Leadership behaviors in cross-boundary information sharing and integration: comparing the US and China

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LEAERSHIP BEHAVIORS IN CROSS-BOUNDARY INFORMATION SHARING AND INTEGRATION: COMPARING THE US AND CHINA

By

Lei Zheng

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Leadership Behavior in Cross-boundary Information Sharing and Integration:
Comparing the US and China

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Lei Zheng

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Abstract

This study comprises a comparative analysis between the US and China regarding public sector leadership behaviors in the context of cross-boundary information sharing and integration. Based on the literature on leadership, public sector information sharing, and cross-cultural analysis, the research begins with an original case study in China set in the product safety and food safety policy domain. The case explores leadership behaviors of middle-level information leaders in the technological, organizational, and legal context of cross-boundary information sharing in this domain. Qualitative data were collected from in-depth interviews and government documents. The data were analyzed with an inductive approach to identify leadership patterns and boundary-crossing frameworks. The case study examines the nature of boundaries and associated situational variables, traits, power, behaviors, interventions and success criteria.

The patterns observed in the Chinese case were then compared to the results of previously developed and published case studies and related analysis in the US to identify similarities and differences and as well as the impact of macro cultural, political, economic, and social factors on those similarities and differences.

This study extends current knowledge about leadership behavior in cross-boundary information sharing developed in the US into international contexts and new policy domains. First, the study expands the concepts and understanding of boundaries to include a variety of vertical and horizontal factors including new factors such as level of development. It also describes how interaction among boundary factors contribute to situational complexity and associated leadership challenges. The study further identifies essential similarities in leadership between the US and China. It also demonstrates how
cultural values can affect and interact with leader traits, power, behaviors, interventions, and success criteria both directly and indirectly to explain key differences between leadership in the two countries. Finally, practical implications for leaders in both China and the US are discussed, and directions for future studies are also suggested.
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Governments around the world have been challenged by public problems like product quality, food safety, environmental protection, public health, national security, and disaster response for centuries. The development of globalization further magnifies the impacts of those issues by extending their effects beyond traditional national borders, and hence makes those issues more complex and dynamic. The outbreak of product quality issues in summer 2007 with toys that were made in China and exported into the US is just one example among many incidents of this type of transnational issue. Solving those problems required collaboration across organizational boundaries within one particular country, as well as across national and jurisdictional boundaries. Researchers have recognized information sharing as a critical enabler for facilitating such collaboration. Among a number of factors for achieving success of cross-boundary information sharing, effective leadership is identified by many as one of the key variables for fostering these initiatives (Eglene et al., 2007; Gil-Garcia et al., 2007).

Comparative studies across countries could help to solve transnational problems by fostering better understanding among countries involved through recognizing the similarities and differences between their practices, such as leadership behaviors. Before starting to solve the problem, a public leader may need to ask him- or herself a series of questions: How do leaders act and behave in the context of cross-boundary information sharing initiatives in another country? What works there? What does not work there? Do I really understand what happened and why? After all, effective leadership behaviors in one country may be significantly different from those in another country.
Increasing globalization has made it more important to learn about effective leadership in different cultures (House et al., 1997). International competition and the need to trade more effectively overseas have forced most corporations and governments to become increasingly culturally sensitive and globally minded (Kim, 1999). Leaders have also been increasingly confronted with the need to influence people from other cultures, and successful influence requires a good understanding of these cultures. On the other hand, leaders should also be able to understand how people from different cultures view them and interpret their actions (Yukl, 2002).

Over the last century, a great number of researchers have studied the topic of effective leadership behaviors in Western countries, especially in the US, and significant progress has been made towards understanding leadership. However, American-derived leadership theory reflects the individualistic culture of the US, and may not be a firm base upon which to build leadership theories of universal applicability (Smith et al., 1996). In addition, most leadership theories have been developed in the private sector, rather than in the public sector. Furthermore, only a few of them have addressed leadership in the context of cross-boundary information sharing, which is different from leadership within a single bureaucratic organization. With regard to comparative leadership studies, although researchers have developed a number of useful cross-national leadership theories and conducted a series of empirical tests, again, only a few of them are targeted at leaders in the public sector, and even fewer were conducted in the context of cross-boundary information sharing or the collaborative network setting. Up to now, no studies have been conducted on the topic of effective leadership behaviors in the context of cross-boundary information sharing from a comparative perspective. This research begins
to fill this gap and explore this area by conducting a comparative case study between the US and China.

This study could have substantial practical value. It could help leaders in one country to better understand and explain the leadership behaviors in cross-boundary information sharing, as well as its context, in another country. With more knowledge and better appreciation about the issue, leaders could no longer have to assume the situation and take things for granted, which often leads to wrong decisions. Better understanding could also make cross-national dialogue easier, and lead to better policymaking and management for transnational collaboration between the countries involved. In addition, transplanting the practice of one country to another (usually from developed countries to developing countries) without serious consideration of the cultural, political, economic, and social differences of the two countries can be risky. Comparative studies could then help mitigate the risk.

The potential academic value of the research can be quite significant as well. The study can extend current knowledge about effective leadership behaviors in cross-boundary information sharing to a new international context and new policy domains by including more variables which are usually not included in current studies. The findings of the research can also contribute to improving comparative research methods.
Chapter Two: Literature Review

This literature review will start with an examination of classic leadership theories developed over the last century, followed by a scan of the unique context of cross-boundary information sharing. Studies about cross-boundary leadership will then be reviewed before extending the literature of leadership studies into a cross-national perspective.

I. Classic Leadership Theories

1. Definition of Leadership

Many researchers have been trying to define the concept of leadership from various perspectives and with different interests. As Stogdill (1974, p.259) has concluded: “there are almost as many definitions of leadership as there are persons who attempted to define the concept”. However, so far no consensus on the definition has been reached yet due to the complexity and ambiguity of the concept. Karmel (1978, p.476) commented that: “It is consequently very difficult to settle on a single definition of leadership that is general enough to accommodate these many meanings and specific enough to serve as an operationalization of the variable.”

Chemers (1997, p.1) thought that a widely accepted definition might be: “leadership is a process of social influence in which one person is able to enlist the aid and support of others in the accomplishment of a task.” The major points of this definition are that it is “a group activity, based on social influence, and revolves around a common task.” (p.1) After comparing various definitions of leadership, Yukl (2002) concluded that despite
deep disparities most definitions do share some similar assumptions, in which leadership “involves a process of intentional influence exerted by a leader over other people to guide, structure, and facilitate activities and relationships in a group or organization” (p.2). Yukl then presented a broader definition: “Leadership is the process of influencing others to understand and agree about what needs to be done and how it can be done effectively, and the process of facilitating individual and collective efforts to accomplish the shared objectives” (p.7). House and his colleagues (2004) defined organizational leadership as the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organizations of which they are members.

2. Leadership Effectiveness

Conceptions of leader effectiveness differ as well. Given the various measures of effectiveness, it is difficult to choose an appropriate and relevant set of measures. The process of selection will be a subjective judgment and may reflect a researcher’s own perception and preference. Yukl (2002) summarized some measures commonly used to assess leadership effectiveness: organization performance; the attitude of followers toward the leader; and the leader’s contribution to the quality of group processes from the perspective of followers or outside observers.

3. Classification of Leadership Theories

As a subject of research in organization behavior, there have been enormous as well as puzzling literatures about leadership. Chemers (1997) organized leadership theories by earlier theories (contingency theories, transactional theories, transformational leadership, and cognitive approaches, etc.). Storey (2004) summarized the trend of main leadership theories in chronological order as trait theory, behavioral theories, situational and
contingency theory, exchange and path-goal models, “new leadership” characterized by charismatic and visionary leadership, constructive theory, leadership within learning organizations, and post-charismatic and post-transformational leadership. Yukl (2002) identified three variables that are most often emphasized in the studies of leadership: (1) characteristics of the leader; (2) characteristics of the followers; and (3) characteristics of the situation. Based on these three types of variables, he then offered a comprehensive, while still succinct, classification: the power-influence approach, the trait approach, the behavior approach, the situational approach, and the integrative approach. As discussed below, the review of major leadership theories in this study will be based on Yukl’s classification with some slight adjustment.

A. Power-influence approach

This approach examines the type and amount of power possessed and exercised by the leader, as well as influence processes between leaders and other people including subordinates, peers, superiors and outside stakeholders (Yukl, 2002). Weber (1947) identified three types of authorities: traditional authority, legal-rational authority, and charismatic authority. However, Yukl (2002) suggested that power and authority have been used in different ways by different researchers, and this has created considerable conceptual confusion. He further differentiated the two concepts, in which power involves the capacity to influence the attitude and behavior of people, while authority is associated with a position in an organization or social system from which to influence others (Yukl, 2002). Authority sometimes is called “legitimate power” (French & Raven, 1959).
French and Raven (1959) classified five different types of power sources: reward power, coercive power, legitimate power, expert power, and referent power. Power sources are also categorized into two types: “position power” and “personal power” (Bass, 1960; Etzioni, 1991). The former is the potential influence derived from a person’s position in the organization, and the latter is derived from the characteristics of the leader. Peabody (1962) also differentiated the concept of personal competence, experience and leadership, from the concept of formal authority, and suggested that the former modifies and conditions the exercise of the latter. Yukl and Falbe (1991) integrated those earlier typologies as well as added a few new components. In this integrated framework, position power includes legitimate power, reward power, coercive power, information power, and ecological power (i.e., control over the physical environment, technology, and organization of the work); and personal power includes referent power and expert power. With regard to the effect followers, Kelman (1958) proposed three different types of influence processes of leadership on followers, called “instrumental compliance”, “internalization”, and “personal identification”. Instrumental compliance means that a subordinate carries out an action in order to gain some tangible rewards or avoid a punishment. Internalization means that a subordinate is committed to work because the work is intrinsically desirable and correct in terms of his or her own values, beliefs and self-image. Personal identification means that a subordinate imitates a leader’s behavior or adopts the same attitude to please the leader and to be like the leader due to the underlying need for acceptance and esteem. Three outcomes of influence on followers by the level of their acceptance are: resistance, compliance, and commitment (Yukl, 2002).
In addition to studying the sources of power, researchers also examined specific types of behavior adopted to exercise influence. Eleven proactive influence tactics were identified: rational persuasion, apprising, inspirational appeals, consultation, exchange, collaboration, personal appeals, ingratiation, legitimating tactics, pressure, and coalition tactics (Yukl & Falbe, 1990; Yukl et al., 1992; Yukl & Tracey, 1992). Leaders’ power may directly affect their choice of influence tactics, and some tactics require a particular type of power to be effective. Kotter (1982) suggested that effective leaders probably use a mix of different types of power. Research also found that some of these tactics are likely to be more effective than others, and effective leaders may rely more on personal power rather than position power. However, position power is still important in determining a leader’s influence on subordinates through interacting with personal power (Yukl, 2002).

One major limitation of this power and influence approach of studying leadership is that it tends to treat each influence as an isolated episode, rather than an integral part of processes that occur in an evolving relationship between the parties. Although this approach has included some influence tactics, it has not examined other types of behaviors in the influence processes. Moreover, few researchers have studied the relationship between power and personal traits (Yukl, 2002).

B. Traits approach

The trait approach was the dominant focus of leadership studies from the early 1900s to WWII (Chemers, 1997). This approach emphasizes attributes of leaders such as personality, temperament, needs, motives, and values with the underlying assumption that
some people are natural leaders endowed with certain traits not possessed by other people (Yukl, 2002). Namely, it is assumed in this approach that leaders are born and not made.

“Great Man Theory” proposed that heroes possessed some special traits that allowed them to shape history through both their personal attributes and divine inspiration (Carlyle, 1907). Stogdill (1948) analyzed 124 early writings on leadership, and found that the focus of those studies is on identifying differences in personal characteristics between leaders and followers. Although he found that all traits studied were associated with leadership to some extent, none of them were significantly related to leadership emergence: “A person does not become a leader by virtue of the possession of some combination of traits, but the pattern of personal characteristics of the leader must bear some relevant relationship to the characteristics, activities, and goals of the followers” (p. 64). After conducting a new review in 1974, Stogdill (1974) confirmed that there was still no evidence of universal leadership traits. Some traits may increase, but do not guarantee leadership effectiveness.

The “Big Five” model of personality (Digman, 1990; Hough, 1992) defined five traits of effective leaders: surgency (extroversion, energy and activity, and assertiveness), conscientiousness (dependability, personal integrity, and need for achievement), agreeableness (cheerfulness, optimism, nurturance, and need for affiliation), adjustment (emotional stability, self-esteem, and self-control), and (curiosity, inquisitiveness, open-mindedness, and learning orientation). Yukl (2002) integrated previous research into this approach and summarized eight traits that are related to effective leadership: high energy level, self-confidence, internal locus of control, emotional stability and maturity, personal
integrity, socialized power motivation, moderately high achievement orientation, and low need for affiliation.

Leadership skill refers to the ability to do something in an effective manner, and it is determined jointly by learning and heredity (Yukl, 2002). One widely accepted taxonomy for classifying skills is: technical skills, interpersonal skills, conceptual skills (Katz, 1955; Mann, 1965), in which technical skills are primarily concerned with things, interpersonal skills with people, and conceptual skills with ideas and concepts. Some additional leadership skills were identified later, such as emotional intelligence, defined as the extent to which a person is attuned to his or her own feelings and to feelings of others (Goleman, 1995; Mayer & Salovey, 1995); social intelligence, defined as the ability to determine the requirement for leadership in a particular situation and select an appropriate response (Ford, 1986; Cantor & Kihlstrom, 1987; Zacarro et al., 1991); and ability to learn (Dechant, 1990; Argyris, 1991; Mumford & Connelly, 1991; Marshall-Mies et al., 2000;).

One limitation of this approach is that the conceptions of traits are too abstract to be measured to build a significant relationship with leadership effectiveness, unless they are expressed by actual leader behaviors. The approach also does not pay enough attention to how traits interact with each other as an integrator of personality, how traits are related to leadership effectiveness and how situations determine the relationship between traits and their effectiveness (Yukl, 2002).
C. Behavioral approach

In the early 1950s, frustrated with the trait approach, researchers began to turn their attention to what leaders actually do on the job, rather than who leaders are as individuals (Chemers, 1997; Yukl, 2002). One early study in this approach classified two significant leadership styles: democratic leadership and autocratic leadership. The study found that the level of individual satisfaction and performance is higher with the democratic leadership style than with the autocratic leadership (Ford, 1986; Cantor & Kihlstrom, 1987; Zacarro et al., 1991).

One of the most cited research studies in this approach, the Ohio State University study (Hemphill, 1950; Shartle, 1950), developed an instrument to assess leadership behaviors called the Leader Behavior Description Questionnaire (LBDQ). Halpin and Winer (1957) categorized variables of LBDQ into two factors. One is “consideration”, involving notions such as communication, trust, respect, participation, supportiveness, and friendliness; the other is “initiating structure” involving organizing and structuring work, assigning tasks, setting procedures and deadlines, defining roles, and directing followers. Hundreds of empirical tests of the theories found mixed results. Most studies found a positive relationship between consideration and subordinates’ satisfaction, while other studies found that subordinates were more satisfied and performed better with a structuring leader (Fleishman & Harris, 1962; Fisher & Edwards, 1988; Bass, 1990).

Leadership behavior has also been associated with management. McGregor (1960) labeled the conventional conception of management’s task as “Theory X”, in which management is a process of directing, motivating, controlling, and modifying behavior to meet the goals of the organization. “Theory X” management can be “hard” or “strong” involving coercion and threat, supervision, control, and punishment, or be “soft” or
“weak” associated with persuading, satisfying people’s demands, rewarding, and achieving harmony. “Theory X” reflects assumptions about human beings that average people are by nature indolent, lack ambition, dislike responsibility, prefer to be led, are self-centered, resistant to change, and gullible. McGregor believed that those assumptions of human nature are inadequate and incorrect. He pointed out that human needs are organized in a hierarchy of importance from physiological needs, to safety needs, to social needs, to ego needs, and finally to self-fulfillment needs. When one type of need is satisfied, needs at the next higher level begin to dominate a person’s behavior. Thus, according to McGregor, the carrot-and-stick approach of “Theory X” is inadequate to motivate once a person has reached a higher needs level.

McGregor then proposed Theory Y, in that the process of management is to create opportunities, release potential, remove obstacles, encourage growth, and provide guidance so that workers can achieve organizational objectives through realizing their personal goals. Some propositions associated with Theory Y are: decentralization and delegation, job enlargement, participation and consultative management, performance appraisal. This theory is built on assumptions of human nature that people can be self-motivated, responsible, and ready to direct their own behavior towards organization goals, and have the potential for development. While Theory X relies on external control of human behavior, Theory Y relies on self-control and self-direction.

The well-known University of Michigan study also identified two leadership styles: production-oriented and employee-oriented (Katz & Kahn, 1952; Likert, 1961). The former focuses on planning, direction, and productivity, while the latter focuses on good rapport with subordinates, open style, and concern for the satisfaction of subordinates.
Likert (1961, 1967) summarized the findings of the Michigan group and classified three types of leadership behaviors: task-oriented behavior, relationship-oriented behavior, and participative leadership. The first type is similar to the “consideration” behavior in the Ohio Studies, and the second type is close to the “initiating structure”.

Participative leadership is sometimes used in conjunction with specific task-oriented and relation-oriented behaviors, and is regarded as a distinct type of behavior by some studies (Likert, 1967; Yukl, 1971). A participative leader tends to involve followers and stakeholders in the decision process and allows them some influence over the leader’s decisions. According to Yukl (2002), some examples of this type of leadership include consultation, joint decision making, power sharing, decentralizing, and democratic management. He also presented four decision procedures and ordered them along a continuum by the degree to which decisions are made with influence by others. Research found that participative leadership sometimes results in higher satisfaction, effort and performance, and at other times does not (Yukl, 2002).

In addition, Bowers and Seashore (1966) also raised the concept of peer leadership as they found that most leadership functions can be carried out by others besides the designated leader. Sometimes a manager asks a subordinate to share some leadership functions, and sometimes a subordinate performs leadership functions on their own initiative. However, a formal leader is still necessary. “A formally acknowledged leader through his supervisory leadership behavior sets the pattern of the mutual leadership which subordinates supply each other” (Bowers & Seashore, 1966, p.249).

The limitations of this approach have also been pointed out by researchers. One underlying assumption of this approach is that there is one best way with regard to the
effectiveness of leadership behavior. Chemers (1997) argued that it is unreasonable to assume that one style of behavior will be suitable in every situation. Furthermore, when too much preoccupation was put on finding the best set of behavior categories, a lot of rich and descriptive information about the overall pattern of leadership behavior was ignored (Yukl, 2002). In addition, most research examined the effect of behaviors individually rather than the complex interaction of behaviors. It is essential to pay more attention to the overall pattern of leadership behavior, rather than focus too heavily on any component of it (Kaplan, 1988; Yukl, 2002). This approach did not measure the intervening variables regarding how leader behavior affects effectiveness, and has also ignored how leaders influence others by appealing to ideological values, helping to interpret the meaning of events, and facilitating adoption and change in a turbulent environment (Yukl, 2002). In terms of methodology, Chemers (1997) commented that some research studied the behaviors rated by the followers, which may not be the actual behaviors of leaders, but reflections of raters’ perceptions.

D. Situational approach

In the early 1960’s, discouraged by the studies of trait and behavioral approaches, leadership researchers turned in a new direction towards examining the importance of contextual factors that could influence the leadership process (Chemers, 1997; Yukl, 2002).

Fiedler’s (1974) LPC Contingency Theory is one of the earliest and best known contextual approaches. He argued that leadership behavior and effectiveness is dependent on the favorableness of the situation. By using a measure called Least Preferred Co-worker (LPC) score, Fielder first identified two kinds of leaders: task-motivated leaders
and relationship-motivated leaders. The task-motivated leaders are more like McGregor’s Theory X managers, while the relationship-motivated leaders are more like McGregor’s Theory Y. Moreover, the study included another variable, situational favorableness, which refers to the degree to which the situation gives the leader power, control, and influence over the situation. It is measured by three factors: a) leader-member relations: the degree to which leadership is accepted and supported by subordinates; b) task structure: the degree to which the task is clear-cut and structured; c) position power: the degree to which the leader’s position provides power to obtain compliance from subordinates. The study found that task-motivated leaders perform best either in very ‘favorable’ or “unfavorable” situation, while the relationship-motivated leaders perform best in moderately favorable situations. The theory actually implies that two types of leaders perform well in one particular situation, but not in another. Therefore, the one-best-way-in-any-situation assumption of earlier leadership theories was challenged.

The Path-Goal Theory (Evans, 1970; House, 1971) tried to explain how the behavior of a leader influences the satisfaction and motivation of subordinates, based on “Expectancy Theory” (Bowers & Seashore, 1966, p.249).

According to Expectancy Theory, a person decides how much effort to devote to work by considering the desirable or undesirable outcomes of the level of his or her effort.

Thus, a leader can motivate subordinates by influencing their perceptions of the likely consequence of different levels of effort. The theory contained two leader behaviors: supportive leadership and directive leadership, and situational variables such as the nature of the task, the work environment, and subordinate characteristics. These
situational variables determine the leadership behavior for improving subordinate satisfaction and motivation.

The Normative Decision Model developed a framework for matching a leader’s behavior to the demands of the situation (Vroom & Yetton, 1973; Vroom & Jago, 1974). The authors identify four major decision-making procedures, which are autocratic decision, consultative decision, group decision and delegated decision. The model is expressed by a decision tree around eight questions concerning the situational factors:

1. Is there a quality requirement for the decision?
2. Does the leader have sufficient information to make quality decisions?
3. Is the problem structured?
4. Is the acceptance by subordinates critical?
5. Would the decision be accepted by the subordinates, if it is made by the leader exclusively?
6. Do subordinates share the same goals?
7. Are there conflicts among subordinates?
8. Do subordinates have sufficient information to make quality decisions?

By answering these questions, one or more appropriate options regarding the decision-making process will be suggested, guided by 10 rules designed to protect the quality and acceptance of the decisions. The feasible set of options is different for each particular situation. Instead of having one leadership style suitable for one situation, there might be a number of feasible styles which a leader can choose in a particular situation. When more than one option of decision-making process remains in the feasible set, different leaders may choose among them with different approaches. One leader,
labeled as Model A, might choose the one with the most economical method. Another leader, called Model B, with humanistic considerations, may choose the most participative alternative. However, if there is only one alternative available to a leader in a particular situation, he or she is likely to take it even if it is not his or her favorite style.

One limitation of theories in the situational approach is that they are very complex and difficult to test, while each theory also has conceptual weakness that limits its utility. In addition, they do not pay sufficient attention to leadership processes that could transform the way followers view themselves and their work (Yukl, 2002). Like those earlier theories, this approach also seems to be leader-oriented, rather than concerned with the mutual leader-follower relationship. Although some theories do acknowledge the significance of followers, they mainly refer to followers as subjects of influence or sources of support (Chemers, 1997). Finally, most situational theories do not take a broader and more comprehensive perspective of the way that traits, power, behaviors, and situations interact to jointly determine leadership effectiveness (Yukl, 2002).

E. Charismatic and transformational approach

In late 1970’s and 1980’s, researchers were frustrated with the limitations of leadership theories in explaining and predicting the powerful and revolutionary impact of some leaders on followers and organizations (Chemers, 1997). They became interested in studying the emotional, symbolic, and ideological aspects of leadership in order to better understand the exceptional influence of some leaders in interpreting the meaning of events, facilitating change in a turbulent environment, and inducing subordinates to make sacrifice for the organizations (Yukl, 2002). In this approach, leaders are the managers of meaning rather than the managers of influence.
Charismatic leadership in organizations originated from Weber’s (1947) concept of charisma authority. This type of leader arouses followers’ commitment by articulating an appealing vision. House (1977) first described the features of charismatic leadership with three categories: personal characteristics, leaders’ behaviors, and situational determinants. The personal characteristics include extraordinary self-confidence, dominance over followers, strong conviction in moral beliefs, and high need to influence others. Leaders’ behaviors comprise image building, goal articulation, exhibiting high expectations, confidence, and motive arousal behaviors. House’s work in contingency theory was also reflected in this theory by addressing two situations where charismatic leaders are most likely to emerge: stressful situations and situations that foster the opportunity to express goals in ideological terms.

Later, House’s theory was further developed into the Self-concept Theory of charismatic leadership by adding ideas about human motivation and influence processes (Shamir et al., 1993). In the Self-concept Theory, charismatic leaders are likely to have these traits: a strong need for power, high self-confidence, and a strong conviction in their beliefs and ideas. Two classes of leaders’ behaviors are role modeling and frame alignment (i.e., linking their values, beliefs, activities, goals and ideology with that of their followers). The most important influence processes seem to be social identification, and internalization, as well as augmentation of individual and collective self-efficacy (Yukl, 2002). Namely, charismatic leaders engaged followers’ self-concepts and linked them to the organization’s vision and mission. House has incorporated his Path-goal Theory into the Self-concept Theory. Again, situational factors were incorporated in the model. Charismatic leaders are more likely to emerge in situations a) when the leader’s
vision is congruent with existing follower value and identities; b) when there is an exceptional condition; members are anxious or even panic; and there is no consensus on solutions. All these situations may provide a leader with opportunities to interpret the crisis.

Conger and Kanungo (1987) proposed an Attribution Theory of charismatic leadership which stressed that charisma is an attributional phenomenon, defined by the perceptions held by followers. Follower attribution is jointly determined by the leader’s traits, behaviors, and aspects of the situation (Conger, 1989; Conger & Kanungo, 1998). In terms of leader traits and behaviors, followers are more likely to attribute charisma to leaders who: a) advocate a vision that is highly discrepant from status quo; b) act in unconventional ways to achieve the vision; c) make self-sacrifices, take personal risks, and incur high costs to achieve the vision; d) appear confident about their proposals; e) use visioning and persuasive appeals rather than authority or a participative process.

Again, the key situational variable for charismatic leadership is the outbreak of crisis. Even in the absence of a genuine crisis, a leader may be able to create dissatisfaction with current conditions and provide a vision of a better future. The primary influence process in this approach is internalization of values and beliefs by followers, and personal identification, which refers to a follower’s desire to please and imitate the leader.

Theories of transformational leadership were influenced by James McGregor Burns (1978), in which he contrasted transforming leadership with transactional leadership. The theory was later comprehensively formulated by Bass (Bass, 1985a, 1996; Bass & Avolio, 1990). The essence of the theory is the distinction between transformational and transactional leadership. The theory includes four types of transformational behavior:
idealized influence, intellectual simulation, individualized consideration, and inspirational motivation. In contrast, transactional behaviors include contingent reward, active management by exception, and passive management by exception. According to Bass, a transformational leader transforms and motivates followers. Consequently, followers trust, admire, respect, keep loyal to the leaders, and do more than they originally expected to do. Transactional leadership then involves an exchange process that may result in follower’s compliance with leader requests, rather than enthusiasm and commitment to a task or objective. With regard to situational variables, according to Bass (1996, 1997), transformational leadership can be effective in any situation or culture. This proposition was supported by empirical research with conclusions that some aspects of transformational leadership hold in most situations (Howell & Avolio, 1992; Bass, 1996; Pawar & Eastman, 1997; Pettigrew, 1998; Hinkin & Tracey, 1999).

Some researchers considered transformational leadership and charismatic leadership as equivalent and compatible (Chemers, 1997), while others view them as different though overlapping (Yukl, 2002). According to Yukl (2002), the essence of charisma is being perceived as extraordinary by followers, while the essence of transformational leadership appears to be inspiring, developing, and empowering followers, which may actually reduce the charisma of a leader. Bass (1985a) pointed out that a leader can be charismatic but not transformational. With regard to leadership behaviors, transformational leaders are more likely to empower their followers so as to make them less dependent, while charismatic leaders tend to do more on fostering an image of extraordinary competence and keep followers weak and loyal (Yukl, 2002). In terms of the situation of emergence, transformational leaders can be found in any organization at
any level, and for most types of situation (Bass, 1996, 1997), while charismatic leaders are rare, dependent on favorable conditions (Bass, 1985a; Beyer, 1999; Shamir & Howell, 1999). It is also mentioned that the reactions of people towards charismatic leaders are more polarized and extreme (Bass, 1985b). In addition, it appears that charismatic leaders tend to be at the top executive level.

