career advantages in certain contexts. For example, in a study of Chinese

high-tech companies, Xiao and Tsui (2007) found that individual with open networks

("brokers") could not enjoy career benefits, such as higher salaries or bonuses, because the companies had cultures that valued mutual investment and cooperation (i.e., "high-commitment" cultures). Rather, it was the "integrators" who brought others together by introducing unconnected others to each other that achieved better career outcomes. These integrators and their closed networks better fit their organizational culture and met top management's expectations, which encouraged interpersonal collaboration rather than competition. Obstfeld (2005) also noted that engineers who join other engineers together (through the "tertius iungens" process, which inherently closes structural holes) were involved in innovation more actively because the tacit, unwritten, and difficult-to-convey knowledge necessary for innovation is more likely to be exchanged through strong, trusting networks of densely connected engineers. Likewise, Dokko, Kane, and Tortoriello (2014) and Tortoriello and Krackhardt (2010) found that creativity and innovation occurs more often from closed networks across organizational boundaries that have unique identities. Specifically, I introduce the concepts of knowledge boundaries, such as functional background, and identity boundaries, such as legacy organizations, as important organizational boundaries that influence the effects of managers' networks on their promotability during a merger.

Following this work, I will argue that there are two types of organizational boundaries that influence the relationship between managers' networks and their promotability during a merger event: knowledge boundaries, such as functional department membership, and identity boundaries, such as legacy organization membership. This study adopts the perspective that networks full of structural holes might have both benefits and liabilities, and that whether they are positively or negatively

related to a career outcome, such as promotability, is a function of the specific organizational boundaries they cross. When actors need to develop a collaborative atmosphere, develop a shared identity, and overcome any potential concerns for opportunism, as is often the case in the merger integration process across legacy organizations, the liabilities of having many structural holes might prevail over the benefits.

In sum, career benefits from structural holes might not be universal, and closed networks can have positive impacts on individual's career when the organizational context requires mutual understanding, interpersonal trust, building a strong organizational identity, and collaboration. Mergers are dramatic organizational changes that call for quickly building a newly merged organization as a new target of organizational identification among employees that have previously been focused and identified with their "legacy" organizations. Employees from different legacy organizations must work closely together to create synergistic effect, as demanded by top management to ensure a successful merger. Therefore, I suggest that career benefits from closed social networks might arise for managers and executives during a merger when that network closure is focused on crossing important organizational identity boundaries (e.g., from one legacy organization to another), even while information benefits from open networks still persist within the confines of more familiar organizational boundaries (e.g., functional boundaries).

This study is designed to explore the potential career advantages of closed networks during an organizational merger. In the literature review below, I detail the extant literature on social capital and career outcomes, and introduce formal

organizational boundaries as factors that influence the effects of open and closed

networks on manager's career outcomes during a merger. I predict that having closed

networks across certain organizational boundaries (namely, identity boundaries) will be

more advantageous to managers' promotability rated by top management than open

networks while closed networks across other types of boundaries (namely, knowledge

boundaries) will be still detrimental. Moderating effects of rank and networking strategy

(i.e., tertius iungens orientation) will follow.

CHAPTER 2: LITERATURE REVIEW

Social Capital and Career Success

There are two major perspectives within social capital research – the bridging view and the bonding view (Adler & Kwon, 2002; Borgatti & Halgin, 2011). The bridging view of social capital is concerned with individuals' competitive career advantages gained from having certain relationship patterns. In his seminal research on individual social capital, Burt (1992) demonstrated career advantages to having large, "open" networks where many of one's contacts are not themselves directly connected (i.e., having structural holes in one's personal network). Since then, social capital researchers have generally suggested that open networks are more helpful for career outcomes compared to closed networks. For example, Brass (1984) found that employees brokering between groups (i.e., those high in betweenness centrality) were more influential because other employees were dependent on them for information and resources. Similarly, Burt (1992) and Seibert and colleagues (2001) demonstrated that managers who had many structural holes in their individual networks tended to enjoy more favorable career outcomes, such as faster promotion and higher compensation. Mehra, Kilduff, and Brass (2001) and Zaheer and Soda (2009) also showed that spanning many structural holes was closely associated with higher individual performance ratings from superiors.

The career advantages of open networks are argued to come from at least three sources (Burt, 2005). First, open networks spanning unconnected individuals and social groups can provide access to more diverse sources of information and resources. Unlike densely connected, closed networks, open networks span structural holes between

different social groups (Granovetter, 1973). Since these groups are less likely to interact directly, each group is more likely to retain unique information and resources than when the groups are connected. As many creativity and innovation studies argue, combining heterogeneous knowledge or information is a crucial step for creativity and innovation (Collins & Smith, 2006; Obstfeld, 2005; Taylor & Greve, 2006; Grosser, Venkataramani, & Labianca, forthcoming; Tortoriello & Krackhardt, 2010). Given that the organizational environment is ever changing and unpredictable, organizations are looking for more creative and innovative employees. It is reasonable to think, therefore, that organizations would favor employees with more open networks in career advancement over others with closed networks.

Second, open networks can bring in information in a more timely manner than closed networks. Due to their diverse sources of information, individuals with open networks are, on average, more likely to receive new information faster than others who are embedded in closed networks. Because the very definition of creativity is the "production of novel and useful ideas" (Amabile, Conti, Coon, Lazenby, & Herron, 1996), receiving timely information is important for creativity.

Finally, employees with open networks tend to enjoy more power and influence in organizations. An actor has power over others to the extent that the others are dependent on the actor for resources or information (Pfeffer & Salancik, 1978). Employees with open networks brokering many social groups can often control information flows between groups, particularly if those groups lack other connecting pathways for information flow. Those employees whose personal networks are more embedded in one social group may have to rely on those brokers spanning social groups to access

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necessary resources or information available only through other groups (Brass, 1984; Burt, 1992; Padgett & Ansell, 1993). Employees are already seen as powerful and influential because of their network position and control over inter-group resource flows are more likely to be seen as ready for more powerful, influential roles by top management.

Open networks with many structural holes can provide other career advantages beyond these informational advantages. Structural holes tend to exist between different social groups and classes. Thus, employees with open networks are more likely to have direct or indirect access to individuals who have the most influence and the authority to make decisions in the organization, i.e., the dominant coalition (Brass, 1985) outside of their own group's boundaries (Burt, 1992; Ibarra, 1993; Seibert et al., 2001). Connections to the organization's dominant coalition are helpful to an individual's career because they both facilitate resource acquisition, which can improve performance, as well as through influencing policy (Oh, et al., 2006). For example, a regional marketing director can influence the organizational budget in favor of her region through her close relationships with senior managers that control the budgeting process. She may even receive more favorable performance evaluations or enhanced promotion prospects because top management will see better performance due to the superior resources and information. In sum, the bridging view of social capital argues that open personal networks with many structural holes have been generally considered as helpful to individuals' career outcomes. This view of social capital is relatively less concerned with the impact of these networks on the collective or its performance than it is with individuals' outcomes; indeed, it recognizes that individual outcomes can be antagonistic to collective outcomes.

In contrast, the bonding view of social capital focuses on the collective and on the social benefits of mutual trust, norms, and identification which emerge from having a densely connected group of individuals. The extant literature tends to argue that collective benefits of bonding social capital may limit individual members' freedom to explore outside their own social circle for resources or information. As people in a dense network become more similar through frequent interaction, they find it difficult to work or communicate with different or diverse others (McPherson, Smith-Lovin, & Cook, 2001). This may lead to a lack of understanding between different social groups, and developing negative outgroup biases (Brewer, 1979; Portes & Sensenbrenner, 1993; Tajfel & Turner, 1979). Thus, resources and information from other groups are not likely to be sought out or well received in dense networks (Granovetter, 1973; Portes & Sensenbrenner, 1993), hence, leading to a "closed" group. Because of this disadvantage, bonding social capital has been generally viewed as detrimental to individual career success even while being helpful for groups' and organizational survival (Burt, 1992; 2005).

However, recent research started to highlight potential career benefits of bonding social capital of closed networks. According to Burt (2005), structural holes of open networks alone may not help individuals enjoy career success. If an individual has too many structural holes, she may lack trust and legitimacy necessary to utilize diverse information because she does not belong to any social group. Conversely, Coleman (1988, 1990) explained that dense, strong relationships among community members engender "enforced trust" as they can monitor each other's behaviors. If anyone behaves in a way that others believe violates the group's interests, norms, or identity, she will be

sanctioned by others for harming the group (Coleman, 1988). The bonding social capital

inherent in a densely connected group can bring great economic efficiency because

members can cooperate without worrying about being betrayed or paying the search costs

for new transaction partners (Granovetter, 1985; Uzzi, 1997; Williamson, 1979). These

characteristics of closed networks are helpful for brokers to share information, mutually

understand and collaborate with the group members to make it useful (Obstfeld, 2005;

Tortoriello & Krackhardt, 2010). Therefore, bonding social capital of network closure

contributes to stability, trust, and collaboration within the group necessary to capitalize

on the diverse information received from other social groups. In sum, the social capital

literature suggests that the optimal personal network structure keeps many structural

holes externally, but build dense ties internally.

One important consideration, however, with regard to most of the previous studies

on the relationship between social networks and career success is that they have been

conducted in relatively stable organizational environments, rather than during times of

organizational change and upheaval. For example, Burt (1992, 2005) and Podolny and

Baron (1997) studied large U.S. high-technology firms during relatively calm phases of

normal operation. Mehra and colleagues (2001) studied a small high-technology firm

undergoing normal growth patterns. Although high-technology-based firms may have

fast-paced external environments, they tend to have stable patterns of internal

relationships, either because certain internal structures are dominant at one era of time

(DiMaggio & Powell, 1983; Meyer & Rowan, 1977) or because existing organizational

structures are inertial to ensure reliability (Hannan & Freeman, 1977). Seibert et al.'s

study (2001) surveyed school alumni, whose organizations were not likely under severe

changes or in fluctuations, such as an organizational merger. Boxman, De Graaf, and

Flap (1991) collected their samples from multiple companies in the Netherlands. Their

sample, too, was from generally stable environments because organizational changes and

mergers are relatively rare events in an organization's history and when they do occur, it

is rare for a company to invite in social network researchers in the midst of the change.

Thus, few previous studies have focused on managerial career outcomes in the face of the

type of intense organizational change brought about during an organizational merger, as

compared to those conducted during relatively stable time periods (e.g., Burt, 1992;

Greenhaus et al., 1990).

This study looks to better understand the relationship between individuals' social

networks and their career outcomes in the context of a corporate merger. In doing so, I

hope to illustrate that whether an individual has an open or closed network is important in

predicting how their career is affected during the merger, and that I need to specifically

take into account whether their network contacts cross formal boundaries or not (e.g.,

whether the ties are inter-functional or across the legacy firms in a merger). Merely

understanding the structure of the employee's network in terms of the presence or

absence of structural holes is not enough to understand in detail what occurs to

individuals throughout the course of this major organizational upheaval. To fully

understand the relationships between individuals' networks and career outcomes, I study

managers' career outcomes of a newly-merged organization over two time points:

immediately after the merger ratification (T1) and a year later (T2).

My study is focused specifically on managers' career outcomes for several

reasons. First, managers have greater discretion to reach out to other organizational units,

and therefore, have latitude to be more "entrepreneurial" (Burt, 1992). Thus, their careers are more likely to be sensitive to their networking patterns. Second, managers are key to mergers' success or failure. (Fried, Tiegs, Naughton, & Ashforth, 1996; Guth & MacMillan, 1986). Managers can bring employees from two different organizations together by communicating and reinforcing a new organizational identity. Managers can also reduce employees' stress and confusion due to the merger by providing personalized attention and readjusting tasks among employees. Finally, managers are employees, too, and may feel helpless, withdraw psychologically, and intend to leave the organization if they evaluate the merger negatively and perceive that it will unfairly impact their career development (Fried et. al., 1996). Therefore, managers' career outcomes deserve closer investigation, particularly in organizations undergoing merger.

There are reasons to believe that the effects of social networks on managers' career outcomes might diverge during a merger from the normal relationship studied previously in more stable organizational contexts. Social network research on individual social capital focuses on the diversity of information and resources that open networks access while downplaying the communal advantages of closed networks, such as trust, reciprocity, and coordination. However, managerial roles are not limited to their own individual performance and creativity; managers are assessed as well by their ability as leaders. Effective leadership involves promoting trust and coordinating effort among followers and among others in the organization who might not have a reporting relationship with the manager in order to achieve organizational goals (Hogg, van Knippenberg, & Rast, 2012). In a stable organizational environment, trust and coordination might not be overriding issues. Stable organizations use mechanisms, such

as routines, meetings, plans, and schedules to promote coordination. Okhuysen and

Bechky (2009) summarized that these mechanisms create accountability, predictability,

and common understanding, which are three integrative conditions for coordinated

activity. In other words, stable organizations can substitute interpersonal coordination

processes with formal mechanisms. Therefore, stable organizations are likely to need

creativity advantages of open networks more than they need coordination advantages of

closed networks. This is probably one major reason why previous research on stable

organizations has found largely positive effects for open networks and largely negative

impacts for closed networks on career outcomes. Mergers, however, are disruptive events

that can change these coordination mechanisms. Routines, meetings, plans, and schedules

might lose their predictability during a merger because the two legacy organizations have

had their own unique modes of operation. Therefore, the importance of bonding social

capital, such as trust, coordination, and identity reinforcement, might increase when two

organizations during the time period when two legacy organizations are merging into one

new entity.

I am not arguing that the advantages obtained through open networks, such as

diverse, timely information and controlling power, disappear during a merger. Rather,

employees and managers alike need more accurate, timely information in times of abrupt

integration. Mergers excite employees' anxiety about ambiguity in their job continuity,

changes in compensation package, job security, and career prospects in new organization

(Chung, Du, & Choi, 2014; Fried et al., 1996; Makri & Ntalianis, 2015; Rafferty &

Restubog, 2010). To make sense of the changes during a merger (Weick, 1995),

managers will seek more information from beyond their own social circles because they

already know what people in their circle know (Srivastava, 2015). Managers with more open networks are likely to receive more accurate, timely information to help them respond to volatile situations and will enjoy better prospects of keeping jobs or advancing to higher positions. I do not intend to disprove the generally positive effects of open networks on career outcomes during a merger -- I still believe it to be the case that having many structural holes in one's network will lead to better career outcomes. However, my study will also suggest that when ties cross formal organizational boundaries in this merger context, it is network closure -- having closed cross-boundary ties -- that will further improve career outcomes.

Bridging Organizational Identity and Knowledge Boundaries

Much of the research from the bridging perspective on social networks tends to ignore the theoretical implications of formal boundaries in organizations with the notable exception of Fernandez and Gould (1994), who proposed a typology of brokers according to their roles within and across group boundaries. They found evidence that brokering institutions had different levels of power depending on their roles and the actors they broker around the boundaries dividing health institutions. Likewise, intra-organizational boundaries can affect brokers' advantages and influence obtained from social networks. Although formal boundaries play a crucial role in defining relationships (Feld, 1981), the effects of organizational boundaries on the relationship between social networks and career outcomes have been underexplored (for a notable exception, see Seibert et al., 2001). Because employees are likely to interact more frequently within the boundaries that define their groups than across (Friedkin, 1982; Hinds & Kiesler, 1995), there will be

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more structural holes (i.e., opportunities to broker between disconnected actors) across an organization's formal boundaries than within. Social capital benefits obtained by bridging organizational boundaries can vary depending on what types of boundaries one is bridging.

Two broad categories of intra-organizational boundaries can affect relationships and ultimately employee outcomes: "identity boundaries" (Hogg & Terry, 2000; Tajfel & Turner, 1979), and "knowledge boundaries" (Carlile, 2002). Identity boundaries are dividing lines between employees who identify themselves with different entities, in this specific instance, with the different legacy organizations. Identity boundaries provide employees with a reference point to determine whether other employees are one of them. For example, when two organizations are merging, employees of the legacy organizations might not consider themselves as belonging to the newly created organization and might view employees from the other legacy organization as outsiders. In this case, the divide between legacy organizations can be a strong identity boundary. Knowledge boundaries, in contrast, demarcate employees from different knowledge backgrounds within the organization and are usually instantiated in the formal organizational structure (e.g., as functional departments). For example, accounting department encompasses employees with knowledge on such topics as financial status, cash flows, and tax, whereas employees in marketing department specialize in understanding target customers, conducting market research, and developing product concepts.

During a normal, non-merger phase in the organization's lifespan, identity boundaries and knowledge boundaries may or may not overlap within an organization. They may not overlap if employees are very close to one another and perceive solidarity

within the one company. This can be especially the case in small-sized organizations where intra-organizational boundaries are not salient and employees can run into each other in the hallways (Carton & Cummings, 2012; Krackhardt, 2003). Identity boundaries and knowledge boundaries may overlap when employees consider themselves as a "marketing person" as well as sharing knowledge about company's marketing strategies within the boundary of marketing function.

However, identity boundaries and knowledge boundaries can also diverge markedly during a merger. Although a person can have multiple social identities, the most salient identity depends on the situation and context (Brewer, 1991; Tajfel & Turner, 1979). Because organizations with different cultures and histories are abruptly combined into one company through merger, "legacy" organization membership becomes more salient, sharpening distinctive identity boundaries more so than boundaries created by knowledge pools or functional distinctions (Brewer, 1991). Knowledge boundaries from the legacy organization, such as functional boundaries, will continue to persist, but the introduction of a "foreign" legacy organization might make the cross-organization identity boundary more salient and important during merger. Because of this changing salience and importance, I suggest that the effects of managers' open and closed networks will be different across these two types of boundaries during a merger.

The beneficial effects of open networks on managerial career outcomes will prevail even during a merger if the open networks broker employees from different knowledge boundaries (i.e., they involve cross-functional ties; see Figure 2-1 for an illustration of cross-functional open and closed networks). Mergers are abrupt events that can change organizations' overall strategies and human resources policies all at once.

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Managers who can gather information across diverse knowledge boundaries, such as different functional departments, may be able to better understand where the organization is headed, how everything will change, and what top management wants from managers and junior executives. This information might help a manager navigate a better career path during the merger. For example, a marketing director is more likely to become aware of the company's plan to downsize a product line post-merger if she has contacts in the HR and R&D departments. If she receives the information faster than others, she could move to a position in a more promising product line, rather than continue her career focus on the ill-fated one. While having ties certainly gains access to this type of information, having disconnected ties is what provides competitive advantage for careers. In the above example, if the manager's contacts communicate directly, the information may already be circulating in the closed network enough where other directors already know about the upcoming product line closure, increasing the competition for a different job opening and reducing the possibility of the beneficial career move. The manager can even control the information flows between knowledge boundaries to her advantage, making herself more influential among competitors (Brass, 1984). Also, managers spanning knowledge boundaries may contribute to a merger's success by being more creative. According to researchers, creativity comes from combining diverse knowledge in a novel way (e.g., Perry-Smith & Shalley, 2003). Knowledge boundary spanners can achieve this novel combination with knowledge derived from different pools. During a merger, top management seeks more synergistic effects to improve the likelihood of merger success (Chatterjee, 1986), and knowledge boundary spanners may suggest creative solutions that create greater synergy for the merged company. These above

arguments are similar to what one would expect even in a stable organization -- those

with open networks between knowledge boundaries such as formal organizational

departments or units will benefit career-wise from sitting in a broker position.

Where my work diverges from previous work is to argue that closed networks are

not always harmful to managers' career outcomes, particularly in the turbulent merger

setting. The negative effects of closed networks on manager's career outcomes might not

come to pass if a manager has a closed network with employees from the different legacy

organizations (see B' in Figure 2-2 for an illustration of an inter-legacy organization

closed network). Mergers tear down previous organizational boundaries to build up new

ones. Employees may have difficulties in adjusting to and identifying with the new

organization created by the merger because the new organization now includes

"foreigners" (Terry, 2003; Terry, Carey, & Callan, 2001). This post-merger integration

problem has led many mergers to failure (Shrivastava, 1986). Because the synergistic

effects and success of a merger depend on post-merger integration (Larsson &

Finkelstein, 1999), top management expects managers to help promote the sense of unity

among all employees of the newly-merged organization. Building networks with both

legacy organizations can enable managers to bring employees together in the beginning

of a merger process by playing a role of mediating communications between the two.

Eventually, however, the employees will need to interact and influence directly to

understand better and assimilate to each other because relying on a few brokers is not an

efficient or effective way of communication. Moreover, for a merger to be successful,

two legacy organizations need to acculturate to each other, and it gives intense pressure

on the employees (Nahavandi & Malekzadeh, 1988). Thus, it is difficult for managers to

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achieve fast stabilization of the post-merger organization when their subordinates do not communicate directly with each other. For example, an HR manager in the newly-merged organization might want her staffs from the different legacy organizations to talk to each other directly rather than requiring them to go through her to eliminate minor discrepancies in policies across the two legacy organizations (e.g., compensation, rank order, and training policies). Managers play an important role in forging a new, united post-merger organizational identity by communicating personalized previews of what will happen next and coaching desirable behaviors (Schweiger & Denisi, 1991; Sung, Woehler, Fagan, Grosser, Floyd, & Labianca, forthcoming). If managers encourage strong, closed social network ties during a merger among employees from different legacy organizations, they can encourage mutual understanding and trust between the members of the legacy organizations, making the communication and coaching much easier than would be the case through maintaining open networks. Therefore, building closed networks with other employees from different legacy organizations can be helpful for managerial career advancement during a merger.

Mutual trust, smooth coordination, and identity reinforcement might be of less importance between two employees within the same organizational boundary, whether a knowledge or identity boundary, during a post-merger integration. Within a knowledge boundary, employees share similar knowledge backgrounds, practices and problems (Brown & Duguid, 1991; Orr, 1996). Employees in the same knowledge boundary may not need closed networks for better coordination and trust because they already understand the nature of colleagues' work (Huber & Lewis, 2010). Likewise, employees sharing a pre-existing legacy organizational identity can find swift trust in each other

without the support from closed networks. When employees are similarly identified with the organization (e.g., "we are proud to be members of Company A"), they are likely to share certain historical patterns of working together (e.g., "The Company A Way"). Because people tend to trust and value their in-group members more than out-group members (Brewer, 1979), it is less likely that there will be coordination or trust issues within an identity boundary, even in the absence of closed networks.

Thus, on the whole, I expect that the information benefits of open networks with many structural holes still hold within a social system that is bounded. Managers brokering unconnected employees will still enjoy diverse information sources, timely information, and control power within the boundary, which can enhance their career outcomes. However, in situations where the need for collaboration and coordination among people surpasses the need for information benefits, as is the case in bridging the legacy organization identity boundary, having closed networks may be more helpful for managers' career. In the empirical study presented below, I test hypotheses derived from this line of reasoning. The research model is summarized in Figure 2-3.

Figure 2-1. Ego-networks within and across functional boundaries
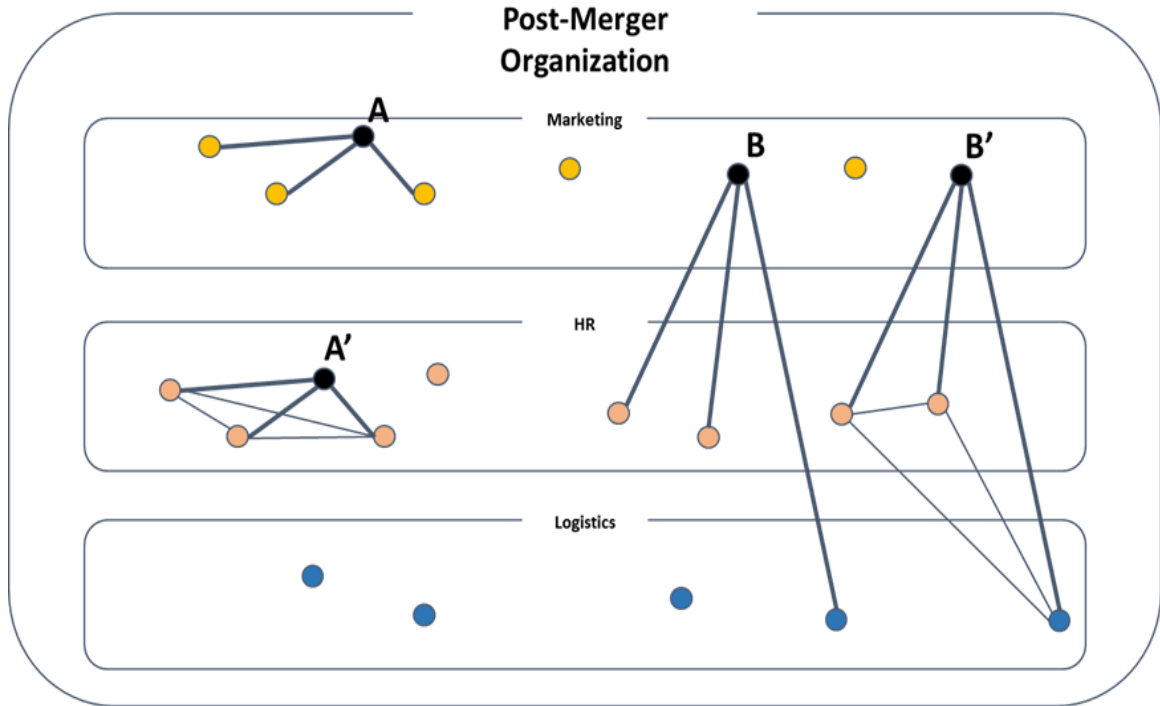
Figure 2-2. Ego-networks within and across legacy organizational boundaries
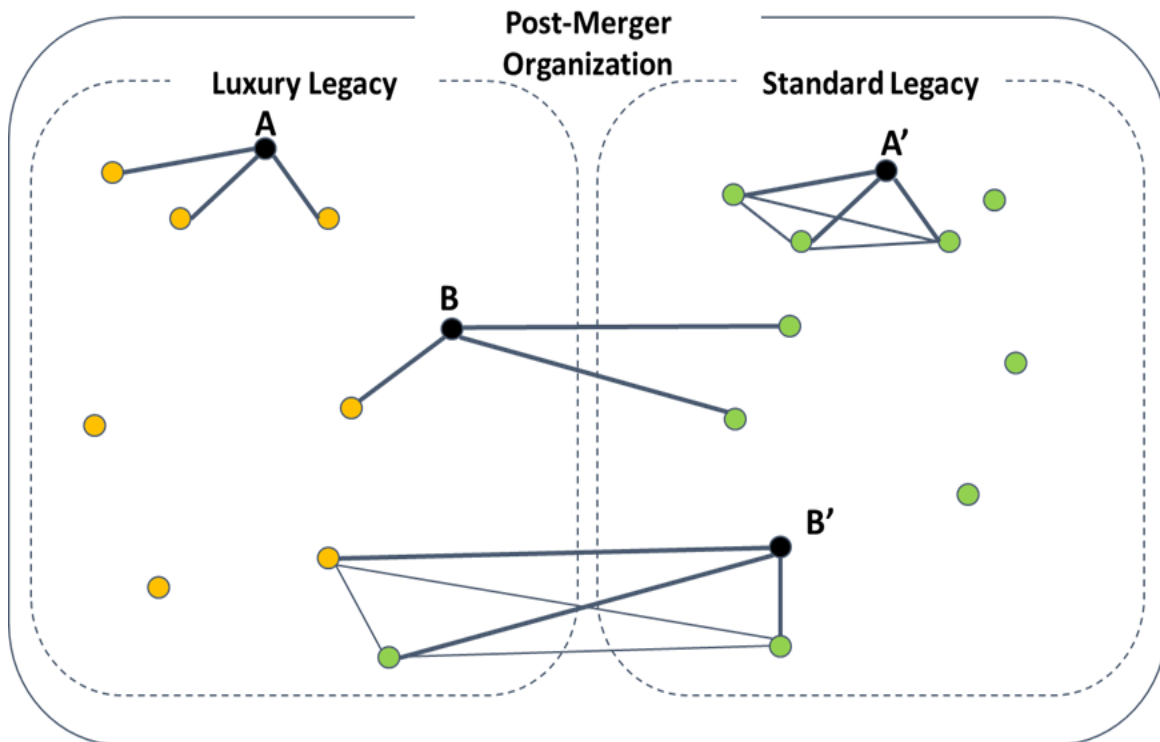
Figure 2-3. Summary of hypotheses
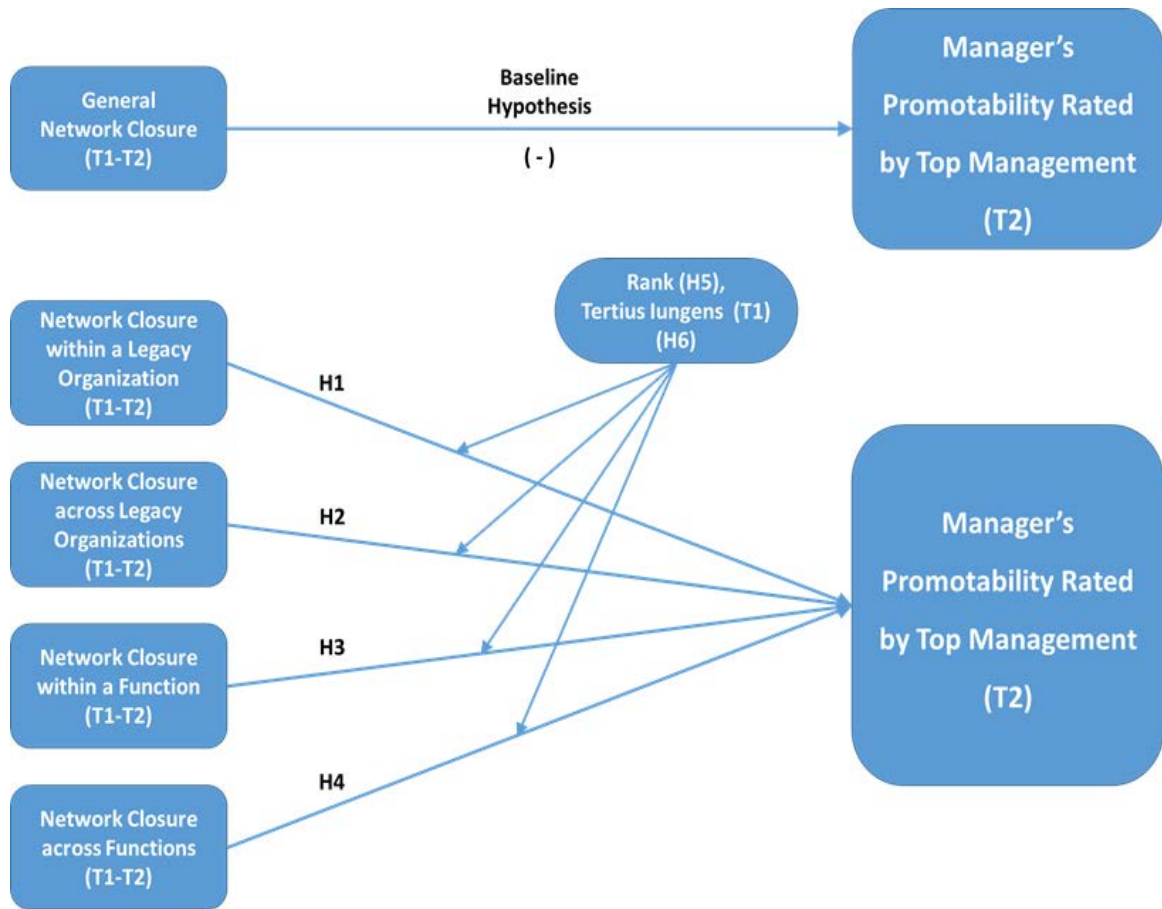
CHAPTER 3: HYPOTHESES

Social Networks and Managers' Promotability

It has been well established in the social capital literature that an open network with many structural holes (i.e., a lack of relationships between one's contacts) brings numerous benefits to a social actor, including greater prospects for career success (Burt, 1992; Seibert et al., 2001). When people are connected by dense, closed social relationships, information and knowledge they possess tend to become similar and redundant through the process of interaction. On the contrary, when people do not interact directly with each other, they are more likely to have different information, unique knowledge bases, and cultures. Therefore, structural holes tend to exist between disparate social groups (Burt, 1992; Granovetter, 1973). When a manager's network has many structural holes, she is likely to be "bridging" the relational gaps between these unconnected groups. Burt (2005) called this actor connecting unrelated groups a broker, and summarized three advantages of playing a broker in a network as: (1) access to more diverse source of information, (2) early access to information, and (3) control over information flow between groups. Being a broker between groups provides an individual manager with additional values because the resources from unique groups are more likely to be diverse than those from a homogenous group. Having diverse sources of information may also provide earlier access to novel information than having fewer unique contacts. Lastly, brokers can control information diffusion from one group to another because they are the ones in a position to pass, or not pass, information between groups. Thus, people are likely to be reliant on these brokers for useful information from other social groups. Due to similar reasons, Brass (1984) reasoned that being central to

information flows (i.e., having high closeness and betweenness centrality) brought more power to individuals.

On the other hand, network closure with densely connected individuals is often considered to be detrimental to one's career success. Managers with few structural holes in their networks (i.e., closed networks) will receive redundant information from their contacts because most of their contacts are connected and information they have is likely to become similar through the process of interaction (Burt, 1992). This limitation on information access can block the way of promotion for several reasons. First, homogenous information may limit a manager's creativity because creative ideas are generated by combining heterogenous information (Perry-Smith, 2006). Given that managers are required to think strategically rather than focusing on daily routines, poor creativity would be considered disqualifying for higher organizational positions. Second, unlike lower level employees who generally focus on their own tasks, a manager should work in coordination with other departments, functions, and the organization's top management. If she is not aware of what is happening in other parts of the organization, her ability to collaborate with others will be damaged or diminished (Gargiulo & Benassi, 2000), which, in turn, will dim the prospect of her future promotion. Moreover, she may need to ask for help from other managers who are brokers to make up for this limited access to useful information. This will further lower her promotability because she has to rely on others, which is a sign of lack of influence, and because when she receives the necessary information, if possible, she is already behind her competitors in the internal job market. Burt (1992) explain this as network constraint as opposed to the structural freedom that brokers enjoy.

Over time, closed networks may have even more detrimental effects on a manager's promotability during a merger. Mergers cause abrupt changes in organizations including managers' careers (Ghauri & Buckley, 2003). To cope with the ambiguity caused by merger, employees and managers desperately search for information about changes in formal structures, promotions, layoffs, and so on by utilizing network ties to others from all over the organization (Srivastava, 2015). If managers want to collect as much information as possible, they need to add new contacts and increase the proportion of structural holes in their social networks. If, instead, they increase network closure in response to the uncertainties, they may be trapped in their own network, not be exposed to timely information about change, and eventually lack the ability to adapt to the new environment (Gargiulo & Benassi, 2000). Therefore, I posit that if a manager increases network closure across their entire personal ("ego") network over time, her promotability will decrease at the end of the period.

> *Base hypothesis: Increases in a manager's ego-network closure from T1 to T2 are*
> *negatively related to the manager's promotability at T2.*

Network Closure Within and Across Identity Boundaries

The deleterious effects of having more closed networks may be stronger within the same identity boundary (e.g., within the legacy organization; see A and A' in Figure 2-2 for illustrations of open and closed networks within the same legacy organization). In a merger, two organizations with different organizational cultures and histories are integrated. The M&A literature has argued that mergers frequently fail because of integration failure (e.g., Agrawal & Jaffe, 2003; Cartwright & Cooper, 1995; Grotenhuis,

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2009). Thus, faster integration and stabilization of the organization as one company are likely to be top management team's number one priority during a merger. Indeed, one executive vice president in my research site lamented that few managers were demonstrating leadership to initiate collaboration between organizational boundaries during the merger. Accordingly, managers who contribute to integrating and stabilizing the merger of two organizations will be evaluated as more promotable during a merger process. Increasing network closure within a legacy organization in response to a merger may cause harm to a manager's ability to integrate legacy organizations. First of all, network closure discourages building new ties outside of the closed network because of network inertia (Briscoe & Tsai, 2011). A closed network tends to reinforce trusted relationships among members because everyone can monitor each other's behavior through densely connected relationships (Coleman, 1988). This reinforced trust generates unique patterns of behavior and perspectives that members share, and, in turn, group identity differentiated from other groups (Burt, 1992; Coleman, 1988). Members of a closed network will find difficulties in building relationships with people from other groups because it is harder to make shared understanding with different others, and also because it simply feels uncomfortable being with them (McPherson et al., 2001). Even if one manages to reach out to other groups, the information or resources from the external contacts are likely to be downplayed by other members because of positive in-group biases and negative out-group biases (Brewer, 1979; Portes & Sensenbrenner, 1993; Tajfel & Turner, 1985). In a merger, two previous organizations have reinforced different identities, unique cultures, and organization-specific knowledge over the history of those organizations (Grant, 1996; Zollo & Singh, 2004), particularly if they were previously

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rivals in the industry. When a merger compels these two organizations to become one, these differences can be major obstacles. Building strong social ties between the two legacy organizations can lower the wall between them and facilitate understanding through frequent interaction and mutual assimilation (Huber & Lewis, 2010; Nelson, 1989).

Managers who have more open networks within their legacy organization are relatively "free" to build new ties with other groups because they are not constrained by their pre-existing dense net of relationships (Burt, 1992; Granovetter, 1973), and they can change their behavior vis-a-vis different groups more easily than others in closed networks (Mehra et al., 2001). Indeed, research has found that people who are heavily embedded in closed networks within their own groups are less likely to build new social ties with other groups during an organizational change (Briscoe & Tsai, 2011; Gargiulo & Benassi, 2000). Likewise, managers who increased their investments in closed networks within their own legacy organizations during a merger are less likely to build meaningful relationships with the other legacy organization over time. From the top management's perspective, these managers and junior executives are less suitable for promotion because they are not adequately facilitating the obstacles to organizational integration.

> *Hypothesis 1: Increasing network closure within the same legacy organization in a manager's ego-network from T1 to T2 will be negatively related to the manager's promotability as rated by the top management at T2.*

However, increasing network closure across identity boundaries (legacy

organizations) may actually increase conducive to managers' promotability (see B and B'
in Figure 2-2 for illustrations of open and closed networks across legacy organizations).
Among Mintzberg's (1990) three categories of managerial roles, interpersonal roles and
informational roles are two preceding factors for decision making roles, the ultimate top
managerial roles. Increasing network closure across legacy organizations can help
managers do a better job during a merger in several ways, and, hence, increasing their
promotability. First, having closed networks between one's own legacy organization and
the other facilitates coordination between the two legacy organizations. When two people
do not directly communicate, they need to rely on common third-party contacts to share
information and to allocate resources properly. However, going through other people may
cause distortion of the information being passed and will take much more time to
coordinate actions than direct communication. Thus, indirect communications between
two legacy organizations block sense-making processes which are crucial to post-merger
integration (Maitlis & Christianson, 2014). Lack of coordination and sense-making
between legacy organizations may impede people of different identities and cultures to
perform smoothly for common organizational goals, which add up to raise doubts about a
manager's ability as leader.