This new approach emphasized the importance of the symbolic behavior of leaders and emotional reactions of followers, whereas all earlier leadership theories emphasized the instrumental and rational-calculative aspects of leader-follower interaction. This approach has also included a comprehensive set of variables including traits, behavior, influence processes, situation, and thus provided a more integrative perspective than the earlier theories (Yukl, 2002). Actually some of the propositions in this approach reflect the contributions of earlier leadership theories from the 1960s such as the conceptions of empowering subordinates, power sharing, mutual trust, teamwork, participation, support, and motivations as well as situational context (McGregor, 1960; Argyris, 1964; Likert, 1967; House, 1971; Fiedler, 1974). The empirical research on these theories has generally been supportive (Yukl, 2002).

This approach has also some weaknesses. It lacks sufficient specification of underlying influence processes that account for the positive relationship found between leader behavior and follower performance. It has also focused too narrowly on a dyadic process between the leader and the followers rather than processes at the team and organization levels. In addition, more attention may need to be paid to situational variables that determine leadership effectiveness (Bryman, 1992; Beyer, 1999; Yukl, 1999b, 2002).
4. An Integration Framework

Each above approach focuses on studying leadership from one particular perspective and provides some special insights into the phenomenon. However, none of them has made an integrated framework incorporating different lenses, though most of the findings from different approaches are consistent and mutually supportive (Yukl, 2002). Yukl (2002) provided such an integrating conceptual framework that encompasses a set of interrelated and interacting variables in a larger network (See Figure [1]).

![An Integrating Conceptual Framework](Yukl, 2002)

In this framework, leader behavior is both an independent and dependent variable. Leader behavior is influenced by a variety of factors including leader traits, power, aspects of the situation, feedback from success criteria, and feedback from prior intervening efforts. Leader power is also determined by leader traits, situational factors,
and by the feedback effects of success or failure. Leaders can directly influence intervening variables in a variety of ways, or indirectly influence intervening variables through situational variables by making the situation more favorable. Also, intervening variables and situational variables change by levels. Some intervening variables for top-level executives could be situational variables for managers at lower levels. Furthermore, external conditions beyond the control of the leader such as the political and economic context may also influence effectiveness directly out of the control of leaders. The leader’s influence on success criteria could also be diluted by situational variables that affect the intervening variables. The research in this dissertation will employ this comprehensive framework and pay attention to various aspects including leader traits, behaviors, power, situational variables, intervening variables, and success criteria, as well as the interactions among these variables. Major leadership theory in each approach and respective variables in each theory are summarized in Table [1].

Table [1] Summary of Leadership Approaches and Theories

<table>
<thead>
<tr>
<th>Power and Influence Approach</th>
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<tr>
<td><strong>Power Sources:</strong></td>
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<tr>
<td>▪ <strong>Five sources:</strong> (French &amp; Raven, 1959)</td>
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<tr>
<td>Reward power, Coercive power, Legitimate power, Expert power, Referent power</td>
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<tr>
<td>▪ <strong>Two types:</strong> (Bass, 1960; Etzioni, 1991)</td>
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<tr>
<td>Position power and Personal power</td>
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<tr>
<td>▪ <strong>Integration framework:</strong> (Yukl &amp; Falbe, 1991)</td>
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<tr>
<td>Position power: Legitimate power, Reward power, Coercive power, Information power, Ecological power</td>
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<tr>
<td>Personal power: Referent power and Expert power</td>
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<tr>
<td>▪ <strong>Influence Tactics:</strong> (Yukl &amp; Falbe, 1990; Yukl et al., 1992; Yukl &amp; Tracey, 1992)</td>
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<tr>
<td>Rational persuasion, Apprising, Inspirational appeals, Consultation, Exchange collaboration, Personal appeals, Ingratiation, Legitimating tactics, Pressure, Coalition tactics</td>
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<tr>
<td>▪ <strong>Influence Processes:</strong> (Yukl, 2002)</td>
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<tr>
<td>Instrumental compliance, Internalization, Personal identification</td>
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<tr>
<td>▪ <strong>Influence Outcomes</strong> (Yukl, 2002):</td>
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Commitment, Compliance, Resistance

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<th>Traits Approach</th>
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<tr>
<td><strong>Traits:</strong></td>
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<tr>
<td>- “Big Five” personality traits: (Digman, 1990; Hough, 1992) Surgency, Conscientiousness, Agreeableness, Adjustment, Intellectance</td>
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<tr>
<td>- <strong>Traits predicting leadership effectiveness:</strong> (Yukl, 2002) High energy level, Self-confidence, Internal locus of control, Emotional stability and maturity, Personal integrity, Socialized power motivation, Moderately high achievement orientation, Low need for affiliation</td>
</tr>
<tr>
<td><strong>Skills:</strong></td>
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<tr>
<td>- Three-skill taxonomy (Katz, 1955; Mann, 1965), Technical skills, Interpersonal skills, Conceptual skills</td>
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<tr>
<td>- <strong>Additional skills:</strong> Emotional intelligence (Goleman, 1995; Mayer &amp; Salovey, 1995), Social intelligence (Ford, 1986; Cantor &amp; Kihlstrom, 1987; Zacaréro et al., 1991), Ability to learn (Dechant, 1990; Argyris, 1991; Mumford &amp; Connelly, 1991; Marshall-Mies et al., 2000).</td>
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<th>Behavior Approach</th>
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<tr>
<td>Levin’s early study: (Levin et al., 1939) Democratic leadership, Autocratic leadership</td>
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<tr>
<td>Ohio University study: (Halpin &amp; Winer, 1957) Consideration vs. Initiating structure</td>
</tr>
<tr>
<td>University of Michigan study: (Likert, 1961, 1967) Task-oriented behavior, Relationship-oriented behavior, Participative leadership</td>
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<tr>
<td>Peer leadership (Bowers &amp; Seashore, 1966)</td>
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<tr>
<th>Situational Approach</th>
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<tr>
<td>LPC Contingency Theory (Fiedler, 1974):</td>
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<tr>
<td>- Leader Behaviors: Task-motivated vs. Relationship-motivated</td>
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<tr>
<td>- <strong>Situational Favorableness:</strong> Leader-member relations, Task structure, Position power</td>
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<tr>
<td>Path-Goal Theory (Evans, 1970; House, 1971):</td>
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<tr>
<td>- Leader Behaviors: Supportive leadership vs. Directive leadership</td>
</tr>
<tr>
<td>- <strong>Situational Variables:</strong> Nature of the task, Work environment, Subordinate characteristics</td>
</tr>
<tr>
<td>- <strong>Intervening Variables:</strong> Subordinate satisfaction and motivation</td>
</tr>
<tr>
<td>Normative Decision Model (Vroom &amp; Yetton, 1973; Vroom &amp; Jago, 1974):</td>
</tr>
<tr>
<td>- Decision-making procedures: Autocratic, Consultative, Group, Delegated.</td>
</tr>
<tr>
<td>- <strong>Situational Variables:</strong> Decision quality, Information processes by leader and subordinates, Problem Structure, Acceptance of subordinates, Shared goals, Conflict among subordinates</td>
</tr>
<tr>
<td>- <strong>Leader types:</strong> Model A vs. Model B</td>
</tr>
</tbody>
</table>
## Charismatic and Transformational Approach

- **Charismatic Leadership**
  - **Charisma Leadership Theory** (House, 1977)
    - **Personal characteristics**: Extraordinary self-confidence, Dominance over followers, Strong conviction in moral beliefs, High need to influence others
    - **Leaders’ behaviors**: Image building, Goal articulation, Exhibiting high expectations, Confidence, Motive arousal behaviors
    - **Situational determinants**: Stressful situations, Situations that foster the opportunity to express goals in ideological terms
  - **Self-concept Theory** (Shamir et al., 1993)
    - **Leaders’ traits**: Strong need for power, High self-confidence, Strong conviction in their beliefs and ideas
    - **Leaders’ behaviors**: Role modeling, Frame alignment
    - **Influence processes**: Social identification, Internalization, Augmentation of individual and collective self-efficacy.
    - **Situational variables**: a) when the leader’s vision is congruent with existing follower value and identities; b) when there is an exceptional situation; members are anxious or even panic; and there is no consensus on solutions,
  - **Attribution Theory** (Conger & Kanungo, 1987)
    - **Leader traits and behaviors**:
      a) Advocate a vision that is highly discrepant from status quo
      b) Act in unconventional ways to achieve the vision
      c) Make self-sacrifices, take personal risks, and incur high costs
      d) Appear confident about their proposals
      e) Use visioning and persuasive appeals
    - **Influence process**: Internalization, Personal identification
    - **Situational variable**: Crisis
  - **Transformational Leadership** (Bass, 1985a, 1996; Bass & Avolio, 1990)
    - **Transformational behavior**: Idealized influence, Intellectual simulation, Individualized consideration, Inspirational motivation.
    - **Transactional behaviors**: Contingent reward, Active management by exception, Passive management by exception.
    - **Situational variables**: Any situations

### Success Criteria

- Organization performance
- Attitude of followers toward the leader
- Leader’s contribution to the quality of group processes from the perspective of followers or outside observers (Yukl, 2002)

It should be mentioned that almost all the above theories were developed in the private sector. Montgomery (2003) compared the mainstream leadership literature to the
public-sector leadership literature. He found that the integrative frameworks of mainstream leadership theories developed in the 1990’s have not been reflected in the public sector literature. Furthermore, Montgomery pointed out although the literature on leadership with a public sector focus is a fraction of that in the private sector, it is has been relatively unfocused. In particular, compared to executive policymaking leaders, administrative leadership within organizations has received scant attention. Literature that is most interested in leadership in public sector bureaucratic settings has experienced neither the volume nor the integration of the mainstream (Montgomery, 2003).

II. Cross-Boundary Information Sharing

1. What is Cross-boundary Information Sharing?

Harris (2000) asserted that information integration means different things to different people in different contexts. Barki and Pinsonneault (2002, 2005) also claimed that despite the widespread interest regarding the topic, it continues to be poorly conceptualized. They further defined cross-boundary information sharing as the collaboration or interconnection of different information systems or telecommunication technologies to share data with a common conceptual schema between entities such as groups, departments, and organizations (Barki & Pinsonneault, 2002; Barki & Pinsonneault, 2005). Based on an extensive study of eight case studies of public health and public safety initiatives in the US, Gil-Garcia, Pardo and Burke (2008) identified and provided preliminary definitions of four components of cross-boundary information sharing, and thus provide a foundation for discussions about cross-boundary information sharing to seek other undiscovered core components of the phenomenon:
1. Trusted social networks. Networks of social actors who know and trust each other.

2. Shared information. Sharing of tacit and explicit knowledge in the form of formal documents, informal talks, e-mail messages, faxes, etc.

3. Integrated data. Integration of data at the level of data element standards and/or industry/community data standards.

4. Interoperable technical infrastructure. Systems that can communicate with each other at the hardware/operating system level.

2. Why Cross-boundary Sharing Information?

Information sharing has long been recognized as a critical enabler for enhancing organizational effectiveness and efficiency while better strategic decisions and problem solving can be achieved with aggregated information and knowledge. (Drucker et al., 1997a, 1997b; Chow et al., 2000b; Kim & Lee, 2006). Information sharing can lead to significant cost savings and data reuse without duplicated data collections (Dawes, 1996; Landsbergen & Wolken, 1998; Bajaj & Ram, 2003; Gil-Garcia & Pardo, 2005; Zhang et al., 2005; Zhang & Dawes, 2006; Gil-Garcia et al., 2007;).

In the public sector, information sharing is defined as exchanging or otherwise giving other agencies access to information (Dawes, 1996). Information is scattered across groups or group members, while some have the information that others might need (Cress & Kimmerle, 2006). Information sharing can thus help government agencies to provide better public services and to solve critical public problems through facilitating interorganizational collaboration. Today, the delivery and management of public services increasingly relies on complex networks of interdependent organizations to deal with
ambiguous or complex issues (O'Toole, 1997), because networks of multiorganizations can solve problems that cannot be achieved, or achieved easily, by single organizations (Agranoff & McGuire, 2001). Some of the network rests on reciprocal and voluntary collaboration between two or more government agencies or between public and private or non-profit entities to deliver government services (Dawes & Préfontaine, 2003). With the development of information and communication technology, interorganizational networks and external alliances have become more common (Tapscott & Carston, 1993), and consequently sharing information across government organizations has become more attractive and practical as well (Dawes, 1996; Pardo et al., 2004).

3. **What are the Boundaries?**

What are the “boundaries” in cross-boundary information sharing? Until now, there seems to be no explicit definition of boundaries when cross-boundary information sharing is discussed. Current literature, in general, has focused on organizational boundaries. Furthermore, in the literature, the vertical boundary between different hierarchical levels is assumed to be less complex than the horizontal boundaries among departments or organizations. In addition, geographic boundaries and personal boundaries also play a role and have been identified as such in the literature.

*A. Organizational boundary*

Researchers have studied information sharing across different departments, and organizations and functional areas from both vertical and horizontal directions. Weber claimed that ideal bureaucracy is an efficient and fair organization with laws and administrative regulations established (Weber, 1958). However, information problems are rooted in the organizational structure of bureaucracy that cannot be fully solved.
Hierarchy, specialization and centralization are recognized as major sources of distortion and blockage of intelligence (Wilensky, 1967). Vertical hierarchical structure can constitute barriers to information-sharing (Creed et al., 1996; Tsai, 2002). Departmentization could also impede information sharing among various horizontal departments or governments (Argote et al., 2000; Willem & Buelens, 2007). Gil-Garcia and Pardo (2005) found that the complexity of cross-boundary information sharing gradually increases from the organizational level, the inter-organizational level, to the intergovernmental level. In addition, the literature seemingly assumes that vertical information integration is less complex than horizontal integration by arguing that vertical integration problems are easier to solve and could be overcome before horizontal integration (Layne & Lee, 2001; Klievink & Janssen, 2008).

Klievink and Janssen (2008) argued there is an urgent information-sharing need for horizontal integration of information systems operated by various government agencies to promote more integrated services. In Figure [2], a stage model is proposed to conceive of e-government collaboration from a single organization level to a nation-wide level. The model focuses on the development of horizontal integration between departments at the organizational level, to the interorganizational level and lastly to the national level. In the model, horizontal integration is assumed to be more inherently difficult and at a earlier stage of development than vertical integration (Klievink & Janssen, 2008).
According to Layne and Lee, vertical integration also occurs before horizontal integration (See Figure [3]). They observed that many state agencies interact more closely with their federal and local counterparts than with other agencies in the same level of government (Layne & Lee, 2001).
B. Personal boundary

Besides organizational boundaries, personal boundaries also play an important role in information sharing. Kolekofski and Heminger proposed that interpersonal relationships influence attitudes and intentions to share information (Kolekofski Jr. & Heminger, 2003). Informal relationships, such as personal networks and team work that are not previously arranged and defined by hierarchy and regulation, can result in more intense and effective information sharing between departments in an organization (Tsai, 2002; Willem & Buelens, 2007). Wheatley also claims that information can grow from social networks where exchange is common and information is not accumulated by only individuals but is also shared with others (Wheatley, 2006).

C. Geographic boundary

Geographic boundaries also matters significantly in cross-boundary information sharing, as organizations may be spread in various geographic areas. Thus, smooth transmission of data and effective communication among people in different locations and may be hindered by long distance. Pardo and her colleagues claimed that the geographical origin of data poses myriad challenges in ensuring the quality of the integrated data (Pardo et al., 2004; Pardo & Tayi, 2007).

4. Factors for Cross-boundary Information Sharing Success

In order to facilitate information-sharing initiatives, particularly in the public sector, identifying factors that could influence information sharing to achieve desired goals is critical (Pardo et al., 2004). Most early research on cross-boundary information sharing focused on the technological barriers such as the compatibility of data standards and
information technology. Over time researchers began to identify and examine organizational and political barriers (Dawes, 1996; Landsbergen & Wolken, 1998; Gil-Garcia & Pardo, 2005; Zhang et al., 2005; Zhang & Dawes, 2006).

A. Technological and Information Perspective

The advancement of information technology increases the ease of information flow and provides more alternatives to share and integrate information. Different organizations may use various types of hardware, software, data standards and definitions, as well as programming languages, and the task of integrating them could be very challenging (Dawes, 1996; Pardo et al., 2004; Zhang & Dawes, 2006; Gil-Garcia et al., 2007;). In addition, system outsourcing could become a barrier, as contractors may reveal critical government information, may go out of business, and may fail to collaborate for the sake of competition (Gonzalez et al., 2005; Park & Kim, 2005). However, technological barriers are commonly recognized as less complex compared to challenges in the organizational and political aspects (Dawes, 1996; Landsbergen & Wolken, 1998; Pardo et al., 2004; Gil-Garcia et al., 2005).

B. Organizational and Managerial Perspective

While technological challenges are the most obvious, other challenges such as organizational factors that are deeply embedded in institutional and professional realities also create barriers to cross-boundary information sharing (Dawes, 1996; Landsbergen & Wolken, 1998; Pardo et al., 2004; Gil-Garcia et al., 2005;). Over time researchers began recognizing the importance of organizational perspectives and have begun to focus on identifying and examining organizational factors such as organizational structure, organizational values and culture, processes and procedures, cost and benefit, trust,
leadership, and capabilities that can influence cross-boundary information sharing (Dawes, 1996; Goodman & Darr, 1998; Kolekofski Jr. & Heminger, 2003; Cress & Kimmerle, 2006; Kim & Lee, 2006; Pardo & Tayi, 2007; Willem & Buelens, 2007).

Centralization in hierarchical structure has a significant negative impact on sharing of information in a multiunit organization (Tsai, 2002; Kim & Lee, 2006). When employees have limited autonomy and need to get approval from superiors for most decisions, their interests in sharing information with other groups are greatly reduced (Tsai, 2002). Researchers also discovered that formalization, such as formal rules, guidelines and procedures, and regulation, could be barriers to information sharing as well. Less formalized structure and voluntary arrangements could lead to more flexible and open interactions among employees (Tsai, 2002; Kim & Lee, 2006; Willem & Buelens, 2007), and seem to be more successful than formal and mandated structuring of collaboration efforts (Milward, 1982; Mintzberg et al., 1996). In recent case studies, formal authority appeared to be necessary to the success of an information sharing network although no particular authority relationships among participating organizations was associated with networking success (Eglene et al., 2007).

Heterogeneous organizations may have different origins, values, and cultures (Pardo et al., 2004; Pardo & Tayi, 2007), making it difficult to align their missions and identify common goals. Furthermore, different organizations have individually developed their operation procedures, control mechanisms, and work flows, which may increase the difficulty of information sharing and integration (Pardo et al., 2004).

Many employees are reluctant to share and contribute their own information to shared databases (Ardichvill et al., 2003; Cress & Kimmerle, 2006). People’s perceptions
of costs and benefits may influence information sharing activities (Dawes, 1996). According to Davis, perceived usefulness and perceived ease of use are two critical determinants to employees’ decisions to accept using new information systems (Davis, 1989). An information contributor may need to spend a great amount of time and effort to get information ready for sharing, and expect that further requests for clarification and assistance may be evoked. Without receiving clear benefits, a contributor would be reluctant to share information (Goodman & Darr, 1998; Cress & Kimmerle, 2006). Also, cross-boundary information sharing may sometimes require reengineering current working processes, and staff may resist those changes due to inertia or personal interests (Aldrich & Ruef, 2006). Furthermore, some employees regard information as a symbol of power (Kolekofski Jr. & Heminger, 2003). Sharing information is viewed as losing power and social influence (Ardichvill et al., 2003). As Willem and Buelens (2007) pointed out, power games can negatively influence information sharing activities. Lack of trust could also influence information sharing among different organizations (Dawes, 1996; Pardo & Tayi, 2007). Trust may be affected by the concerns of losing autonomy and misuse of information by other organizations. In a study to understand how trust is built to facilitate cross-boundary information sharing in the public sector (Zhang et al., 2005; Pardo et al., 2006), researchers also claimed that, through reward and incentive mechanisms, employees’ intention to share information and knowledge can be greatly enhanced (Kim & Lee, 2006; Willem & Buelens, 2007). Research has also highlighted leadership as a one of the key enablers for the success of IT initiatives in general and information sharing in particular, which we will discuss in more detail in later chapters (Mintzberg, 2001; Eglene et al., 2007; Gil-Garcia et al., 2007).
In addition, many government agencies do not have prior experiences--especially positive experiences--in information sharing and also lack the capabilities to carry out information sharing initiatives (Cresswell et al., 2005). Some agencies are even unaware of what useful information is available in other agencies (Landsbergen & Wolken, 2001).

C. Legal and political perspective

Information sharing initiatives in government agencies are embedded in a complex legal and political environment. Laws and policies thus have strong influences on organizations in the public sector. In a democratic system, government agencies need to cope with pressures from legislators, courts, interest groups and citizens (Wilson, 1989). Layers of mandates such as crosscutting regulations and crossover sanctions escalate coordination requirements and constitute pressures for leaders working in a network structure (O'Toole, 1997). The legitimacy of a cross-boundary sharing program often rests on general legal authority over a governmental function, on specific legislation, or on a formal executive directive (Eglene et al., 2007). Without supportive legislation, information sharing initiatives in the public sector may lack funding and resources to make themselves sustainable (Dawes, 1996; Zhang et al., 2005).

Particularly, information sharing initiatives could be hindered by policies that prohibit government agencies from sharing sensitive and regulated information for the sake of public safety and national security (Dawes, 1996; Gil-Garcia & Pardo, 2005; Zhang et al., 2005; Gil-Garcia et al., 2007). However, information privacy and confidentiality are also critical concerns for organizations in the public sector. Policies that address those concerns properly could increase the trust of the general public on government interoperability projects (Landsbergen & Wolken, 2001; Zhang & Dawes,
2006). Also, pre-defined policies in agencies regarding program boundaries and goals could become potential barriers for information sharing (Pardo & Tayi, 2007). Explicit statutory authority should define the general circumstances in which information can and/or cannot be shared, which could help reduce agencies´ hesitation to share information (Dawes, 1996; Landsbergen & Wolken, 2001).

Research has also found that support from top-level executive leaders is critical for the success of cross-boundary information sharing initiatives. One study found that knowledge networks are more likely to succeed when basic legal authority is augmented by the political support of a currently serving chief elected official (Eglene et al., 2007). Executive involvement has an influence on cross-boundary information sharing initiatives through their support of the actions of informal leaders, respect for the autonomy of participating organizations, ability to affect the willingness of key actors to participate, as well as ability to make financial resources available (Gil-Garcia et al., 2007).

Furthermore, partisan dynamics in different agencies matter as well. Some participating organizations may be concerned about losing autonomy or control to the opposite party, and may perceive that sharing information may help the organizations run by the opposite party (Pardo et al., 2004; Zhang & Dawes, 2006). In addition, sharing information may also expose the involved agencies to public scrutiny and evaluation from supervising agencies. All these concerns can greatly reduce the willingness of government agencies to participate in information sharing projects (Landsbergen & Wolken, 2001; Pardo et al., 2004; Pardo & Tayi, 2007).
Based on the literature review, Table [2] summarizes the factors that could influence information sharing initiatives. They are categorized into three perspectives: technological perspectives, organizational perspectives, and policy perspectives.

Table [2] Factors Influencing Information Sharing

<table>
<thead>
<tr>
<th>Technological and Information Perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Information technology compatibility</td>
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<tr>
<td>- Hardware and software</td>
</tr>
<tr>
<td>- Data standards and definitions</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Organizational and Managerial Perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Over centralization</td>
</tr>
<tr>
<td>- Over formalization</td>
</tr>
<tr>
<td>- Diversity in values and cultures</td>
</tr>
<tr>
<td>- Procedures</td>
</tr>
<tr>
<td>- Perceptions of costs and benefits</td>
</tr>
<tr>
<td>- Easy-to-use and usefulness of technology</td>
</tr>
<tr>
<td>- Information is perceived as power and valuable asset</td>
</tr>
<tr>
<td>- Concern of losing autonomy</td>
</tr>
<tr>
<td>- Time and effort to share information</td>
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<tr>
<td>- Resistance to change</td>
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<tr>
<td>- Feedback and recognition</td>
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<tr>
<td>- Trust among organizations</td>
</tr>
<tr>
<td>- Incentives</td>
</tr>
<tr>
<td>- Leadership</td>
</tr>
<tr>
<td>- Capabilities, experiences and awareness</td>
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<table>
<thead>
<tr>
<th>Legal and Political Perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Laws and policies</td>
</tr>
<tr>
<td>- Funding and resources</td>
</tr>
<tr>
<td>- Information privacy, confidentiality and sensitivity</td>
</tr>
<tr>
<td>- Top executive support</td>
</tr>
<tr>
<td>- Partisan dynamics in government agencies</td>
</tr>
<tr>
<td>- Public scrutiny and evaluation</td>
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</tbody>
</table>

III. Leadership in Cross-Boundary Information Sharing

Given the distinct context of cross-boundary information sharing in the public sector, aspects of leadership in terms of situations, power, traits and skills, behaviors, and specific actions (intervening variables), as well as effectiveness measurement all appear
different from those in traditional organizational forms. Quite a number of researchers have studied these issues.

1. **Situational Variables**

   The various factors identified in the last chapter that could influence cross-boundary information sharing constitute the situational variables for leaders who are working in this complex and dynamic context. These situations in the network structure and cross-organizational collaboration are significantly different from traditional organizational forms which are characterized by specialization, centralization, and formalization. When applying the situational variables discussed in previous chapters into this setting, we can conclude that, in the context of cross-boundary information sharing, the tasks may not be well structured, power is usually shared, participants are not followers, leadership may not be accepted and supported by participants, participants may have more sufficient information than leaders, participants may not share the same goals and they are likely to have conflicts with each other.

   Huxham and Vangen (2000) pointed out that traditional assumptions about hierarchical leader–follower relationships, minimal individual autonomy, and unified goals and objectives may not apply in these settings. Mintzberg et al., (1996) also argued that collaboration cannot be treated as a hardened structure, as its nature depends on the task and the goal, the parties involved, and its evolution over time. Schneider (2002) described this setting as a “stakeholder model of organizational leadership” and a lateral “radix organization” in which the leader works not only within but also outside the boundaries of his or her own organization, and stakeholders tend to join, instead of follow, the leader. Crosby and Bryson (2005) called the situation a “no-one-in-charge, shared-
power world”, where participating organizations have only partial responsibility and share power. Nevertheless, it should be emphasized as well that these new forms of public organization do not replace old forms. Instead, networks and bureaucracy coexist and interact (O’Toole, 1997).

2. Power

Leadership in the context of cross-boundary information sharing seemingly relies more on the use of personal power rather than on the position or legitimate power over the participants. O’Toole (1997) pointed out that network structures involve multiple interdependent organizations and dispersed power, where one unit is not merely the formal subordinate of another in a hierarchical arrangement. While the shared-power environment has enhanced many aspects of democracy, "it also makes leadership more difficult" (Henton et al., 1997, p.14). Because participants come from different organizations with various and often conflicting goals, a leader cannot exert formal authority based on hierarchical rank (Huxham & Vangen, 2000). The success of collaboration cannot be guaranteed by the exercise of traditional, hierarchical power (Mintzberg et al., 1996). The authority structure underlying a public sector network initiative, by itself, is not enough to ensure willing and successful participation (Eglene et al., 2007). Furthermore, giving directives in network settings may actually lead to not just ineffectual but counterproductive outcomes (O'Toole, 1997). Therefore, in this setting, leaders have to develop influence without the formal authority to command, and they must use the power to guide cooperation rather than to direct the actions (Schneider, 2002). Leadership should be seen more as a personal style or a skill than formal position power to impose a set of strict rules. Personal commitment and leadership, regardless of
formal position, are critical in providing the impetus necessary for the progress of the initiatives (Eglene et al., 2007).

However, research also found that formal authority is still important and could provide a foundation for the success of cross-boundary information sharing initiatives in the public sector, because organizational networks are governed by legally constrained politico-administrative processes and often are established by specific legal requirements (Eglene et al., 2007). Dawes and Préfontaine (2003) pointed out that multiorganizational collaboration in the public sector needs institutional legitimacy, which commonly begins with law or regulation and is strengthened by the sponsorship of recognized authority or formal relationships among participants, in order to come through political transitions and changes. Recent case studies again showed that a legal basis benefits public sector knowledge networks with authority and legitimacy (Eglene et al., 2007), and formal authority helps build trust and confidence among participants (Pardo et al., 2006).