On the contrary, building closed networks across previous organizational
boundary generate mutual understanding, trust, coordination and helping behavior
between different legacy organizations (Bowler & Brass, 2006; Coleman, 1988;
Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Strong mutual relationships among
people help employees share information and reduce conflict across organizational
boundaries (Carton & Cummings, 2012; Krackhardt, 1992; Nelson, 1989; Simmel, 1950).

Also, introducing unconnected contacts to each other can make co-working more efficient and less demanding for the broker (Krackhardt, 1999; Mehra & Schenkel, 2008) because the contacts can work together first hand without always requiring help from the broker. These coordination issues may be less problematic among people already sharing organizational identity, culture, and knowledge, such as employees from the same legacy organization. Hence, previous social capital studies conducted within one identity boundary suggested that the bridging social capital from open networks are more helpful career-wise than bonding social capital from network closure (Burt, 1992, 2005; Oh et al., 2004). However, coordination benefits (i.e., bonding social capital from network closure) may have advantages over information benefits from open networks during a merger as many mergers and acquisitions end up in failure because of poor post-merger integration (Datta, 1991; Shrivastava, 1986; Zollo & Singh, 2004). This might put a lot of pressure on managers to overcome poor post-merger integration by creating networks that can do a better job of coordinating. Also, more closed networks can generate superordinate identity beyond legacy organizations. For example, Podolny and Baron (1997) suggested that a small, densely connected network of buy-in relationships is more helpful for careers than a large, sparse network because organizational identity flows through and is reinforced by cohesive ties. In sum, managers can make a major impact on the success of a newly merged organization by facilitating knowledge and identity integration. Managers' closed networks across the legacy organization boundary are one important mechanism for them to use in facilitating post-merger integration. Therefore, managers who increase network closure between legacy organizations will be more favorably considered for future promotion by top management.

Lack of information diversity to which network closure is susceptible may not be a critical issue if the closed networks are between legacy organizations because each legacy organization can provide unique information and perspective. Previous research that has found the negative effects of network closure on career emphasize information advantages and control power (e.g., Brass, 1984; Burt, 1992; Gargiulo & Benassi, 2000). However, Podolny and Baron (1997) explained that they did not find the effects of structural holes on career advancement because of their sample's heterogeneity in organizational identity and belonging, while Burt's (1992) sample did not have salient organizational identity difference. Without similar knowledge bases and mutual trust, diverse knowledge from disparate sources may not generate creative ideas and innovation because the tacit, "deep" knowledge necessary for innovation is shared and utilized only when people understand and trust each other (Hansen, 1999). Indeed, researchers have found evidence that people who are connected with closed, strong networks are more likely to be innovative if they are from different organizational units (e.g., Dokko et al., 2014; Obstfeld, 2005; Tortoriello & Krackhardt, 2010). Fleming, Mingo, and Chen (2007) argued that creative knowledge combination is more likely to occur within cohesive collaboration networks if the members of the networks bring broad experience. If managers build more closed networks across legacy organizations that possess unique knowledge pools, they can generate more synergy from the merger by utilizing and combining diverse knowledge. Therefore, I predict that managers who increase network closure across legacy organizations during a merger will have higher promotability than others who do not.

Hypothesis 2: Increasing network closure across legacy organizations in a

manager's ego-network from T1 to T2 will be positively related to the manager's promotability at T2.

Network Closure Within and Across Knowledge Boundaries

Increasing network closure in a manager's network may have negative effects during a merger if it occurs within the manager's own functional boundary (see A and A' in Figure 2-1 for illustrations of open and closed networks within the same function). Regardless of the merger context, managers are expected to coordinate individual tasks within their own functions and with other functions. When a manager has closed networks within a function, she may be a part of a densely connected coalition that includes most employees within the function. The manager may be investing too much time and effort to maintain network ties only with others in her own function (Burt, 1992; Granovetter, 1973). This type of networking may limit the manager's capacity to reach out to other parts of the organization because her time and effort are heavily invested in her own function (Burt, 1992). As strong identity or unique culture generated in this type of cohesive group might further restrict generating new ties outside the group (Briscoe & Tsai, 2011; Portes & Sensenbrenner, 1993; Granovetter, 1973). Therefore, being constrained in a densely connected network in one function can ultimately negatively affect a manager's information diversity and her ability to coordinate tasks across functional boundaries, which will lower the promotability of the manager. This can be even more problematic when the manager increases network closure over time within her own function in response to a merger because she is restricting her information capability during a time period when it is most necessary and valuable. I, therefore, predict that

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increases in network closure in a manager's network will be detrimental to the manager's promotability.

> *Hypothesis 3: Increasing network closure within the same functional boundary in a manager's ego-network from T1 to T2 will be negatively related to the manager's promotability at T2.*

Increasing network closure may have negative effects as well if it is across functional boundaries (see B and B' in Figure 2-1 for illustrations of open and closed networks across functional boundaries). Functions in organization are knowledge-based formal boundaries that are specialized in one area of organizational operations (Carton & Cummings, 2012). Carton and Cummings (2012) theorized that having more knowledge-based subgroups in a team would improve the team's ability to consider alternative sources of knowledge and information, which in turn would lead to better team-level outcomes, such as team learning. This suggests that preserving unique, diverse sources of knowledge in organizations is helpful. Because closed networks tend to develop uniform perspectives within, increasing network closure across functional boundaries may harm organizational learning. Network researchers also show that having network ties with diverse knowledge bases helps managers achieve faster promotion (Burt, 1992, 2005) and be ready for a new task environment during organizational change (Gargiulo & Benassi, 2000). If managers add more structural holes across functional boundaries during a merger process, they are more likely to gather diverse information than others who did not. For example, Marketing vice president A may have communicated with engineer B in R&D, and with director of logistics C in Operations. If B and C do not have a direct

relationship, they are likely to work on different projects with A. Then, A may be able to hear from B and C about the organization's overall strategic changes for various projects. This will not only help A achieve better performance and improved team learning, but also better cope with organizational changes due to the merger, which all add up to A's improved prospect for promotion. Conversely, if B and C have a direct tie, A's source of information will be limited because B and C are likely to have redundant information as they communicate, which may restrict A's promotability in the future. Thus, I hypothesize here that increasing network closure over time will have negative effects on manager's promotability.

> *Hypothesis 4: Increasing network closure across functional boundaries in a manager's ego-network from T1 to T2 will be negatively related to the manager's promotability at T2.*

Moderation Effects

The aforementioned relationships between manager's ego networks and promotability are likely to change depending on factors that affect their networking patterns. There are a couple of factors that I consider within my work that may affect the patterns of network change of managers, and thus, their promotability. The first is rank, because the need to coordinate across legacy organizations increases as one moves further up the hierarchy. The second is an individual difference in the propensity to keep open or closed triads in one's network owing to one's *tertius iungens* orientation (Obstfeld, 2005).

Rank

Higher ranking managers are expected to have more open, diverse networks than lower ranking managers. Their contacts may include top management, their subordinates, and other managers from different departments. The hierarchical chain of reporting in most organizations might dictate that lower ranking managers will not often contact other functions or top management directly. Accordingly, higher ranking managers are likely to have more open networks with many structural holes between their contacts simply by virtue of their roles. In fact, playing a liaison between their own "silo" and others is one of many roles that managers play (Mintzberg, 1990). Top management will expect high ranking managers to broker different parts of organization more than they will lower ranking managers. Also, higher ranking managers tend to oversee much broader units in the organization. For example, a senior vice president of marketing may have relationships with the marketing teams for several independent product lines. It will be more beneficial for her career to come up with creative product mix and take control of information flows between the lines than to encourage irrelevant or redundant conversations among them. Therefore, I predict the following:

> *Hypothesis 5: Manager's rank will moderate the relationships in H1-4, such that*
> *the higher the manager's rank: (a) the stronger the negative effects of higher*
> *network closure within the same legacy organization on the manager's*
> *promotability; (b) the stronger the positive effects of higher network closure*
> *across legacy organizations on the manager's promotability; (c) the stronger the*
> *negative effects of higher network closure within the same function on the*
> *manager's promotability; and (d) the stronger the negative effects of higher*

network closure across functional boundaries on the manager's promotability.

Tertius Iungens Orientation

Tertius iungens orientation is defined as "a strategic, behavioral orientation toward connecting people in one's social network by either introducing disconnected individuals or facilitating new coordination between connected individuals" (Obstfeld, 2005: 102). If a manager is high in tertius iungens, she is more likely to try to create connections between her contacts who do not have direct relationships. If this tendency operates within one knowledge (function) or identity (legacy organization) boundary, it may exacerbate the proposed negative effects of closed networks increases on manager's promotability because it will create more densely closed networks around the managers. On the other hand, tertius iungens orientation may create beneficial effects for building closed networks across functional or legacy organization boundaries because top management will appreciate that manager's effort to bring people together. Of course, the unconnected contacts may not form stable, long-term relationships even if the manager attempts to connect them because he or she alone cannot fully control others' actions (Emirbayer & Goodwin, 1994). For example, a manager might introduce two unconnected subordinates in an effort to create a closed triad. The two may talk to and get to know each other for certain period of time at first. However, if the two find that they do not need to communicate any longer, or if they feel socially incompatible, the relationship may not persist for a long time (Casciaro & Lobo, 2008). Even then, however, highly tertius iungens-oriented managers are contributing to temporary tie formation and to network cohesion. Therefore, I propose that a manager's tertius iungens

orientation amplifies both beneficial and deleterious effects of building closed networks

on manager's promotability, depending on the type of boundary those ties cross.

Hypothesis 6: A manager's tertius iungens orientation at T1 will moderate the relationships in H1-4, such that it will: (a) strengthen the negative effects of higher network closure within the same legacy organization on the manager's promotability; (b) strengthen the positive effects of higher network closure across legacy organizations on the manager's promotability; (c) strengthen the negative effects of higher network closure within the same function on the manager's promotability; and (d) strengthen the negative effects of higher network closure across functional boundaries on the manager's promotability.

CHAPTER 4: METHODS

Research Setting

The data used for this study were collected with multiple people's effort as a part of a larger research project (see Sung, et al., forthcoming, for example). Luxury, Inc. and Standard, Inc. were two rival U.S. consumer goods manufacturing firms. Standard's products ranged from very basic to above average, but it could not penetrate the high end of this traditionally staid industry. Luxury, in contrast, had created this industry's first major innovation in decades and had parlayed that into a high-status position as its most profitable and differentiated competitor. In a span of two decades, it had become the industry's largest and fastest-growing company. However, once Luxury, Inc. had gone public, it could no longer pursue a focused differentiation strategy of merely offering luxury products at 5-10 times the price of its competitors if it wished to continue growing in a manner that would satisfy its shareholders. Luxury first attempted to manufacture a line that was only twice as expensive as its competitors, but fearful of harming its strong brand image, Luxury later decided to acquire an existing competitor and its brands covering the market's middle and lower end. Luxury's top management team approached the slightly smaller Standard to propose an acquisition, which was accepted in principle and announced publicly in Fall 2012. After intense negotiation, due diligence, and governmental approval, the new Luxury Standard, Inc. was officially born in mid-March 2013. The new firm offered the widest range of basic to luxury products in the industry and adopted a broad differentiation strategy--in addition to covering the entire product range, it would innovate across its entire product line faster than its remaining competitors in order to maintain a superior market position. While there had been some

public suggestion that this was a merger of equals (much like the Daimler-Chrysler merger), it was evident that Luxury had bought Standard, that Luxury was in the stronger position financially, and that Luxury was the "big brother." The new corporate headquarters were located in Luxury's former headquarters, requiring Standard managers who were retained to move out-of-state; subsequently most of the legacy Standard managers left or retired within a year of the acquisition closing. Applying the merger pattern taxonomy of Giessner and colleagues (e.g., Giessner, Viki, Otten, Terry, & Tauber, 2006; Gleibs, Täuber, Viki, & Giessner, 2013) to this merger, I consider it to fit the *integration-proportionality* pattern wherein both merger partners are represented in the newly-merged organization, but one merger partner (Luxury, in this case) is clearly the dominant partner in the integration.

Both legacy firms were organized by function, as was the newly-combined organization. Each function in Luxury had a counterpart function in Standard, and top management encouraged them to reach out to their counterparts in an attempt to work together better. When the acquisition was announced initially, many employees in both organizations worried that there would be significant downsizing. However, management reassured them that because there was little overlap in their product categories or in the manner in which the products were manufactured, there was little to gain by rationalizing the workforces. Instead, management emphasized the need to share technology across the two legacy firms to create new, unique, hybrid products that were differentiated within the industry, and the need to use their newfound market position to create better deals with retailers. Employees were initially skeptical about the lack of downsizing and were concerned about their job security. Some left of their own accord, while others were

terminated for performance-related reasons. This initial period saw the payroll shrink slightly. However, employees eventually realized that the firm was continuing to grow rapidly and that the merger brought with it the need for more employees, rather than downsizing. By the end of the study period, the number of employees exceeded the pre-merger number.

My research team was granted broad access to study the merger in Fall 2012, including all archival materials, top management team interviews, observing company meetings, as well as permission to survey the entire population of Luxury Standard employees. In return, we designed a custom survey assessing employee engagement and merger success that was administered twice (June 2013 and June 2014); we reported aggregate results to the organization as part of their organizational development process. As with most large mergers and acquisitions, even 15 months after the new $3 billion company came into being, the integration was still ongoing. While some functions such as information technology had become fairly integrated across the two companies by late 2013, other functions such as customer service were only very loosely integrated by the summer of 2014 and it was anticipated that it would be at least another full year prior to the integration's completion.

Sample and Procedures

The data consists of three parts: psychometric data collected from employee surveys, network data calculated from the company's email exchange information, and personnel information, such as performance and demographics from the company's HR department. Since I study managers' career outcomes, I focus on 172 junior executives

from the director level to the vice president level who had promotability evaluation information.

Psychometric data (survey). The initial survey was administered in June 2013. It covered employee engagement, attachment and turnover intentions, as well as merger reactions. While the merger began officially in mid-March, it had not yet begun to affect most of the organization by the time of the survey. The subsequent survey was administered to the same set of professional employees one year later in June 2014, by which time the entire professional organization had been affected by the merger. All respondents were regular, full-time employees.

Network data. To study the network communications at Luxury-Standard, my research team requested a corpus of emails from the company. Although emails may not capture all communications within the organization, emails were the primary means of communication during the merger process. Interviews with key informants and my own long-term observation in the organization suggested that email was the most preferred method of communication, particularly for interdepartmental communication. Other potential sources of digital communication (e.g., texting) were not culturally relevant at Luxury-Standard. Because there were no other internal messaging services available, employees frequently used emails for sending short messages to close others. However, emails were also useful for cross-boundary communications where face-to-face meetings were more difficult. Even when employees meet face-to-face or speak on the phone, emails were used to share materials, such as meeting slides, and to follow up. Moreover, the company I studied was a very large organization with over 2,500 professionals. Email networks are more complete than survey networks, given that sociometric surveys are

very difficult to implement in large organizations, and that, if possible, they tend to

receive low response rates (Quintane & Kleinbaum, 2011). In summary, emails are a

valid, reliable source of communication information in this context.

A third party firm had been storing the company's emails for the purposes of

creating an easy-to-search database and facilitate legal discovery in the event of a lawsuit.

The entirety of the company's email traffic, incoming and outgoing, along with all

content and attachments, was stored by the third-party. I requested email data from

multiple time periods available, including the six month period immediately following

the merger event (which includes the time period around our first company-wide survey)

and a one month period surrounding our second survey a year later.

The data were delivered by mail on encrypted hard drives. The dataset was

comprised of nearly 500 compressed zip files, each with a single Microsoft PST that

contained 10,000 messages. In total, there were approximately 4 million messages. The

messages from the PST files were extracted using the readpst program into 10,000 text

files. The text files were parsed using custom R code and stored in an intermediate

SQLite database with the fields and their values stored as key - value pairs. Relevant

fields were stored including the email addresses in the from, to, cc, and bcc fields, the

body of the message, the subject lines, the date and time stamp, and the information

necessary to reconstruct conversation threads. Other data, such as attachments, were

ignored. This intermediate database was then processed and cleaned. The dyadic

information (email addresses attached to each message), were stored in one table;

message level data (such as content and date), were stored in another table; and

attachment information (such as the type of attachment, not the actual attachment itself)

in a third table. The email addresses were de-identified using a hashing algorithm combined with a nonce to obfuscate the original email address while maintaining a consistent identification with other sources of data.

Networks were constructed using the dyadic information. To determine which email addresses were part of the company, the human resources department provided us a list of company email addresses. Some employees, especially in sales, used accounts that were issued by third party email providers such as Gmail and other employees in the network had multiple addresses. These email addresses were recoded to reflect one primary email address per employee. This was done using an email alias system provided by the company network administrators, in combination with information provided by human resources.

Edgelist data were created by treating the email addresses in the "from" field as a source and the email addresses in the "to," "cc," and "bcc" fields as targets. The total list of approximately 10,000 unique email addresses (after primary email recoding) were coded as a person vs. non-person, or as a meeting room email address (the meeting room system uses emails to coordinate). Emails sent from non-human addresses (such as ordering systems sending updates, or meeting room messages) were removed first. I wanted to remove policy broadcast emails or large informative emails that didn't involve direct meaningful communication, so I focused on emails involving only the sender and no more than two targets (Quintane & Kleinbaum, 2011). Next, I filtered out any message that included someone from outside the formal boundaries of the company. Most importantly, restricting the dataset to company-only messages removed spam messages, which were plentiful.

For this study's purpose, the network was examined at two time points, June 2013 and June 2014. A network for each was constructed, after all the manipulations discussed above, by counting the number of messages sent from one person to another in a thirty day period corresponding to the times immediately prior to and after each of our surveys. This network was summarized in an (n x n) matrix, where an element x_{ij} denotes the number of messages sent from Employee i to Employee j. This matrix was symmetrized by maximum, assuming that email messages become mutual when receivers read the messages. If $x_{ij} = 7$ and $x_{ji} = 5$ $(i \neq j)$, symmetrizing the matrix by maximum would create a new matrix, where $x_{ij} = x_{ji} = 7$. Among all ties, percentages of reciprocated ties were 65% and 64%, in 2013 and 2014, respectively. Finally, I removed ties with less than four messages in this time period since nearly fifty percent of the edges had a weight of one or two and clouded structural measures and visualizations. Thus, a tie between two individuals in each period was defined as four or more emails exchanged during the period. To determine this threshold of four or more messages, my colleagues and I ran correlation analyses among centrality scores of networks with different thresholds (see Appendix 1 for details). First, we created ten network matrices using thresholds from 1 to 10 messages. We, then, calculated the degree centrality[1] scores of employees for each resulting network, and correlated the scores across those networks. We did the same with betweenness centrality[2] and eigenvector centrality[3]. Degree, betweenness, and

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[1] Degree centrality is an indicator of an individual node's (in this study, a person's) importance in terms of popularity. It was measured as the total number of a person's contacts (Freeman, 1978).
[2] Betweenness centrality measures importance of an individual by counting the shortest paths between any pair of individuals that includes the focal individual (Freeman, 1978). Betweenness centrality indicates how important an individual is for flows of information or other resources in the network.
[3] While degree centrality considers one's immediate contacts only, eigenvector centrality considers contacts of contacts (Bonacich, 1972). Eigenvector centrality provides information about which individuals are connected to popular others.

eigenvector centrality are among the most frequently used node-level measures (Borgatti, Carley, & Krackhardt, 2006), and they reflect well relationship patterns around each node. If the centrality scores of one network are highly correlated with the scores of all other networks, we can reasonably conclude that network characteristics (i.e. centrality) of each person in the network will be robust even if the threshold changes. As shown in Appendix 1, the result consistently supported the use of threshold of four or more messages per month, as its centrality scores were correlated the most with all other networks' centrality scores. Also, I ran the same analyses described below using thresholds of 2, 3, 5, and 6 messages per month. My results remained largely robust to different thresholds.