3. Leader’s Traits and Skills

Traditional research mainly focuses on leaders in a formal managerial role, ignoring the role of others who emerge as conveners or leaders in the network settings (Huxham & Vangen, 2000; Schneider, 2002). Leadership traits and skills required for effectiveness in such settings differ significantly from those in a single bureaucratic organization. Mizrahi and Rosenthal (2001) defined competent network leadership as a combination of knowledge, skills, and attributes, including such variables as persistence and commitment; facilitation, negotiation, and political skills; and credibility, trustworthiness, experience, willingness to share, and respect. Dawes & Pardo (2002) commented that leader’s communication skills, resourcefulness, and boundary spanning abilities all affect project
results. Others suggest that a leader’s philosophy and management skill have more influence on acceptance of authority than does the leader’s domain expertise (Eglene et al., 2007).

4. Leadership Behaviors

Some researchers have studied and observed leadership behaviors in the context of cross-boundary information sharing networks. Brown and Mclean (1996) asserted that the only way for IS executives to achieve IT success is to build cooperative relationships outside of traditional hierarchical and inter-organizational contractual agreements. Leadership in radix organization is characterized by key attributes such as empowerment, involvement, cooperation, interaction, connection, and positive emotion (Schneider, 2002). A recent case study also found that successful central IT officers rely on close collaborative relationship among stakeholders, which is cultivated by mutual respect and frequent and open communication, in which the officer acts as a collaborative leader or advocate (Anderson et al., 2007). Furthermore, Eglene, et al. (2007) found that a leader’s focus on people is more important than a focus on information or action. They also proved that an adaptive and charismatic leadership style, as well as inspirational values, consultation, and coalition tactics are positively associated with networking success. Overall, those findings are closer to relation-oriented, participatory and transformational leadership than to task-oriented behavior.

5. Specific Actions

Other than leadership traits, skills, and behaviors, many researchers have identified processes that leaders can adopt to make a difference in the outcome of collaboration. O’Toole (1997) emphasized that leaders in such settings should recognize their principal
contingencies and alliances, identify coordination points for participants, move participants toward cooperation for success, as well as make the network structure more favorable by shifting network membership towards more supportive coalitions, locating key allies at crucial nodes, altering agreements among the parties to heighten program salience, and buffering well-functioning arrays to limit uncertainty and complexity. Luke (1998) identified four tasks for public leadership in an interconnected world: a) focusing public attention on the issue; and b) engaging people in the effort to address the issue; c) stimulating multiple strategies and options for action; d) sustaining action and maintaining momentum by managing the interconnections. Agranoff and McGuire (2001) suggested that successful leadership behaviors in public networks involve: a) activating—the process of identifying and understanding participants and stakeholders in the network; b) framing—the process of establishing and influencing the operating rules, values, norms of the network as well as transforming the perceptions of participants; c) mobilizing—developing and achieving common goals to gain participants’ commitment to the network; d) synthesizing—enhancing the contextual situations for favorable and productive interaction among participants. The authors also suggested that some of these sequences are behavioral, and we need to know more about how these processes unfold. Hales (2002) commented that leaders in a network engage in team leadership, negotiating integrated efforts across boundaries, promoting organizational learning, and conceiving and facilitating change. Zhang (2003) recently identified five essential goals a network leader must work toward: 1) building a shared vision; 2) creating supportive structures and processes; 3) fostering an appropriate culture and value system; 4) promoting new technologies; 5) overcoming cognitive constraints. To ensure the success of a network,
Leaders should also work on ensuring political or top-executive support, encouraging and maintaining positive relationships with the project team, encouraging learning and adaptation, and triggering trust and collaboration among external participants (Eglene et al., 2007).

Furthermore, Gil-Garcia, Pardo, and Burke (2007) built a model to show how leadership mechanisms work in the public sector to facilitate cross-boundary information sharing. The study found that the exercise of formal authority has an influence on cross-boundary information sharing initiatives by affecting the existence and nature of localized episodic problems, through the development of appropriate and effective strategies, and by affecting the willingness of key actors to participate. In addition, informal leaders empowered by formal leaders could also have influence on cross-boundary information sharing initiatives. These influences are realized through informal leaders’ ability to build trust among key participants and leverage existing trust embedded in their professional networks, to apply localized and episodic solutions to complex problems, to use boundary objects such as prototypes, documents, plans, etc, to develop appropriate and effective strategies, as well as to clarify roles and responsibilities.

6. **Success criteria**

Given the inter-organizational and multi-level context of cross-boundary information sharing initiatives, the criteria used to evaluate their effectiveness will be different from those of a single bureaucratic organization. Overall, literature on evaluating the success of a network seem to be relevant, although building networks is not exactly the same thing as cross-boundary information sharing initiatives.
Provan and Milward (2001) argued that networks should be evaluated at three levels of analysis: community, network and organization/participant levels. Effectiveness at the community level refers to the contribution of the network to the communities to be served; effectiveness at the network level means the maturity and development of the network; effectiveness at the organization/participant level refers to how the network involvement can benefit an individual agency and its staff. At each level of analysis, they identified key stakeholder groups and developed a set of success criteria (See Table [3]).

**Table [3] Summary of Networks Evaluation Relationships**

(Provan & Milward, 2001)

<table>
<thead>
<tr>
<th>Levels of network analysis</th>
<th>Key stakeholder groups</th>
<th>Effectiveness criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>Principals and clients</td>
<td>• Cost to community</td>
</tr>
<tr>
<td></td>
<td>• Client advocacy groups</td>
<td>• Building social capital</td>
</tr>
<tr>
<td></td>
<td>• Funders</td>
<td>• Public perceptions that problem is being solved</td>
</tr>
<tr>
<td></td>
<td>• Politicians</td>
<td>• Changes in the incidence of the problem</td>
</tr>
<tr>
<td></td>
<td>• Regulators</td>
<td>• Aggregate indicators of client well-being</td>
</tr>
<tr>
<td></td>
<td>• General public</td>
<td>• Network membership growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Range of services provided</td>
</tr>
<tr>
<td>Network</td>
<td>Principals and agents</td>
<td>• Absence of service duplication</td>
</tr>
<tr>
<td></td>
<td>• Primary funders and regulators</td>
<td>• Relationship strength (multiplexity)</td>
</tr>
<tr>
<td></td>
<td>• Network administrative organization</td>
<td>• Creation and maintenance of network administrative organization (NAO)</td>
</tr>
<tr>
<td></td>
<td>• Member organizations</td>
<td>• Integration/coordinations of services</td>
</tr>
<tr>
<td>Organization/participant</td>
<td>Agents and clients</td>
<td>• Cost of network maintenance</td>
</tr>
<tr>
<td></td>
<td>• Member agency board and management</td>
<td>• Member commitment to network goals</td>
</tr>
<tr>
<td></td>
<td>• Agency staff</td>
<td>• Agency survival</td>
</tr>
<tr>
<td></td>
<td>• Individual clients</td>
<td>• Enhanced legitimacy</td>
</tr>
</tbody>
</table>

Synthesizing Provan and Milward’s model and other relevant literature, Dawes (2008) developed a framework to measure the success of public sector knowledge networks. Dawes argued that service delivery networks and knowledge networks are different. Compared to the former, the primary community served by the latter is internal
to the participating organizations. Therefore, the community level is not included in Dawes’ framework, which instead focuses on three other levels: network, participating organizations and individuals. The framework identified measures and critical conditions for success at each level. The three types of measures are structural measures, performance measures, and process & relationship measures. Some of those measures are objective and observable, while others are subjective and perceived. Since the case studies in this dissertation are related to information sharing initiatives for service delivery purposes, aspects of both frameworks seems to be relevant and will be used as the basis for identifying success criteria in the study. Table [4] summarizes findings of leadership variables in the context of cross-boundary information sharing and integration including situational variables, power, traits and skills, behaviors, specific actions, and success criteria.

Table [4] Summary of Leadership Variables in Information Sharing and Integration

<table>
<thead>
<tr>
<th>Situational Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Not traditional hierarchical leader–follower relationships, minimal individual autonomy, and unified goals and objectives (Huxham and Vangen, 2000)</td>
</tr>
<tr>
<td>■ “Stakeholder model of organizational leadership” and lateral “radix organization” (Schneider, 2002)</td>
</tr>
<tr>
<td>■ Collaboration cannot be treated as a hardened structure, but depends on the task and the goal, the parties involved, and its evolution over time. (Mintzberg et al, 1996)</td>
</tr>
<tr>
<td>■ Crosby and Bryson (2005) called the situation “no-one-in-charge, shared-power world”</td>
</tr>
<tr>
<td>■ Networks and bureaucracy coexist and interact (O’Toole, 1997)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Dispersed power (O’Toole, 1997)</td>
</tr>
<tr>
<td>■ Shared-power (Henton et al., 1997)</td>
</tr>
<tr>
<td>■ Leader cannot exert formal authority based on hierarchical rank (Huxham &amp; Vangen, 2000)</td>
</tr>
<tr>
<td>■ The success of collaboration cannot be guaranteed by the exercise of</td>
</tr>
</tbody>
</table>

45
traditional hierarchical power (Mintzberg et al., 1996).

- The authority structure is not enough to ensure willing and successful participation (Eglene et al., 2007)
- Giving directives in network settings may lead to ineffectual and counterproductive outcomes (O’Toole, 1997)
- Leaders have to develop influence without the formal authority (Schneider, 2002)
- Leadership should be seen more as a personal style than formal position power. Personal commitment and leadership are critical (Eglene et al., 2007)
- Formal authority could provide a foundation for the success (Eglene et al., 2007)
- Formal authority could help build trust and confidence among participants (Pardo, Gil-García et al., 2006)

### Traits and Skills

- Persistence and commitment, facilitation, negotiation, and political skills; and credibility, trustworthiness, experience, willingness to share, and respect (Mizrahi and Rosenthal, 2001)
- Communication skills, resourcefulness, and boundary spanning Abilities (Dawes & Pardo, 2002)

### Behaviors

- Build cooperative relationships (Brown and Mclean, 1996)
- Empowerment, involvement, cooperation, interaction, connection, and positive emotion (Schneider, 2002).
- Close collaborative relationship among stakeholders, mutual respect, frequent and open communication, acting as a collaborative leader or advocate (Anderson et al., 2007).
- Focus on people before information or action, adaptive and Charismatic leadership style, inspirational values, consultation, and coalition tactics. (Eglene, Dawes and Schneider, 2007)

### Specific Actions

- Recognize principal contingencies and alliances, identify coordination points for participants, move participants toward cooperation for success, make the network structure more favorable, locating key allies at crucial nodes, altering agreements among the parties to heighten program salience, and buffering well-functioning arrays to limit uncertainty and complexity (O’Toole, 1997)
- a) focusing public attention on the issue; and b) engaging people in the effort to address the issue; c) stimulating multiple strategies and options for action; d) sustaining action and maintaining momentum by managing the interconnections (Luke, 1998)
- a) activating--the process of identifying and understanding participants and stakeholders in the network; b) framing--the process of
establishing and influencing the operating rules, values, norms of the
network as well as transforming the perceptions of participants; c)
mobilizing—developing and achieving common goals to gain
participants’ commitment to the network; d) synthesizing—enhancing
the contextual situations for favorable and productive interaction
among participants. (Agranoff and McGuire, 2001)

■ Engaging in team leadership, negotiating integrated efforts across
boundaries, promoting organizational learning, and conceiving and
facilitating change. (Hales, 2002)

■ Five essential goals a network leader must work toward: 1) building a
shared vision; 2) creating supportive structures and processes; 3)
fostering an appropriate culture and value system; 4) promoting new
technologies; 5) overcoming cognitive constraints. (Zhang, 2003)

■ Ensuring political or top-executive support, encouraging and
maintaining positive relationships with the project team, encouraging
learning and adaptation, and triggering trust and collaboration among
external participants (Eglene et al., 2007)

■ Exercising formal authority through affecting the existence and nature
of localized episodic problems, the development of appropriate and
effective strategies, and the willingness of key actors to participate;

Exercising informal leadership through building trust among key
participants, leveraging trust embedded in professional networks,
applying localized and episodic solutions to complex problems, using
boundary objects such as prototypes, documents, plans, developing
appropriate and effective strategies, and clarifying roles and
responsibilities (Gil-Garcia et al., 2007)

<table>
<thead>
<tr>
<th>Success criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Three levels of analysis: community, network, organization/participant levels (Provan and Milward, 2001)</td>
</tr>
<tr>
<td>■ Three levels of analysis: network, participating organizations, individuals. Three measure of success: structural, performance measures, process and relationship measures. (Dawes, 2008)</td>
</tr>
</tbody>
</table>

IV. Cross-National Leadership Studies

1. Why Cross-national?

So far, almost all studies that have been discussed in previous sections were
developed in western countries, particularly in the United States. The issue is that US-
based leadership theories may not be applicable to non-US situations and may need to be
adapted to local norms and values to become accepted and hence effective (Hofstede, 1983; Yiu & Saner, 2000).

Hofstede (1993) listed three major differences between American conceptions of leadership and those of other cultures: a) American approaches focus highly on market processes, in which managers and subordinates make deals by which self-interests are harnessed to organizational goals. b) U.S. theories are individualistically focused with issues of individual gain, self-actualization, and personal growth. The word “duty”, for example, is not mentioned in any US leadership theory; c) American approaches are extremely focused on the leaders as the primary determinants of subordinates’ motivation and performance. In contrast, some leadership studies in other cultures identify stronger influences than leadership, such as peer group pressures in collectivist cultures. Those three assumptions underlying the US leadership theories may not hold in other countries. Although some aspects of a theory may be universally applicable, other aspects may apply only to a particular culture. Hofstede (1980) argued that Fiedler’s Contingency theory of Leadership may be the only US leadership theory which allows for a certain amount of cultural relativity, although indirectly. Contingency theories acknowledged the roles of situational moderators and culture is the greatest of all moderators (Triandis, 1993). Thus, cultural values should be included as moderating variables in all contingency leadership theories (Chemers, 1997).

Testing leadership theories in different cultures can provide new insights and improve leadership theories (Yukl, 2002). Studies in different countries can help to provide different scripts for effective leadership, assess similarities or differences in various cultures (Ayman, 1993), and understand what works and what does not work in
different cultural settings (Triandis, 1993). A focus on cross-cultural issues can help researchers uncover new relationships by including a broader range of variables often not considered in current leadership theories (Dorfman, 1996). Although culture will add another level of complexity to leadership theories, it also holds the potential for greater understanding and practical utility (Chemers, 1997). Looking from a different country, the environment of one’s own country may look a lot clearer (Shenkar & Glinow, 1994).

2. Definition of Culture

Zavalloni (1980) suggested that the central features of culture or societies are expressed by values, which refers to the preference of social actors in terms of what is considered desirable or preferable. Smith and Paterson (1988) defined cultures as agreed ways of interpreting signs, symbols, artifacts, and actions. The GLOBE (Global Leadership and Organization Behavior Effectiveness) project, a cross-cultural leadership study, defined culture as “shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives and are transmitted across age generations” (House et al., 2002, p.5).

3. Cultural Value Taxonomies

A. Hofstede’s dimensions of culture

Hofstede’s (1980, 1993) culture value taxonomy is the most widely used framework in cross-cultural research to differentiate and explain various national cultures. The framework identified five cultural dimensions among different countries: a) power distance; b) individualism/collectivism; c) uncertainty avoidance; d) masculinity/femininity; e) long-term orientation.
Power distance refers to the degree to which a culture considers inequality between individuals to be normal and appropriate. Individualism/collectivism refers to the degree to which individuals are integrated into groups. Uncertainty avoidance refers to a culture’s tolerance for uncertainty and ambiguity. Masculinity/femininity reflects the degree to which the cultural values are associated with a masculine perspective, such as competition, assertiveness, success and acquisition, or a more feminine nature such as the quality of life, personal relationships, caring, and modesty. Long-term orientation, closely associated with Confucianism, is related to virtues such as valuing education, working hard, thrift, patience and perseverance. Hofstede (1980) also found that the dimensions of collectivism and power distance are correlated, namely, most collectivist cultures are also high in power distance.

B. GLOBE project’s culture dimensions

The GLOBE project is a series of long-term cross-cultural leadership studies involving 150 scholars from 61 cultures in all major regions of the world. The project examined national cultures with nine dimensions: power distance, institutional collectivism, in-group collectivism, uncertainty avoidance, gender egalitarianism, assertiveness, future orientation, performance orientation, humane orientation (House et al., 2002). The first six dimensions are based on Hofstede’s work. The dimensions of gender egalitarianism and assertiveness are derived from Hofstede’s masculinity/femininity dimension. Future orientation originated from Kluckhohn & Strodtbeck’s (1961) past, present, future orientation dimension, which focuses on the temporal mode of a society. Performance orientation is derived from McClelland’s work on need for achievement. Humane orientation has its roots in Kluckhohn & Strodtbeck’s
(1961) dimension about human nature being considered essentially good or bad. The GLOBE project’s culture construct definitions and sample questions are listed in Table [5].

### Table [5] Culture Construct Definitions and Sample Questionnaire Items (Kluckhohn & Strodtbeck, 1961)

<table>
<thead>
<tr>
<th>Culture construct definitions</th>
<th>Specific questionnaire item</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Distance:</strong> The degree to which members of a collective expect power to be distributed equally.</td>
<td>Followers are (should be) expected to obey their leaders without question.</td>
</tr>
<tr>
<td><strong>Uncertainty Avoidance:</strong> The extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events.</td>
<td>Most people lead (should lead) highly structured lives with few unexpected events.</td>
</tr>
<tr>
<td><strong>Humane Orientation:</strong> The degree to which a collective encourages and rewards individuals for being fair, altruistic, generous, caring and kind to others.</td>
<td>People are generally (should be generally) very tolerant of mistakes.</td>
</tr>
<tr>
<td><strong>Collectivism I:</strong> The degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action.</td>
<td>Leaders encourage (should encourage) group loyalty even if individual goals suffer.</td>
</tr>
<tr>
<td><strong>Collectivism II:</strong> The degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families.</td>
<td>Employees feel (should feel) great loyalty toward this organization.</td>
</tr>
<tr>
<td><strong>Assertiveness:</strong> The degree to which individuals are assertive, confrontational and aggressive in their relationships with others.</td>
<td>People are (should be) generally dominant in their relationships with each other.</td>
</tr>
<tr>
<td><strong>Gender Egalitarianism:</strong> The degree to which a collective minimizes gender inequality.</td>
<td>Boys are encouraged (should be encouraged) more than girls to attain a higher education (scored inversely).</td>
</tr>
<tr>
<td><strong>Future Orientation:</strong> The extent to which individuals engage in future-oriented behaviors such as delaying gratification, planning, and investing in the future.</td>
<td>More people live (should live) for the present rather than for the future (scored inversely).</td>
</tr>
<tr>
<td><strong>Performance Orientation:</strong> The degree to which a collective encourages and rewards group members for performance improvement and excellence.</td>
<td>Students are encouraged (should be encouraged) to strive for continuously improved performance.</td>
</tr>
</tbody>
</table>

These cultural taxonomies have been shown by extensive empirical studies to be useful frameworks for understanding culture differences. Nevertheless, Triandis (1990) pointed out that considerable variation can exist within a culture. There are always “deviants” out of the mainstream societies. “Idiocentrics” could be present in collective societies, and “allocentrics” exist in individualistic groups. Chemers (1997) added that although one orientation or another might dominate in a culture, all cultures will be a blend of different orientations in different contexts. However, Ayman and Chemers (1991) emphasized that it is hard to “do your own thing” in a society that expects everyone to follow the same rules regardless of their personal wishes. If a society has strong rules of
conduct, individuals will agree on the expected behavior patterns in a situation even if they do not hold similar values (Ayman, 1993).

C. Comparing the cultures of China and the US

The scores of the US and China resulting from Hofstede’s research are shown in Figure [4]. The comparison shows that the two countries differ significantly in terms of the degree of individualism, power distance, and long-term orientation. According to Hofstede’s work, the United States is the most individualistic culture among all countries, scored at 91, while China scored much lower in the individualism dimension at 20. The US ranks low on the power distance dimension at 40, compared to China’s score at 80. The long-term orientation of the US is very low at 29, while China has the highest long-term orientation score in the world at 118 (Hofstede, 1993). Interestingly, while many people may think that the American and Chinese cultures are completely different, the comparison shows that the two countries are actually quite similar to each other with regard to the dimensions of uncertainty avoidance and masculinity. The US’s masculinity score is 62, compared to China’s score at 55. It may be interesting to mention that the scores of some western countries, whose cultures are usually assumed to be similar to that of the US, are actually much more different from the US on this dimension. For example, Sweden scores at 5, and Spain at 42. In terms of uncertainty avoidance, the scores of the US and China are 46 and 40, while Germany, Italy, and France, are scored at 65, 75 and 86 respectively (Hofstede, 1993).
The result of the GLOBE project also shows both similarities and differences between the two cultures (See Figure [5]). The studies confirmed the results of Hofstede’s work with regard to the dimension of collectivism, gender egalitarianism, and power distance to some extent. However, the GLOBE project found that China has as much higher score on uncertainty avoidance than the US, while Hofstede’s study shows a different result, in which the scores are quite similar. In terms of the new dimensions that are not included in Hofstede’s framework, the US scores much higher than China on assertiveness, and a little higher than China on future orientation. The countries are very similar in terms of performance orientation and humane orientation. The difference of results between Hofstede’s work and the GLOBE project may be caused by the fact that the two studies used different methods, and were conducted in different time periods with
different types of samples.

Figure [5] Results of GLOBE Project (2004)

Echoing the above findings with regard to Chinese culture, Redding and Hsiao (1990) identified three long-standing forces that affect how Chinese think and behave: a) paternalism, which means a sensitivity to hierarchy and deference to seniority; b) personalism, which refers to a people orientation, reliance on mutual interpersonal obligations to deal with daily affairs; c) defensiveness derived from insecurity, which involves sacrifices of immediate gratification to secure long-term material and educational achievements. Redding and Wong (1986) suggested that concern for face, although a universal concern, is particularly high in China. Kim, Pan and Park (1998) also found with empirical tests that subjects from China and Korea are more socially oriented, are more likely to avoid confrontation, and have more trouble dealing with new
situations. The results with Chinese and Korean subjects are consistent with Hall’s (1976) description of high-context cultures, and the American subjects’ tendencies are consistent with low-context cultures. According to Hall (1976), a high-context culture is one in which people are deeply involved with each other, and a low-context culture is one in which people are highly individualistic, fragmented, and alienated with relatively little involvement with others. The former is like collectivism, and the latter is like individualism in Hofstede’s terms.

In addition, subcultures have been identified in China. Huo and Randall (1991) compared values between four subcultural Chinese groups in Beijing, Wuhan, Hong Kong and Taiwan and found strong subcultural differences across these subcultures. The authors argued that linguistic, regional, tribal, ethnic, religious, and caste cleavages within nations may make the data from one region unrepresentative for the whole nation.

4. Culture’s Influence on Leadership

Cultural values are reflected in societal norms about the way people are related to each other (Yukl, 2002), and are internal and most likely to affect an actor’s expectations, behavior, and reactions (Ayman, 1993). Thus, people act without thinking because behavior under the influence of culture is over-determined (Triandis, 1993).

With regard to leadership, cultural values can influence leader’s traits, behaviors, power, situational variables, and influence tactics, as well as leaders’ and followers’ perceptions of leadership effectiveness. Yiu and Saner (2000) argued that cultural values are present in the characteristics of both leaders and their behaviors, in task characteristics such as uncertainty, and have dramatically different implications in different cultural contexts. Yukl (2002) identified four major types of cross-cultural
leadership research questions: a) Differences in the conceptualization of leadership behavior; b) Differences in beliefs about effective leadership behavior; c) Differences in the actual pattern of leadership behavior in each country; d) Differences in the relationship of leadership behavior to outcomes.

Casimir and Waldman (2007) found that cultural background influences the perceived importance of various traits with regard to effective leadership. This is determined partly by culturally endorsed interpersonal norms and partly by the requirements of the leadership role. The cultural values of followers could affect their reactions to leadership and determine the specific traits and behaviors that make up the prototype of an effective leader (Chermers, 1997). Cultural values can influence the attitudes and behavior of managers as well (Adler, 1997; Fu & Yukl, 2000; House et al., 1997; Lord & Maher, 1991), and these can predict the leader attributes and behaviors that are most frequently enacted, acceptable, and effective in that culture (House et al., 2002). Triandis (1993) specified that a society’s expectations about the appropriate roles of power and authority, and the predictability and control of the environment determine the interpretation of situational variables and hence leadership behaviors. The ways in which behaviors are perceived and interpreted differ with culture (Triandis, 1993), and acceptable forms of leadership behavior are shaped by cultural norms (Yukl, 2002). Specific behaviors that are associated with certain leadership patterns (Triandis et al., 1968) and the meaning of different leadership styles (Ayman, 1993) may also differ across cultures.
Fu et al. (2004) found that societal cultural values can moderate the relationship between individual social beliefs and the perceived effectiveness of influence tactics. Different cultures may imbue tactics with different meanings, provide different contexts in which a strategy may be evaluated with varied efficacy, or sensitize its members differently to the effect of behavior-guiding beliefs (Leong et al., 2007).

Triandis (1993) pointed out that Fiedler’s three situational variables have some conceptual relationship to cultural dimensions. He argued that the model’s ‘leader-member relations” is linked with collectivism. Leader-member relations are likely to be good when the leader belongs to the same in-group as the followers and bad if the leader belongs to the out-group. In addition, there may be more situations perceived in collectivist cultures as having “poor leader-member relations” than in individualistic cultures, so effective leaders will have to be more nurturant and supportive and do more community sharing in such cultures than in individualistic cultures. The model’s “task-structure” variable is related to uncertainty avoidance. A situation with much task structure should be compatible for people high in uncertainty avoidance. Also, more situations may be defined as “low-task-structure” in high-uncertainty-avoidance cultures than in low-uncertainty-avoidance cultures. The “leader power” variable in the Contingency model is clearly related to power distance. Due to the higher acceptance of power distance in high-power-distance cultures, a leader is likely to be given more power, and more situations may be defined as “low-power”, in high-power-distance cultures than in low-power-distance cultures (Triandis, 1993). Yukl (2002) further pointed out that situational variables such as characteristics of the organization (type of organization, size, organization culture and climate), and characteristics of the managerial position (level
and function of the manager, position power and authority) may also interact with national culture. With those interactions, cross-cultural differences may be found in some situations but not in others, and the effects of situational variables may be greater in some cultures than in others (Bass, 1990a; House et al., 1997).

Specifically, each cultural dimension may have its particular influence on leadership. Those influences will be discussed respectively in the following sections.

A. Influence of power distance

Followers in high power distance cultures are more likely to accept inequality as a basic fact of society. They view leaders and followers are different kinds of people, and find questions about the legitimacy of power irrelevant. A high level of inequality of power and wealth is usually present in such the societies. However, it should be noted that this condition is not necessarily forced upon society, but rather accepted it as their cultural heritage (Hofstede, 1993). By contrast, people in a low power distance culture tend to believe that inequality in society should be minimized. Subordinates and superiors are viewed as the same kind of people, and society expects that power will be exercised on a legitimate basis.

Followers in countries higher in power distance tend to neither expect nor desire to participate in decision making (Hofstede, 1993), while followers in a low power distance culture often take the initiative rather than waiting for their superiors to invite participation (Chemers, 1997). Organizations in high power distance cultures tend to be more centralized and more hierarchical than organizations in low power distance cultures, and leaders in high power distance cultures tend to be more authoritarian than those in low power distance cultures (Chemers, 1997). Billings (1989, 1991) suggested that high
power distance would be especially related to charismatic leaders, and the ideal leader may well be expected to be an extraordinary person.

B. Influence of individualism/collectivism

Triandis (1993) specified a list of attitudes, beliefs, norms, roles, self-definitions, and values that contrast individualism and collectivism as shown in Table [6]. Collectivists tend to “define themselves by using group attributes (e.g. I am Chinese), see behavior as reflecting group influence (e.g. I am not surprised he did this: What can you expect of a Japanese?), see success as due to the help received from others (e.g. I am what my coworkers helped me become), and failure due to internal factors (e.g. I did not try hard enough)” (Triandis, 1993, p.172). In contrast, people in individualism cultures tend to “define themselves by reference to personality attributes (e.g. I am reliable), see behavior as reflecting internal factors (e.g. attitudes, personality), and failure as due to external factors (e.g. The task was difficult.)” (Triandis, 1993, p.172).

**Table [6] Main Contrasts between Collectivists and Individualists**

*(Triandis, 1993)*

<table>
<thead>
<tr>
<th>Collectivists</th>
<th>Individualists</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit of analysis</strong></td>
<td></td>
</tr>
<tr>
<td>The group, the collective</td>
<td>The individual</td>
</tr>
<tr>
<td><strong>Attributions for success</strong></td>
<td></td>
</tr>
<tr>
<td>Help given by collective</td>
<td>Ability</td>
</tr>
<tr>
<td><strong>Attribution for failure</strong></td>
<td></td>
</tr>
<tr>
<td>Lack of effort</td>
<td>Difficult task, bad luck</td>
</tr>
<tr>
<td><strong>Self is defined in</strong></td>
<td></td>
</tr>
<tr>
<td>Ingroup terms</td>
<td>Traits terms</td>
</tr>
<tr>
<td><strong>When individual and group goals are in conflict</strong></td>
<td></td>
</tr>
<tr>
<td>Group goals win</td>
<td>Individual goals win</td>
</tr>
<tr>
<td><strong>Attitudes and norms</strong></td>
<td></td>
</tr>
</tbody>
</table>
Collectivism values responsibility and duty to and support from cohesive in-groups and seeks harmonious interpersonal relationships. By contrast, individualistic cultures believe that a person’s identity is grounded in the individual and in personal achievement, and every person has the right and responsibility to develop their individual initiatives (Chemers, 1997). Collectivists are oriented towards group goals, while individualists are oriented towards personal goal. Collectivists tend to focus on the needs of others, while individualists are more likely to focus on their own needs, rights, and capacities. Collectivists favor interdependence, security, obedience, duty, in-group harmony, hierarchy, and personal relationships. Individualists emphasize independence, doing their own thing, pleasure, achievement, competition, autonomy, and fairness (Triandis, 1990, p.172).

Collectivists are context-dependent (Cohen, 1991). They try to suit their behavior to the demands of the situation and there is no one personality attribute that holds across all situations (Shweder & Bourne, 1984). Also, personal attitudes are not related to behaviors (Iwao, 1988), because personal behaviors must be “appropriate” in all cases (Triandis, 1993). By contrast, individualists assume that attitudes can predict behavior.
Collectivist social behavior is a function of “who the other person is”, while individualist social behavior is a function of “what the other person thinks (attitudes) and does (achievements)” (Triandis, 1993).

In terms of communication styles, collectivists tend to avoid confrontation, which is sometimes considered uncivilized behavior, for the sake of the harmony of relationships within the in-group. They often communicate in an indirect way to avoid the possibility of hurting someone, and let listeners fill in the gaps. Drawing conclusions is considered an insult to the listeners (Triandis, 1993; Javidan et al., 2006). Preserving others’ face in social encounters is important, so supervisors usually do not point out others mistakes directly. Instead, they typically use vague or moderate language to protect the face of those being criticized (Dorfman et al., 1997). By contrast, individualists see nothing wrong with some confrontations. They tend to be more concerned with “I” than “we’, usually communicate the same way regardless of context, and are more likely to use extreme terms (Triandis, 1993).

The goals of collectivists emerge in group interaction or are imposed by group authorities, while the goals of individualists tend to be generated by themselves to reflect their personal needs. When group and personal goals are in conflict, the collectivists tend to give priority to the group goals; the individualists are more likely to give priority to their personal goals (Triandis, 1993). Organizations in individualistic societies encourage leadership behaviors based on expertise and rationality, while organizations in collectivism culture tend to treat personnel as members of a “family” (Chemers, 1997).

Collectivists tend to form few in-groups that are stable over time based on friendships (Triandis et al., 1988a), and are highly concerned about the integrity and well-
being of these groups and often value them over their personal needs (Triandis, 1989). It is difficult to enter in-groups, but once one has been accepted, social behavior is intimate and supportive (Triandis et al., 1988b). Collectivists are usually indifferent, distrusting, and can even be hostile with out-groups, but they can be very hospitable towards potential in-group members (Triandis, 1993). On the contrary, in individualism cultures, the in-groups tend to be defined more broadly, and individualists can have many in-groups. The difference between in-group and out-group behaviors is less pronounced. Individualists regard interactions with group members as being restricted to a particular purpose and time, and they can join or leave groups easily depending on the groups’ ability to satisfy their individual goals (Triandis et al., 1988a). The influence of in-groups on collectivists is profound and widespread while the influence of in-groups on individualists is limited to specific behaviors (Triandis et al., 1990).

As a result of all these situations, the image of the ideal leader is likely to be different in these two kinds of cultures, and what is a desirable leadership behavior in one culture may be undesirable in another. Hofstede and Bond (1988) described the ideal leader in a society that is low on power distance and high on individualism as a “resourceful democrat”, while in cultures with the reverse pattern, the ideal leader would be a “benevolent autocrat” “like a good father”. In collectivism cultures, the ideal leader is paternalistic, takes good care of the in-group, supports subordinates, solves personal problems, and shows maintenance and consideration behaviors (Ayman & Chemers, 1983). Leadership is more of a group-focused phenomenon, in which one of the leader’s most important functions is to strengthen an “in-group” identity and ties among group members, thereby eliciting from followers the selflessness and loyalty owed to the in-
group (Chemers, 1997; Javidan et al., 2006). By contrast, the ideal leader for individualists is the one who allows them to do things in their own ways, but is supportive when they need help. Such a leader will respect and admire their distinctiveness, accept their search for pleasure and achievement, and helps them deal with interpersonal competition (Ayman & Chemers, 1983).

C. Influences of uncertainty avoidance, masculinity, long-term orientation

Uncertainty avoidance is related to a society’s degree of comfort in unstructured situations such as novel, unknown, surprising, unusual conditions (Hofstede, 1993). Hofstede (2001) argued a culture with a strong tendency to avoid uncertain situations is likely to set strict written laws and rules, and take safety and security measures. High uncertainty-avoidance cultures also believe that experts and authorities know a great deal more than ordinary citizens, and conflict and competition should be avoided. Organization practices also stress uniformity, bureaucratic and risk avoidance, and foster managers who are task oriented (Chemers, 1997). By contrast, low uncertainty avoidance cultures are more tolerant of uncertainty and risks, and tend to have as few rules as possible (Hofstede, 1993).

Organizations in high masculinity cultures tend to believe that performance is what counts; ambition and achievement are desirable; high job stress is acceptable. They place career above private lives. Organizations in high femininity societies favor job designs that foster teamwork. They value quality of life over achievement, and try not to interfere in employee’s private lives (Chemers, 1997).

People in long-term orientation cultures value concepts such as thrift, perseverance, a sense of shame, saving face, fulfilling social obligations, respect for tradition, and
reciprocation of favor and gifts. These values indicate the society's time perspective and an attitude of overcoming obstacles with time, if not with will and strength (Hofstede, 1993).

D. GLOBE project’ results

The GLOBE program examined how the nine cultural value dimensions as independent variables influence the six dependent variables, culturally endorsed leadership theory dimensions, including charismatic/value-based; team oriented, self-protective, participative, humane oriented, autonomous. The project found that being group or team oriented is considered more relevant for leadership effectiveness in collectivism cultures than in individualism cultures. Being democratic and participative is considered more relevant for leadership effectiveness in low-power-distance and low-uncertainty-avoidance cultures. Being charismatic is considered more relevant in cultures with a high performance orientation. The study emphasized that the United States emerges as the only culture in which participative leadership has a positive influence on employee performance.

GLOBE project results also indicated that some attributes are universally regarded as contributing to outstanding business leadership in all cultures. These attitudes include integrity, visionary, inspirational, decisive, diplomatic, team integrator, performance-oriented and administrative competence. Some attributes found to be more culture-specific, viewed in some societies as promoting good leadership, and in other societies as impeding good leadership, included ambitious, cautious, compassionate, domineering, formal, independent, indirect, intuitive, logical, orderly, risk taker, self-effacing, self-
sacrificing, sensitive, status conscious, willful, cunning, evasive, class conscious, and sensitive.

5. Leadership Studies about China in a Comparative Perspective

To date, most cross-cultural research on leadership has involved supportive leadership, task-oriented leadership, use of contingent rewards, participative leadership, and transformational or charismatic leadership (Yukl, 2002). A number of research studies have examined the leadership phenomenon in China with a comparative perspective. They are organized using Yukl’s integrative framework below (Yukl, 2002).

A. Power and influence

Shenkar and Glinow (1994) found that legitimate power in China goes far beyond what is normal in the West. These concept of legitimate power includes "ideological power" which is unique in the Chinese context (Laaksonen, 1988). According to Mao Zedong’s "Red and Expert" doctrine, politics should be emphasized in managerial selection. An official’s appropriate political background and political participation are a complement to his technical specialization. As a result, expertise per se in Chinese government organizations generates relatively weaker power than in the West.

Fu and Yukl (2000) examined the perceived effectiveness of influence strategies in China and the US, and found that U.S. managers rated rational persuasion and exchange as more effective than did Chinese managers. For Chinese managers, coalition tactics, upward appeals, and gifts were viewed as more effective influence tactics. Leong et al. (2007) also tested the perceived effectiveness of two broad dimensions of influence strategies among three Chinese societies and the US. The more nurturing Gentle Persuasion (GP), involved both ingratiation tactics and persuasion via reason or fact
Contingent Control (CC), which involved the use of contingent punishment, exchange of benefits, collegial support and assertiveness. The study found that Americans managers rated GP as most effective; Mainland Chinese rated it least effective. No cultural differences were found for the rated effectiveness of CC. In addition, the perceived effectiveness of GP increased with higher position power of the subject, and vice versa for CC.

B. Traits

Casimir and Waldman (2007) compared China with Australia concerning which traits are regarded as important for effective leadership. They found that the Australians rated traits that attenuate leader–follower power differences higher than did the Chinese. Australians rated the traits bossy, communicative, friendly, humorous, participative, and respectful significantly higher than Chinese. Chinese rated the traits integrating and modest significantly higher than did the Australians. Smith et al., (1997) identified a new leadership factor in the Chinese settings, moral character, which is related to integrity, honesty and commitment to the work team and political party. While integrity and honesty have also been identified as Western leadership traits which are interpreted in an individualized and personal form (Yukl, 1987), their meanings in China, which are embedded in its collectivism culture, are different to some extent.

C. Leadership behavior

The GLOBE project found that in China charismatic/value-based and team oriented leadership contribute to effectiveness. Humane oriented leadership is viewed favorably, although not as important as the former two. Autonomous leadership is viewed neutrally.
Participative leadership is ranked relatively low, and self-protective leadership is relatively high (Javidan et al., 2006) as effective forms of leadership behavior.

Research also found that Chinese managers tend to be more authoritarian and autocratic than Western managers, and expect respect and obedience from subordinates (Redding & Casey, 1976; Javidan et al., 2006). They tend to judge a follower’s worth based on loyalty rather than ability or performance against objective criteria (Chen, 1995). Meanwhile, Chinese leaders are also expected to be fraternal and friendly with their subordinates and have an indirect approach to communication by using metaphors and parables. Chinese leaders are expected to build emotional ties with in-groups and their relationships with their subordinates go far beyond than their U.S counterparts. Chinese like leaders who are status conscious and are neutral towards leaders who are elitist. In contrast, Americans have a neutral view of fraternal leadership, have a negative view of indirect leadership, are not fond of status conscious leaders, and are negative towards elitist leaders (Javidan et al., 2006).

Hsu (1982) found that Chinese subordinates prefer a leadership style where the leader maintains a harmonious considerate relationship with followers while initiating structure and defining clear-cut tasks for each member of the group at the same time. Namely, both supportive and directive leadership are highly impactful. Shenkar and Glinow (1994) suggested that due to pressures from the political system to conform and internal group pressures, the Chinese leader is responsible for maintaining harmony among his subordinates and supporting their well-being, while at the same time carrying out policies issued by the political hierarchy. A leader’s role is not only to maintain culture (Trice & Beyer, 1991), but also to assure compliance. These findings are
consistent with Misumi’s (1985) well-known finding in Japan, which is also a collectivism culture, that a leader who is most effective is both nurturant and production-oriented in all situations. Zhou and Martocchio (2001) further noted that Chinese managers rely more on work performance and personal needs when making monetary decisions but put more emphasis on the relationship with co-workers and managers when deciding on non-monetary decisions.

Walumbwa and Lawler (2003) examined the moderating effect of collectivism on the relationships between transformational leadership, work-related attitudes and perceptions of withdrawal behaviors in three countries: China, India and Kenya. Results found support for the moderating effect of collectivism on the relationship between transformational leadership and work-related outcomes, such as facets of job satisfaction, organizational commitment and perceptions of organizational withdrawal behaviors. The results support the view that transformational leadership might be effective across cultures.

D. Situational variables

With regard to situational variables of leadership effectiveness, especially the characteristics of followers, Pratt (1991) found that cultural, social, political, and psychological influences are shown to result in different conceptions of self in China and the United States. The Chinese construction of self emphasizes continuity of family, societal roles, the supremacy of hierarchical relationships, compliance with authority, and the maintenance of stability. They seek fulfillment through performance of duty, ordained roles, and patterns of filial loyalty. In the US, the self is considered a psychological construct as much as an artifact of cultural, social, and political influences. Shenkar and
Glinow (1994) found that the relationships among need categories according to Maslow’s (1954) theory are different in the Chinese setting from those in Western countries. While Maslow's theory places individual needs of self-esteem and self-fulfillment as the highest order needs at the expense of social needs, in Chinese society it has been suggested that a hierarchy of needs will show national and social needs to be the most important (Nevis, 1983).

Leung, Su, and Morris (2001) studied cross-cultural differences in employee reactions to feedback, and found that Chinese respondents reacted less negatively to supervisory criticism compared to the U.S. respondents. Morris et al. (1998) compared the conflict-resolution approaches in the United States, China, India, and the Philippines. They found that Chinese participants reported a greater tendency to use an avoiding style than the participants in the other three countries, whereas the U.S. participants reported a greater tendency to use a competing style relative to the others. Chen (1995) suggested that open discussion in China about decision making processes tends to be viewed as a challenge to the leader’s authority. Instead, subordinates typically assume the leader has considered all relevant factors prior to making a decision.

With regard to information sharing, Chow et al. (2000a) conducted an empirical study to examine the interaction effects of national culture and contextual factors on employees’ tendency to share knowledge with co-workers. Results suggested that when the knowledge sharing has no potential to damage the sharer's self-interests, there is no significant difference in terms of willingness to share between Chinese and Americans. When knowledge sharing can damage the sharer's self-interests while benefiting the firm, Chinese put the interests of the collective ahead of their own by indicating a significantly
higher propensity to share. However, Chinese are also significantly less inclined than their U.S. counterparts to share information files with employees who are not considered to be part of their "in-group." This suggests that the effects of national culture on knowledge sharing are not monotonic; rather, they interact with attributes of the knowledge and employment setting.

E. Actions

Redding & Wong (1986) found that in Chinese organizations, control is achieved through conformity, nepotism and guanxi, not through performance contingent rewards and punishments. Guanxi means building personal ties and relationships, which reflects collectivists’ belief that one’s value and importance is embedded in social ties and relationships (Javidan et al., 2006). According to Wood, et al. (2002), Guanxi could be best defined as friendship with implications of a continual exchange of favors. Wood, et al. (2002) suggested that setting-guanxi is an issue uniquely important to the Chinese leadership. Guanxi assumes an importance in Chinese interpersonal relationships unparalleled in the West (Bond & Hwang, 1986; Chen, 1995; Yeung & Tung, 1996; Smith et al., 1997). Yeung and Tung (1996) list some of the differences between guanxi and the Western view of friendship and networking, including differences in motives, the nature of reciprocation, time orientation, the use of power differentiation, the nature or source of power, and the nature of sanctions employed as a result of the different concepts. Xin and Pearce (1996) pointed out that guanxi is especially important in a weak legal and regulatory environment. This is so because in a transitional economy, reliance on structures, property rights and institutional stability are somewhat fragile (Putnam,
1993). Consequently, business dealings are likely to rely more on the context of individual relationships than on abstract legal representations (Xin & Pearce, 1996).

6. Culture Change

The values and traditions in a national culture are not static, and can change over time (Tsui et al., 2007; Yukl, 2002). Scholars have observed that cultural values may change more rapidly during periods of environmental transformation in the economy or in technology (Fertig, 1996). Cultural change is especially important for studying nations with rapid economic, technological, and social development, such as China (Ralston et al., 2006). Researchers need to pay greater attention to the effects of rapid societal developments and changes when studying leadership style and leadership effectiveness in a developing country. Saner (2001) further suggested that cultural values may converge over time as a result of the continued globalization of the world economy and increasing postmodern convergence of culture.

Particularly with Chinese culture, Ralston, et al. (2006) found that cultural values changed much more rapidly in China than in the United States in a recent 12-year period. Li et al. (2002) examined the relationship between the changes in culture and changes in leadership style, and found that due to different political, economical, and cultural developments in recent decades, the leadership styles in four Chinese societies (Mainland China, Taiwan, Hong Kong, Singapore) have changed in different directions. The study found many similar behaviors and attitudes among the four and shows that some dimensions of leadership style can remain unchanged, in spite of the development and change in those Chinese societies. On the other hand, despite the same cultural roots and heritage, some leadership attributes turned out to be significantly different among these
four Chinese societies. The Taiwanese leaders ranked very high in diplomatic, procedural and non-participative behaviors, while leaders in both Singapore and China were rated as autocratic and status conscious. Egri and Ralson (2004) investigated the generation cohort value orientations of Chinese and U.S. managers and professionals. The four Chinese generations studied are: Social Reform (born in 1971-1975), Cultural Revolution (born in 1961-1970), Consolidation (1951-1960), and Republican Era (1930-1950); and the three American generations classified are: Generation X (born in 1965-1975), Baby boomer (born in 1946-1959), and Silent generation (born in 1925-1940). The research found that China’s Consolidation, Cultural Revolution, and Social Reform generations are significantly more open to change and self-enhancement and less conservative and self-transcendent than the Republican Era generation. The result of the US generations basically followed an age related pattern, namely, the older people are, the more conservative they are. After comparing the generations in the two countries, the study further found that China’s Republican Era generation and the American Silent generation were similar in respect to all four values. China’s Social Reform generation and the American’s Generation X were similar with respect to two values--high openness to change and low conservatism. There are different value orientations between Chinese and U.S. generations that had grown up during Communist China’s closed-door policy (1951-1970).

The implications of culture change for research methodology are that adopting a more dynamic perspective on national culture, with a better understanding of the sources, processes, and consequences of the changes, can provide more accurate, reasonable, and consistent explanations. Longitudinal investigations which correlate organizational
processes with changing institutions will be also needed (Shenkar & Glinow, 1994).

7. Other Political, Economic and Social Factors

Culture is not the only factor at play (Shenkar & Glinow, 1994). Leadership behaviors and effectiveness could be also influenced by other factors such as the political, economic and social context of a country. Most of these factors can influence program effectiveness directly and are seemingly beyond the control of leaders.

A broader range of variables, such as religion, language, ethnic background, history, or political systems should be considered in current leadership theories (Dorfman, 1996). Researchers need to pay attention to possible effects of situational variables such as religion, language, history, law, political systems, and ethnic subcultures (Yukl, 2002). Kim (2007) suggested that the performance of digital government is likely to be determined by economic wealth, education, urbanization, civil liberties, and government effectiveness. Among those factors, Kim singled out government effectiveness, which refers to the quality of public bureaucracies for delivering better services to the public, as much more important than any other factor in determining global e-government performance. Srivasta and Thompson’s (2007) research highlighted the importance of national technological and organizational contexts for e-government development. Evan and Yen (2005) argued that infrastructure realities, the digital divide, historical issues, style of government and ideology, different concerns about security and privacy, as well as cultural issues all have impacts on the development of e-government implementation in a country.

With regard to the context in China, Li, et al. (2002) argued that the difference in terms of leadership styles in four Chinese societies (Mainland China, Taiwan, Hong
Kong, Singapore) are a result of different political, economic, and cultural developments in recent decades. For example, Taiwan allows democratic elections of government leaders at all levels. In Mainland China almost all levels of government leaders are appointed. After comparing four subcultures of Chinese, Bosland (1985) argued that factors such as local environment, organizational subculture, industry, or recent history may explain why such wide divergence is found for the same national cultures are found.

Chen et al. (2007) identified critical success factors for successful e-government implementation and proposed an implementation framework to compare e-government strategies in the US and China. The framework includes four major factors of e-government strategies and implementations between developed and developing countries: national government infrastructure factors, cultural factors, and societal factors. The government infrastructure factors comprise four attributes: a) network access, involving the availability, cost, and quality of information and communication technology networks, services, and equipment; b) network learning, involving issues such as technical staffing and training, c) network economy—meaning that business and government use information and communication technologies to interact with the public and each other. These interactions include boundary removal, collaboration, partnership, public-private sector partnership, and e-community creation; and d) network policy—the extent to which the policy environment promotes or hinders the growth of ICT adoption. This factor includes issues such as laws, strategies (visions and missions), and accountability. Societal factors include attributes like history, citizenship, government staff and governance, organizational structure, and politics and information availability. Cultural factors refer to organizational culture as well as social norms and national culture.
8. Cross-national Studies in the Public Sector

With the exception of e-government studies, most of these cross-national leadership studies were conducted in the private sector probably due to globalization and the expansion of multinational companies. Only a few studies have addressed cross-national leadership in the public sector. Pye and Pye (1990) conceptualized Asian political development as a product of cultural attitudes about power and authority, and argued that leaders in Asia are more concerned with dignity and upholding collective pride than with problem-solving, because people in Asia are group-oriented and respectful of authority. Yun (2008) investigated the empirical associations between Hofstede’s cultural dimensions and excellence in public diplomacy, and suggested that the uncertainty avoidance dimension has a substantial and significant negative relationship with excellence in public diplomacy, and individualist and low power distance cultures are more conducive to excellence.

Very few research studies have considered how public leaders behave within their own country in a comparative perspective. Particularly, no comparative studies about leadership behaviors in cross-boundary information sharing in the public sector were found. This may be because it is sensitive and difficult to have access to government information in a foreign country, or simply because researchers lack interests in the topic.

V. Identifying the Gap in the Literature

A great number of studies have been conducted on the topic of effective leadership behaviors in Western countries, especially in the US. However, American-derived leadership theory reflects the individualistic culture of the US, rather than offering a firm base upon which to build universal leadership theories (Smith et al., 1996). In addition,
most leadership theories have been developed in the private sector, rather than in the public sector. Furthermore, only a few of studies have addressed leadership in the context of cross-boundary information sharing, which is very different from the settings in a single bureaucratic organization. With regard to comparative studies, although researchers have developed a number of useful cross-national leadership theories and conducted a series of empirical tests, again, only a few of them are targeted at leaders in the public sector, and even fewer were conducted in the context of cross-boundary information sharing or the collaborative network setting. Up to now, no studies have been conducted on the topic of effective leadership behaviors in the context of cross-boundary information sharing in a comparative perspective. This research intends to start filling that gap and to explore this area by conducting a comparative case study between the US and China. The process of summarizing the literature and identifying the gap is shown in Figure [6].

Figure [6] Identifying the Gap in the Literature
Chapter Three: Research Design and Methods

I. Research Objectives

The purpose of this research is to extend current theories of effective leadership behavior in cross-boundary information sharing developed in the US into international contexts and new policy domains hoping to contribute to the development of new knowledge in the field. This will be achieved through exploring effective leadership behaviors in cross-boundary information sharing initiatives in China, comparing the results in China with those in the US to identify similarities and differences, and then exploring the impact of political, economic, social and cultural factors on those similarities and differences.

II. Overall Research Design

Research design is the framework for the collection and analysis of data (Bryman, 2004). This research will comprise a comparative analysis between the US and China by taking an inductive and qualitative approach. The research comprises two steps. The first step involves an original case study in China to explore effective leadership behaviors in the technological, organizational, and legal context of cross-boundary information sharing initiatives. Qualitative data will be collected from in-depth interviews and government documents in information sharing initiatives of China’s product safety and food safety policy domain. The data will be analyzed with an inductive approach using grounded theory to develop theoretical patterns and frameworks. Next, in the second step, the patterns and frameworks developed in Chinese case will be compared to the results of
previously developed and published case studies and related analysis in the US to identify the similarities and differences between them and then exploring the impact of macro cultural, political, economic, and social factors on those similarities and differences. The research designs of the two parts will be closely linked to each other.

The following conceptual model (Figure [7]) illustrates the overall research design of the study. The outer layer represents the cultural, political, economic, and social context of a country; the middle layer represents the technological, organizational, and legal environment of information sharing initiatives, and the core symbolizes the patterns and frameworks of leadership behaviors. The cores in the two countries will be compared to identify similarities and differences with all contextual factors taken into account.

Figure [7] Conceptual Model
III. **Chinese Case Study**

A case study involves detailed, rich and intensive analysis of a case or phenomena (Lee, 1989; Walsham, 1995; Yin, 2003; Bryman, 2004), and it is concerned with the complexity and particular nature of the case in question (Stack). According to Yin (1994), case study design is employed to answer how and why questions. An inductive approach refers to the relationship between theory and research in which the former is the outcome of the latter. The inductive approach is usually associated with a qualitative research approach, which emphasizes words rather than quantification in the collection and analysis of data (Bryman, 2004).

1. **Research Questions and Variables**

   The research questions in the case study are:

1) What is the technological, organizational, and legal environment of leaders who are working in cross-boundary information sharing initiatives in China?

2) How do leaders in China behave in this given situation in order to carry out cross-boundary information sharing initiatives?

3) What is the relationship between those leadership behaviors and the effectiveness of the initiatives in China?

4) What kinds of leader behavior are more accepted by followers and stakeholders of the initiatives?

5) How do leaders and stakeholders perceive the effectiveness of a cross-boundary information sharing initiative?

6) What cultural, political, economic, and social factors might account for those leadership behaviors in China?
Using Yukl’s (2002) Integrative framework, the case study will explore a variety of complex and dynamic relationships among the variables. Those variables include leader power, leader traits, leader behaviors, actions (intervening variables), success criteria, as well as situational variables including the acceptance of leadership behaviors by followers and stakeholders, the technological, organizational, and legal context of cross-boundary information sharing, and the cultural, political, economic, and social context of China. Table [7] lists the variables, research questions and examples of interview questions that will be used in the case study.

### Table [7] Variables, Research Questions and Examples of Interview Questions in Case Study

<table>
<thead>
<tr>
<th>Variables to be explored</th>
<th>Research questions</th>
<th>Examples of interview questions</th>
</tr>
</thead>
</table>
| Power, Situational Variables, Leader traits  | What is the technological, organizational, and legal environment of leaders who are working in cross-boundary information sharing initiatives in China? | 1. What is your role in your organization? How long have you been in your position? How long have you worked for this organization?  
2. Please tell me about one important cross-boundary information sharing initiative you have been involved in (Probes: What are the main goals of the initiative? How did it get started? What organizations are involved and why are they involved? Is this your first information sharing project or do you have other experiences?)  
3. What is your own role in the initiative? (Probes: has your role changed over time? What are the most important activities associated with your role?)  
4. What are some of the barriers to achieving the goals of the initiative? (Probes: are the barriers the same for all the organizations involved or do you think different organizations face different barriers?)  
5. What factors (such as incentives, resources, or rules) help the organizations involved to achieve the goals? |
<p>| Leader traits, Leader                        | How do leaders in China behave in this given situation in order to                                                                                 | 6. Please tell me about one problem or issue that you helped resolve and how you did                                                                         |</p>
<table>
<thead>
<tr>
<th>Leader traits, Leader behaviors, Leadership effectiveness, Actions</th>
<th>carry out cross-boundary information sharing initiatives?</th>
<th>What is the relationship between those leadership behaviors and the effectiveness of the initiatives in China?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power, Leader behaviors, Situational variables</td>
<td>What kinds of leader behavior are more accepted by followers and stakeholders of the initiatives?</td>
<td>What kinds of leadership behaviors do you think are more acceptable in cross-boundary information sharing initiatives? What kinds are less acceptable? Why or why not?</td>
</tr>
<tr>
<td>Leadership Success</td>
<td>How do leaders and stakeholders perceive the effectiveness of a cross-boundary information sharing initiative?</td>
<td>What factors help you judge whether a cross-boundary information sharing initiative is successful or not?</td>
</tr>
<tr>
<td>Situational Variables</td>
<td>What cultural, political, economic, and social factors might account for those leadership behaviors in China?</td>
<td>All above questions could reveal clues to this research question</td>
</tr>
</tbody>
</table>

2. **Selection of Case**

A case is chosen either because it is critical, unique, revelatory, or exemplifying in that it will provide a suitable context for the research questions to be answered and allow the researcher to examine key social processes (Yin, 1984; Bryman, 2004). In this research, cross-boundary information sharing initiatives in China’s product quality and food safety policy domain was selected as the case for study, namely, the unit of analysis. A brief reconnaissance study showed that the case can provide a suitable environment for investigating the research questions of this study. The case involves multiple stakeholders and includes various information sharing relations hips. Along the vertical dimension, the case consists of information sharing between the China’s State Council (the Cabinet)
and various ministries, a national ministry and its local agencies throughout the country, and between a provincial government and its various agencies. Along the horizontal dimension, the case embraces information sharing among different nations, among different ministries of the State Council, among different departments of a ministry, among counterpart agencies in various provinces, as well as information sharing between the public sector and the private sector. In addition, in practical terms, the policy domain of product quality and food safety is critical for both the domestic market of China as well as the international market given the fact that China is now one of the major goods exporters in the world. E-government projects, especially cross-boundary information sharing initiatives among all participants, are important elements of efforts for ensuring product quality and food safety. In short, the case seems to be both academically and practically worth studying.