Personnel information. The HR department of the company provided us with access to the personnel data in 2013 and 2014 including performance, age, gender, pay grades, days of salary change, managers' promotability, functional integration order, and legacy organization of each employee.

Measures

Promotability. Among many career related outcomes, such as actual promotion and salary increase, I use the promotability rating assessed by the top management as the dependent variable for several reasons. First, promotions are relatively rare events in one's career life. Only a few of the managers in my sample were promoted during the period of my study. Since post-merger integration may not last longer than individual manager's time in one position, actual promotion cannot reflect manager's true career prospect. For example, a manager who was promoted just before the merger was announced might not be considered for another promotion within several years. While

there can be many reasons why a promotion does or does not occur (e.g., a sudden departure of an employee leading to promotions of individuals beneath them), everyone from the director to senior vice president level in this organization was being rated for promotability. Thus, these future promotability ratings by top management can be a superior, reliable, and temporally stable substitute for actual promotion within a short period. Salary increase is not necessarily a good indicator of a bright future career. Other career events, such as seniority and job transfer, can also increase salary. Also, a particular individual's ability to negotiate a higher salary can factor in the process. In contrast, these promotability ratings can demonstrate manager's potential for future career progress assessed directly by top management, who are the ones that ultimately control the manager's career progression.

The company's top management evaluated its lower level executives twice every year, in spring and fall, with a tool which they called their "ninebox." It was a three-by-three matrix with two axes of criteria: job performance in their current role and future promotability. Current job performance assessed how well each junior executive was doing his or her job in their current role; each executive was rated in one of three categories -- low, moderate, and high (see Appendix 2 for examples and details). Promotability assessed each junior executive's potential for taking on a higher-level role; they were also rated in one of three categories -- low, moderate, and high. The two criteria were not perfectly commensurate with each other (polychoric correlation coefficient = 0.25). For example, some top performers in current positions were rated moderate or low in promotability because top management thought that they had reached their highest potential in their current positions. Meanwhile, some executives with high

potential for promotion might receive moderate or low evaluations for current job

performance because the top management understood that, despite their high potential,

they had reasonable excuses for temporarily low performance, such as divorce, loss of

family members, or lack of experience in their current role. I used the latest assessment,

conducted in the Fall of 2014, as the dependent variable. Among 172 executives assessed

from 2013 to 2014, 87 (50.58%) were assessed as low potential for promotion, 76

(44.19%) as moderate, and 9 (5.23%) as highly promotable. Promotability changed a

little over time, but not to a great degree. Polychoric correlation[4] coefficient between

promotability in 2013 and 2014 was .72. Polychoric correlation between performance in

2013 and in 2014 is .57, which is lower than correlation of promotability ($r = .57$). This

suggests that promotability was more stable than performance.

   Ego-centric network constraint. I measured network closure for the base

hypothesis using Burt's (1992) measure of network constraint:

   $$C_{ij} = (p_{ij} + \Sigma_q p_{iq} p_{qj})^2, \; i \neq q \neq j,$$

where p_{ij} is the proportional strength of i's relationship with j, $p_{iq}p_{qj}$ is a multiplication of

the proportional strength of i's relationship with q and of q's relationship with j. This

indicator shows the sum of i's direct investment of time and effort in j (p_{ij}) and indirect

investment through q in j ($\Sigma_q p_{iq} p_{qj}$).

   Although the network constraint measure is a useful index for overall network

closure, I need a different approach to measure cross-boundary network closure because

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[4] Pearson correlations, which are generally used, are used for two continuous variable. In this study, however, promotability and performance were measured each with an ordinal variable with three categories. Polychoric correlations handle correlations between two ordinal variables. The interpretations of polychoric correlation coefficients are similar to those of Pearson correlations, such that coefficient of 1 is a perfect positive correlation, 0 is a no correlation, and -1 is a perfect negative correlation.

constraint cannot capture cross-boundary ties. Thus, for below measures of network closure within and across boundaries, I adapted the 'matchmaker index' of Kleinbaum and Stuart (2014) that similarly investigated the effects of cross-boundary network closure. The matchmaker index is the proportion of the number of closed triads to the total number of triads (open + closed triads). For example, the matchmaker index across functional boundaries of Manager B in Figure 2-1 is 0 (= 0/3), while the index of Manager B' is 1 (= 3/3). I entered both the numerators and denominators of the indices separated in my models, as opposed to using proportions, because some managers did not have any contacts in certain categories making the denominator zero.

In a whole network study, such as mine, betweenness centrality is frequently used to measure the concept of structural holes (e.g. Brass, 1984; Mehra et al., 2001). Betweenness centrality may capture better the degree to which an individual is in-between different clusters of a whole network (Freeman, 1978). However, in a large network with more than a thousand people, it can be misleading (Everett & Borgatti, 2005), ignoring individuals' roles in local networks with immediate contacts because an indIvidual cannot possibly have relationships with all parts of the large network. For the purpose of my study, constraint or the number of closed triads are better measures to capture an individual's effort or contribution to integrating people in immediate contact with the focal individual. Nonetheless, I test the effects of global betweenness centrality in the supplementary analyses section.

Network closure within the same legacy organization. I counted the number of closed triads a manager had with two other people who were both from the same home legacy organization. I controlled for the total number of triads the manager had with

people within the same home legacy organization to account for any potential network size effects.

Network closure across legacy organizational boundaries. I counted the number of closed triads involving the manager and at least one person from different legacy organizations. I controlled for the total number of triads (open + closed triads) the manager had with people from different legacy organizations to account for any potential network size effects.

Network closure within the same function. I counted the number of closed triads a manager had with two other people from the manager's home function who also had ties with each other. I controlled for the total number of triads (open + closed triads) the manager had within the same function to take into account any potential network size effects.

Network closure across functional boundaries. I counted the number of manager's closed triad with at least one other person outside of the manager's home functions. I controlled for the total number of triads (open + closed triads) the manager had with people from other functions to account for any potential network size effects.

Moderators

Rank. The study sample consisted of three levels of junior executives from the merged company, including directors (50), vice presidents (18), and senior vice presidents (4).

Tertius iungens orientation. I used Obstfeld's (2005) 6-item scale of tertius iungens orientation to measure each manager's strategic networking behavior. Sample items were "I introduce people to each other who might have a common strategic work

interest," and "I see opportunities for collaboration between people;" (2013 α = .85; 2014 α = .86).

Control variables

Age. I controlled for age because older managers might be viewed as less able to develop capabilities for higher positions, and, thus, have fewer opportunities for promotion. Managers' age ranged from 29 to 66, and the average was 47.8.

Gender. There has been evidence that men continue to receive more promotions than women, even in the 2010s (e.g., Ibarra, Carter, & Silva, 2010). Management jargon used frequently in the media, such as glass ceilings, glass cliffs, and tokens, suggests that women are even rarer in the upper echelons of top management. Social network research on career development also finds differences in networking patterns and returns to social capital (e.g., Burt, 1998; Ibarra, 1992). This evidence suggests that female managers may have received less favorable evaluations from the male-dominated top management team (6 males and 1 female in this organizational setting) on average for promotability than their male counterparts. Thus, I controlled for the focal manager's gender. Among 172 junior managers who received promotability ratings, 130 were males (76%), 29 were females (17%), and 13 did not have gender information (7%).

Performance. Although performance ratings are not always associated with promotability, they may still have had some influence on managers' perceived promotability. Indeed, no one in the low performance category was among the 9 junior executives who received the highest assessment for promotability. Among 172 managers assessed from 2013 to 2014, 10 (5.85%) were assessed as low performers, 90 (52.63%) as moderate performers, and 71 (41.52%) as high performers.

Number of days from last salary change. New managers may need more time to perform before they collect information about how things work, become familiar with new roles, and build relationships with colleagues to do their jobs. Likewise, the top management needs some time to assess the new managers' capability for current and future positions. Therefore, if a manager was recently promoted to their current position, his or her promotability to the next level might be diminished until the new manager proves his or her value, and the top management team confirms it.

Legacy organization. Managers from Luxury legacy may have had a better chance for a promotion than their counterparts from Standard legacy because Luxury was the acquiring party in the merger; thus, I controlled for legacy organization. Although the top management of the new organization predominantly consists of Luxury people (6 out of 7, including the CEO), junior executives were almost equally from each legacy organization. Among 172 managers, 79 (46%) were from Standard, 76 (44%) were from Luxury, and 17 joined after the merger and were not legacy employees of either legacy organization.

Functional integration order. Each employee was a member of one of the 18 major organizational functions. Some functions were required to merge more than a year earlier than others, which might affect employees' merger reactions. Functional integration order was provided by the CHRO, who was tasked with leading the integration, and verified by archival materials provided. Functions integrated during one of three time periods: 1) immediately after the merger was officially ratified (e.g., HR and IT; 96 junior executives total); 2) three-to-nine months after ratification (e.g., Forecasting and Planning; 38 junior executives total); or 3) the integration was still

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ongoing at the time of the 2014 survey (e.g., Customer Service; 17 junior executives

total).

CHAPTER 5: ANALYSES AND RESULTS

Table 5-1 summarizes descriptive statistics of variables and correlations between variables. There were 172 junior executives who were assessed their promotability from fall of 2013 to fall of 2014 by the top management. Among them, 9 left the company, and 72 responded to surveys both in 2013 and 2014. I used these 72 junior executives as my final sample because the hypotheses required both years' data. I used ordinal logistic regressions (recall that the dependent variable, promotability, is ordinal: low, medium, high). To test the effects of network changes, I entered the corresponding independent variables from the 2013 and 2014 networks in the same model, rather than use difference scores. This is following Edwards' (2002) alternative procedure to using difference scores as independent variables because the coefficients of difference scores are difficult to interpret due to low reliability, and conceptual ambiguity and confounded effects (i.e., it is difficult to know which time point of a variable has significant effects and which is not. For details, see Edwards, 2002). Figure 5-1 illustrates the test results of the hypotheses.

The base hypothesis is to verify the extant literature's finding that more structural holes in your ego-centric network (i.e., a less constrained network) increases your odds of getting promoted. Indeed, constraint in 2013 was significantly and negatively associated to promotability (β = -19.61) at the beginning of the merger process; however, when I include constraint scores in 2014, there is no significant association with promotability. This suggests that the managers' overall network constraint had significantly negative impacts on their promotability in 2013, as I would expect from prior research in stable

organizational environments, but these types of open networks lost their

beneficial effects during the merger event in 2014. The Base Model in Table 5-2 shows

the result of the ordinal logistic regression testing the base hypothesis. This suggests that

a contingency approach to understanding the organizational context of the closed network

(i.e., whether it is being generated from within knowledge/functional or identity/legacy

boundaries) might be fruitful in explaining divergent career outcomes for executives.

Model 1 in Table 5-2 shows the test results for Hypotheses 1 and 2. Hypothesis 1

argues that if a manager increased their proportion of closed triads from 2013 to 2014

within her own legacy organization (i.e., within her identity boundary), her promotability

in 2014 would have decreased. This hypothesis was not supported as the numbers of

triads within one legacy organization in both 2013 and 2014 were not significant factors

for promotability in 2014. Hypothesis 2 predicts that if a manager increased the

proportion of closed triads from 2013 to 2014 across legacy organizations (i.e., across the

identity boundaries), her promotability in 2014 would also have increased. This

hypothesis was supported, as the number of triads across legacy organizations in 2014

was significantly and positively related to promotability ($\beta = .08$), controlling for the

number in 2013.

Hypothesis 3 states that if a manager increased their proportion of closed triads

from 2013 to 2014 within her own knowledge boundary (i.e., functional department), her

promotability in 2014 would have decreased. This prediction did not receive support as

the numbers of closed triads within a function in both 2013 and 2014 were not

significantly associated with promotability in 2014 (see Model 1 in Table 5-3). Thus,

Hypothesis 3 was not supported. Hypothesis 4 predicts that if a manager increased their

proportion of closed triads from 2013 to 2014 across functional boundaries (i.e., their

cross-knowledge boundary ties), her promotability in 2014 would have decreased. It was

not supported as the number of triads across functional boundaries in 2014 was

significantly, but *positively,* related to promotability (β = .03), controlling for the number

in 2013 (see Model 1 in Table 5-3).

Test results for Hypotheses 5a-d, which sought to understand whether the rank

level would moderate any of the above relationships, appear in Models 2 and 3 in Tables

2 and 3. Hypothesis 5a predicting that rank will strengthen the negative effects of having

more closed triads within the same legacy organization received support. Network

closure within the same legacy organization in 2013 (β = -.08) and 2014 (β = .06) were

significantly moderated by rank. I drew interaction plots to clearly illustrate the

moderation. I took -1 SD and +1 SD for network closure, and the lowest rank (directors)

and the highest rank (senior vice presidents) for rank. In 2013, lower-ranking managers

with a low proportion of closed triads within the same legacy organization were more

likely to be promotable, while higher-ranking officers were less affected (see Figure 5-2).

In 2014, however, it became more important for higher-ranking managers to have fewer

closed (i.e., more open) networks to be seen as promotable (see Figure 5-3). Hypothesis

5b did not receive support as the interactions between the number of closed triads across

legacy organizations and rank did not have significant effects on managers'

promotability. Hypothesis 5c was not supported as well. The numbers of triads within the

same functional boundary in both 2013 and 2014 did not interact with manager's rank.

Hypothesis 5d was supported: The numbers of closed triads across functional boundaries

in 2013 (β = -.04) and 2014 (β = .03) significantly interacted with rank. According to the

interaction graphs, lower-ranking managers who had a low proportion of closed triads across functional boundaries in 2013 had a better chance of being viewed as being promotable, which was not the case for higher-ranking managers (see Figure 5-4). However, by 2014, fully a year into the merger, higher-ranking managers were *more* likely to be promotable when they a had low proportion of closed triads across functional boundaries (see Figure 5-5).

Models 4 and 5 in Tables 2 and 3 show the test results for Hypotheses 6a-d. Hypothesis 6a was supported. The interaction between network closure within the same legacy in 2013 and tertius iungens orientation in 2013 was negative and marginally significant ($\beta = -.02$, $p < .10$). Figure 5-6 illustrates the moderation effect. Managers' with high network closure within the same legacy organization were not influenced much by the networking strategy of joining unconnected contacts (tertius iungens orientation). Meanwhile, others with more open networks within the same legacy who tried to join others together had lower promotability than those who did not bring people together. The interaction between network closure within the same legacy in 2014 and tertius iungens orientation in 2013 was positive and significant ($\beta = .04$). The interaction plot in Figure 5-7 shows that managers with closed networks were negatively affected by the strategy of joining networks (tertius iungens orientation) they had a year ago. Hypothesis 6b predicted interaction effects between network closure between legacy organizations and tertius iungens orientation, but it was not supported (Model 5 in Table 5-2). Hypotheses 6c-d were also not supported as there were no significant interaction effects between network closure within the same function and tertius iungens orientation, and between network closure between functions and tertius iungens orientation (Models 4 and

5 in Table 5-3).

Table 5-1. Descriptive Statistics

	Variable	Min.	Max.	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1	Promotability	1	3	1.49	0.58											
2	Network constraint (2013)	0.06	0.27	0.11	0.05	-0.27 *										
3	Network constraint (2014)	0.03	0.38	0.11	0.06	-0.18	0.49 *									
4	Number of closed triads within the same function (2013)	0	176	34.83	39.83	0.06	-0.39 *	-0.23								
5	Number of closed triads within the same function (2014)	0	199	33.94	42.07	0.03	-0.28 *	-0.26 *	0.71 *							
6	Number of closed triads across functional boundaries (2013)	4	357	116.46	87.87	0.19	-0.66 *	-0.40 *	-0.04	-0.01						
7	Number of closed triads across functional boundaries (2014)	0	700	136.06	129.05	0.26 *	-0.46 *	-0.57 *	0.01	-0.09	0.67 *					
8	Number of closed triads within the same legacy (2013)	6	399	121.57	82.86	0.16	-0.67 *	-0.41 *	0.20	0.05	0.85 *	0.58 *				
9	Number of closed triads within the same legacy (2014)	2	428	105.97	85.66	0.14	-0.43 *	-0.57 *	0.14	0.04	0.58 *	0.86 *	0.65 *			
10	Number of closed triads across legacy organizations (2013)	0	264	37.26	52.2	0.13	-0.46 *	-0.28 *	0.38 *	0.49 *	0.51 *	0.32 *	0.19	0.14		
11	Number of closed triads across legacy organizations (2014)	0	363	65.83	75.15	0.30 *	-0.45 *	-0.48 *	0.22	0.31 *	0.53 *	0.74 *	0.30 *	0.41 *	0.67 *	
12	Total number of triads within the same function (2013)	0	496	101.82	115.23	0.07	-0.44 *	-0.29 *	0.90 *	0.50 *	0.01	0.10	0.24 *	0.20	0.30 *	0.21
13	Total number of triads within the same function (2014)	0	595	83.82	113.58	0.01	-0.26 *	-0.30 *	0.66 *	0.91 *	-0.07	-0.01	-0.01	0.13	0.39 *	0.32 *
14	Total number of triads across functional boundaries (2013)	28	1634	550.65	429.63	0.18	-0.73 *	-0.42 *	0.12	0.03	0.91 *	0.67 *	0.81 *	0.58 *	0.50 *	0.54 *
15	Total number of triads across functional boundaries (2014)	7	5670	647.92	809.9	0.15	-0.39 *	-0.51 *	0.07	-0.06	0.51 *	0.91 *	0.46 *	0.81 *	0.22	0.66 *
16	Total number of triads within the same legacy (2013)	45	1770	481.92	382.94	0.13	-0.65 *	-0.38 *	0.21	-0.04	0.72 *	0.51 *	0.88 *	0.58 *	0.09	0.23
17	Total number of triads within the same legacy (2014)	10	3655	438.68	526.98	0.08	-0.34 *	-0.49 *	0.10	-0.05	0.43 *	0.79 *	0.46 *	0.86 *	0.08	0.43 *
18	Total number of triads across legacy organizations (2013)	0	1271	194.65	252.85	0.13	-0.53 *	-0.34 *	0.30 *	0.36 *	0.61 *	0.46 *	0.28 *	0.25 *	0.95 *	0.73 *
19	Total number of triads across legacy organizations (2014)	0	3015	308.4	428.31	0.17	-0.40 *	-0.48 *	0.15	0.13	0.48 *	0.83 *	0.33 *	0.60 *	0.44 *	0.87 *
20	Rank	3	7	5.21	0.82	0.02	-0.42 *	-0.18	-0.11	-0.11	0.51 *	0.53 *	0.46 *	0.47 *	0.11	0.32 *
21	Tertius Iungens (2013)	4	7	5.93	0.64	0.11	-0.26 *	-0.23 *	0.21	0.16	0.32 *	0.23 *	0.36 *	0.24 *	0.23	0.21
22	Tertius Iungens (2014)	4	7	5.87	0.67	0.18	-0.21	-0.17	0.15	0.20	0.24 *	0.12	0.29 *	0.19	0.15	0.08
23	Age	33	65	47.67	8.77	-0.56 *	0.19	0.18	-0.01	-0.01	-0.19	-0.18	-0.17	-0.06	-0.09	-0.22
24	Performance	1	3	2.4	0.52	0.18	-0.39 *	-0.25 *	0.07	0.03	0.45 *	0.42 *	0.36 *	0.28 *	0.33 *	0.43 *
25	Gender	0	1	0.15	0.36	-0.02	-0.02	-0.08	0.20	0.23	-0.01	-0.02	0.09	0.13	0.02	-0.05
26	Days from Last Salary Change	18	571	89.44	61.98	-0.05	-0.16	0.02	0.16	0.11	0.18	-0.06	0.20	-0.03	0.16	-0.02
27	Luxury	0	1	0.46	0.5	-0.01	-0.24 *	-0.08	0.04	0.04	0.37 *	0.12	0.47 *	0.30 *	0.04	-0.10
28	Functional Integration Order	1	3	1.69	0.7	-0.25 *	0.17	0.04	0.33 *	0.37 *	-0.32 *	-0.16	-0.23	0.02	0.04	-0.10