A. Introducing AQSIQ

Information sharing initiatives in China’s product quality and food safety policy domain are mainly carried out by the General Administration of Quality Supervision, Inspection and Quarantine of China (AQSIQ). AQSIQ is a ministerial administrative agency directly under the leadership of the State Council of China (the Cabinet). The responsibilities of the administration include product quality supervision, inspection of import-export commodities, inspection and quarantine clearance, entry-exit health quarantine, entry-exit animal and plant quarantine, and safety inspection of imported and exported food. AQSIQ has nineteen in-house functional departments, such as the Department of Inspection and Quarantine Clearance and the Department of Supervision and Management of Product Quality. Moreover, AQSIQ has fifteen directly affiliated
organizations, which provide technical and logistical support for AQSIQ programs. Figure [8] illustrates the internal organization structure of AQSIQ and its relationship with external agencies.

Two major units of AQSIQ are directly in charge of product quality and food safety issues: the Exit-entry Inspection and Quarantine unit and the Supervision of Quality and Technology unit. The Exit-Entry Inspection and Quarantine unit is responsible for inspection of the quality and safety of commodities exported to or imported from other countries. The Supervision of Quality and Technology unit is responsible for supervision of the quality and safety of commodities circulated exclusively in the domestic market.
At the provincial and local levels, AQSIQ also has 35 direct Exit-Entry Inspection and Quarantine Bureaus (CIQ) covering 31 provinces, nearly 300 branches and over 200 local offices alongside the seaports, land ports, airports, and other commodity-distribution centers. Those CIQs are under the direct vertical leadership and control of AQSIQ, and serve as the local agents of AQSIQ. Similarly, under the Supervision of Quality and Technology unit, there are also 31 provincial Bureaus of Quality and Technology Supervision (BQS) with more than 2,800 administrative divisions affiliated. However, unlike CIQs, BQSs are administered by their corresponding provincial governments, and AQSIQ only provides them with business guidance and has no direct vertical leadership or control over them.

In AQSIQ, the divisions that are responsible for e-government and informatization initiatives are called Informatization Office and Information Center. The two divisions are independent from other business departments to focus on all information-related tasks at AQSIQ. The former is responsible for informatization policymaking, regulation and planning, and the latter is responsible for implementation of specific IT projects. In addition, the two divisions and an outside private company invested a joint-venture company, called iTowNet, to work on all technical works such as application development and maintenance. iTowNet serves as a contractor of AQSIQ and is under the direct control and guidance of the two information divisions at AQSIQ.
B. AQSIQ’s information sharing initiatives

AQSIQ began to explore technology to support its business processes in 2001. In 2004, “three new e-applications” were launched, namely E-Declaration, E-Supervision, and E-Discharge.

E-Declaration refers to the electronic inspection declaration process of export and import commodities among AQSIQ, CIQs and private companies. In the past, the whole process was fully manual making it time-consuming, costly, and labor-intensive. By 2008, the declaration process has become almost fully electronic, and has directly decreased commodity clearance time.

E-supervision refers to AQSIQ’s supervision of manufacturing processes within firms. E-supervision enables real-time supervision through simultaneous transmissions of process data and surveillance video from the manufacturers to AQSIQ. The results of inspection and quarantine are electronically sent to port CIQs via the Internet during and after the commodities are produced. Thus, E-supervision supplements E-declaration by exercising “in-advance” monitoring. There are three essential components in the process: 1) pre-supervision and management of export goods; 2) expediting the discharge process for export goods; and 3) fast inspection of import goods.

The E-Discharge application is made up of two components: E-Certificate transmission and E-Custom clearance. E-transfer system refers to the electronic transmission of inspection permits among CIQs in different provinces (cities). For export business, commodities will first be inspected by the CIQ in its origin location. After passing the inspection, the CIQ will issue a paper-copy inspection permit to the export company; meanwhile an electronic copy of the permit will be transmitted to a CIQ in the province (city) with a seaport, land port or airport, wherever those commodities will be
exported. When the commodities are finally transported to the port, the port CIQ will verify the paper copy permit that the company holds with the electronic copy in the system before discharging them to Customs. For import business, permits will be electronically transmitted from a port CIQ to a CIQ in the inner-land instead. E-Customs clearance refers to the electronic transmission of customs clearance permits between AQSIQ and the General Customs of China another ministerial-level agency. It is required by law that commodities for export be inspected by AQSIQ for quality and safety first before Customs declaration. After commodities pass inspection, AQSIQ will issue a customs clearance permit to the export company; meanwhile an electronic copy of the permit will be transmitted to Customs. When commodities arrive at the ports, Customs will verify the hard copy permit the company holds and the electronic permit sent from AQSIQ beforehand.

These three E-applications are under the big umbrella of a national initiative called Golden Quality project, aimed at ensuring product quality and food safety in China. In addition, some other cross-ministry information sharing initiatives include: information sharing between AQSIQ and the Ministry of Agriculture with regard to entry-exit animal and plant quarantine; information sharing between AQSIQ and the Ministry of Environmental Protection with regard to waste raw material import; and information sharing between AQSIQ and China’s central bank as one component of a project to establish a national credit system.

During the process of establishing these information sharing initiatives, a number of technological, organizational and political barriers were entreated and some are still impeding the initiatives from achieving their goals. Faced with these complex challenges,
effective leadership becomes extraordinarily important and pressing in order to solve the problems and push the initiatives forward.

3. Sampling of Individual Participants

Information leaders of Informatization Offices and Information Centers at middle level in AQSIQ are the focus and the unit of analysis of the study. Moreover, people working around these information leaders are also interviewed to gain their opinions on leaders’ behaviors. Therefore, individuals who are working in the information sharing initiative in China’s product quality and food safety policy domain are the unit of observation of the study.

A snowball sampling method was used to identify and select individuals for interviews based on the relevance of the person’s expertise and involvement in the information sharing initiatives to be studied. 21 participants were interviewed. Interviewees included people from multiple sectors, different functional ministries agencies and departments, different levels of government, different professional backgrounds as well as different regions, in order to gain a variety of perspectives on the case. Participants can be categorized into three groups: 1) Public-sector: government leaders, department heads, program managers, professionals who are directly working in the field of product quality and food safety; 2) Private-sector: general managers, department heads, program managers, and professionals who are working in the contractors and user companies of relevant e-government applications; 3) Third-party: experts and observers working in independent institutes or non-profit organizations that are not directly involved in the initiatives but who could provide external observations.
and general viewpoints of the issue in China. All together, ten people from category 1, seven people from category 2, and four people from category 3 are interviewed.

4. Data Collection Procedures

Primary data was collected through in-depth, semi-structured interviews. Each interviews lasted between 1-2 hours. The snowball sampling method started with a leader in the area by asking each informant/participant to recommend other individuals to be interviewed based on the relevance of the other persons’ expertise and involvement in the processes of information sharing. Using contact information provided to me, I will then personally contact those other individuals and ask whether they will agree, as well as be available to be interviewed. I will not reveal the name of the person (the initial participant) who suggested me to contact him/her to the second participant. I will conduct the interviews individually and only with their agreement and consent. The interviews will be conducted in Chinese (mandarin).

In addition, secondary documents will be collected from websites of related agencies and public newspapers to not only ask the subjective perceptions of the participants, but also to observe relatively objective indicators of variables. Those documents include: 1) organization missions and objectives, and structures; 2) relevant laws, policies and regulations; 3) government plans, strategies, reports, and meeting minutes. 4) Public news reports on the initiatives.

5. Data Analysis

Grounded theory is by far the most prominent framework for analyzing qualitative data. It is defined as deriving theory from systematically gathered and analyzed data through research (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Following the
processes of grounded theory building, data collected in China was transcribed and coded to identify common patterns with an inductive approach. Coding is a process of labeling, separating, compiling and organizing data (Charmaz, 1983). A theoretical framework based on the coding and analysis was then developed.

**IV. Comparative Analysis**

A comparative design analyzes two or more contrasting cases using more or less identical methods in order to better understand the social process (Bryman, 2004). Cross-cultural or cross-national comparisons examine particular phenomena in two or more countries to compare their manifestations in different social-cultural settings, such as institutions, customs, traditions, value systems, life styles, language, and thought patterns, using the same research instruments (Hantrais, 1996). With regard to comparative public administration studies, the goal is to identify and compare the problems encountered by different governments in attempting to implement a particular solution or service while paying attention to the specific cultural context (Riggs, 1991). Comparisons are usually associated with descriptive accounts of national similarities or differences in public policies or organizational arrangements, such as information sharing, as well as with cross-national generalizations or explanations of differences in public policies and administrative patterns (Geva-May, 2002).

Comparative design is often considered an extension of a case study design, and it also exhibits some features of experiments and quasi-experiments, which rely on comparison (Bryman, 2004). Multiple-case studies can improve theory building by comparing two or more cases to establish the circumstances in which a theory will or will
not hold (Eisenhardt, 1989; Yin, 1984). Each case is developed in its own context and analyzed by systematic comparison (Ragin, 1990; Agranoff & Radin, 1991). Kohn (1987) asserted that cross-national research is valuable and even indispensable for establishing the generality of findings and the validity of interpretations derived from single-nation studies.

The type of cross-cultural research that a study intends to undertake should be specified to clarify the focus of the research (Eglene & Dawes, 2006). Adler (1983) categorized cross-cultural studies into four types: (a) parochial, (b) ethnocentric, (c) polycentric, and (d) comparative. A true comparative research study will seek to identify both similarities and differences across nations, and this is what this comparative analysis intends to do.

Kohn (1987) also distinguished four types of cross-national research: (a) nation as object of study; (b) nation as context of study; (c) nation as unit of analysis; and (d) transnational. In this research, I take the approach of nation as context (Scheuch, 1967). The primary purpose of this type of research is to use countries as vehicles for investigating the contexts in which social institutions operate, rather than study more about particular countries. Such research provides sufficient thoroughness for intensive comparisons (Kohn, 1987).

1. **Research Questions and Variables**

The research questions that this comparative analysis will focus on are:

1) What are the similarities and differences in effective leadership behaviors between China and the U.S. in the context of cross-boundary information sharing?
2) What cultural, political, economic, and social factors might account for these similarities and differences?

Consequently, the similarities and differences between effective leadership behaviors in the two countries, as well as the broad cultural, political, economic, and social factors of the two countries will be the key variables.

2. Selection of Countries

A clear rationale for selecting the countries for comparison should be made (Eglene & Dawes, 2006). The selection should be based on the theoretical dimension of the research (Adler, 1983). Countries chosen for comparison should not be similar in everything, nor be dissimilar in everything; good comparative studies should fall between these two extremes where attributes are in part shared and in part non-shared (Sartori, 1994). In this study, the US and China have similar territorial scale and national structure, and both are influential players in the world. The two countries also have some commonalities with regard to the national culture as discussed in the literature review. All these facts make them comparable in various aspects. The two countries are also significantly different in terms of their political, economic, social and cultural context, which will make the comparison enlightening as well as interesting.

In addition, the interaction between the two countries in political, economic, social and cultural aspects has been increasing dramatically over the last several decades, which make the two countries more and more interdependent on each other. The relationship between the two countries has now been considered by many politicians and observers as one of the most important bilateral diplomatic relationships in the 21st century. Given the fact that the United States is the largest developed country in the world and China is the
largest developing country, a comparative analysis between the two countries could have
global implications for both the developing and the developed world. Therefore,
comparing the two countries will be practically valuable for both sides, as well as for
other parties.

3. Cases for Comparison in the US

The patterns and framework developed in China will be compared with the
findings previously discovered by the Center for Technology in Government at
University at Albany in research called Knowledge Networking in the Public Sector (KN)
and Modeling the Social & Technical Processes of Interorganization Information
Integration (MIII), as well as the findings of other relevant research that has been
conducted in the West. The KN study involves four cases in New York State: (a)
Homeless Information Management System, (b) Information Technology Intranet, (c)
Annual Reassessment Program, and (d) Geographic Information System Coordination
Program (Eglene et al., 2004). The MIII study involves eight cases of state-level
information sharing initiatives in the policy domains of public health and criminal justice
across the states of Colorado, Oregon, Connecticut and New York (Gil-Garcia et al.,
2007).

4. Equivalent Data Collection Instruments

Adler (1983) pointed out that one fundamental difficulty of conducting
comparative studies is to design a methodology that is equivalent across cultures. The
comparability of the categories and data collection methods, and the equivalency of
samples of respondents or organizations constitute challenges for cross-national
comparative research (Bryman, 2004). As such, the case study in China will adopt
identical or mostly identical interview protocols that the US case studies have used, and will collect data from similar types of participants in similar cases.

Translation is also recognized as a methodological problem in cross-national study. The genuine comparability of data collection instruments should not be undermined by the translation (Bryman, 2004). The translator should be fluent in the languages and knowledgeable about the cultures involved, as well as be familiar with the discipline (Eglene & Dawes, 2006). In general, the quality will be better when the translation is done from a foreign language into the native language of the translators (Adler, 1983); (Eglene & Dawes, 2006). To address these concerns, the original instruments will be translated by myself, a native Chinese who has spent six years in the US studying in the discipline of public administration with a focus on digital government research.

Furthermore, conceptual equivalence of key concepts has also been identified as critical for the validity of the comparative case study. Research found that leadership is even viewed differently in two western cultures, the United States and Quebec, although it is identified as a critical factor in both countries (Eglene & Dawes, 2006). Accordingly, this study will also pay special attention to this equivalence concern throughout the research process. The research instruments will not be literally and mechanically translated into Chinese. Instead, they will be translated “culturally”, as well as linguistically, to ensure that they will be culturally appropriate as well as accurate in the context of China, without having the essence of the original instruments jeopardized.

5. **Comparative Analysis**

Investigators often neglect the importance of cross-national analysis, which can constitute the most important aspect of comparative studies (Eglene & Dawes, 2006).
The literature found that it is challenging to define, observe, collect, and measure data about culture (Adler, 1983; Tayib, 2001; Eglene & Dawes, 2006). Eglene and Dawes (2006) also pointed out that culture is not only contextual but behavioral, it cannot be easily understood from analysis of secondary documents, nor from a particular question in an interview. Instead, it can be best observed in the interactions with participants. Therefore, this study will not rely solely on secondary sources or literature to identify cultural factors as the context, but attempts to capture them from the primary data collected from in-depth interviews. Hofstede’s (1980, 1994, and 1998) five cultural dimensions will be used as the framework for cultural analysis.

Adler (1983) asserted that recognizing a studied phenomenon as culturally specific, avoiding cultural bias, and avoiding misinterpretation of results are major difficulties in comparative studies. Byrman (2004) also recognized insensitivity to specific national and cultural contexts as a challenge. Eglene and Dawes (2006) further distinguished two kinds of errors in multinational studies: one is cultural stereotype, in which the emphasis is placed on differences rather than similarities, and there is a tendency towards exaggeration; the other is the universality assumption, in which the focus is on similarities across different countries, and too little attention may be paid to conceptual equivalence. A good comparative analysis should focus on both similarities and differences to gain a balanced view. Therefore, this study will follow this approach in the process of data analysis to identify both similarities and differences.

Furthermore, Cavusgil and Das (1997) pointed out that very little attention has been paid to cross-cultural methodology at the within-country level. “Distinct and very palpable differences exist at the cultural level across different parts and communities in
highly heterogeneous countries” (p. 83). Eglene and Dawes (2006) also suggested that subcultures within a country and regional languages should also be studied in comparative studies. Accordingly, given the fact that China is a large, as well as economically and culturally diversified country, the case study in China will include both the relatively developed Eastern and the underdeveloped Western regions, as well as the Northern part and the Southern part of China, which have different subcultures.

V. Ethical Issues

Diener and Crandall (1978) pointed out four ethical concerns that social research needs to address, which include harm to participants, lack of informed consent, an invasion of privacy, and deception. This study has taken those principles into consideration. Any potential risks to individual participants related to job and position are dealt with by a number of measures.

The research is a comparative analysis that requires conducting the study with an international population. Overall, Chinese people care less about privacy compared to American people, and IRB review and consent forms are not required there for conducting research. However, the society of China is more hierarchical with a top-down authoritarian political system, and government officials in China may care about the opinions and attitudes of their political and bureaucratic superiors much more than their U.S. counterparts. Thus, Chinese government officials tend to be very cautious in granting and participating in interviews. It is highly unlikely that anyone would be coerced into participating. In order to protect the subjects as well as encourage participation, both standard and special confidentiality measures were built into the design.
First, I employed the snowballing method by requesting contact information for additional interviewees and then contacting them myself in recognition of the bureaucratic culture in China. If a higher level person gives my contact information to a lower level person, the lower level person will tend to interpret that as a direct assignment and will contact me for an interview even if he or she does not want to participate. In this case, the interviewee will be likely to give me the organizational view rather than his or her own view during the interview. On the other hand, if the lower level person's contact information is given to me, and I reach out to them with a request for an interview, then he or she will feel more comfortable refusing an interview if he does not want to do it. If the person does agree to an interview he or she will also be more likely to speak freely. In addition, I did not reveal the name of the person (the initial participant) who suggested that I contact the second participant.

Second, all individual’s cooperation in this study was completely voluntary. I conducted the interviews individually and only with their agreement and consent. When he or she preferred not to participate or chooses to withdraw from the study at any time, he or she can do so without penalty.

Third, consent of those involved in research was sought for interviews. In China, a government official in an interview usually will be very likely to hesitate to sign his or her name on a consent form, because such a signed document will be considered more as a threat to confidentiality by becoming a proof of what the interviewee had said, than evidence of protection of his or her rights. Therefore, in order to better protect the rights of the interviewees, in this research, an interviewee was not required to sign a consent form. Instead, he or she was given a copy of the consent signed by the researcher for his
or her own record before the interview begins and after the purpose of the study and the interviewee's rights were stated and explained clearly by the researcher.

Forth, I intend to maintain data collected during projects in perpetuity. Identifiers are kept with data because they cannot be removed from tapes and because there is little or no risk inherent in any of the data collected which focuses attention on government professionals doing the work of government. In order to protect the privacy of interviewees, all materials related to the project are kept in a locked filing cabinet or my personal computer including field notes, audiotapes, transcripts, analysis, and drafts and final versions of presentations and publications. My PC is protected by a firewall and a password. All transcribing of tapes were done by myself.

Fifth, the information that an interviewee provides are used only for research purposes. Presentations, reports, and publications focuses attention on general findings about the agencies and organizations involved, which are referred to by name. Interviewee's contributions are referred to by type of informant, and, to the extent possible, these contributions are reported in ways that avoid identification of those individuals. When a point can be made only by identifying a person, or when concealing identity is not possible due to the small sample size of persons or organizations involved or the uniqueness of the subject under study, those individuals’ prior consent were requested. In addition, before the final report was made public, the interviewees received a copy of for review and comments.

Overall, the topic that this research will study is not considered sensitive in China. I have consulted with senior researchers in China on the topic, design, and methods of this research and none of them see any of these as threatening or inappropriate. One highly
reputable Chinese professor has provided a letter confirming this as part of the University of Albany IRB approval process.
Chapter Four: Boundaries

The study first examines the situational variables for leaders who work in information sharing initiatives in China. Specific boundaries that leaders need to cross in the case are investigated. This chapter will focus on discussing these boundaries and the relationships among them.

I. Differentiating Boundaries and Barriers

The terms “boundary” and “barrier” appear frequently in previous literature without clear differentiation. The paper finds it necessary to differentiate the term of “boundary” and “barriers” in the context of information sharing and integration. Put simply, a boundary is a line we need or want to cross, and a barrier is what prevents us from crossing. The difficulty of crossing a specific boundary is determined by the existence of certain political, organizational and technological barriers around it. The difficulty of boundary crossing can be much lower when significant barriers do not exist or have been removed. Barriers may therefore be overcome or eliminated with some efforts, but boundaries tend to exist for a long period of time unless significant institutional changes occur to remove them.

A metaphor can help explain the difference between the two concepts. A boundary is like a road, and the difficulty of crossing it depends on the conditions of a number of potential barriers around it, such as the color of the traffic light, the weather conditions, the number of cars and pedestrians, and the road surface conditions. A crossroad may exist for a long time, but those elements of context around it change continually. A road
could be very easy to cross when all those conditions are favorable, but become problematic or even possible when conditions are harsh, conflicting or confusing.

The research identifies a number of boundaries associated with information sharing initiatives along vertical and horizontal dimensions. In addition to boundaries that have been identified by prior literature, some new types of boundaries were also identified.

II. **Vertical Dimension**

First it is necessary to separate boundaries along the vertical dimension from those along the horizontal dimension in order to capture more intricacy and depth. Four kinds of boundaries were identified along the vertical dimension. They are hierarchical boundary, personal boundary, vertical geographic proximity boundary, and vertical development level boundary. These boundaries are discussed below:

1. **Hierarchical Boundary**

First, a hierarchical boundary appears between higher level and lower level organizations in information sharing and integration initiatives. In China’s administrative reporting system, there are two types of higher level government organizations: functional ministries in the central government, such as AQSIQ; and provincial governments where provincial functional agencies are located, such as Shandong provincial government, and Shanghai municipal government (in China, municipalities like Beijing and Shanghai enjoys provincial level status). Both ministries and provincial (municipal) governments report directly to the State Council, the central government. Next, in terms of which higher level government organization a lower level agency reports to, two kinds of hierarchical administrative relationships are recognized: vertical
(direct) administration in which the relationship are formal and direct, and non-vertical (indirect) administration in which relationships are informal and indirect. (See Figure [9]).

**Figure [9]  China's Administrative Reporting System**

Vertical (direct) administration refers to the arrangement in which a local bureau serves as the local office of a ministry in the central government, and the former reports directly to the latter, rather than to a provincial government. For example, a CIQ is under the direct vertical (direct) administration of AQSIQ and does not report to the provincial government where it is geographically located. In a vertical relationship, a functional ministry in the central government exercises strong administrative control over its vertical local bureaus in terms of personnel appointments, financial allocation, data standard unification and other resources. One central government official summarized the relationship in this way: “All local bureaus are under a vertical tree-structured system, which is a centralized administration. Local staff and budget are all administrated by the central ministry.”
By contrary, non-vertical (indirect) administration refers to the situation that where a provincial functional agency reports directly to its respective provincial government, rather than to a functional ministry in the central government. For example, a local BQS reports directly to its provincial government, rather than to AQSIQ. In a non-vertical relationship, a functional ministry in the central government usually provides only policy and operational advice to the provincial agencies and does not have full control over their personnel and financial resources. Officials from the National Quality Supervision Bureau said: “We are in charge of operational guidance, but do not have administrative authority over local agencies. Some portion of their budget does not come from us”. “A major part of their human resources, material resources and financial resources are provided by their respective provincial governments.”

We might say that in vertical (direct) administration, a vertical local bureau has a more distant hierarchical relationship with its respective provincial government than with its functional ministry in the central government. In a non-vertical administrative relationship, the situation is just the opposite (see Figure [10] [11]).
Figure [10] Hierarchical Boundary between Central Ministry and Local Agencies in Vertical and Non-vertical Administration

Figure [11] Hierarchical Boundary between Provincial Government and Local Agencies in Vertical and Non-vertical Administration
2. Personal Boundary

In addition to boundaries that emerge from formal organizational arrangements, an informal personal boundary also appears between individual leaders, managers and staff at higher levels and those at lower levels (see Figure [12]). The case data indicate that a distant personal relationship could complicate or even aggravate a formal hierarchical boundary, while close personal relationships could instead alleviate the difficulty of crossing the formal boundary. “Whether people’s personal bond is strong or not will influence the smooth progress of the projects, aside from enforcing formal policies,” one leader in AQSIQ said.

![Figure 12: Vertical Personal Boundary](image)

3. Vertical Geographic Proximity Boundary

A vertical geographic proximity boundary also emerges in the case across higher level and lower level organizations in different locations (See Figure [13]). A central government ministry seems to have better communication and relationships with local
agencies and companies located in Beijing or closer provinces than with those in other more distant provinces. It appears that the complexity of an information sharing and integration initiative increases when participants with vertical relationships are separated by larger distances.

![Central Government Ministry](image)

**Vertical Geographic Proximity Boundary**

**Close Local Agencies**

**Vertical Geographic Proximity Boundary**

**Distant Local Agencies**

**Figure [13]  Vertical Geographic Proximity Boundary**

4. **Vertical Development Level Boundary**

The case study also identified a new kind of boundary: development level boundary. In the vertical dimension, the development level boundary refers to the gap between higher level and lower level organizations at different technological, managerial, personnel and economic development levels. The concept is related to the notion of digital divide, but focuses more on organizational than on individual capabilities.

As a developing country, the disparity among regions in China is significant. In the case, the technological, economic, personnel, and managerial capacities of local agencies in relatively developed regions are much more advanced than those located in underdeveloped regions. In order to achieve unification, a central government ministry has to strike a balance and set the development level of a central system between the two
extremes. One local agency leader described it this way: “In order to achieve nation-wide applicability, the General Administration has to simplify the system; however, simplicity is in conflict with advancement. Two situations then occur: on one hand, underdeveloped provinces need to catch up with the national pace; on the other hand, well-developed provinces have to go backward to fit the national system. It is hard to cook one dinner that could satisfy different tastes. Finally, central administration has no choice but makes compromise and walks a middle way.”

The compromise the central ministry takes then results in a vertical development level boundary across central ministries and local agencies. From the perspective of local agencies in less developed regions, AQSIQ’s development level is more advanced. Officials in AQSIQ commented: “For those relatively underdeveloped cities, the basic infrastructures there for informatization are not favorable, and their thoughts and management levels are not matured yet. Thus, the national Golden Quality Project meets the demands in these provinces and cities.”

However, the situation in relatively developed regions is the opposite. The development level of local agencies in these more developed regions is usually higher than that of AQSIQ. A local agency manager in a highly developed region said: “When the General Administration started building the national project, we had been quite well developed since we started earlier. The national Golden Quality Project is not so specific and can not satisfy our supervision requirements, nor do its design, management and technology level meet our needs, because it has to cover the whole country.”

Overall, it seems that a local agency in a less developed region has a more distant boundary with its respective provincial Government than with its central government
ministry; while the situation in a developed region is the opposite (See Figure [14] [15]). The complexity of information sharing initiatives also seems to go up when the difficulty of crossing this type of boundary increases.

**Figure [14] Vertical Development Level Boundary between Central Ministry and Local Agencies**

**Figure [15] Vertical Development Level Boundary between Provincial Government and Local Agencies**
III. **Horizontal Dimension**

Boundaries along the horizontal dimension separate entities at the same hierarchical level. Six types of boundaries along the horizontal dimension are identified in the case study.

1. **Departmental boundary**

Departmental boundary refers to the boundary between functional agencies at the same level of government. This boundary could impede information sharing and integration initiatives across departments in the case. One interviewee described: “The horizontal connection is the relatively weak point in the whole system. Generally, it is difficult to coordinate across two ministries or two departments within the same ministry. They seldom communicate and interact with other horizontal agencies, even if they are neighbors to one another.”

This boundary exists at various hierarchical levels: between divisions in the same bureau, between different bureaus in the same ministry, and between different ministries (See Figure [16]). When the span of an initiative expands from cross-divisions, to cross-bureau, to cross-ministry, the complexity of the initiative also increases.

![Figure [16] Departmental Boundary](image-url)
A. Across Divisions within the Inspection Bureau:

All divisions within Inspection Bureau used to have their own information systems, which were not fully integrated with one another. According to many interviewees, those divisions collected the same set of information from corporations individually and redundantly. As a result, corporations were inspected by these different divisions repeatedly for similar purposes. In recent years, the situation has improved with the success of some information sharing initiatives within the bureau. A manager in the Inspection Bureau recalled: “Even within the same Bureau, information sharing among different divisions is an issue that needs to be addressed. People in the Plant and Animal Quarantine Division do not know what is going on in the Sanitary Registration Division. People in different divisions refer to the same information in different forms. I say A, you say B, and he says C. The three cannot even tell whether A, or B, or C is the same company.”