Table 5-1. Descriptive Statistics (Continued)

	Variable	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
13	Total number of triads within the same function (2014)	0.52 *															
14	Total number of triads across functional boundaries (2013)	0.24 *	0.02														
15	Total number of triads across functional boundaries (2014)	0.19	0.12	0.62 *													
16	Total number of triads within the same legacy (2013)	0.39 *	-0.02	0.85 *	0.51 *												
17	Total number of triads within the same legacy (2014)	0.23	0.18	0.55 *	0.94 *	0.55 *											
18	Total number of triads across legacy organizations (2013)	0.29 *	0.32 *	0.63 *	0.39 *	0.21	0.23										
19	Total number of triads across legacy organizations (2014)	0.22	0.28 *	0.57 *	0.91 *	0.36 *	0.75 *	0.58 *									
20	Rank	-0.08	-0.12	0.38 *	0.34 *	0.30 *	0.29 *	0.17	0.28 *								
21	Tertius Iungens (2013)	0.20	0.10	0.30 *	0.14	0.25 *	0.10	0.26 *	0.16	0.16							
22	Tertius Iungens (2014)	0.10	0.08	0.16	-0.04	0.15	-0.06	0.14	-0.01	0.07	0.72 *						
23	Age	-0.02	-0.03	-0.17	-0.09	-0.13	-0.01	-0.13	-0.13	0.01	0.03	-0.18					
24	Performance	0.11	0.02	0.46 *	0.34 *	0.32 *	0.23	0.38 *	0.38 *	0.13	0.15	0.06	-0.21				
25	Gender	0.19	0.15	0.01	-0.01	0.03	0.04	0.05	-0.04	-0.06	0.29 *	0.36 *	0.04	-0.03			
26	Days from Last Salary Change	0.14	0.07	0.19	-0.07	0.18	-0.07	0.19	-0.05	-0.05	0.23 *	0.08	-0.01	-0.06	-0.07		
27	Luxury	-0.10	-0.07	0.17	-0.03	0.18	0.02	0.03	-0.14	0.35 *	0.18	0.25 *	-0.07	-0.07	0.15	0.13	
28	Functional Integration Order	0.26 *	0.41 *	-0.28 *	-0.06	-0.21	0.02	-0.04	-0.05	-0.13	0.02	0.06	0.25 *	-0.04	0.02	0.18	-0.08

Table 5-2. Results of Ordinal Logistic Regression Predicting Promotability: Identity boundaries (legacy organizations)

	Control Model	Base Model	Model 1	Model 2	Model 3	Model 4	Model 5
Control Variable							
Age	-0.17 (0.03)***	-0.16 (0.03)***	-0.29 (0.08)***	-0.60 (0.22)**	-0.35 (0.11)**	-0.29 (0.09)**	-0.29 (0.08)***
Performance (2012)	0.01 (0.34)	0.22 (0.36)	-0.45 (0.77)	-2.05 (1.20)†	-0.82 (0.85)	-0.81 (0.85)	-0.49 (0.79)
Gender (1 = female)	0.12 (0.53)	0.12 (0.54)	-0.41 (1.03)	0.01 (1.46)	-0.16 (1.05)	-0.89 (1.26)	-0.25 (1.10)
Days from Last Salary Change	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)	-0.02 (0.01)†	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Legacy (1 = Luxury legacy)	-0.80 (0.57)†	-1.12 (0.45)*	-1.01 (1.31)	-3.24 (2.35)	-1.07 (1.36)	-1.04 (1.41)	-1.00 (1.31)
Functional Integration Order	-0.47 (0.31)	-0.54 (0.32)†	-1.35 (0.71)†	-2.40 (1.20)*	-1.75 (0.84)*	-1.20 (0.75)	-1.35 (0.72)†
Independent Variable							
Constraint (2013)		-10.79 (4.94)*	-63.03 (20.94)**	-58.24 (36.01)	-80.84 (31.89)*	-54.77 (20.06)**	-63.81 (21.32)**
Constraint (2014)		0.86 (2.32)	20.15 (11.96)†	29.11 (29.77)	-20.76 (12.59)†	9.57 (14.16)	20.78 (12.16)†
Number of Closed Triads within the Same Legacy (2013)			-0.01 (0.01)	0.04 (0.02)†	-0.02 (0.02)	-0.01 (0.02)	-0.01 (0.02)
Number of Closed Triads within the Same Legacy (2014)			0.02 (0.02)	0.01 (0.02)	0.03 (0.02)	0.01 (0.02)	0.03 (0.02)
Number of Closed Triads between Legacy Organizations (2013)			0.01 (0.04)	0.01 (0.06)	-0.01 (0.04)	0.01 (0.04)	0.01 (0.04)
Number of Closed Triads between Legacy Organizations (2014)			0.08 (0.03)**	0.17 (0.08)*	0.09 (0.03)**	0.07 (0.03)*	0.08 (0.03)*
Total Number of Triads within the Same Legacy (2013)			-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Total Number of Triads within the Same Legacy (2014)			0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Total Number of Triads between Legacy Organizations (2013)			-0.01 (0.01)	-0.02 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Total Number of Triads between Legacy Organizations (2014)			-0.01 (0.01)*	-0.03 (0.01)*	-0.02 (0.01)*	-0.01 (0.01)*	-0.01 (0.01)*
Rank			-2.78 (0.92)**	-6.47 (2.46)**	-3.29 (1.15)**	-2.50 (0.89)**	-2.81 (0.97)**
Tertius Iungens (2013)			2.43 (1.17)*	6.26 (2.97)*	2.79 (1.34)*	2.21 (1.42)	2.45 (1.18)*
Tertius Iungens (2014)			-0.69 (1.06)	-1.56 (1.81)	-0.94 (1.14)	-0.42 (1.29)	-0.78 (1.09)
Interactions							
Number of Closed Triad within the Same Legacy (2013) X Rank				-0.08 (0.03)**			
Number of Closed Triad within the Same Legacy (2014) X Rank				-0.06 (0.02)*			
Number of Closed Triad between Legacy Organizations (2013) X Rank					-0.02 (0.02)		
Number of Closed Triad between Legacy Organizations (2014) X Rank					0.02 (0.02)		
Number of Closed Triad within the Same Legacy (2013) X Tertius Iungens (2013)						-0.02 (0.01)†	
Number of Closed Triad within the Same Legacy (2014) X Tertius Iungens (2013)						0.04 (0.02)*	
Number of Closed Triad between Legacy Organizations (2013) X Tertius Iungens (2013)							-0.01 (0.02)
Number of Closed Triad between Legacy Organizations (2014) X Tertius Iungens (2013)							0.01 (0.01)
Fit Statistics							
N	134	132	72	72	72	72	72
Pseudo R^2	0.23	0.26	0.50	0.67	0.51	0.56	0.50

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5-3. Results of Ordinal Logistic Regression Predicting Promotability: Knowledge boundaries (functions)

	Model 1	Model 2	Model 3	Model 4	Model 5
Control Variable					
Age	-0.22 (0.06)***	-0.22 (0.06)***	-0.35 (0.10)***	-0.21 (0.06)***	-0.23 (0.06)***
Performance (2012)	-1.05 (0.76)	-0.93 (0.80)	-2.61 (1.08)*	-1.02 (0.77)	-1.42 (0.86)†
Gender (1 = female)	-0.01 (1.06)	0.59 (1.16)	0.74 (1.28)	0.19 (1.11)	-0.16 (1.15)
Days from Last Salary Change	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Legacy (1 = Luxury legacy)	-0.80 (0.97)	-1.38 (1.09)	-2.72 (1.35)*	-0.83 (0.98)	-0.97 (1.02)
Functional Integration Order	-0.49 (0.65)	-0.75 (0.72)	-1.15 (0.80)	-0.43 (0.67)	-0.56 (0.65)
Independent Variable					
Constraint (2013)	-50.27 (17.68)**	-49.29 (19.11)*	-63.96 (25.19)*	-49.74 (17.74)**	-52.18 (18.65)**
Constraint (2014)	9.58 (10.01)	7.37 (10.69)	-2.81 (14.82)	11.15 (10.36)	6.31 (11.01)
Number of Closed Triads within the Same Function (2013)	-0.02 (0.03)	-0.02 (0.04)	0.01 (0.04)	-0.02 (0.04)	-0.02 (0.04)
Number of Closed Triads within the Same Function (2014)	0.02 (0.03)	0.03 (0.03)	0.05 (0.04)	0.03 (0.03)	0.04 (0.04)
Number of Closed Triads between Functions (2013)	0.01 (0.02)	0.01 (0.02)	0.24 (0.08)**	0.01 (0.02)	0.01 (0.02)
Number of Closed Triads between Functions (2014)	0.03 (0.01)*	0.02 (0.01)	-0.14 (0.06)	0.02 (0.01)*	0.02 (0.01)
Total Number of Triads within the Same Function (2013)	0.01 (0.01)	0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Total Number of Triads within the Same Function (2014)	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Total Number of Triads between Functions (2013)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Total Number of Triads between Functions (2014)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)†	-0.01 (0.01)	-0.01 (0.01)
Rank	-2.00 (0.75)**	-1.69 (0.80)*	-3.83 (1.26)**	-1.94 (0.76)*	-2.17 (0.82)**
Tertius Iungens (2013)	1.86 (1.03)†	1.94 (1.08)†	2.63 (1.32)*	1.86 (1.03)†	2.20 (1.10)*
Tertius Iungens (2014)	-1.11 (0.92)	-1.09 (0.96)	-1.86 (1.22)	-1.13 (0.93)	-1.34 (0.99)
Interactions					
Number of Closed Triad within the Same Function (2013) X Rank		-0.01 (0.02)			
Number of Closed Triad within the Same Function (2014) X Rank		-0.03 (0.02)			
Number of Closed Triad between Functions (2013) X Rank			-0.04 (0.01)**		
Number of Closed Triad between Functions (2014) X Rank			0.03 (0.01)**		
Number of Closed Triad within the Same Function (2013) X Tertius Iungens (2013)				0.01 (0.03)	
Number of Closed Triad within the Same Function (2014) X Tertius Iungens (2013)				-0.02 (0.03)	
Number of Closed Triad between Functions (2013) X Tertius Iungens (2013)					-0.01 (0.01)
Number of Closed Triad between Functions (2014) X Tertius Iungens (2013)					0.01 (0.01)†
Fit Statistics					
N	72	72	72	72	72
Pseudo R^2	0.41	0.44	0.54	0.41	0.43

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 5-1. Summary of Results
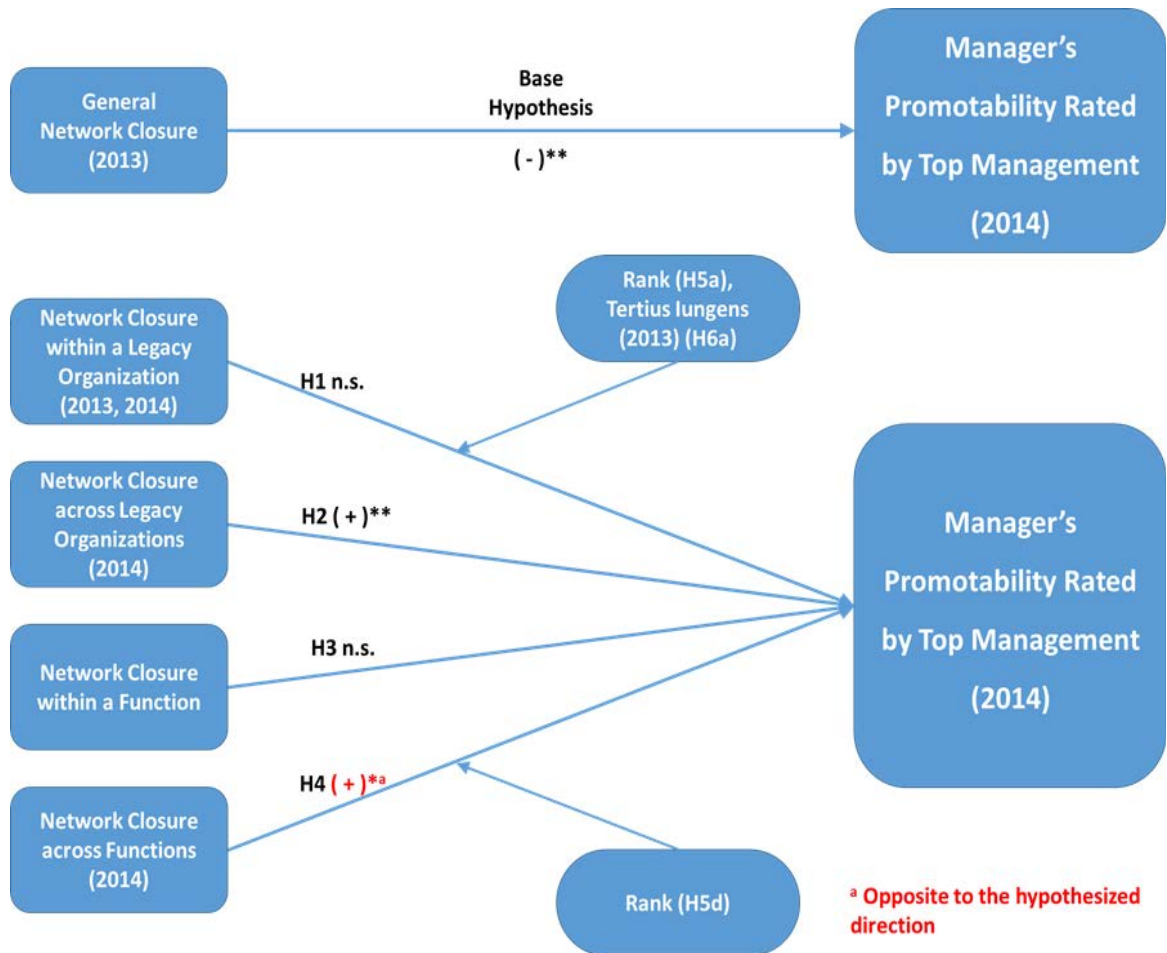
Figure 5-2. Interaction between Network Closure within the Same Legacy (2013) and Rank
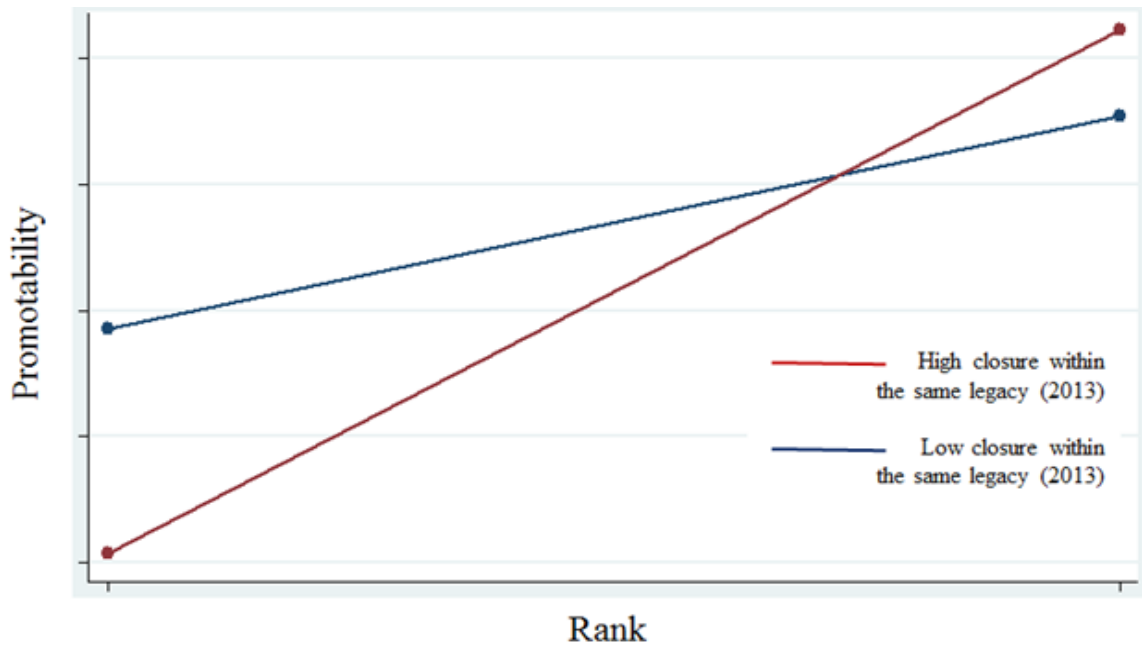
Figure 5-3. Interaction between Network Closure within the Same Legacy (2014) and Rank
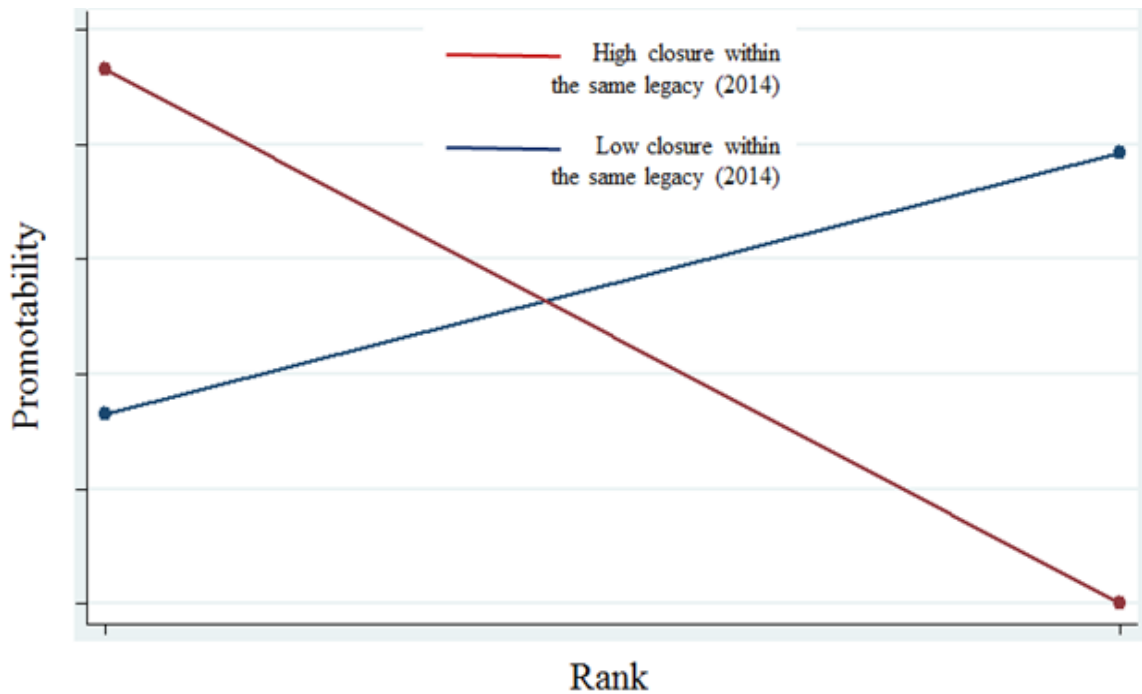
Figure 5-4. Interaction between Network Closure between Functions (2013) and Rank
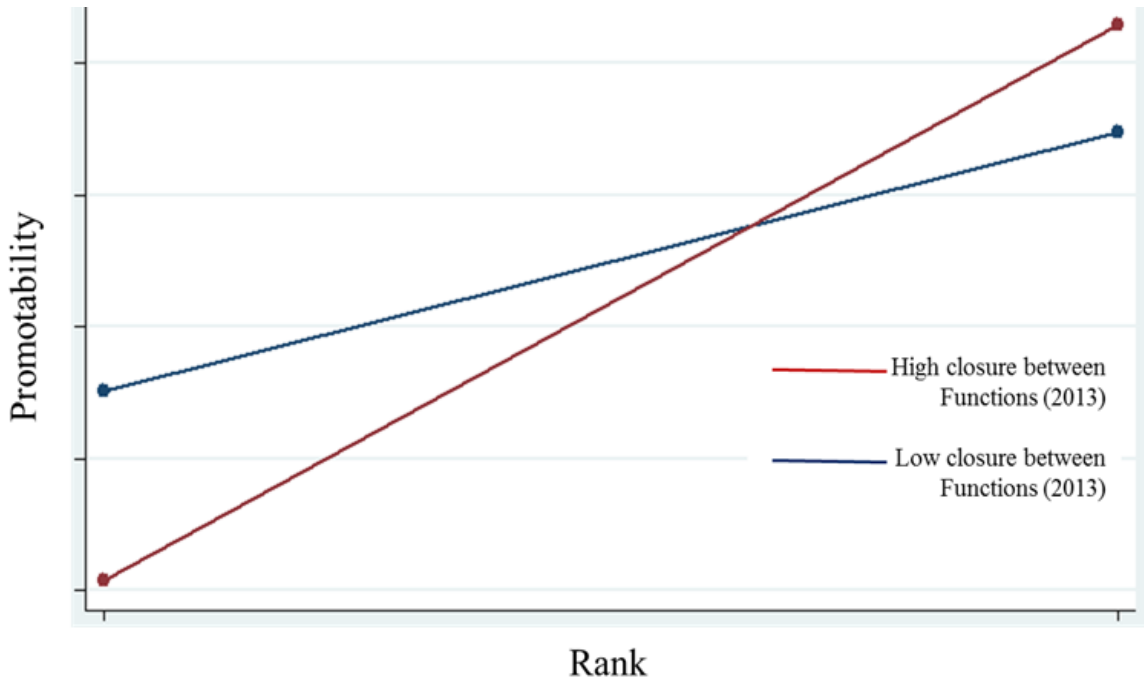
Figure 5-5. Interaction between Network Closure between Functions (2014) and Rank
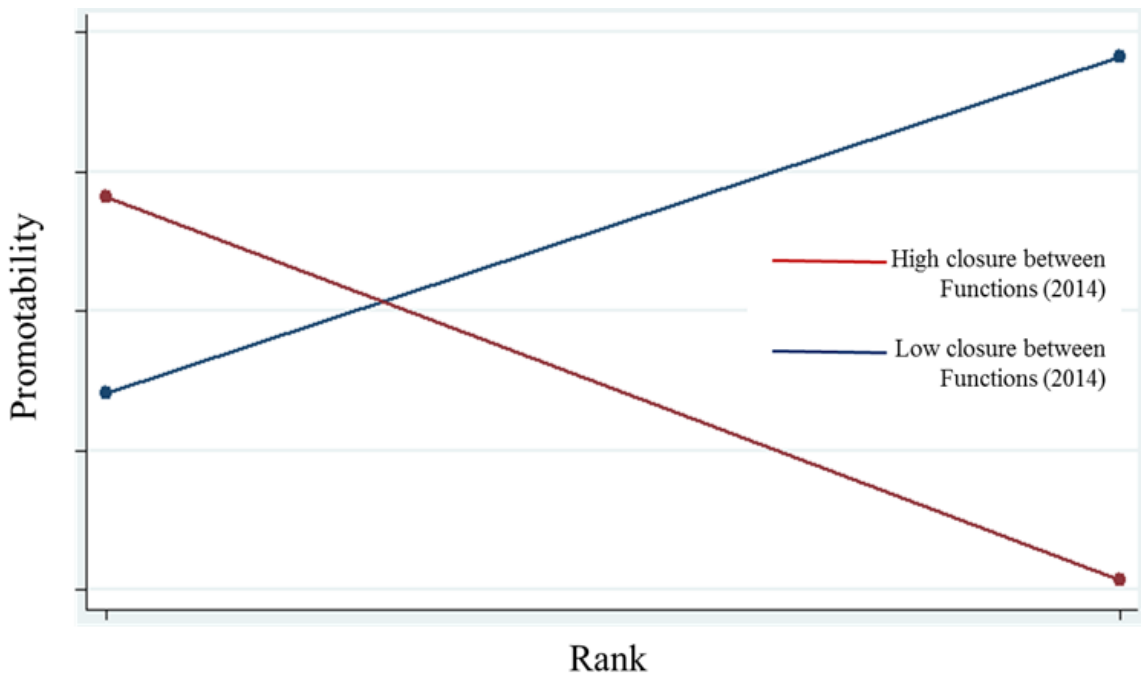
Figure 5-6. Interaction between Network Closure within the same Legacy (2013) and Tertius Iungens Orientation (2013)
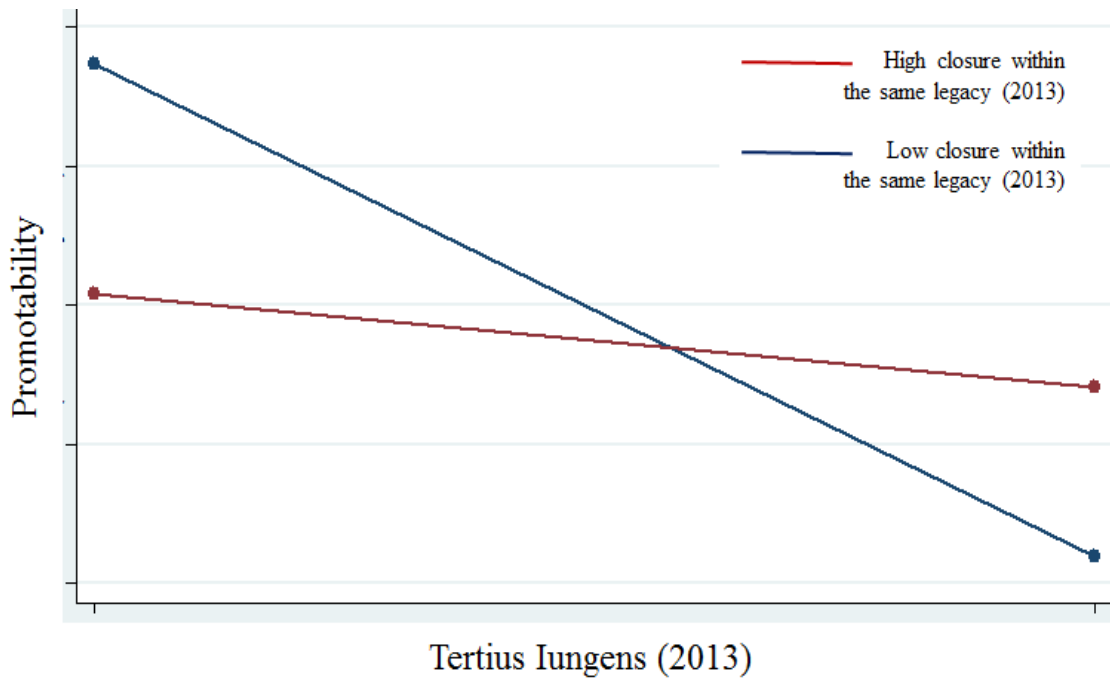
Figure 5-7. Interaction between Network Closure within the same Legacy (2014) and Tertius Iungens Orientation (2013)
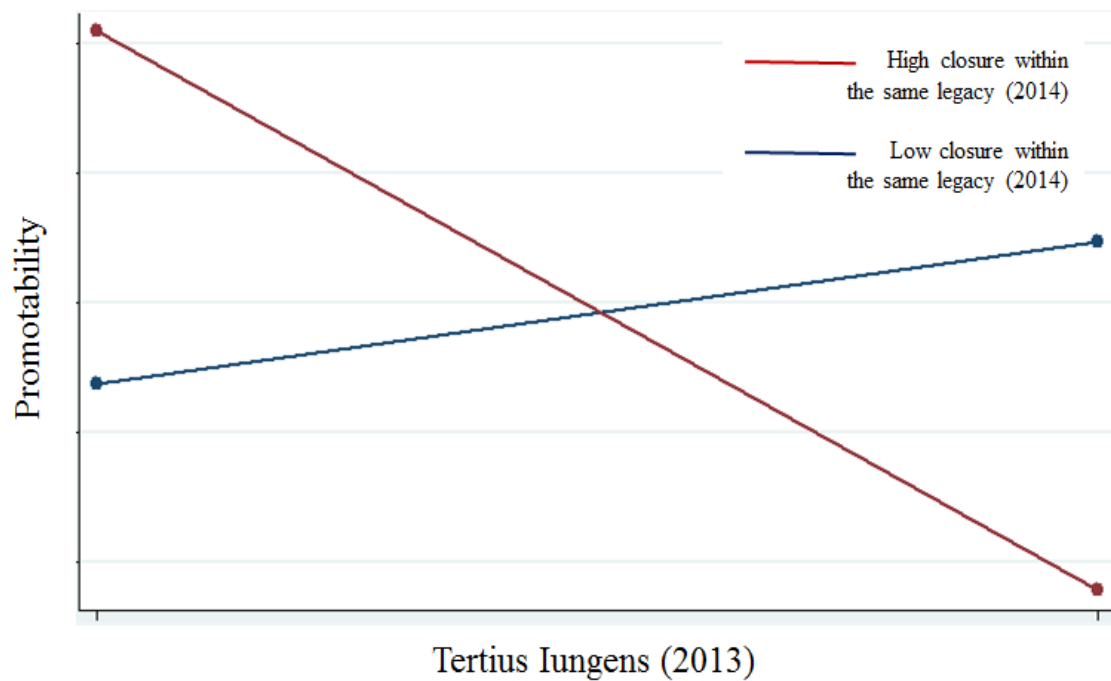
CHAPTER 6: SUPPLEMENTARY ANALYSES

Promotability vs. performance

Although my study was intended to only study promotability, I ran similar analyses predicting performance with the same set of variables. The results were similar for cross-functional network closure in that it had a positive impact on performance, but, unlike promotability, cross-legacy network closure did not predict performance. However, within-legacy network closure in 2013 was positively associated with performance assessed in 2014 (see Appendix 3 for details). This suggests that the antecedents of performance, such as within-legacy support and collaboration, may be different from those of promotability, such as cross-legacy coordination and management skills beyond one's unit. This is consistent with the difference between current role performance and promotability in this organization. Junior executives who were more focused on the status quo (i.e. exploiting current relationships) may have received high performance ratings. On the other hand, others who helped to build a newly merged organization by coordinating actions across legacy organizations may have been seen as a better leader, hence, more suitable for higher positions.

The potential effects of secondhand structural holes

My theory explains that the reason why managers become more promotable when they have more closed networks across organizational boundaries is that the top management appreciates those managers' contributions to the post-merger integration by closing the cross-boundary structural holes. Thus, I believe that firsthand brokerage (i.e. brokerage between immediate contacts) reflects the managers' direct effort better than

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secondhand brokerage (going through other employees, i.e., brokerage of contacts).

Nonetheless, secondhand structural holes may have effects beyond first-order brokerage

as Shah, Levin, and Cross (in press) suggests. I tested my models with secondhand

structural holes, measured by constraint including alters' ties (see Appendix 4 for details).

Secondhand structural holes had effects on promotability, but not more than firsthand

constraint. Also, when firsthand constraint is controlled for, the effects of secondhand

constraint disappears. This result suggests that alters' contributions may not be considered

for a focal manager's promotability assessment.

On the other hand, global betweenness centrality became significant and negative

in predicting promotability only when the network closure measures were controlled for

(see Appendix 5 for details). These results suggest that the cross-boundary network

closure measured with immediate relationships (i.e. firsthand brokerage) has effects over

and beyond the effects of secondhand brokerage.

Ties and alters vs. network structure

My argument in this study is that, to be more promotable, managers have to

connect employees from different organizational boundaries with closed triads.

Therefore, simply having many ties to the other organization may not be sufficient.

However, diversity of alters (i.e. ties to diverse others, or network heterogeneity; Reagans

& Zuckerman, 2001) or ties to high ranking executives (Oh et. al., 2006; Seibert et al.,

2001) may also have effects on promotability, making cross-boundary network closure's

effects spurious. To test this, I controlled for network heterogeneity[5] (i.e. diversity of ties

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[5] I used Blau's index of heterogeneity to measure network heterogeneity. It is calculated as below:

to other legacy organization or to other functions), number of ties to top management team[6], and weighted average ranking of alters[7]. None of these were significantly associated with promotability. These results suggests that how you build up your network structure may be more important for your career during a merger than whom you are connected to. In other words, network structure is a better predictor than ties and alters.

Integration effort vs. legitimacy

The benefits of structural holes may not be exerted when the brokers are perceived as illegitimate members of the organization (e.g. females and minority members). Because illegitimate brokers may not be perceived as "insiders", the information they bring in from other social groups may not be trusted by majority members, reducing the information benefits of brokerage. Therefore, the positive effects of cross-boundary network closure might be seen as due to lack of legitimacy of managers having cross-boundary ties. However, in my study, samples were all junior executives holding director or above ranks. Many of the executives had worked for the organization for a long time (mean tenure = 9.36 years). Also, controlling for gender and minority did not change cross-boundary network closure's effects on promotability. Thus,

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$(1-\sum p_i^2)$, where p_i is the proportion of an employee's contacts in each of the i categories. The larger the value is, the more diverse the employee's contacts are. I calculated the indices for both legacy organizations (two categories: Luxury and Standard), and functions (fifteen categories).
[6] Top management team consisted of seven (2013) or eight (2014) members including the CEO, COO, CFO, and CHRO. Since they rated the promotability and performance for the junior executives, relationships with them might have positive impacts on the ratings. I counted the number of each junior executive's ties to the top management team members for the analysis.
[7] Since higher ranking employees were rarer than lower ranking employees, using simple average may be misleading. For example, if Employee A has 50 contacts whose rankings are all level 1 and Employee B has 48 level-1 contacts and 2 level-3 contacts, the average ranking of contacts for Employees A and B would not be very different. The weighted average ranking of contacts of i, $x_i = \sum j * N_j * (N_T/R_j) * / \sum j * (N_T/R_j)$, where N_T is total number of employees, R_j is number of employees in ranking j, and N_j is number of employee i's contacts in ranking j.

legitimacy is a less of an issue in this case.

CHAPTER 7: DISCUSSION

My hypothesis that managers who increase network closure across identity boundaries (i.e., legacy organizations) are more likely to be promotable was supported as expected, while the effects of network closure across knowledge boundaries (i.e., functional departments), which were predicted to be detrimental, were in fact *positive* for manager's promotability. These results suggest that a newly-merged organization needs faster, more effective post-merger integration as exemplified through closed networks, rather than the knowledge creation and information diversity inherent in open networks.

The primacy of integration needs over information benefits during a merger becomes more evident when we consider the test results from the base hypothesis. While high managerial network constraint immediately following the merger ratification (i.e., at T1) was detrimental to promotability, as suggested by previous research, the effects disappear a year after the merger (i.e., at T2). Managers with open networks might have had a better chance for promotion in the beginning of the merger process because the organization did not have serious post-merger integration issues yet. In such situations, the career benefits of open networks, such as access to diverse information and control, might have been more influential than the benefits of closed networks, such as easier coordination and collaboration, as has been found in previous studies of stable organizations. However, the need for network closure may have arisen as the organization underwent post-merger integration problems a year later, such as internal conflicts and misunderstandings between legacy organizations due to culture clashes and a general struggle with creating a new superordinate identity (Vaara, 2002). Thus, the positive effects of both open networks and closed networks on managers' career may

have cancelled each other out, making the effects of network constraint insignificant at T2.

Similarly, I did not find significantly negative effects for network closure within an organizational boundary on managers' promotability. This may suggest that the need for mutual trust and identity during a merger becomes as important as information benefits within a boundary, if not more important as it is across boundaries. Mergers can change the careers of employees and managers drastically (Ghauri & Buckley, 2003). Confused and frustrated by disruptive merger processes, employees may emotionally detach from work or consider leaving the organization (Jetten, O'Brien, & Trindall, 2002; Ullrich & van Dick, 2007). These employees might need socioemotional support from their co-workers and leaders to reinforce their organizational identity and to stay in the organization (Iverson & Pullman, 2000). Therefore, managers might need both closed and open networks in balance to be rated as more promotable, which is probably the reason why I did not find significant effects of network closure within a boundary on managers' promotability.

The moderating effects of rank and tertius iungens orientation at T1 are also suggestive. Low-ranking managers were considered more promotable at T1 when they were brokering across many functional boundaries, but the effect disappears at T2. Meanwhile, higher-ranking managers who increased structural holes were more promotable at T2. This may mean that higher-ranking managers are expected to oversight more knowledge boundaries that are disparate enough not to need direct relationships, whereas lower-ranking managers play integrating roles between knowledge boundaries as the merger process rolls out. On the other hand, higher tertius iungens orientation at T1

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strengthened negative effects of both closed networks across knowledge boundaries and within an identity boundary. High tertius iungens orientation at T1 (i.e., a manager oriented toward joining two unconnected individuals) did not mean that a manager would have more closed networks at T2 as the correlation between tertius iungens orientation at T1 and network constraint at T2 was not positive (ρ = -0.23). However, this result might suggest that top management still appreciated the manager's attempts to bring people together.

Overall, these results are consistent with Burt and Merluzzi's (2016) concept of network oscillation. Network oscillation refers to a person's alternating open and closed networks. Burt and Merluzzi (2016) found that oscillating between open and closed networks from one period to another strongly enhanced network's effects on performance, while stable networks had no association with performance. This suggests that individuals may adjust their networks to the environment to maximize the network advantage. In the context of merger, managers might have to close their open networks to meet the needs for post-merger integration.