B. Across Divisions within Quality Supervision Bureau

The situation in Quality Supervision Bureau is even more disjointed. This Bureau was created by consolidating by six horizontal divisions which used to be separated from each other. So far, the divisions in this Bureau have not yet been integrated into one single information system. Interviewees in the Bureau said: “The core business of Quality Supervision Bureau consists of six horizontal parts: Measurement Supervision, Standardization, Quality Supervision, Quality Management, Administration and Law Enforcement, Security Inspection on Special Equipments. It is difficult to integrate them as they used to be independent operations.”
C. Across Inspection Bureau and Quality Supervision Bureau

AQSIQ was formed by merging several formerly independent departments. Even now, however, the Quality Supervision Bureau and the Exit-Entry Inspection and Quarantine Bureau are two rather independent operations under AQSIQ. The former focuses on the domestic market and the latter targets the import-export business which follows stricter standards. According to a number of interviewees, although the two units are responsible for similar functions and have the potential to share quite a lot of information with each other, information sharing between them remains minimal so far. Officials from both sides commented: “The two bureaus used to be independent and are forced to be merged. Although they are under the same roof of the General Administration, they operate independently in reality.”

D. Between AQSIQ and other Ministries

The situation turns more complex when the initiatives go up to the cross-ministry level. According to several officials, information sharing across ministries is much harder to solve than an internal issue. For example, the operations of AQSIQ and the General Customs are closely related to each other, and they have many mutual information needs. However, “it is very hard to let them talk and coordinate with each other. Although both sides have met many times, no solid progress has been made.” In addition, due to the conflict of interests, one official noticed: “The communication between the two ministries may be even worse than that between IBM and HP.”
2. **Personal boundary**

Personal boundaries exist along the horizontal dimension between leaders, managers and staff at the same level (see Figure [17]). In the case, some information sharing initiatives failed because people from different organizations do not get along with one another. The complexity of an initiative seemingly goes up when the difficulty of crossing the horizontal personal boundary increases. One CIQ manager said: “If people are acquainted with each other, handling an issue can be more smooth and quick. Otherwise, the situation could be quite difficult to deal with”.

![Figure [17] Horizontal Personal Boundary](image)

In addition, the ability to cross the personal boundary among people at higher levels seems to be larger than that at lower levels (See Figure [17]). While two ministries at the national level do not get along with each other, the two ministry’s provincial offices may still have very good relationships. According to local officials, there are two reasons. First, when power is centralized at the national agencies, so is the conflict of interests. Some local CIQ managers explained: “This conflict at the central level does not spread down to the local level. We local CIQ and local Customs people actually have a pretty good relationship. It is because the functions of the two central agencies have some overlaps, which give rise to conflicts, while the functions of local agencies are determined by the central agencies. Since we two local agencies have no rights to make
decisions anyway, we get along with each other very well.” The second reason is that people at lower levels have more opportunities to know and interact face to face with one another. One manager illustrated: “At the local level, it is easier to keep good relationship, as staffs in different agencies are acquainted with each other. When it goes further down to the county level, it is even easier to get things done, because everybody knows each other.”

3. Horizontal geographic proximity boundary

A geographic proximity boundary also appears between parallel organizations in different locations mainly for two reasons: 1) long distance increase the difficulty of transmitting information smoothly and quickly; 2) long distance make it hard for people in different locations to communicate and collaborate face to face. Some studies also call this a geographic or jurisdictional boundary. In the case, the difficulty of crossing the horizontal geographic proximity boundary increases from across provinces to nations. Overall, the complexity of an information sharing initiative also seems to increase with the increased difficulty of crossing this type of boundary (See Figure [18]).

![Figure [18]  Horizontal Geographic Proximity Boundary](image)
A. Across cities or provinces

Information sharing among horizontal cities or provinces is required sometimes. For example, “Inspection Certificate from Beijing CIQ has to be transferred to Tianjin CIQ, since the product is inspected in Beijing, but will be exported at Tianjin Port.” However, each place has its own characteristics. The standards and policy vary across regions, and so do the requests from different local agencies. Some problems are thus caused by these local differences.

Sometimes the communication between local agencies is difficult because they are quite far away from each other. One example is given by an information manager: “When Guangdong CIQ is going to issue a production origin certificate for products made in Zhejiang, a cross-province investigation needs to be conducted. In the past, it took us at least 15 days to get feedback from Zhejiang. Sometimes it even took longer, such as 20 days or even one month. Thus, the purpose of the e-transfer system is to accelerate information exchange between local bureaus.”

B. Cross-national

Information also needs to be transferred across nations. A leader in AQSIQ shared his experience in international business: “It involves international certificate sharing. Once commodities arrive at their international destinations, foreign countries will inspect them. If they find something suspicious, they will send us inquiries to verify the certificate information.” During the process of verification, conflicts between different countries’ data standards constitute a challenge.
4. **Horizontal Development level boundary**

Development level boundaries along the horizontal dimension are identified in the case between regions and agencies at various development levels (See Figure [19]). Information sharing initiatives between organizations on the same or similar development level seem to be easier than those at different development levels.

![Figure [19]  Horizontal Development Level Boundary](image)

**A. Cross-region development level boundary:**

First, there seems to be a development level boundary between agencies in relatively developed regions and agencies in underdeveloped regions in terms of their technological, economic, personnel and managerial capabilities. Some managers illustrated: “The development level across regions is uneven.” “The demand, conditions and management proficiency vary substantially across different regions.”

**In Developed Regions:**

In China, Eastern regions started informatization earlier and are generally more developed than Western regions. According to some local managers, agencies in more developed regions usually cover a very wide range of business; face more special requirements, heavier workload, and more complex contexts. These agencies also often
have skillful staff and sufficient funds, and have developed quite sophisticated systems. One manager in Beijing commented: “Due to the early startup of informatization, Quality Supervision Systems in Shanghai, Shandong, Beijing and Zhejiang are relatively advanced and completed, while those in other provinces are still chaotic and unsystematic.”

In Underdeveloped Regions

On the contrary, the underdeveloped agencies often have smaller workloads, very basic requirements, and relatively simple conditions, because most international trade is concentrated in port cities, rather than inner-land cities. They lack skilled staff, funds, and adequate infrastructure. A local manager in a west province commented: “The difference is huge. For example, our annual workload is not as much as the workload of Guangdong in one day.”

B. Cross-Agency development level boundary

Different participant agencies in the same location could be at different development levels as well. The informatization levels, needs, conditions and management proficiency of participant agencies can differ. For example, one manager said that the Inspection and Quarantine Bureau started development earlier, while the Quality Supervision Bureau has only some basic technological tools, operations, and procedures. “Hence, the whole system is limping: the former is the longer leg, while the latter is the short leg.”

One manager said that one agency they wanted to share information with is very supportive. However, that agency lacked the technology capacity and management
proficiency to collect information and share with others. Eventually, that initiative had to be suspended. “Many agencies’ systems are not so advanced and their data quality is poor. So it is not because they do not want to share, but because they are not able to share.”

5. Process Boundary

The case study found a second new type of boundary, the process boundary, which refers to the boundary between organizations that are not lined up along the same business process. That is to say, organizations that participate in the same business process are more likely to share information with one another than those that are not.

A. Between inspection function of AQSIQ and the Customs

In the case, the Exit-entry Inspection Bureau of AQSIQ and General Customs are considered to be working along the same business process, because they are all related to international trade. Commodity inspection is required by the law to be conducted before Customs declaration. Customs has the responsibility to verify inspection certificates issued by AQSIQ’s Inspection Bureau before discharging commodities. Because the two organizations have to work together along the business process, they have built up a quite well-functioning information sharing system between them, after overcoming many other difficulties.

By contrast, although the Exit-entry Inspection Bureau and Quality Supervision Bureau of AQSIQ are all under the same ministry and are responsible for similar functions, information sharing between them remains at a minimal level. When participants from both bureaus were asked whether they need information from the other, they all agreed that it would be helpful to share information. “We do need their
information such as quality records of companies producing exported products, because many companies are producing not only exported commodities but also commodities for the domestic market”.

However, when they were asked why these information sharing needs were not turned into reality, they all offered the same reason: The former targets the import-export business and the latter focuses on the domestic market. Their operations are parallel to each other, rather than on the same process chain (See left side of Figure [20]). One leader in AQSIQ described it this way: “The Customs and we are on the same line. We often have meetings together. However, our relationship with the Quality Supervision Bureau is much farther apart. The internal business in the Inspection Bureau is not linked with the Quality Supervision Bureau. We are not on the same business line, and we operate independently.”

![Figure [20] Process Boundary]

**Figure [20]  Process Boundary**

**B. Divisions within the Inspection Bureau and the Supervision Bureau**

A process boundary also exists between divisions within the functional bureaus of AQSIQ. All divisions within the Exit-entry Inspection and Quarantine Bureau are on the same process, while divisions within the Quality Supervision Bureau are independent.
from one another (See right side of Figure [20]). Officials from both sides agreed that that is why information sharing initiatives within the former bureau are much more successful than those in the latter bureau. “The businesses within the Quality Supervision Bureau are fragmented, parallel, and independent, and each division has its own administrative domain, different management style, and different management scope. However, all operations within the Inspection Bureau are on the same process chain, and serially connected with one another. The conclusion of one division’s operation is beginning of another division’s operation,” one leader concluded.

6. **Sector Boundary**

   In the case, a sector boundary was also found between the government agencies and private companies (See Figure [21]). This boundary can make it difficult to achieve information sharing and integration between the two sectors, as some private companies, especially those in underdeveloped regions, are not willing to participate for various reasons. For example, the cost of installing systems is too high for private companies; sharing information may reveal companies’ business secrets. One manager gave an example: “E-declaration and E-supervision both involve private firms’ participation. We have some difficulties in cooperating with private forms. Issues include cost, companies’ perception of informatization, and companies’ willingness to participate.”
IV. Boundaries and the Complexity of Initiatives

As for the relationship between the difficulty of crossing each specific boundary and the complexity of an information sharing initiative, the study finds that individually the difficulty of crossing every boundary seem to be linearly associated with the complexity of information sharing and integration initiatives. That is to say, when the difficulty of crossing a specific boundary increases, the complexity of an initiative also goes up (see Table [8]).

Table [8]. Relationship across Boundaries and the Complexity of Information Sharing Initiatives

<table>
<thead>
<tr>
<th>Vertical Dimension</th>
<th>Relationship</th>
<th>Illustrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hierarchical boundary</td>
<td>Linear</td>
<td>From the perspective of central ministry, the complexity increases from vertical direct administration to non-vertical indirect administration; From the perspective of provincial government, the complexity increases from non-vertical indirect administration to vertical direct administration</td>
</tr>
<tr>
<td>Personal boundary</td>
<td>Linear</td>
<td>The complexity increases when the difficulty of crossing vertical personal boundary goes up from close to distant</td>
</tr>
<tr>
<td>Geographic proximity boundary</td>
<td>Linear</td>
<td>The complexity increases when the difficulty of crossing vertical geographic proximity boundary goes from close to distant</td>
</tr>
<tr>
<td>Development level boundary</td>
<td>Linear</td>
<td>In developed regions, the complexity increases when group from sharing between provincial government and local agencies to sharing between central ministry and local agencies; In underdeveloped regions, the complexity increases when moving from sharing between central government and local agencies to sharing between provincial government and local agencies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Horizontal Dimension</th>
<th>Illustrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental boundary</td>
<td>The complexity increases when moving from sharing between divisions, to between bureaus, to between ministries</td>
</tr>
<tr>
<td>Personal boundary</td>
<td>The complexity increases when crossing the horizontal personal boundary goes from sharing among people at lower levels to sharing among people at higher levels</td>
</tr>
<tr>
<td>Process boundary</td>
<td>The complexity increases when organizations are not</td>
</tr>
</tbody>
</table>
V. Interactions among Boundaries

However, although individually relationship across a specific boundary seems to be linearly associated with the complexity of an initiative, when these boundaries exist collectively and simultaneously, the relationship among them becomes a non-linear interactive matrix. The relationships across various boundaries may amplify, alleviate, or mediate one another, and thus complicate the context of information sharing initiatives.

Two types of interactions are found in the case:

1. Interaction along the Same Dimension

First, relationships across boundaries along the same dimension may interact with each other. For example:

- the ability to cross the vertical development level boundary could be aggravated by the difficulty of crossing the hierarchical boundary (see (1) in Table [9]);
- the difficulty of crossing the personal boundary could further deteriorate the ability to cross organizational and geographic proximity boundaries (see (2) in Table [9] and [10]; and (3) in Table [9] and [10]);

<table>
<thead>
<tr>
<th>Boundary Type</th>
<th>Relation</th>
<th>Complexity Description</th>
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</thead>
<tbody>
<tr>
<td>Geographic proximity boundary</td>
<td>Linear</td>
<td>The complexity increases when moving from sharing between cities, to provinces, to between nations</td>
</tr>
<tr>
<td>Development level Boundary</td>
<td>Linear</td>
<td>The complexity increases when moving from sharing between underdeveloped and developed agencies, to sharing between agencies in underdeveloped and developed regions</td>
</tr>
<tr>
<td>Sector Boundary</td>
<td>Linear</td>
<td>The complexity increases when the difficulty of crossing sector boundary goes up for various reasons</td>
</tr>
</tbody>
</table>
• the difficulty of crossing the horizontal development level boundary could further weaken the ability to cross departmental and horizontal geographic proximity boundaries (See (4) (5) in Table [10]);

• the difficulty of crossing a process boundary could aggravate the ability to cross a departmental boundary (see (6) in Table [10]);

• the difficult of crossing sector boundary could be aggravated by the ability to across horizontal development level (see (7) in Table [10]).

In sum, interaction along the vertical dimension is visualized in Table [9], and the interaction along horizontal dimension is expressed in Table [10].

Table [9] Interactions between boundaries along Vertical Dimension

<table>
<thead>
<tr>
<th></th>
<th>Hierarchical</th>
<th>Vertical Personal</th>
<th>Vertical Geographic Proximity</th>
<th>Vertical Development Level</th>
</tr>
</thead>
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<tr>
<td>Hierarchical</td>
<td></td>
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<td>X (2)</td>
<td>X (1)</td>
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<tr>
<td>Vertical Personal</td>
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<tr>
<td>Vertical Geographic Proximity</td>
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<td>X (3)</td>
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<td>Vertical Development Level</td>
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Table [10] Interactions between Boundaries along Horizontal Dimension

<table>
<thead>
<tr>
<th></th>
<th>Departmental</th>
<th>Horizontal Personal</th>
<th>Horizontal Geographic Proximity</th>
<th>Horizontal Development Level</th>
<th>Process</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental</td>
<td></td>
<td></td>
<td>X (2)</td>
<td>X (4)</td>
<td>X (6)</td>
<td></td>
</tr>
<tr>
<td>Horizontal Personal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal Geographic Proximity</td>
<td></td>
<td></td>
<td></td>
<td>X (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X (7)</td>
</tr>
</tbody>
</table>

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2. Interaction across both Vertical and Hierarchical Dimensions

Furthermore, vertical boundaries and horizontal boundaries may interact, interweave, and integrate with each other directly (see Table [11]). For example, the difficulty of crossing the vertical development level boundary can be caused or aggravated by the difficulty of crossing the horizontal development level boundary. Because of the existence of the horizontal development level boundary, the national system has to balance the east and west regions and eventually choose to stay in the middle, the vertical development level boundary is thus triggered by horizontal development level boundary (See (1) in Table [11]).

In addition, the difficulty of crossing boundaries along one dimension could change with changes in boundary relationships along the other dimension. For instance, the nature of the relationship across hierarchical boundaries could change with changes in the relationship across departmental boundaries: while CIQs have a vertical and direct administrative relationship with AQSIQ, BQSs have a non-vertical and indirect relationship with AQSIQ. (See (2) in Table [11])

Moreover, the difficulty of crossing a departmental boundary could vary with changes in hierarchical levels. When the difficulty of crossing departmental boundaries goes up along the hierarchical levels from cross-divisions, to cross-bureau, to cross-ministry, the complexity of information sharing initiatives also increases. In addition, while at the central government level, the Inspection Bureau and Quality Supervision
Bureau are two functional bureaus within AQSIQ, at the provincial level CIQs and BQSs are two totally independent agencies (See (3) in Table [11]). Furthermore, the nature of relationships crossing the horizontal personal boundary could change with changes in hierarchical levels. As discussed earlier in this chapter, while two ministries at the national level may not get along with each other, staff in their provincial offices can still have good relationships (See (4) in Table [11]); Moreover, the difficulty of crossing the horizontal geographic proximity boundary could increase across hierarchical levels of government from across cities, provinces, to nations (See (5) in Table [11]).

The relationships across vertical personal boundaries may differ with respect to department boundary and horizontal geographic areas as well. A leader may have relationships across the personal boundary with people in one particular department or one particular provincial agency but not with those in others (See (6) and (7) in Table [11]). In addition, people in more developed local agencies seem to have more chances to be promoted to a higher level, and people in a higher level agency are more likely to be appointed as leaders in a more developed local agency. Thus, the ability to cross vertical personal boundaries is limited by the ability to cross horizontal development levels (See (8) in Table [11]). In addition, it is more difficult to cross the vertical development level boundary in the Entry-exit Inspection system than in the Quality Supervision system, because the former exercises a centralized vertical (direct) administration, and the latter exercises a non-vertical (indirect) administration. Therefore, the ability to cross the vertical development level boundary could vary across departments (See [9] in Table [11]).
### Table [11] Interactions between Boundaries along Two Dimensions

<table>
<thead>
<tr>
<th></th>
<th>Departmental</th>
<th>Personal</th>
<th>Geographic Proximity</th>
<th>Development Level</th>
<th>Process</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal Boundaries</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Vertical Boundaries</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographic Proximity</td>
<td>X [1]</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### VI. A Dual Dimensional, Multi-factor, and Interactive Framework

The case study illustrates a dual-dimensional, multi-factor, and interactive framework of boundaries in the context of information sharing and integration initiatives. This framework expands the traditional notion of boundaries in information sharing and integration, and includes organizational, geographic proximity, personal, sector, development level and process boundaries. Some of these boundaries are newly identified;
some have been identified through previous research, but have not been analyzed comprehensively in an integrative framework. Some of these boundaries seem to be more formal and explicit, and some are more latent and are seemingly ignored by earlier research. Moreover, the study also implies that it may not be appropriate to judge whether an information sharing project is within- or cross-boundary in a dichotomous approach, but should assess the complexity of specific boundaries on a continuum.

Furthermore, the study indicates that in a specific information sharing initiative, boundaries along the vertical and horizontal dimensions may exist simultaneously and be equally important. Vertical boundaries are not necessarily easier to cross than horizontal boundaries. In terms of organizational boundaries, a non-vertical hierarchical relationship does not appear easier to build than a relationship across departmental boundaries as some research has suggested. As for other boundaries such as personal, geographic proximity, and development level, there is no evidence that vertical boundaries are easier to cross. Most importantly, unlike earlier models that attempt to draw a linear or stage model of boundaries crossing, this study offers an interactive framework which captures more complexity and depth in the context of information sharing and integration initiatives. With regard to a particular initiative, its complexity is case-specific, situational and dynamic depending on the presence of specific boundaries and the interactions among them. This dual-dimensional, multi-factor, and interactive relationship could be visually expressed by Figure [22]. In this figure, the vertical dimension and the horizontal dimension, with all factors incorporated, interact with each other in a dynamic fashion. The framework can be used as both a theoretical model and an analytic tool for practitioners.
Figure [22] A Dual-dimensional, Multi-factor, and Interactive Framework of Boundaries
Chapter Five: Barriers and Enablers

In the case study, a number of barriers were identified around the various boundaries discussed in last chapter. This chapter will discuss these barriers in four categories: 1) technological; 2) information; 3) organizational and managerial; 4) legal and political.

I. Technological Barriers

Overall, technology seems to be a second-order issue in the case according to most interviewees. Most interviewees agreed that what matters most is not technology, but policy and management. “There is no problem in terms of technological realization, and currently there is no information that cannot be exchanged technically. This project has realized its technical integration, and only needs some improvement.” “The major problem is in policy.” Nevertheless, technology barriers do exist.

1. Infrastructure, Software and Security

A few interviewees mentioned some typical technological challenges such as infrastructure, security, and software problems. For example, “It is related to the communication infrastructure, the expenses, and bandwidth”. “Technological problems mainly include communication command, virus, and update”. “We do not have very reliable communication software. Having tried a lot of software, we still have not found an impeccable one, which does not need large bandwidth, and can be monitored.”
2. **Legacy System Integration**

Some participating agencies, especially those in relatively developed regions had already built up their own information systems and run it for a couple of years before new nation-wide information sharing projects were launched. Therefore, how to integrate (or replace) legacy systems with new systems becomes a big challenge as they may use different hardware, software and programming languages. One leader noted: “East regions have been well developed for years, and have established many things so that it is difficult to build new things there because you need to replace and remove the old things first.” “The more mature they are, the harder it is to change them.”

3. **System Maintenance**

Lack of system maintenance was identified by interviewees as a treat to system sustainability. Some systems had very strong teams during the development stage, but once the project development finished, the team left. Thus, one manager requested: “We need a team to do the maintenance work after developing every information system. If we do not have adequate maintenance, the success of the system will not last long. Every system requires a certain amount of input and long-term investment. It is not a short-term battle that you could shift battlefield after every one shot.”

II. **Information Barriers**

1. **Information Quality**

Information quality problems, such as inaccurate, missing, and even manipulated information, were raised by some managers as a barrier. A manager gave an example:
“Sometimes manual input might give rise to data error or repetition. Currently, each division inputs data separately. This backward input method has its main drawback: information repetition. If someone typed in only one extra blank by mistake, one company becomes two different companies in the database.”

2. Data Standards

Data integration was mentioned frequently by many participants as one of the most critical issues. This task is not only detailed and time-consuming, but also controversial. According to quite a number of officials from various organizations, products classification standards differ between divisions, between bureaus, between ministries, and between nations, and between hierarchical levels, as well as between sectors.

First, the product categorization methods of the six divisions within the Technology Supervision Bureau differ from each other. “There are many different ways to categorize food, such as raw or cooked, planted or produced, and meat or grain or rice. Since there is no one set of standards, it poses a serious problem for information sharing.”

At a higher level, the data standard issue also occurs between bureaus in the same ministry. “Inspection and Quarantine Bureau uses HS code and its own CIQ code, while we in Quality Supervision Bureau also developed our own codes for categorization.” “If there is no transition mechanism so that one of them needs to abandon its own system and adopt the other’s, who should give up?”

Between two ministries such as AQSIQ and the General Customs, data standard conflicts exist as well. “We Inspection and Quarantine Bureau adopt the National Standard, while Customs adopts the Customs Association standard, so our standards are
not unified. In fact, whether you use mine, or I use yours, there is no big difference. The problem is that neither side can convince the other to give up its own.”

In addition, data standards between hierarchical levels may not be consistent either. The Inspection and Quarantine Bureau is in a vertical (direct) administration, so the whole country adopts one standard. The Technology Supervision Bureau is in a non-vertical (indirect) administration, so they have no centralized nation-wide standard. Therefore, one manager noted: “The most important thing for sharing information with local agencies is to set a universal standard, even if those local agencies use their own systems rather than the system developed by the General Administration, at least we should all adopt a unified standard to exchange information and get our operations connected. We still have some difficulties in that aspect. The product categorization method adopted at provincial, city and county level are all different. It is too messy!”

Moreover, data standard alignment between sectors also seems to be an issue. “The Customs standard is updated once a year, so companies also need to update correspondingly every year. Usually that is done on the night of December 31st. The companies need to download it, so then comes the synchronization issue.”

Finally, data standards between various countries are different, and no international organization has established a universal standard. “National standard, UN standard, ISO standard and European Union standard are all incompatible with each other. For these basic and public things, does an international organization need to work on it?” The cross-national data standard issue seems to be more complex than the domestic one. “Codes such as nation code, measurement, and port code are all related to sovereignty. One would say, I can not let you change, if you change it, my port will lose its code. Also,
the international standard updates very slowly. Kosovo declared independence, but it does not have a code yet. Although the nation has not been recognized yet, international trade with it has already started. When sovereignty and international trade are in conflict, what should we do?’’

Besides products classification standards, unified organization and institution codes have not been developed across agencies. One particular company is coded in different ways across various information systems. This makes it very hard for these agencies to verify information and track companies. In the worst situation, one single company was recorded as different companies in different agencies. Some leaders commented: “Are the company information registered at the Business Administration Bureau, Taxation Bureau and Banks all correct? We do not know! Because these agencies all have their own databases and standards. Our state does not specify which standard is the most authoritative”. “Organization and institution code is the ID of a corporation. One enterprise’s business scope may span across different divisions. However, because its identification is not unified, its information cannot be interconnected and shared across divisions. Before this problem is solved, cross-department information sharing cannot be realized, nor can information sharing internally within the same department.”

III. Organizational and Managerial Barriers:

Organizational and managerial barriers are deeply embedded in bureaucratic realities. In particular, participant organizations’ attitudes against information sharing constitute a major factor. A number of specific barriers related to attitude were identified:
1. **Different Goals and Interests**

   Some agencies’ organizational goals and interests are in conflict with one another, and are very difficult to align. Officials pointed out: “We have some conflicts when cooperating with enterprises and other government agencies. We have different perspectives. Each party’s interests all sound reasonable from each one’s own perspective, but might not be appropriate from the perspective of the other side.”

   Especially, when the fields and clients of participant agencies overlap with one another, the conflict of interests among them becomes especially high. Two interviewees stressed: “We in the Inspection and Quarantine Bureau monitor ports, while the Quality Supervision Bureau monitors home. This makes the coordination between the two very difficult to achieve, because ‘people in the same business are foes’. Both point at the other, every time when a product quality problem occurred, because both are responsible for quality monitoring and may have neglected their duties. Actually we cooperate more and better with Customs, because we monitor one field, and they monitor the other.”

2. **Diverse Operations and Procedures**

   Different agencies have different operational procedures and management styles, and developing a new information sharing and integration system sometimes requires process reengineering. However, some staffs are not willing to accept changes, simply because they have been used to the old processes. “Due to some inertial thinking, people do not want to change. In fact, if you ask them why not, they themselves do not know the reason. They simply have been used to it. They would say: I just want to do in that way; I just want to add this item here; or I just want to code in this way, as that is the only way I
can understand. It is very difficult to convince people to make change, even though they would lose nothing from the change.”

3. Different Perceptions of Cost and Benefit

Perceptions of costs and benefits of participants were identified as a critical factor. When an agency believes that the benefit it can from a cross-boundary information sharing is less than its cost, or the benefit is unclear or unequal, the agency tends to withdraw. Some officials observed: “Finally, cost-benefit comparison and mechanism of interests are fundamental. Whether the three parties could accomplish a task is determined by the cost-benefit analysis. How much will I spend and how much will you spend? Then how much can I gain and how much can you gain? These are the core issues.”

When some agencies believe that an initiative is valuable to one side but not to the other side, such a perception of unequal benefits could hinder collaboration. “Organizations with relatively abundant information have some advantages. What they demand from others is much less than what others demand from them. These organizations are not willing to provide information.”

A number of specific factors are considered when agencies conduct cost and benefit analysis. These factors include workload, power, resources, headcount, feedback, and incentives as follows:

A. Workload

An agency needs to spend a great amount of time and effort in information sharing initiatives with other agencies. If doing so would only increase an agency’s work burden
without bringing significant return, an agency is unlikely to participate. In addition to refusing to share information, an agency could also refuse to receive information shared by other agencies, because interoperating with others could increase the former’s workload and affect its efficiency. One official recalled: “We give them information to enforce inspection, but they view it as an extra burden. Their workload has been quite heavy, and verifying more data from us would bring them more troubles by increasing their workload, reducing their clearance efficiency, and bringing them more complains from users. Companies would say: look! How inefficient Customs are!”

B. Losing power and resources

Information is considered by many as sources of power and resources. Thus, some agencies and people may lose power, influences and resources by giving out information. Moreover, many agencies tend to build their own isolated system rather than participating in an integrated system with others for the sake of gaining and keeping more financial resources and power. Some examples are: “Information was not shared in the past. They could sell the data to some banks or firms to make some extra money”; “If everyone can get his data easily, his importance for upper level leaders will diminish”; “He can apply for funding for his own project; controls the money in his own hands; makes decision on his own preference; and keeps all interests. Because once you control the money, you control the power. All agencies throughout the country act like this: trying every means to get funding through proposing new projects.”
C. Layoffs and headcount reduction

Some information sharing and integration initiatives could lead to layoffs, cuts in headcount, or removing leaders from their positions. These concerns can impede some agencies from participating. One manager said: “There used to be many staff working in the service hall. Some are the relatives of officials. Since the system was launched, many of them were laid off. Will the project affect headcounts in their own organizations? This is a realistic consideration.” Moreover, “some leaders may be moved from their original positions for this project. Therefore, a reasonable reform proposal has never been proposed from inside.”

However, some interviewees think it is not a major issue, because it is an inevitable “trend”: “We do face such resistance, but that is not a big problem. As for this matter, related government agencies are quite conscious that they cannot act against the trend.”

D. No feedback

Some managers complained that some agencies who received their information have never returned any feedback to them. This also reduces their intention to continue sharing: “We are at the upstream of information flow and they are at the downstream. We upstream have provided them with information, but they downstream do not return any feedback to us.”

E. No sustainable incentives

Without sustainable rewards and incentives, agencies’ intention to share information is unlikely to be sustainable. According to some managers, a number of initiatives failed for this reason: “Many plans sound wonderful, but have no results for
various reasons. If there is no sustainable incentive, it won’t work. They just started with a tiger head, but ended up with a snake tail.”

4. Unpleasant Prior Experiences

In addition, many government agencies do not have positive prior experiences in information sharing with other agencies. This could greatly affect their attitude to participate new initiatives: “Beijing city used to build a trade information center around 1997 or 1998. The Beijing Commerce Bureau and the Economic and Trade Commission both invested a lot of money. Unfortunately, the initiative failed at last and makes them owe several million in debts. The Commerce Bureau has never forgotten this failure and still feels bad about informatization.” One manager also commented: “The communication difficulty between the two sides is not something formed currently. Historically, both sides have never reached an agreement, and both wanted the other party to change. As time goes by, the communication between them becomes more and more difficult, and more and more problems were accumulated. If they want to change this issue, they have to go back to all past issues first.”

5. Capabilities

In addition to agencies’ attitudes about information sharing, their actual capabilities to collect and share information also matter. Some interview participants pointed out a number of factors related to capabilities.

A. Funding

Funding is mentioned as a barrier by many officials. However, they have different opinions on whether cost really matters. For central agencies without sufficient budget
and local agencies in underdeveloped west and central regions, cost seems to be a big issue: “Some people say money is not an issue, but I think it is definitely an issue.” “Funding to the whole nation is not a problem, but it is a serious issue for Middle and West regions. Agencies in East China can be fully self-financed.”

However, other officials, especially those from “rich” agencies and “rich” regions, said that funding is a factor, but is not a key determinant. “Funding is sufficient. As far as the Inspection and Quarantine Bureau is concerned, we do not have funding problems. Facilities are guaranteed, and the state has already made quite a lot investment in us.” “No organization would say there is enough money. The key point is how to use the money and where to use it.”

These managers further pointed out that funding is sufficient, but what is more important is prioritizing initiatives: “Nowadays government has sufficient money. The issue that the Development and Reform Commission studies now is how to spend the money. As long as they think the initiative is important, and is on the Premier’s priority agenda, funding won’t be a problem. Even the biggest project would spend just several billions, or tens of billions at most” “As long as everyone wants to do it, money will come naturally.”

In addition, cost also seems to be a burden for some private companies to carry out information sharing with government. Especially, relatively small companies or companies in undeveloped regions thought that their return from sharing information is not proportional with their investment. For example, “The biggest problem of video supervision is the high cost. Shanxi province does not have big firms with large output. Many firms earn little profit. However, the system installation alone would cost them
more than 300,000 Yuan, and there are also operational expenses afterward. How can these firms afford the cost? Only rich firms that have good profit can afford to set up very good supervision systems. We would rather make more trips there in person to monitor their manufacturing process than ask them to install a whole set of equipment to transmit video back to our agency.”

B. Staff lack capabilities

Some agencies and companies lack the know-how and capabilities to carry out information sharing initiatives. One interviewee pointed out: “The development of information technology is so fast, but our staff’s capabilities of tracking and understanding IT development are limited. They are all eager to do something, but they are not very clear about what should be done and how to do it.”

C. Lack of staff

Many agencies simply have not enough staff to work on initiatives, due to headcount control in government. This fact seriously affects many agencies’ capabilities to accomplish heavy-load tasks. “We are short of staff, but too much work! We want to recruit more staff, but we fail to get more civil servant headcount. Every agency is short of staff now including the General Administration. The central government wants to increase the number of government employees, but cannot solve it due to fiscal budget control.”

D. Information awareness

Some agencies know very little about what information other agencies have so that they could use it. They simply lack information about information. One classic example
was observed by an official: “It is only because of SARS, that people started to know
about one special function of National Family Plan Commission (NFPC). It is actually
NFPC that disclosed information about new incidents to the public every two or three
days during the outbreak of SARS, because NFPC has a very powerful vertical reporting
system down to the village level. NFPC knew clearly who left the village, who returned,
and who was coughing. However, the Ministry of Health (MOH) does not have such an
information system down to the bottom level of the society. It is not until very much later
that MOH finally found out that NFPC has all this information.”

E. Time constraint and rushed implementation

Some managers complained that they do not have enough time to do a good job.
Many complex initiatives are under very tight schedule without having time to
thoroughly assess the context. For example: “The time schedule for the Golden Quality
Project is too tight. The initial needs assessment started on March 10th, and the whole
national system has to be launched by August 21st, including trial operation, test, and
adjustment. Thus, a system for the whole nation has only about three to four months to
develop. Anyone with some system development experiences knows that it is impossible
to develop a good system in such short time.” One leader further commented that: “I
think the process of informatization is too fast, and we have spent too little time in
studying our operation. It is meaningless to develop information systems before having a
clear mind about the business operation.”
F. No strategic planning and coordination

According to some interviewees, many projects are initiated and developed independently and randomly without strategic planning and coordination. According to some interviewees, that is the main reason why many projects are isolated from one another. “The General Administration has no overall planning, but a number of specific projects. Leaders think they have done planning. I think what they did is not at the macro level, but just at the operational level.” “In order to accomplish information sharing and operational connection under the same platform, it is necessary to make an overall plan including both technology and management dimensions. However, nobody is doing that. Every party did its own staff, and everyone was separated. Information was not shared, and you can find isolated systems everywhere.”

IV. Legal and Political Barriers:

1. Legal System under Development

As a developing and transitional country, China’s legal system is still under development and the rule of law has been fully established. In the case, a number of legal barriers stand out, such as: specific laws have not been enacted yet; provisions of some enacted laws are not explicit and enforceable; law enforcement is not effective; laws change too frequently. All these weaken the amount of legal power that leaders could exercise.

A. Lack of applicable laws

First, there are no applicable laws that could be applied to guide, facilitate or regulate cross-boundary information sharing initiatives. Some officials commented:
“Because there are no legislations, none of these projects across horizontal organizations can not be solved without a higher leader’s involvement.” “Why do they conceal data codes to the outside? Because the country does not have legal statutes to force them do it.”

B. Implicit laws and weak law enforcement

One leader addressed the issue that some initiatives are hard to implement because the roles and responsibilities for participant agencies are not explicitly defined by laws. One leader said: “Laws in China are quite strong in principle, but with no clues on how to enforce them, because they are not made explicitly. Many laws only talk about what should we do, but do not say a word on what if the law is not enforced. Legislations should be enforceable.”

Furthermore, sometimes even when they are specifically defined, law enforcement is not rigorous and strong in China. “A lot of commodities were discharged by Customs without verifying their clearance certificates. If the law said explicitly that ‘Customs should take the full responsibility, if they discharge commodities without verifying product quality certificate issued by Inspection Bureau’, then Customs will voluntarily come to me and ask for the data. It is just that simple. Laws should clarify the boundaries of responsibility strictly, and should enforce it!”

C. Laws and regulations change frequently

Since the legal system in China is still under development, relevant laws and regulations change frequently. Thus, agencies and private companies are required to
make changes in their operations accordingly. Some problems are then caused by these frequent changes. One leader noted: “Currently, laws and regulations change frequently in our country, due to the changing international trade conditions. Every time when China and the US reached a new agreement, new laws and regulations will be enacted by the state accordingly. Then new regulations for inspection declaration will come out. Consequently, data in information systems need to be updated. There are hundreds of thousands of firms in our country, and the amount is beyond what we can deal with quickly.”

D. Cross-national legal conflict

With regard to cross-national information sharing, according to some participants, one major challenge is that different countries adopt different regulations and standards. Cross-national legal conflicts then emerge. For example, “Regarding… standards, We can only adopt our national standard. The national standard does not match the ISO standard, and the UN standard is different from the ISO standard, neither is the European Union standard. There is a conflict among laws”.

2. Lack of Facilitating Institutions and Leadership

Institutions and leadership that could initiate, facilitate, and coordinate information sharing across government agencies were not in place yet. Several officials called for more efforts in institutionalizing information sharing: “One constraint is about the institutionalization of informatization. There is no regular mechanism and no action institution. We need to institutionalize many tasks such as planning, management, and
maintenance. Then if any party does not share information with other, it then breaks the rule.”

Furthermore, the institutionalization of information management in the whole government system is still quite “chaotic, and no one is taking the lead: “The problem does not concern just one agency or ministry, but is a national issue. Even the situation in the State Council is disorganized. It has a construction center, an emergency center, a state informatization center, and an e-management center.” “Under the current mechanism, which organization is in charge of informatization? No one knows! None of them, the Administrative Office of the Central Committee of the Party, the Administrative Office of the State Council, the Information Office of the State Council, the Development and Reform Commission, and the Ministry of Industry and Informatization, know exactly the roles they should play. Nobody has the authority to exercise the power, and the whole system lacks a head.”

Particularly at the organizational level, many officials stressed that there are not executive-level informatization offices in place yet that could lead and coordinate information sharing efforts across boundaries. “It is about institutional integration. There should be a comprehensive information management department to take the initiative and be responsible for the task, so as to command and coordinate across different departments. Information issues are comprehensive problems and thus require a comprehensive department to address, rather than just a specific operational department.” “It is fine to lack an informatization department when we were at the early stage of informatization, but now, with the advancement of informatization, this problem becomes more and more conspicuous.”
3. Information Security and Confidentiality Concerns

Security and confidentiality are critical for government information. These concerns could prevent information sharing among government agencies. Some interviewees commented: “Ministries and commissions care a lot about information security and confidentiality. These data belong to the government and are politically sensitive. Some data concerning special equipment and state secret departments should be kept confidential and cannot be given out to anyone. Even if the mayor wants to access the data, he needs to go through a certain procedure first. What kind of information can be exchanged between government agencies, what cannot be? This is a core issue. Top leaders should reach an agreement first.”

Similar issues exist with private companies as well. The concern of revealing business secrets to competitors constitutes a major barrier that prevents companies from sharing information with government agencies. For example, “It is unrealistic to push some enterprises to implement video supervision. To those who involve high processing technology, they are afraid of revealing the techniques. They do not allow others to watch.”

Nevertheless, according to many interviewees, information security and confidentiality concerns are often used as excuses for refusing to share. “If the information is not explicitly listed as must-disclose or must-conceal, they could easily find an excuse under the name of national security and secrets to refuse sharing. Some true reasons are covered under the excuse”. However, “when it really becomes necessary to protect information, then nobody really cares.” One example was also mentioned by a manager: “Customs can warn the General Administration that ‘if the system is in danger
due to information sharing, who will take the responsibility? Will you? Dare you tell the Premier that?” Then, everybody is in silence and nobody dares to take that responsibility.”

In addition, sometimes a whole set of data was refused to be shared only because only a very small portion of it is truly confidential. “The current situation is that even if only ten pieces of information are confidential within one million, the entire set is concealed. That is a problem! You can conceal the confidential part, and disclose the rest that are not confidential.”

4. **Prolonged Review Process**

Some initiatives take too long to be approved by top executive leaders. This has further shortened the time left for system development. “During the two-year development cycle, the reviewing process and calling for proposals take up more than half of the time, and the time left for system development is less than one year. What can we do? No single director’s signature can be skipped. It is a typical situation for a government project.”

5. **No Top Leader’s Attention & Support**

Many interviewees complained that some executive leaders do not pay enough attention to informatization and neglect this responsibility. For example, “XX used to be responsible for informatization when he worked in the State Council, but he refused to take charge of informatization after he came to our ministry, as he thought the task is too troublesome.”
In fact, information sharing initiatives are often not on leaders’ priority lists. “In many leaders’ minds, the goal of informatization is only about improving efficiency. They do not realize that the impact and value of informatization on the entire organizational structure and management style. Few politicians, provincial leaders, and local leaders treat informatization as a tool to realize their modern political ideas.”

6. Internal Problem Exposure

In some cases, sharing information with others could expose internal procedures and problems to other agencies or to top executive leaders. This concern greatly discourages some agencies’ intention to share information. A manager noted: “Through network verifying, on one hand we can strengthen supervision on the enterprises, and the other hand it can also lead to supervision between agencies. For example, before network verifying was implemented, nobody could find out whether a batch of commodities was discharged by Customs without verifying certificates; but once the system is connected, all internal supervision flaws are exposed to others.” In addition, “They are concerned that if all data are uploaded, the upper level will know too much about their operations.”

7. Public Pressure

Pressure from the public also constitutes as a constraint. One controversial issue is whether government-run systems could charge private companies user fees. There is a debate going on around the topic.

Some officials explained why they charge fees for using the system: “Actually submitting the application itself does not charge fees, what is charged for is using the IT system to submit applications. Why cannot public services charge fees? We need to pay a
team to build and maintain the system. Should government pay for the service from its own pocket? We should take a market-oriented approach”. “The system actually saved a lot of money for user companies, and it is reasonable and appropriate to charge them some fees. This is a win-win approach.” For example, “He used to take a taxi to go back and forth between his company and the government agency, and now their taxi expenses have been saved due to the system. But then they forget about the savings and ask why he was charged for submitting applications. What he has saved from taxi expenses is about 50 yuan, and what he pays for the service is only 5 Yuan.” In fact, some user companies also agreed it is fine to pay fees: “Charging 5 yuan is not a problem, and it is not that much.”

Other officials expressed their concerns: “Some local governments invested more than 100 million, and then the port was operated like a business - providing firms with some information and charging them some fees, because only in this way, the system can continue operation. But is it appropriate to invest in a system with government funding, and then set up a company to make profits?” “Enterprises would ask: ‘why do I need your services? Why do I have to get services from you solely?’ It is quite controversial.”

V. Enablers

The case also revealed a number of enablers that contribute to the success of the initiatives. Some leaders raised explicitly a number of enablers as discussed below.

1. Inherent and Mutual Needs for Information Sharing

Each participant organization’s inherent and mutual needs for information sharing are recognized by many participants as the most fundamental and sustainable enablers. A
manager commented: “The most important factor for accomplishing interoperability is that all parties share mutual needs”. “Cross-agency information sharing arises from business needs. With regard to non-vertical relationships and horizontal systems, it mainly depends on whether both sides have inherent demands for sharing. This is the most important driving force, which is sustainable and could prevent initiatives from moving backward.”

2. Legal Basis

Laws and regulations that support information sharing serve as the legal basis for the initiatives. Especially the newly enacted Open Government Information Regulation of China was mentioned by many interviewees as an enabler for information sharing initiatives among government agencies, in addition to its objective of disclosing government information to the general public. “An effective way to achieve information sharing is through legislation. Information sharing should be guaranteed by legal efforts. Now we have the Open Government Information Regulation which regulates explicitly that government agencies should disclose product monitoring information. This is what everyone knows and must obey”. “When information is disclosed, it is shared as well.”

3. Institutional Reform

Favorable institutional reform could also foster information sharing. The Chinese central government’s recent effort to transform the current regulation-oriented government to a service-oriented government is viewed by some interviewees as an enabler. “Our conception is changing too, from the original regulation-oriented government to management-oriented government, and then to service-oriented
government. These are indicators of making progress. After the government achieves this transformation, it will start seeking horizontal collaboration gradually.”

In addition, the new institutional reform of combining several business-related ministries into one “big ministry” was also mentioned by some officials as an opportunity for information sharing and integration. One leader said: “The ‘Big Ministry’ institution is favorable for aligning objectives.”

4. Higher-level Leadership Support and Involvement

Higher-level leaders’ support and involvement is recognized by many as one of the most critical enables for the success of the initiatives. One leader said: “Informatization is a project of “number one boss”, and the “number one boss” must get involved.”

In the case, executive leaders from various levels have supported and got involved in person in some information sharing initiatives. These leaders include top leaders, ministry leaders, local government leaders, and business department leaders. Higher level leaders’ support and involvement constitute situational variables for lower-level leaders.

A. Top leadership support and involvement

Support and involvement from top executives in the State Council (the Cabinet) can make a major difference for the success of a cross-boundary information sharing initiative. When a top leader puts an initiative into his priority agenda, it creates a totally different environment that was compared to those proposed by lower-level leaders. Many critical projects were accomplished under the direct involvement of the State Council or even the premier or vice premiers themselves. “Sometimes a project needs the State Council to issue a special administrative order to push forward, or needs Vice Premier
Wu Yi’s involvement in person.” “If the Premier cares about it, asks about it every day, sends you a command every day, and organized a meeting on the issue every 3-5 days, dare he refuse to do it?”

Specifically, support and involvement from the State Council can be operationalized through two approaches: establishing national projects or ad-hoc problem solving.

*National projects recognition*

The State Council sometimes gives support to an initiative by recognizing it as a national E-government project. In China, a national E-Gov project often starts with a character of “Golden” in its name. The Golden Quality project is one of the national E-Government projects. As a national project, the Golden Quality project receives great attention and support from the State Council. One leader noted: “A national project receives tremendous support. The whole state collectively supports the project’s implementation, from architecture design to financial support.” “The project’s success is of national interest. Therefore, all information must be shared and those who do not cooperate will be punished.”

*Ad-hoc Problem Solving*

Sometimes, the top executives get involved through special problem solving action. For example, the success of the E-Customs clearance application is the result of a taskforce’s involvement. Before the special taskforce was formed, AQSIQ and Customs worked on the project for three years, but failed to make solid progress. Then, “Last year, product quality problems happened. Vice Premier Wu Yi took charge of a special
response taskforce to address the issue. She brought together people from Ports, Inspection and Quarantine Bureau, and Customs and asked them to solve these problems before a specific deadline. Wu Yi said: ‘you were requested to establish the E-Custom Clearance long before and why have not you finished it yet? You must finish the project by the end of this year.’ Then customs had to take it seriously. Just one month after, the problem was solved. Sometimes a problem only needs one word from the top to be solved.”

B. Ministry leaders and provincial leaders support

Ministerial or provincial leaders’ involvement also played a key role for the success of the initiatives. A manager mentioned: “Ministerial Leaders played a very important role in the whole process.” “Shangdong province did a pretty good job because the project received special attention from top leaders of the provincial Bureau.”

However, sometimes, two local agencies involved are under different vertical administrative relationships, namely, one local bureau reports directly to a central agency, and the other local agency reports to a provincial government. In that situation neither support from ministerial leaders nor involvement from provincial leaders work in solving information sharing conflict between the two. For example, according to officials from provincial CIQs and BQSs, sharing information between the two local bureaus was very hard to achieve mainly because the former reports to AQSIQ, and the latter report to the provincial government. Thus the two parties do not report to the same leaders and do not attend the same meetings. Solving such a problem has to rely on coordination at a higher level, the State Council. A manager described the situation as follows: “Inspection and Quarantine Bureau is under the vertical (direct) administration of the central agency,
rather than the Beijing Municipal Government. So they do not attend meetings organized by the Beijing Municipal Government, and we in the Quality Supervision Bureau do not attend their meetings either. Because the two bureaus do not report to the same bureau, it is very hard to communicate and coordinate between us. It is not a management issue, but an institutional problem.”

5. Crisis

The case study finds that top executive attention and involvement is often triggered by outbreak of a crisis. A crisis could draw public attention to a problem, foster consensus making among stakeholders, and remove resistance. Some officials believe that crisis could be an opportunity for solving some longstanding problems. Referring to the toys crisis, one interviewee said, “Customs did not want to do it at the beginning. After the crisis happened, customs had to do it. Therefore, a crisis is not necessarily a bad thing. A crisis can draw attention.” “The crisis finally becomes an enabler. It integrated resources. I have never seen so strong cohesiveness and high spirit for work.”

An observer further commented: “The progress of some initiatives needs a happenstance to move forward. A crisis could draw attention from top leaders, and then history might be changed. A happenstance may be a bad thing to some specific organizations or people, and some leader may be fired, but it might be a good thing for the advancement of the whole business.”

One official pointed out that sometimes the outbreak of a crisis may have international impacts and thus draw international attention. These international pressures can also accelerate problem solving and capacity-building. “International pressure is another enabler. When our Premier negotiated with leaders from the US, US leaders
proposed information sharing across the two parties. Then, when our Premier started to work on it, he realized that our current institution did not support this information sharing initiative, and the responsibilities of departments in charge of information management were not clearly defined. Then he might propose and foster establishing CIO offices in each ministry.”

6. **Societal Impetus**

Impetus from the society also constitutes an enabler. Increasing citizens’ requirements for better public service and problem solving push the government to carry out information sharing initiatives. “Citizen’s supervision of government and people’s voices questioning performance are getting stronger and stronger thanks to the Internet. Suddenly, many public problems are picked out by them. Citizens’ consciousness of self-protection has also been developing constantly. All these have pushed our industrial standard and national standard to move closer and closer to international standards.”

Over time, informatization has been considered by more and more in the society as an inevitable trend. “Currently, the overall bar is rising higher and higher, and every department is talking about informatization.” “From common people to leaders at all levels, people’s conceptions have developed. It is unlikely that things will be more backward. The poorer we are, the more we need informatization, in order to catch up with the world trend.”

7. **Sufficient Resources**

Successful initiatives need sufficient resources as well. These include human and financial resources. According to several interviewees, some agencies are more
successful in information sharing initiatives because they have more revenue resources than others. “The Inspection and Quarantine Bureau targets at large firms with import and export businesses, and they are serving commercial activities of the firms. However, the Quality Supervision Bureau regulates middle- or small-size firms, and is mainly doing regulation. Therefore, the Inspection and Quarantine Bureau has more funding to build the system on its own, while the Quality Supervision Bureau has no other resources other than the funding from the state.”

8. **Basic IT Infrastructure**

Basic IT infrastructure is recognized as the foundation for information sharing initiatives by some interviewees. “I believe the most crucial thing for the success of cross-ministry information sharing to build basic IT infrastructure and basic operational systems. These are the conditions for information sharing; otherwise there would be no way to share information.”

9. **Relationships among Enablers**

A number of officials also emphasized the relationship among all these enablers and prioritized them. Many agreed that inherent information needs is the most fundamental and sustainable enabler, and legal basis and institutions provide external forces. When none of these enablers exists, then higher-level leadership involvement becomes the last resort. “The inherent demand is the most important. But if different departments have inconsistent or even contradictory objectives, we have to rely on higher leadership to coordinate.”

However, many interviewees also stressed that relying too much on leadership involvement is not sustainable, because a leader’s attention and support are hard to obtain
and may shift. Therefore, they believe institutionalization and legislation would be more effective. “Attentions from leaders can be a good starter, but whether an initiative can sustain itself is a different story. Relying only on a leader’s attention is like putting the tail before the body. Only sustainable driving forces could stay longer.”

One leader made his points thoroughly: “A leader’s attention can be a very powerful driving force in a short period of time, but will diminish as time goes by. So it won’t solve the problem in the long run. Leader attention is not reproducible, nor sustainable, because it is impossible to have every problem solved by leaders in person. We should not stress leader’s attention too much. It is rule of people instead of rule of law. Instead, we need institutions that won’t change with leadership change, or change when leaders’ preferences shift. So, leaders should walk away from telephones, and focus on institutionalization and legislation.”

In general, the existence of the boundaries, barriers and enablers identified in chapter 4 and 5 indicate whether the environmental situations are favorable for leaders working in the context of information sharing. The more boundaries and barriers that appear in the environment, the more unfavorable the overall situation is for leaders to achieve cross-boundary information sharing. The fewer the boundaries and the more enablers that emerge, the more favorable the situation becomes.
Chapter Six: Leadership Power and Traits

I. Position Power

With regard to the type of power possessed and exercised by leaders, the study first investigates leaders’ formal position power. In the case, the extent of leaders’ position power varies in three different ways: within organizations, across hierarchical boundaries, and across departmental boundaries.

1. Within Organizations

At the organizational level, the position power possessed by leaders of informatization departments is very weak compared to leaders of business departments. The department responsible for E-Gov initiatives within a ministry is usually called the informatization office or information center. Overall, they are neither influential nor powerful departments within Chinese government systems. Currently, China does not have a public CIO system. Leaders of informatization departments are only at the department-head level rather than at the executive level. As a result, many important organizational decisions regarding informatization are made without information leaders’ participation. In general, information department leaders lack sufficient position power to coordinate information sharing across various boundaries even within their own organizations. An information center leader complained about this: “We only play a technical support role, and have no necessary information management functions. All these businesses have nothing to do with you even if you have the titles of CTO or CIO. If you are not allowed to attend executive meetings, or neglected when projects are
proposed, or not invited in project evaluation, then what is the point of being an information department leader?”

2. Across Vertical Boundaries

The extent of position power informatization leaders have across vertical boundaries varies in accordance with the nature of vertical (direct) administration. Overall, they have more legitimate power over their lower level counterparts in the direct vertical administrative relationships than in the indirect non-vertical relationships. A leader in a vertical (direct) administration system noted: “Relatively we could use more administrative power in a vertical system, because local bureaus are under our direct management.” However, a leader in a non-vertical central agency said: “When we communicate with local agencies, we are not directing but negotiating with them, because local bureaus are not under our vertical leadership, but are led by the local governments, which have their own plans.”

3. Across Horizontal Boundaries

The position power that leaders could exert across horizontal departmental boundaries is very weak or does not exist at all, as powers are shared across participants. “Power is weak at the horizontal level, and we cannot exert administrative power over others” one leader commented.

However, it seems that the amount of power that lateral participant agencies possess is not always equal. In reality, some agencies seem to be relatively more powerful than others in information sharing initiatives. For example, among Customs, the Inspection and Quarantine Bureau and the Port Authority, Customs is the relatively more powerful agency, and the Inspection and Quarantine Bureau is the relatively weaker one.
According to one leader, the reason is that: “Customs covers a wider range of supervision responsibilities, while the Inspection and Quarantine Bureau is just one branch of the entire supervision operations and has very specific responsibility. All businesses are required to be declared to the Customs, but not all of them need to be reported to the Inspection and Quarantine Bureau. The state endows us with different supervision power.”

4. Effectiveness of Exercising Position Power

A. In vertical (direct) administration

   Apparently the effectiveness of exerting position power and its acceptance is greater in vertical relationships than in non-vertical relationships. One official illustrated: “One advantage of the vertical (direct) administration is that it is easy to carry out initiatives. Once the central government makes up its mind, it can send commands down to the bottom level and have it implemented very quickly, unless it is not in a vertical relationship.”

   However, many officials also stressed that even in a vertical relationship where leaders can exert more power, the acceptance of power is not always ensured. Relying on pushing from the upper level is not sustainable in the long run. Some managers commented: “If everybody is unhappy, even if the leaders push it to ‘succeed’ in the short term, there will surely be some problems afterwards.” “He might think his ideas have been very holistic and it will be fine as long as he can exert the power. However, the most crucial point is to let others accept these ideas.”
B. *In non-vertical (indirect) administration*

In non-vertical administrative relationships, exerting power is still effective to some extent, as long as the power is used on a legitimate basis. According to one leader, “Local agencies are subject to the operational standard and guidance of the General Administration. As long as what we do has a sound basis, lower level agencies have no excuses to resist.”

However, the effectiveness of exerting power in a non-vertical system is not as effective as it is in vertical relationship. For example, the Inspection and Quarantine Bureau has a vertical administrative relationship with its local bureaus, and its exercise of power from the top to the bottom is “relatively smooth”. By contrast, the Quality Supervision Bureau has a non-vertical relationship with local agencies, and its command cannot be pushed down to the bottom level easily. As a result, “the difference between the two systems is pretty obvious, and shows clearly the different effect of different organizational arrangements.”