My study lays stepping-stones for future research in several ways. First, my study suggest that individuals may take advantage of closed networks rather than open networks in certain situations. Since Burt (1992) developed the concepts of structural holes versus network closure, many researchers have agreed that structural holes are helpful for individual performance and careers while network closure brings advantages to collectives (Adler & Kwon, 2002; Borgatti & Halgin, 2011). However, recent studies are discovering that structural holes have both benefits and liabilities and that whether they are good is a function of the context (e.g., Ahuja, 2000; Xiao & Tsui, 2007). Future

research should find more occasions where individuals can benefit from having closed networks. Second, my study calls for more research on individual's career outcomes during a dramatic organizational change, such as an organizational merger. Although there is much research on managers' career in stable organizations (e.g., Burt, 1992; Seibert et al., 2001), individual's career outcomes have rarely been investigated in times of abrupt organizational change. Because employees need more career-related information in a turbulent situation than in a stable, predictable situation, we need further research on individual's career in an organizational change to help employees survive the change. Future research should explore other types of organizational change than a merger and other career outcomes than promotability to fully understand individual's career in a change. Studying organizational change inevitably involves longitudinal data. Social capital research on career needs more longitudinal studies. One of my important findings is that similar network configurations may gain or lose effects on promotability as time passes by, as in network constraint. Third, my study suggests that organizational boundaries play a significant role in determining the effects of social relationship patterns. Recently, social capital research began to understand the importance of boundary spanner's role (e.g., Dokko et al., 2014; Tortoriello & Krackhardt, 2010), but it has not yet been applied to career research. Although I did not find significant influence of boundary types (i.e., knowledge and identity boundaries), I hope that future research will use my framework to explain the interplay between formal boundaries and informal networks. Finally, my study calls for more leadership research from a social network perspective. Although I did not make explicit observations on leader's roles, the results suggest that leader's effectiveness depends at least partly on the relationships between

followers.

My study has practical implications to managers of organizations undergoing a merger process. Managers may need different strategies towards networking within the organization. In an ordinary situation, maintaining open ego-networks can be a good networking strategy for a successful career. However, in a tumult of a merger, managers should demonstrate their ability as leaders to coordinate employees of different parts of the organization. Increasing closed networks across organizational boundaries can enhance managers' ability as intergroup leaders (Hogg et al., 2012) by facilitating smooth coordination among employees, and therefore, improve career prospects of the managers. Of course, they need to understand that their ranks and networking strategy (e.g., tertius iungens orientation) may change the effects of their networks.

CHAPTER 8: CONCLUSION

Our results suggest that closed networks can be more helpful than open networks for managers' career during a merger if they contribute to the merger's success. Specifically, career benefits of open networks dwindle in a newly-merged organization in need of coordination, collaboration, and strong identity, while closed networks integrating employees across boundaries can improve managers' promotability. Our study further suggests the importance of organizational context, such as knowledge and identity boundaries, and mergers, in determining the effects of personal networks and social capital. Managers should be mindful that their relationship patterns may have very different effects on their career during turbulent times compared to stable situations.

Appendix 1. Determining the threshold for email networks

I. Correlation matrices of degree centrality scores (2013) and plots

	GE1_13In deg	GE2_13In deg	GE3_13In deg	GE4_13In deg	GE5_13In deg	GE6_13In deg	GE7_13In deg	GE8_13In deg	GE9_13In deg	GE10_13I ndeg
GE1_13Indeg	1	0.974211	0.949076	0.922579	0.896181	0.873142	0.847918	0.828373	0.809101	0.792995
GE2_13Indeg	0.974211	1	0.986961	0.969407	0.949429	0.930145	0.908608	0.89142	0.874316	0.859432
GE3_13Indeg	0.949076	0.986961	1	0.988784	0.973415	0.957494	0.938682	0.923506	0.907591	0.893734
GE4_13Indeg	0.922579	0.969407	0.988784	1	0.989167	0.976545	0.961089	0.94751	0.933164	0.919804
GE5_13Indeg	0.896181	0.949429	0.973415	0.989167	1	0.990858	0.978735	0.966578	0.953899	0.941418
GE6_13Indeg	0.873142	0.930145	0.957494	0.976545	0.990858	1	0.990492	0.980828	0.969515	0.958413
GE7_13Indeg	0.847918	0.908608	0.938682	0.961089	0.978735	0.990492	1	0.991651	0.982261	0.972692
GE8_13Indeg	0.828373	0.89142	0.923506	0.94751	0.966578	0.980828	0.991651	1	0.992197	0.983594
GE9_13Indeg	0.809101	0.874316	0.907591	0.933164	0.953899	0.969515	0.982261	0.992197	1	0.991915
GE10_13Indeg	0.792995	0.859432	0.893734	0.919804	0.941418	0.958413	0.972692	0.983594	0.991915	1

2013 InDegree Correlations
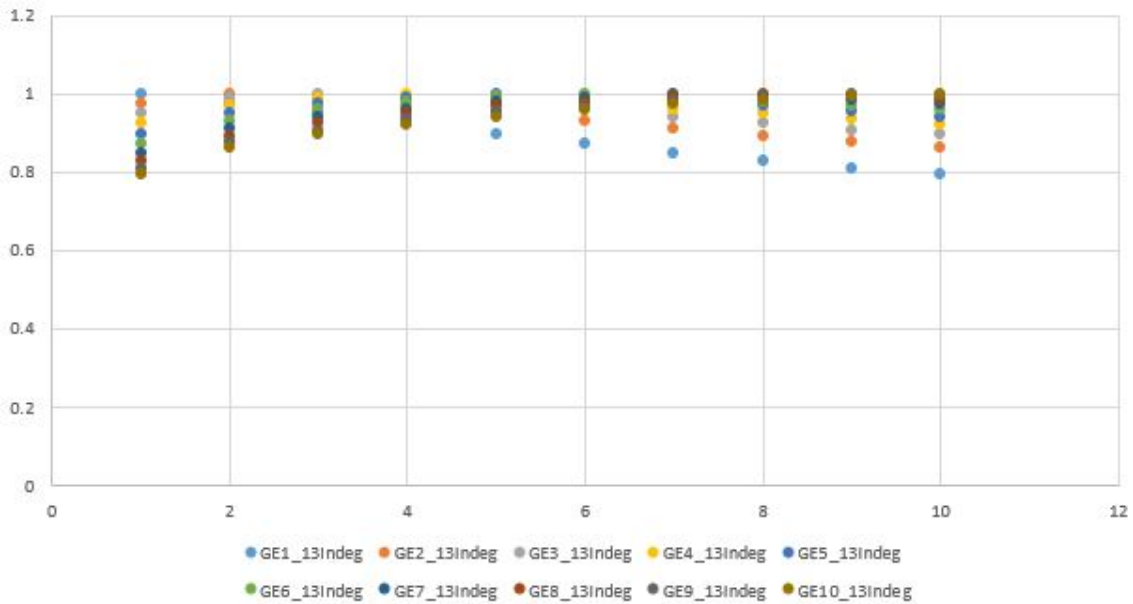
	GE1_13O utdeg	GE2_13O utdeg	GE3_13O utdeg	GE4_13O utdeg	GE5_13O utdeg	GE6_13O utdeg	GE7_13O utdeg	GE8_13O utdeg	GE9_13O utdeg	GE10_13 Outdeg
GE1_13Outdeg	1	0.979451	0.953636	0.925191	0.899399	0.876503	0.854712	0.831288	0.808064	0.786645
GE2_13Outdeg	0.979451	1	0.986224	0.966511	0.946469	0.928173	0.907972	0.886877	0.865651	0.845785
GE3_13Outdeg	0.953636	0.986224	1	0.988285	0.9733	0.957726	0.939656	0.92109	0.901954	0.882923
GE4_13Outdeg	0.925191	0.966511	0.988285	1	0.989789	0.977302	0.960854	0.944407	0.92652	0.909519
GE5_13Outdeg	0.899399	0.946469	0.9733	0.989789	1	0.99045	0.976632	0.962937	0.947343	0.932638
GE6_13Outdeg	0.876503	0.928173	0.957726	0.977302	0.99045	1	0.988381	0.976924	0.962893	0.949284
GE7_13Outdeg	0.854712	0.907972	0.939656	0.960854	0.976632	0.988381	1	0.991424	0.980511	0.968865
GE8_13Outdeg	0.831288	0.886877	0.92109	0.944407	0.962937	0.976924	0.991424	1	0.991615	0.981566
GE9_13Outdeg	0.808064	0.865651	0.901954	0.92652	0.947343	0.962893	0.980511	0.991615	1	0.991787
GE10_13Outdeg	0.786645	0.845785	0.882923	0.909519	0.932638	0.949284	0.968865	0.981566	0.991787	1

2013 OutDegree Correlations
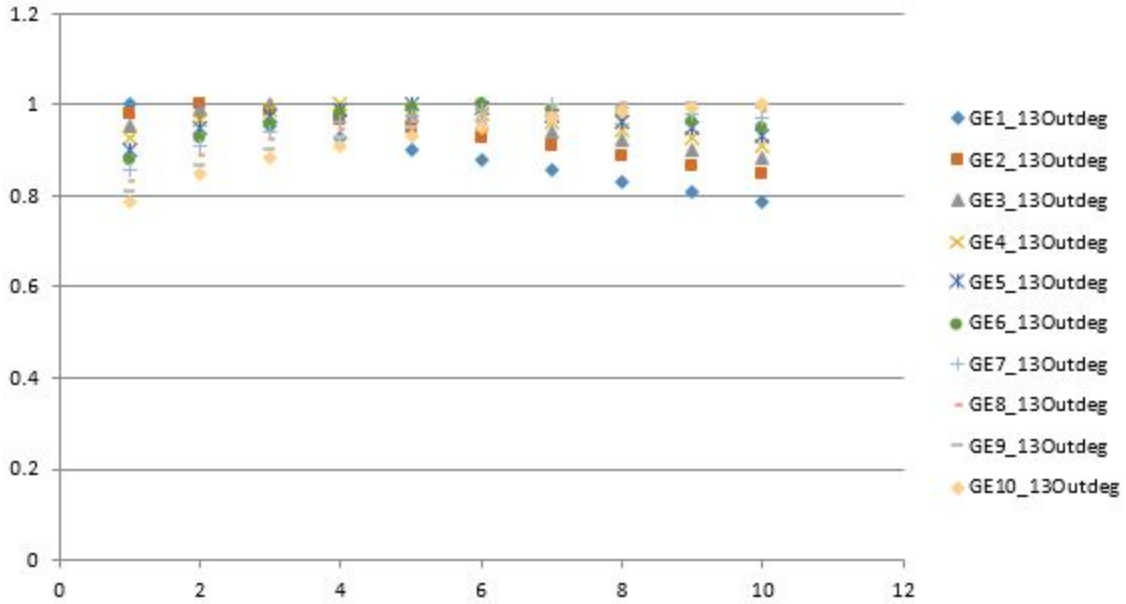
II. Correlation matrices of betweenness centrality scores (2013 and 2014) and plots

	GE1_13Bet weenness	GE2_13Bet weenness	GE3_13Bet weenness	GE4_13Bet weenness	GE5_13Bet weenness	GE6_13Bet weenness	GE7_13Bet weenness	GE8_13Bet weenness	GE9_13Bet weenness	GE10_13Bet weenness
GE1_13Betweenness	1	0.953192	0.910116	0.882047	0.829901	0.792025	0.755149	0.72619	0.699729	0.67918
GE2_13Betweenness	0.953192	1	0.974364	0.950987	0.894786	0.850587	0.816895	0.790417	0.762038	0.736476
GE3_13Betweenness	0.910116	0.974364	1	0.980329	0.931786	0.892624	0.863443	0.839417	0.807707	0.782511
GE4_13Betweenness	0.882047	0.950987	0.980329	1	0.961399	0.922695	0.891144	0.867941	0.842057	0.819114
GE5_13Betweenness	0.829901	0.894786	0.931786	0.961399	1	0.97642	0.947943	0.92715	0.903241	0.878733
GE6_13Betweenness	0.792025	0.850587	0.892624	0.922695	0.97642	1	0.975954	0.954693	0.930854	0.911048
GE7_13Betweenness	0.755149	0.816895	0.863443	0.891144	0.947943	0.975954	1	0.985362	0.965016	0.946123
GE8_13Betweenness	0.72619	0.790417	0.839417	0.867941	0.92715	0.954693	0.985362	1	0.980719	0.962867
GE9_13Betweenness	0.699729	0.762038	0.807707	0.842057	0.903241	0.930854	0.965016	0.980719	1	0.985432
GE10_13Betweenness	0.67918	0.736476	0.782511	0.819114	0.878733	0.911048	0.946123	0.962867	0.985432	1

2013 Betweenness Correlations

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	GE1_14Betweenness	GE2_14Betweenness	GE3_14Betweenness	GE4_14Betweenness	GE5_14Betweenness	GE6_14Betweenness	GE7_14Betweenness	GE8_14Betweenness	GE9_14Betweenness	GE10_14Betweenness
GE1_14Betweenness	1	0.962505	0.923691	0.884857	0.858383	0.816992	0.799242	0.761718	0.716202	0.693641648
GE2_14Betweenness	0.962505	1	0.966178	0.920938	0.896878	0.864789	0.848599	0.813285	0.76868	0.743459275
GE3_14Betweenness	0.923691	0.966178	1	0.972649	0.950771	0.920336	0.903999	0.863021	0.81199	0.781627
GE4_14Betweenness	0.884857	0.920938	0.972649	1	0.980706	0.951924	0.926485	0.881268	0.828146	0.801674
GE5_14Betweenness	0.858383	0.896878	0.950771	0.980706	1	0.974209	0.951701	0.907479	0.855324	0.829189
GE6_14Betweenness	0.816992	0.864789	0.920336	0.951924	0.974209					
GE7_14Betweenness	0.799242	0.848599	0.903999	0.926485	0.951701					
GE8_14Betweenness	0.761718	0.813285	0.863021	0.881268	0.907479					
GE9_14Betweenness	0.716202	0.76868	0.81199	0.828146	0.855324					
GE10_14Betweenness	0.693642	0.743459	0.781627	0.801674	0.829189					

2014 Betweenness Correlations

- GE1_14Betweenness
- GE2_14Betweenness
- GE3_14Betweenness
- GE4_14Betweenness
- GE5_14Betweenness
- GE6_14Betweenness
- GE7_14Betweenness
- GE8_14Betweenness
- GE9_14Betweenness
- GE10_14Betweenness

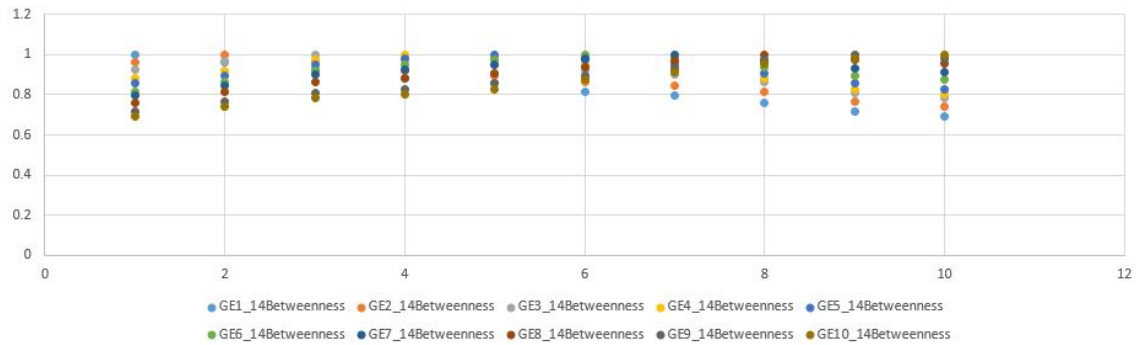III. Correlation matrices of eigenvector centrality scores (2013 and 2014) and plots

	GE1_13Eigenvec	GE2_13Eigenvec	GE3_13Eigenvec	GE4_13Eigenvec	GE5_13Eigenvec	GE6_13Eigenvec	GE7_13Eigenvec	GE8_13Eigenvec	GE9_13Eigenvec	GE10_13Eigenvec
GE1_13Eigenvec	1	0.981807	0.955346	0.934597	0.91003	0.887946	0.863586	0.85071	0.827009	0.80778
GE2_13Eigenvec	0.981807	1	0.98851	0.975102	0.957298	0.939511	0.919287	0.908245	0.888243	0.871258
GE3_13Eigenvec	0.955346	0.98851	1	0.993024	0.981822	0.9689	0.953728	0.944254	0.928121	0.912317
GE4_13Eigenvec	0.934597	0.975102	0.993024	1	0.992791	0.982917	0.970419	0.96312	0.948476	0.932776
GE5_13Eigenvec	0.91003	0.957298	0.981822	0.992791	1	0.994119	0.984559	0.977631	0.965949	0.950955
GE6_13Eigenvec	0.887946	0.939511	0.9689	0.982917	0.994119	1	0.993247	0.986525	0.976963	0.963075
GE7_13Eigenvec	0.863586	0.919287	0.953728	0.970419	0.984559	0.993247	1	0.994362	0.987132	0.974972
GE8_13Eigenvec	0.85071	0.908245	0.944254	0.96312	0.977631	0.986525	0.994362	1	0.99428	0.984113
GE9_13Eigenvec	0.827009	0.888243	0.928121	0.948476	0.965949	0.976963	0.987132	0.99428	1	0.992497
GE10_13Eigenvec	0.80778	0.871258	0.912317	0.932776	0.950955	0.963075	0.974972	0.984113	0.992497	1

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2013 Eigenvector Correlations
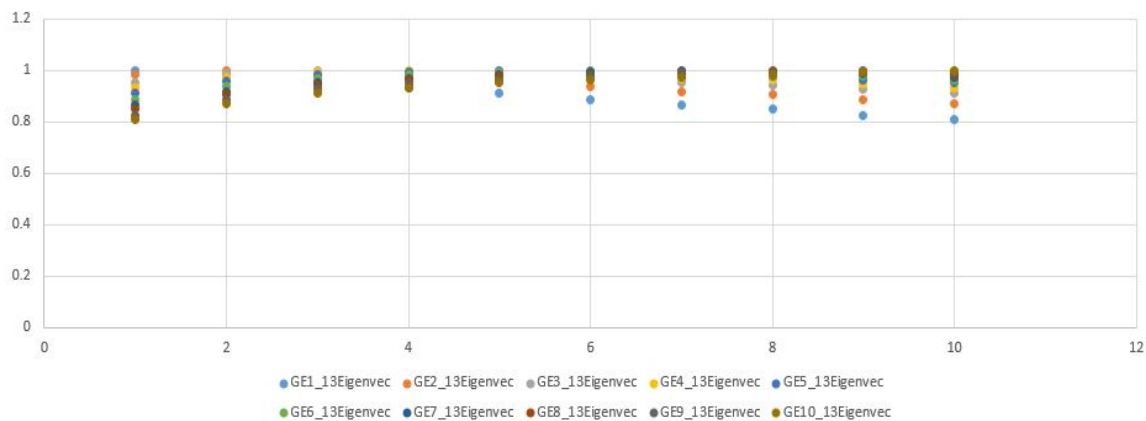
Legend: GE1_13Eigenvec, GE2_13Eigenvec, GE3_13Eigenvec, GE4_13Eigenvec, GE5_13Eigenvec, GE6_13Eigenvec, GE7_13Eigenvec, GE8_13Eigenvec, GE9_13Eigenvec, GE10_13Eigenvec

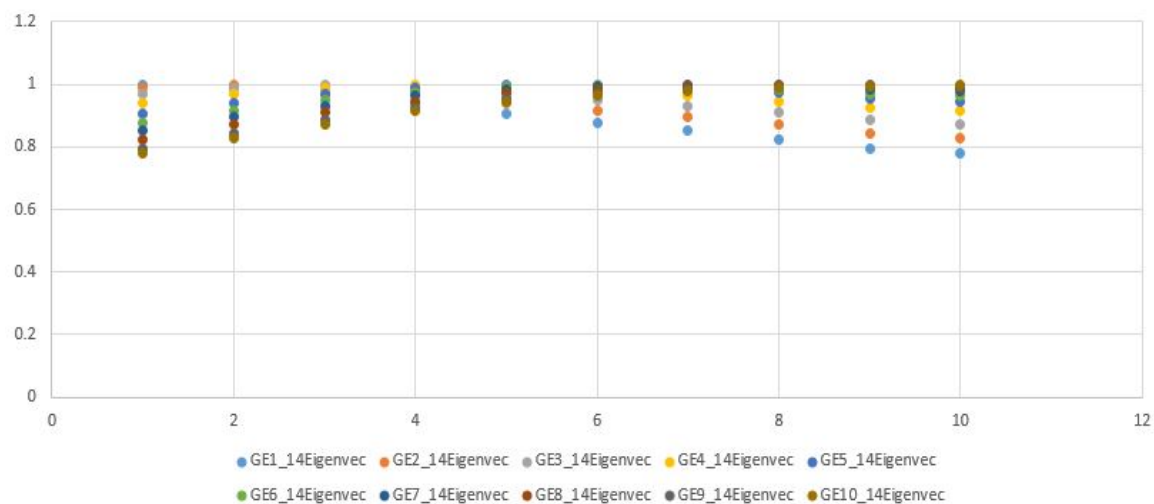|	GE1_14Eigenvec	GE2_14Eigenvec	GE3_14Eigenvec	GE4_14Eigenvec	GE5_14Eigenvec	GE6_14Eigenvec	GE7_14Eigenvec	GE8_14Eigenvec	GE9_14Eigenvec	GE10_14Eigenvec
GE1_14Eigenvec	1	0.987215	0.967727	0.941399	0.905621	0.877165	0.852085	0.82558	0.793637	0.780609
GE2_14Eigenvec	0.987215	1	0.989789	0.970916	0.942306	0.91732	0.894926	0.870991	0.841429	0.829264
GE3_14Eigenvec	0.967727	0.989789	1	0.990322	0.970496	0.950347	0.931401	0.911004	0.885051	0.874116
GE4_14Eigenvec	0.941399	0.970916	0.990322	1	0.989386	0.975452	0.961921	0.945616	0.924016	0.914284
GE5_14Eigenvec	0.905621	0.942306	0.970496	0.989386	1	0.99326	0.984111	0.972434	0.954834	0.946835
GE6_14Eigenvec	0.877165	0.91732	0.950347	0.975452	0.99326	1	0.993706	0.985028	0.971412	0.964726
GE7_14Eigenvec	0.852085	0.894926	0.931401	0.961921	0.984111	0.993706	1	0.994459	0.984412	0.977936
GE8_14Eigenvec	0.82558	0.870991	0.911004	0.945616	0.972434	0.985028	0.994459	1	0.993933	0.987985
GE9_14Eigenvec	0.793637	0.841429	0.885051	0.924016	0.954834	0.971412	0.984412	0.993933	1	0.994567
GE10_14Eigenvec	0.780609	0.829264	0.874116	0.914284	0.946835	0.964726	0.977936	0.987985	0.994567	1

2014 Eigenvector Correlations

Legend: GE1_14Eigenvec, GE2_14Eigenvec, GE3_14Eigenvec, GE4_14Eigenvec, GE5_14Eigenvec, GE6_14Eigenvec, GE7_14Eigenvec, GE8_14Eigenvec, GE9_14Eigenvec, GE10_14Eigenvec
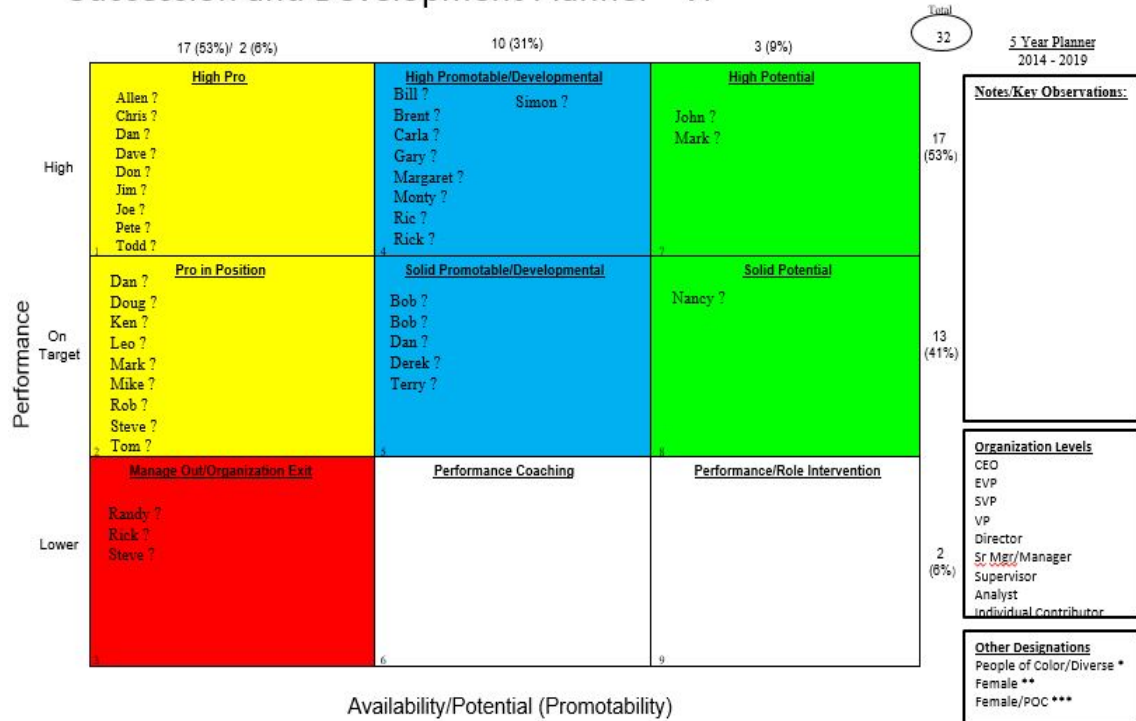
Appendix 2. The "Ninebox" Information (Performance X Promotability Matrix)

Below are example ratings of the "ninebox" information for vice president level executives rated by top management team in the Fall of 2014. Names were anonymized.

Succession and Development Planner - VP

	17 (53%)/ 2 (6%)	10 (31%)	3 (9%)	Total 32	5 Year Planner 2014 - 2019
High	**High Pro** Allen ? Chris ? Dan ? Dave ? Don ? Jim ? Joe ? Pete ? Todd ?	**High Promotable/Developmental** Bill ? Simon ? Brent ? Carla ? Gary ? Margaret ? Monty ? Ric ? Rick ?	**High Potential** John ? Mark ?	17 (53%)	**Notes/Key Observations:**
On Target	**Pro in Position** Dan ? Doug ? Ken ? Leo ? Mark ? Mike ? Rob ? Steve ? Tom ?	**Solid Promotable/Developmental** Bob ? Bob ? Dan ? Derek ? Terry ?	**Solid Potential** Nancy ?	13 (41%)	
Lower	**Manage Out/Organization Exit** Randy ? Rick ? Steve ?	Performance Coaching	Performance/Role Intervention	2 (6%)	**Organization Levels** CEO EVP SVP VP Director Sr Mgr/Manager Supervisor Analyst Individual Contributor

Performance (vertical axis)
Availability/Potential (Promotability) (horizontal axis)

Other Designations
People of Color/Diverse *
Female **
Female/POC ***

Also, Luxury Standard had stated role contributions that were required for individuals to develop in order to be promoted to the next level as shown in below table. For example, director level positions required "expert functional manager and leader" for current role contribution. If a director wants to be promoted to a vice president, she is required to develop a "shift from functional orientation to multi-functional performance." The TMT assessed junior executives' performance and potential twice a year according to these criteria. Therefore, a marketing director who is very specialized in her own areas and products, but does not understand others' would receive the highest performance rating but less favorable potential (i.e. promotability) rating because the TMT might not find her ready for a higher position although she is good at her current position. These

assessments went into a nine category assessment (i.e. a three by three matrix) labeled as, for example, "high potential (high in both current performance and promotability)", "high pro (high in performance, but low in promotability)", and "manage out/organization exit (low in both performance and promotability)." These labels helped the TMT members to assess junior executives according to their relative standing in performance and promotability.

Level	General Role	Timeframe orientation	Critical Skill Growth between levels
Director (first level executive)	• Manages managers within sub-function; applies strategies across functions and business units • Proficient strategist, blending functional strategy with overall business strategy • Assists VP-level executives (and above) in developing, testing and directing implementation of new products, processes, standards and/or operational plans • Collaborates across functions and business units to coordinate initiatives and resources to accomplish functional goals, while accounting for other function's needs • Recognized as a role model and facilitator of the company's values • May spend 10%-20% of time performing similar tasks as subordinates and lower level individuals	• Mid Term (quarterly to annually) • Applied strategy	• *Shifts from short-term operational perspective to annual strategic perspective* • Expert functional manager and leader • Increased managerial maturity – adoption of mid-term perspective • Demonstrates communications and collaboration skills required to work across business lines and functions • Ability to manage and implement change • Translates strategic business needs and develops others
Vice President	• Leads multiple sub-functions or business unit areas for enterprise • Skilled business strategist and cross-functional performance facilitator • Develops processes, standards and operational plans in support of company's business strategies with direct impact on business unit/function overall results • Builds functional or group capabilities • Takes charge of integrating functions and performance • Must be able to utilize staff functions	• Mid Term to Annual (quarterly to annually) • Applied strategy	• *Shift from functional orientation to multi-functional performance* • Must focus on broader company perspective and profitability versus functional performance • Recognized outside of function for knowledge and capability • Must address functional capabilities for future needs

The company made it clear that the information was for succession plan. Thus, although concrete methods may differ, any organization that employs a certain form of internal succession planning should have similar assessment regarding executive promotability. Promotability was assessed independently from performance in the current position ($r=.25$). Higher positions required greater managerial and leadership skills, and multi-functional perspectives. Those new skills for higher positions may not be commensurate with current performance, which was assessed according to the current role contribution requirements.

Appendix 3. Ordinal Logistic Regression Predicting Performance

	Base Model	Model 1
Control Variable		
Age	-0.05 (0.03)†	-0.13 (0.07)*
Promotability	0.20 (0.37)	-1.60 (0.95)†
Gender (1 = female)	-0.15 (0.47)	1.70 (1.20)
Days from Last Salary Change	-0.01 (0.01)	-0.02 (0.01)*
Legacy (1 = Luxury legacy)	-0.06 (0.36)	-3.11 (1.30)*
Functional Integration Order	0.17 (0.26)	2.45 (0.90)**
Independent Variable		
Constraint (2013)		-53.13 (21.13)*
Constraint (2014)		8.96 (8.93)
Number of Closed Triads within the Same Function (2013)		0.05 (0.04)
Number of Closed Triads within the Same Function (2014)		-0.06 (0.04)
Number of Closed Triads between Functions (2013)		0.03 (0.02)†
Number of Closed Triads between Functions (2014)		0.05 (0.02)*
Total Number of Triads within the Same Function (2013)		-0.02 (0.01)†
Total Number of Triads within the Same Function (2014)		0.01 (0.01)
Total Number of Triads between Functions (2013)		-0.01 (0.01)
Total Number of Triads between Functions (2014)		-0.01 (0.01)*
Rank		-2.79 (1.01)**
Tertius Iungens (2013)		2.53 (1.17)*
Tertius Iungens (2014)		-3.07 (1.29)*

		Base Model	Model 1
Fit Statistics			
	N	72	72
	Pseudo R^2	0.20	0.46

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$

Appendix 3. Ordinal Logistic Regression Predicting Performance (continued)

	Base Model	Model 1
Control Variable		
Age	-0.05 (0.03)†	-0.08 (0.05)
Promotability	0.20 (0.37)	-0.42 (0.72)
Gender (1 = female)	-0.15 (0.47)	-0.85 (1.02)
Days from Last Salary Change	-0.01 (0.01)	-0.02 (0.01)†
Legacy (1 = Luxury legacy)	-0.06 (0.36)	-2.36 (1.09)*
Functional Integration Order	0.17 (0.26)	0.95 (0.65)
Independent Variable		
Constraint (2013)		-19.66 (13.62)
Constraint (2014)		5.04 (7.38)
Number of Closed Triads within the Same Legacy (2013)		0.03 (0.02)*
Number of Closed Triads within the Same Legacy (2014)		0.02 (0.01)
Number of Closed Triads between Legacy Organizations (2013)		-0.02 (0.03)
Number of Closed Triads between Legacy Organizations (2014)		-0.01 (0.02)
Total Number of Triads within the Same Legacy (2013)		-0.01 (0.01)
Total Number of Triads within the Same Legacy (2014)		-0.01 (0.01)
Total Number of Triads between Legacy Organizations (2013)		0.01 (0.01)
Total Number of Triads between Legacy Organizations (2014)		0.01 (0.01)
Rank		-0.95 (0.60)
Tertius Iungens (2013)		1.17 (0.87)
Tertius Iungens (2014)		-1.58 (0.90)†

Fit Statistics

		Base Model	Model 1
	N	72	72
	Pseudo R^2	0.20	0.34

† $p < 0.1$, * $p < 0.05$

Appendix 4. Using secondhand structural holes

	Model
Control Variable	
Age	-0.20 (0.05)***
Performance	-0.90 (0.74)
Gender (1 = female)	-0.07 (1.04)
Days from Last Salary Change	-0.01 (0.01)
Legacy (1 = Luxury legacy)	-0.94 (0.97)
Functional Integration Order	-0.33 (0.66)
Independent Variable	
Secondhand Constraint (2013)	-73.48 (30.11)*
Secondhand Constraint (2014)	12.46 (16.15)
Number of Closed Triads within the Same Function (2013)	-0.01 (0.03)
Number of Closed Triads within the Same Function (2014)	0.02 (0.03)
Number of Closed Triads between Functions (2013)	0.01 (0.02)
Number of Closed Triads between Functions (2014)	0.02 (0.01)†
Total Number of Triads within the Same Function (2013)	0.01 (0.01)
Total Number of Triads within the Same Function (2014)	-0.01 (0.01)
Total Number of Triads between Functions (2013)	-0.01 (0.01)
Total Number of Triads between Functions (2014)	-0.01 (0.01)
Rank	-1.81 (0.71)*
Tertius Iungens (2013)	1.59 (0.98)
Tertius Iungens (2014)	-0.78 (0.88)

Fit Statistics

	N	72
	Pseudo R^2	0.39

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix 4. Using secondhand structural holes (continued)

	Model
Control Variable	
Age	-0.28 (0.08)***
Performance	-0.35 (0.75)
Gender (1 = female)	-0.42 (1.00)
Days from Last Salary Change	0.01 (0.01)
Legacy (1 = Luxury legacy)	-1.40 (1.34)
Functional Integration Order	-1.11 (0.67)†
Independent Variable	
Secondhand Constraint (2013)	-105.42 (37.80)**
Secondhand Constraint (2014)	24.56 (20.47)
Number of Closed Triads within the Same Legacy (2013)	-0.01 (0.01)
Number of Closed Triads within the Same Legacy (2014)	0.02 (0.01)
Number of Closed Triads between Legacy Organizations (2013)	0.01 (0.04)
Number of Closed Triads between Legacy Organizations (2014)	0.07 (0.03)*
Total Number of Triads within the Same Legacy (2013)	-0.01 (0.01)
Total Number of Triads within the Same Legacy (2014)	0.01 (0.01)
Total Number of Triads between Legacy Organizations (2013)	-0.01 (0.01)
Total Number of Triads between Legacy Organizations (2014)	-0.01 (0.01)*
Rank	-2.62 (0.89)**
Tertius Iungens (2013)	2.19 (1.12)†
Tertius Iungens (2014)	-0.48 (1.01)

Fit Statistics

	N	72
	Pseudo R^2	0.48

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix 5. Using betweenness centrality

	Model
Control Variable	
Age	-0.24 (0.07)***
Performance	-1.25 (0.87)
Gender (1 = female)	-0.47 (0.99)
Days from Last Salary Change	-0.01 (0.01)
Legacy (1 = Luxury legacy)	-0.45 (0.97)
Functional Integration Order	0.56 (0.78)
Independent Variable	
Betweenness Centrality (2013)	0.01 (0.01)
Betweenness Centrality (2014)	-0.01 (0.01)*
Number of Closed Triads within the Same Function (2013)	0.02 (0.03)
Number of Closed Triads within the Same Function (2014)	0.01 (0.03)
Number of Closed Triads between Functions (2013)	-0.01 (0.02)
Number of Closed Triads between Functions (2014)	0.01 (0.01)
Total Number of Triads within the Same Function (2013)	-0.01 (0.01)
Total Number of Triads within the Same Function (2014)	-0.01 (0.01)
Total Number of Triads between Functions (2013)	0.01 (0.01)
Total Number of Triads between Functions (2014)	0.01 (0.01)
Rank	-0.68 (0.52)
Tertius Iungens (2013)	0.70 (0.86)
Tertius Iungens (2014)	-0.44 (0.82)

Fit Statistics		
	N	72
	Pseudo R^2	0.42

$* p < 0.05$, $*** p < 0.001$

Appendix 5. Using betweenness centrality (continued)

	Model
Control Variable	
Age	-0.26 (0.08)**
Performance	-0.80 (0.81)
Gender (1 = female)	-0.22 (0.98)
Days from Last Salary Change	-0.01 (0.01)
Legacy (1 = Luxury legacy)	-0.19 (1.23)
Functional Integration Order	-0.56 (0.73)
Independent Variable	
Betweenness Centrality (2013)	0.01 (0.01)*
Betweenness Centrality (2014)	-0.01 (0.01)*
Number of Closed Triads within the Same Legacy (2013)	-0.01 (0.02)
Number of Closed Triads within the Same Legacy (2014)	-0.01 (0.01)
Number of Closed Triads between Legacy Organizations (2013)	0.02 (0.04)
Number of Closed Triads between Legacy Organizations (2014)	0.05 (0.02)*
Total Number of Triads within the Same Legacy (2013)	-0.01 (0.01)
Total Number of Triads within the Same Legacy (2014)	0.01 (0.01)*
Total Number of Triads between Legacy Organizations (2013)	-0.01 (0.01)
Total Number of Triads between Legacy Organizations (2014)	-0.01 (0.01)
Rank	-0.89 (0.52)†
Tertius Iungens (2013)	0.46 (0.89)
Tertius Iungens (2014)	0.35 (0.89)

Fit Statistics

	N	72
	Pseudo R^2	0.46

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$

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