Consequently, in non-vertical administrative relationships, the acceptance of power at lower level agencies is critical. “Unless you can convince the operations staff at the lower level to accept a system willingly, they will not use it.”

C. *Across horizontal boundaries*

In a horizontal relationship, sometimes a relatively more powerful agency tends to control and dominate a relatively weaker agency, and the latter then tries to resist such control in order to keep its autonomy. In general, exerting power on parallel organizations is ineffective. One manager gave an example: “The Customs takes the
initiative, and can even swallow other bureaus. In order to keep its independence and autonomy, the Inspection and Quarantine Bureau tries all it can to resist the former.”

With regard to horizontal collaboration, it seems that only power exerted by higher level leaders is effective. “The administrative impetus from the upper level government is a major force. Difficult projects, such as the electronic custom clearance project, must rely on administrative power from the top to be solved.”

5. Outcomes of Exercising Position Power

With regard to the outcomes of exerting position power and influence, in line with Yukl’s (2002) findings, the case study also indicates three levels of outcomes. They are: commitment, compliance, and resistance.

A. Commitment

Some agencies are fully committed to an initiative when they believe the project meets their inherent interests. A local leader gave an example that the climate for informatization in Beijing is quite good, and “generally each bureau, office and commission is very supportive”, because their needs are being met. One observer commented that sometimes an external request can become an inherent incentive through good communication of leaders. Then “everybody’s willingness-to-do finally gets the job done”.

B. Compliance

Being afraid of potential punishment, some agencies choose to comply with the power exerted by higher level governments, even if the initiative does not satisfy their original preference or even works against their interests: “Locals often obey the central.
Due to the organizational discipline, no one would resist desperately.” Another manager described a situation in which “originally they did not want to do it. Thanks to the incident of the (toys) crisis, they had to agree to cooperate. However, the attitude of willing to do it and having to do it is different.”

C. Resistance

Sometimes, agencies choose to resist a request from the upper level or parallel level, because an initiative does not meet or is against their interests, or is simply considered useless. However, in order to avoid punishment, these resistance activities are not made with direct confrontation, but with covert and skillful measures. One example was given by a local manager: “Finally we abandoned the system of the General Administration and went our own way, and we did not let the General Administration know this.” One senior observer also made a comment on how people deal with unreasonable requests from leaders. “Forceful pushing looks effective above the surface, but will be abandoned easily afterwards. Now the common people and local officials are quite witty. If they think what leaders put forward is unacceptable, they know how to fool those leaders in a way they called ‘using externalism to cope with bureaucratism.’ That is the so called: ‘for every measure from the top, there is a countermeasure at the bottom’.”

II. Other Sources of Power and Influence

In addition to position power, the case study also identified some other power sources such as personal power, geographic proximity power, development advancement level and expert power. These other power sources can complement formal position power, when position power does not exist is insufficient, or does not work effectively.
1. **Personal Influence**

In the case, a leader in AQSIQ used to work in a provincial CIQ before he was promoted into his current position in the central government. As a result, people in that particular CIQ have greater influence on this leader than people in other local CIQs. On the other hand, this leader’s personal influence on people in that particular CIQ is also much greater than those in other provincial CIQs. One leader described an example in detail: “I used to work in XXX province, and even now people there sometimes still ask for my help and hope I can do them some favors. As long as it is related to informatization, I will not save a bit of my effort to help them. First, I can help them with their work; second, I am also helping myself when I help them, as it will eventually also make my work easier.”

Another example illustrates this kind of power. In China, before a new initiative is promoted to nation-wide scope, a central government agency will often select several provinces to experiment with the initiative first and then make some adjustments. Therefore, those provinces selected often have more opportunities to influence the policy making in the central agency. Some local officials believed that personal influence plays a role when leaders are selecting provinces for experiments: “Director X used to be a division director in AQSIQ and currently is the director of Y Port Bureau. Of course Y Port got more experimental projects.”

2. **Geographic Proximity Power**

Some local agencies that are geographically closer to the capital seem to have more opportunities to influence AQSIQ’s policymaking and meanwhile receive more direction from AQSIQ than other more distant local agencies. An official in a central government
agency explained: “In order to seek advice from firms, we conducted an online questionnaire survey. However, due to the geographic restriction, we only invited representatives located in Beijing to our face-to-face roundtable discussion and collect their opinions.”

3. Development Power

It seems that the level of development also plays a powerful role. In the case, local agencies are under pressure from two high-level organizations simultaneously: one from its counterpart in the central government, the other from its respective provincial government. Both kinds of higher level government are interested in building up centralized systems. Thus local agencies are often faced with a dilemma: on one hand, they are required by the central agency to integrate their systems with the national system; on the other hand, they are also asked by their respective local governments to join the provincial system platforms. One observer described, “They are supervised by two sides. It is hard for them to strike a balance between the national bureau and local government without any bias.”

Under this dilemma, in general, a government agency that is at the same or higher development level has more influence over a local agency. For instance, local agencies in relatively underdeveloped regions tend to rely on the central agency’s technological, financial, personnel and managerial support, and are more willing to follow the instructions from a central agency rather than those from their respective local governments. One central agency leader observed: “It is difficult for some provinces in the Middle West China to develop their own systems, and the funding from their local governments is quite limited. Once they knew that the national agency was building a
national system, they decided to adopt the software and information system developed by the national agency. They listened to the national agency, and did whatever we told them to do. These regions are weak and immature. They are like a piece of blank paper, and you can draw whatever you want there.”

However, local agencies in relatively developed regions often receive more support from their respective provincial governments which are often at a more advanced development level than a central agency. Consequently, these local agencies tend to resist the centralization request from the central agency; instead, they prefer to follow the instructions of their respective provincial governments. For example, “local governments in Shanghai, Beijing, Guangdong and Shandong provide local agencies with substantial support, and these agencies tend to follow the general plan set by their provincial governments.”

Such effect appears more in non-vertical (indirect) administration relationships in which a central agency has less control over its local agencies. A manager from a local BQS said: “I believe we are more advanced than AQSIQ, so we have never thought about adopting the Central Administration’s system. Our funding is sufficient, as Beijing Municipal Government invests about 30 to 40 million in us each year.”

Nevertheless, even in vertical (direct) administration relationships, sometimes local agencies in developed regions also favor their respective local governments more than their direct central government superior. A local manager from a developed city said: “It brings us benefits by cooperating with local government’s systems and participating in their projects. The Port Coordination Bureau of Shanghai Municipal Government does not charge us even one cent, but can help our work. Why not do it?” Development power
to some extent overlaps Yukl’s (2002) concept of ecological power, which says that control over the physical environment, technology, and organization of the work has an influence.

4. **Expert Power**

Informatization department leaders have low power status compared to other business department heads. However, it seems that some of them take advantage of their expert power to enhance their positions and influence in the organization. One information center director gave an example: “We need to build up our power status through our work. If the Information Center can do a great job on its work, of course its power status will be enhanced. Many functional departments now want to pull my staff to work in their departments, as my staff members know details of every business process in their departments even better they do themselves. This in turn elevates the power status of our Information Center.”

III. **Traits and Skills**

In terms of the traits and skills required for effective leaders in cross-boundary information sharing, the following attributes were found most critical in the case: comprehensive knowledge background, strategic thinking, communication and coordination skills, and “two-hand” personality.

1. **Comprehensive Knowledge and Experiences in both Business and IT**

According to many interviewees, an effective leader should have a comprehensive knowledge base and working experiences in both business and IT fields. Officials commented: “What we need most are comprehensive people who know the business and
grasp the technology. If one can think only from the perspective of technology, and has no idea about management, what he developed won’t be accepted by the business departments. On the other hand, one who comes from business departments is not capable of the technology.”

In case only one kind of experience is available in a leader, most think that business background is more important than IT knowledge. “I do not think technology people could be ideal candidates for directors of Informatization Office, instead, people who know business should be. Leaders originally from business departments can often get things going and done better.”

2. Strategic Thinking Ability

Some interviewees said that strategic thinking is also critical for effective leaders. They should have a broad and holistic perspective of the task they are working on, instead of focusing on only one aspect. “They should know the details of each system, as well as how every component integrates with every other in the system. Only those who possess such kind of vision are qualified for building the informatization system” one leader said.

3. Communication and Coordination Skills

Having good communication and coordination skills is also very important to be successful information leaders according to many interviewees. One observer commented: “If the leader is an excellent communicator, the projects can be discussed well among participants. For a parallel cross-department project, it all depends on their negotiation capability and communication skill.”
4. “Two Hands” Personality

Observers also stressed that someone who is both assertive and attentive will be the most effective. “Both soft and tough hands are needed.” An observer gave an example: “Normally, he is very gentle, cultivated, humble, and attentive to people’s opinions and suggestions. However, once he has made up his mind, he can become very tough. Leaders should be assertive and decisive, and then summon people to work together. Only a leader who has such a personality can be successful.”
Chapter Seven: Leadership Behaviors, Actions and Success

Criteria

I. Leadership Behaviors and Specific Actions

1. Task-oriented Behaviors

In the case study, some measures that leaders have taken to facilitate information sharing display typical characteristics of task-oriented behaviors such as strategies, rules, process, control, coercion, and supervision. Leaders tend to use these types of behaviors more often in favorable situations in which they are faced with few boundaries and barriers, and where they have more position power. Some specific activities identified under task-oriented behaviors include incremental implementation strategies, information security and secrets, punishment and reward, and centralization.

A. Environmental scanning

Some leaders carefully scan the external and internal environment and assess information needs. The external environment includes the laws, administrative statutes requirements from higher leaders, and other mandates. The internal environment includes the business process, operations, rules, and needs. One manager described what he needs to do before working on a project: “First study the laws and statutes, then study the business, and then assess the needs for informatization. It is a must to investigate the current situation, sort out the businesses and systems of all bureaus, find out their
functions, and check out the current operational status. Then, we can say what we should do next.”

B. Develop incremental implementation strategies

Some leaders mentioned that they set up realistic and step-by-step goals for information sharing initiatives. They tend to carry out reform incrementally and align long-term goals with short-term objectives: “(we) need to find out what our ultimate goals are, and figure out what necessary steps are needed to move us from where we are now to our final goals. We also need to figure out the sequences between major goals and minor goals and adjust our steps.” One official also recalled how he started a complex initiative from relatively easier tasks. At the beginning, many agencies were not willing to participate. He then picked relatively weak agencies to start with, and these projects turned out to be very successful and set good examples and models for other agencies. Consequently, others were willing to participate later.

One leader also stressed that taking appropriate approaches and measures to avoid resistance are very important. She described a tactic she uses: “We never say that we are going to ‘reengineer’ their systems, but to ‘optimize’ them. People tend to accept optimizing minor issues more easily. In fact, optimization of many minor issues can accumulate and finally lead to a huge and thorough reengineering of the whole system.”

C. Seek higher leaders’ support

Some interviewees commented that seeking and securing support from high level leaders is very critical within China’s context. But this demand needs good communication. He or she needs to convince the top leader that what is proposed is
helpful to realize the leaders’ own goals. “Most top leaders do not know much about informatization, so they rely on you somehow, and you can direct that reliance to get support you need.”

D. Unification and centralization

Unifying and integrating current systems across horizontal divisions and vertical levels is a major theme raised repeatedly by information center leaders at AQSIQ. The rationale of taking this centralized approach is to increase system efficiency, avoid duplicated systems, and facilitate information sharing. A leader described his determination for unification very clearly: “The big trend and direction is very clear, that is the unification of rules. Flexibility will cause problems. Inspection and quarantine needs strict supervision and monitoring. We treat the whole nation as one, and built up a system covering the whole country.” Especially, AQSIQ required that all agencies in relatively underdeveloped regions that usually have backward systems or have not installed systems must adopt the new centralized system. Specific unification measures include unifying rationale, unifying planning, unifying budget, unifying implementation, unifying infrastructure, unifying working process, and unifying data standards.

However, according to local officials, although the centralization approach does facilitate information sharing, it has also caused many problems especially at the local level. Sometimes, the centralization stance taken by the national agency seriously affects the smooth operation of local business, due to the diversity throughout the country in terms of needs and operational methods. Particularly, centralization prevents local agencies in some relatively developed regions from making further technological advancement, or even forces these agencies to move backward in order to fit with the
centralized national system. Meanwhile, local agencies in the undeveloped regions also complained that the centralized national system is too advanced for them to catch up. Some local managers acknowledged: “It is hard to cook one dinner that could satisfy different tastes.”

Therefore, one local manager hoped that the General Administration can take into consideration the variations across regions, between local and vertical systems and between development levels. A certain amount of flexibility should be left for local agencies, especially those in well-developed regions, and it is necessary to let the systems of General Administration and local Bureaus coexist. The local manager also pointed out that central government officials still take the traditional approach used in centralized vertical (direct) administration to manage cross-boundary information sharing, and required everybody to be the same in terms of applications, working process, data standards, programming languages, etc. He further argued that centralization should facilitate rather than hinder business at local bureaus.

Strong centralization also can seriously impede horizontal information sharing and integration at the local level, because local agencies lack the autonomy to make decisions regarding information sharing among each other. One CIQ local manager said that they do not have any information sharing projects in any form with the local Customs, and the interaction between local CIQ and Customs are very limited and passive, because they are all under the vertical management of their respective central agencies and do not have the authority to cooperate externally. All interactions between the two systems are concentrated at the Central government level.
E. Addressing information security and secrets

In order to encourage information sharing, some leaders take measures to ensure information security of government agencies and protect business secrets of private companies. As a result, these organizations are more willing to participate. For example, all government users are required to use real-name ‘keys’, so that illegal operations can be tracked. Also, different approaches are taken to different private firms in the implementation of e-supervision applications. For some companies which have specific process techniques that need to be protected, a CIQ only requires them to transmit process data rather than real-time production video, so that the firms’ concerns about revealing their manufacturing techniques are relieved to some extent.

F. Reward and punishment

Both reward and punishment are used to enforce information sharing. It seems that reward and encouragement are more often used than punishment and criticism, because “it is not appropriate to criticize too much”. In addition, given cultural influences, these punishment and reward activities are carried out through the losing-face effect and peer pressure, “If some departments do not share out information and affect the entire system, they will be ranked quite behind on the evaluation results which is made public. Photos of each director are put on the ranking list as well. If you do a lousy job, you will lose face. They would feel the pressure and then get self-motivated.”

2. Relationship-oriented Behavior

In unfavorable situations in which leaders are faced with more boundaries and barriers but few powers, they tend to display more relationship-oriented behaviors. Relationship-oriented behaviors are characterized by key words such as mutual respect,
cooperation, connection, equal participation, communication, supportiveness, and decentralization. A number of specific activities are identified under this type of leadership behavior.

G. Stakeholder analysis

According to some managers, it is necessary to figure out all resources needed including the support from the leaders, budget, and partners; and what should be done to get these resources. Most importantly, leaders must be highly context-sensitive and care about the needs of various stakeholders: “Each involved party should be considered and communicated with, as we cannot do whatever we want to do without careful consideration.”

A manager gave an example of how he deals with various stakeholders: “First I need to cooperate quite well with the General Administration in Beijing, and win their full support. Next, this system must be accepted by all leaders in the Aerospace and Transportation Bureau, supported by the Comprehensive Department, and agreed to by the Computer division in the Science and Technology Department. It also has to be accepted by private firms, and make them feel that the business model is beneficial.”

H. Make consensus through communication

Information leaders also need to seek mutual interests and build consensus among participants through patient communication, coordination, persuasion, and negotiation. Interviewees mentioned that coordination of interests among various committees and ministries need to be carried out continuously on an equal basis. Explanations and personal visits must be made to show mutual respect. All parties should work together to seek common ground while reserving their differences, and solve the problems through
negotiation. One manager commented that: “Many projects share at least some objectives, and you need to find it.” During the process, constant persuasion is also necessary. One party needs to convince the other party that what he or she plans to do can benefit the other. Under many circumstances, compromise is necessary in order to achieve consensus, since “it is impossible to satisfy everyone’s taste.”

Interviewees also emphasized that those communications should be conducted in an indirect way to avoid confrontation: “In Chinese governmental culture, it is very important to use a tactful, appropriate and face-saving way to communicate. Such expression is circuitous. When people disagree, we will communicate and reach a compromise in private. Finally when we are in front of the public, everyone is friendly and the atmosphere is harmonious.”

I. Seek, build and utilize guanxi

Seeking, building and utilizing guanxi is a major work of leaders, as many problems can be solved through guanxi in China. One manager described how she used guanxi to achieve information sharing with another agency: “during the initial contact, they used various excuses to refuse information sharing. We then mobilized all our resources to seek possible guanxi to approach them. Finally, with the help of our director and other information departments, we gradually built up a good relationship with them through some contacts and acquaintances.”

According to interviewees, guanxi can be built up through various ways. For example, some leaders went abroad together, and lived together for a couple of days. During this period, they would purposefully approach each other, and communicate and
interact with each other. One day, such relationships can make work easier. Sometimes, just “eating out and chatting” help to build guanxi.

Once guanxi is built up, it can become very reciprocal. “I asked for your help, and you offered it, and in return I will do you a favor when you come to me. As long as we do not break the general principles, we all try our best to help each other effectively and efficiently.” However, sometimes guanxi is so strong that some formal business principles will be broken for the sake of personal interests. Therefore, one leader commented that although guanxi has many advantages, it certainly has disadvantages as well: “Sometimes, you might go so far as to ask him to take one function out of the system, and he may do it for you.”

J. Voluntary sharing

One manager repeated that she voluntarily opened up her agency’s information to other agencies, including those that have never provided her with data. In her opinion, “there is no need to be that calculating. Who knows that I will never need their data?” Such generosity thus creates a friendly environment for mutual sharing and other agencies soon returned with their favors: “one day when we need their help, their support and openness to us will be much better than to others.”

K. Allow localization

Given the problems of centralization and complaints from the local organizations, successful leaders in central agencies also pay attention to local agencies’ voices, and respect the management style and requirements of local governments. Sometimes,
surveys are conducted in order to collect opinions from local agencies, various departments, and private companies.

Overall, leaders are trying to strike a balance between the central requirement and local needs so as to ensure the entire-system integration while keeping some local flexibility and addressing specific local requirements. As one manager described, “some regions can make their own policies to meet their unique needs, but in general the main structure must be consistent with the system of General Administration.” Furthermore, in order to bring local perspectives and experiences into the national system, professionals and experts from local bureaus and other stakeholders are invited to participate in the national development team. “There is an expert group made up of people from the national bureau, experts from local bureaus, and people from different committees and ministries. They put forward their needs, and we sort them out.”

Some technological solutions are also taken to solve conflicts between the central and local systems, and give local agencies more flexibility. For example, in order to integrate legacy systems in the relatively developed regions into the national systems, standard conversion mechanisms are set up to transform one data standard into another automatically. Some systems are developed with flexible modules and program languages to allow for localized revision and to let local agencies attach mini-applications to the main system to address specific local needs.

However, central agency officials also stressed that local decentralization and local horizontal integration can also affect national unification and weaken the centralized system. The tension between centralization and decentralization appears quite severe. Some central agency officials complained: “so far there is only one system for the whole
nation. Then, every local government says they want to build their own horizontal one-stop service system to integrate all local resources. They do have their own rationale, but that is unacceptable to us, as it will dismantle the unified system we have tried so hard to build up. How to integrate the vertical and horizontal needs? It is truly a challenge, and we have not got a solution yet.”

L. Financial support to underdeveloped regions and agencies

As an effort to address the development level boundary, the central agency usually provides financial support to local agencies in the underdeveloped regions to help them build up a system. These fiscal appropriations usually include funds for hardware, such as routers, network facilities, and computers; and software developed by the central agency.

3. Relationship between Task-oriented and Relationship-oriented Behaviors

With regard to the relationship between task-oriented behavior and relationship-oriented behavior, all interviewees agreed that both are very important, though their preferences have some slight differences. Some of them value the former more; some prefer the latter, and others believe that neither can be used exclusively.

Some believe that task-oriented behavior is more critical, though the relationship-oriented actions could make things work better. One manager said that: “True success still relies on a formal approach. Good relationships can surely help and make work more successful, but you cannot rely on personal relationships only. Of course, personal relationship shouldn’t be bad at least.”
Other leaders think that relationship-oriented behavior is more effective than task-oriented. For them, when both can work, they prefer the soft relationship-oriented approach. One manager in a vertical (direct) administration system said that although she can employ administrative means, she still thinks that equal communication can make a project more successful. Another manager also agreed: “Employing formal mechanisms may make people uncomfortable and feel forced to do it, so you’d better avoid doing it in that way. Government agencies can always find and utilize all kinds of guanxi.”

Several interviewees believed that both types of behavior are required, and it would be perfect if a leader displayed both behaviors at the same time. In their opinions, people can only achieve minor success without employing administrative power. However, the formal approach cannot guarantee sustainability, and only the informal approach can achieve a real success. In the two approaches, one is the precondition, and the other is the acceptance; they cannot be mutually exclusive. One manager stressed: “If both approaches are strong, that would be the best case. In China, if an official wants to be successful, he or she must be tough and soft simultaneously.”

4. Behaviors change with situations

The case shows that leadership behaviors change with the situation, which is in accordance with contingency theory. In relatively unfavorable situations, information leaders in China tend to display more task-oriented behavior and less relationship-oriented behavior. While in relatively favorable situations, they exhibit more relationship-oriented behaviors than task-oriented approaches. One manager said that overall in non-vertical relationships, the soft negotiation approach is more preferable and more effective
than administrative command. In vertical relationships, forceful methods might be implemented. Therefore, “different management mechanisms need different strategies.”

The case also shows that guanxi is more often used in low-levels than in high-levels, because higher level leaders have to be more self-disciplined and business-oriented. One leader explained this: “At the ministry level, leaders are strong at political belief, ideological level and administrative capability, so it is impossible to use guanxi or small favors to change their governance philosophy. Personal relationship has an effect, but is not a major factor at the minister level. However, at lower levels, personal relationships sometimes can have more effect.”

5. Charismatic Leadership

In general, transformational or charismatic leaders were not found in the case, probably for two reasons: 1) officials interviewed in this case study are mainly familiar with administrative and operational levels, rather than the political level which usually can employ more inspirational approaches. 2) In China’s collective political environment, individual heroic and charismatic behaviors are not encouraged. As one manager described, in Chinese culture, “No one wants to be the number one, though no one wants to be the last either.”

In fact, only one leader described by an observer displayed some elements of transformational leadership behaviors. However, even in this single instance, it seems that the leaders’ charisma in his supporters’ eyes is not gained through typical attributes that a charismatic leader in the US would possess, but through some attributes that are highly valued in a long-term orientation and collectivism society, such as “perseverance”, “diligence”, and “self-sacrifice”. The observer described this person thus: “He is so
hardworking and upright. He sacrificed so much for his work. For ten years, he did not stay at home in the evening and at weekends. His intention is to get things accomplished, not to bring himself some personal interests. He has not become a millionaire, and has got a promotion. However, a lot of his supporters around him were moved by his diligence and spirit. When leaders at the Reform and Development Committee finally approved the 86,000,000 (RMB) project to him, they said: ‘even God has been moved by you’. However, he is really too unique, and under current circumstance it is almost impossible to have such kind of person. He is a rarity. People like him can only emerge at chaotic times, not at peaceful times. As the proverb goes: ‘Chaotic times produce heroes.’”

II. Success Criteria

The criteria of effectiveness perceived by leaders in the case have five components, individual benefits, organizational effectiveness, network success, society welfare, and high leaders’ satisfaction. These first four are in accordance with the frameworks in the US literature. The last one, newly identified in China, may be a reflection of Chinese culture and political environment.

A. Individual benefits

Individual benefits to leaders include political credits and economic interests, and the former is more important. The potential political credit a leader can personally gain from a project is a critical criterion. One observer described: “To be straight, interest means not only economic interest, but also political credits and interests, which may be more important. So they gathered to discuss what political interests you can get, and what
political credits I can get from this project. Whether a leader believes the investment is within his field or territory so that he can get credits for it, rather than give other people credits, is a core question.”

B. Organizational effectiveness

Many officials mentioned that a successful initiative must bring real benefits to the business of the organization, and can increase organizational effectiveness and efficiency. According to them, a successful project should play the expected role, really solve problems and benefit frontline staff. Users must accept it and actually use it. One leader also stressed that some projects are fancy and expensive, but not truly useful. The original goals of these projects are displaced in the process of implementation. Such projects cannot be considered successful.

C. Network success

Many also stressed that a successful project should mutually benefit all participants, and achieve a multiple win-win situation. “If a project only benefits one party, it cannot last long.” Successful network structure and guanxi built through the collaboration can be valuable assets for future projects. One manager said: “The success of every successful project has laid a foundation for the success of the next project. Next, both sides should establish a sustainable and effective coordination mechanism, and solve problems through frequent meetings and communication.”

D. Community welfare

Some mentioned that a project should also bring common goods to the external community and benefit the whole society and nation. Specific target beneficiaries include
citizens, private companies, and other government agencies. However, there is also evidence that in reality the concern of community welfare is put after individual and organization interests. “Most people care more about his or her personal interest, and seldom do they think about the interest of the whole nation.”

One leader complained about the uncooperativeness of another agency in interoperability: “The goal of the interoperability is for the national interests. If they discharge commodities without inspection certificates, the national image will be harmed. If they think at this level, this problem can be solved easily. However, they said that the verification task will increase their workload and reduce their clearance efficiency….” so they resisted it.

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E. Higher leaders’ satisfaction

One new criterion, higher leaders’ satisfaction, is found to be especially critical in China. Several officials and observers emphasized that one key motivation of Chinese officials is the approval of upper levels of administration rather than the needs of citizens and society. “All motivations come from the top. They do not need to look down, only need to look up.”

This criterion actually impedes the success of information sharing initiatives, especially when top leaders’ involvement is absent. According to several interviewees, because the agencies’ motivation to provide better public service to citizens is still low under the current political culture, they do not have strong incentives to seek cross-boundary information sharing. One leader said, “Only when the mechanism is truly turned towards serving the common people, they may start considering interoperation.
Currently, many agencies only care about commands from upper leaders, and do not have too much demand to cooperate horizontally.”
Chapter Eight: Comparison and Discussions

I. Relationships among Leadership Variables

With regard to the relationships among leadership variables, this research modifies Yukl’s integrated conceptual framework. In the context of information sharing and integration in China, leader behaviors are influenced by leaders’ traits, power, situational variables, and feedback from success criteria. For instance, leader behaviors are constrained by the type and amount of powers that leaders can exercise. Leaders who are in favorable situations and have more powers to exert tend to show more task-oriented behaviors, while leaders who are in an unfavorable environment and have less power tend to display more relationship-oriented behaviors. In situations when both types of behaviors could be effective, some leaders prefer the soft relationship-oriented approach, given their personalities. Also, leaders’ behaviors can be affected by their perceptions of the success of prior projects.

Meanwhile, the type and amount of power leaders possess is influenced by situational variables such as the existence of specific boundaries and barriers, by leaders’ traits such as negotiation and communication skills, and by others’ feedback regarding prior success. Leaders who succeeded in previous projects are likely to have enhanced their political status within organizations and among stakeholders and thus gain more power to exercise. Certain leadership behaviors can lead to success through a variety of actions. Leaders can also influence success or increase their power by trying to make situational variables more favorable through their choice of activities. However, some external situational variables are beyond the control of leaders and can influence
effectiveness directly. Under such circumstances, leaders can only take these situations as given context and work within them. Some boundaries and barriers such as political and legal constraints fall into this category and cannot be removed or mitigated easily by information leaders unless top political leaders interfere or some strategic changes occur in the environment.

Situational variables have influences on leaders’ power, behaviors, specific actions, and success criteria. Moreover, the choice of actions and the role of situational variables can change by level of leadership. Actions taken by top-level executives often create situational variables for managers at lower levels. For example, legal or political changes initiated by top leaders in the State Council create situational constraints for ministry-level information leaders. Based on the analysis above, a conceptual model regarding dynamics among leadership variables in the context of China’s cross-boundary information sharing is developed as follows (See Figure [23]):
II. Comparing China and the US

After comparing the findings from China and the US, both similarities and differences are evident. Some variables existing in the US or China do not exist in the other country; or some of the same variables are manifested in different ways or to a different degree in the two countries. In general, there seem to be more similarities than
differences in the two countries. The potential influences of culture on these differences will be discussed below.

1. Comparing Situational Variables

Comparison of situational variables between the two countries indicates many similarities as well as differences. First, it seems that all boundaries identified in China also appear in the US. Although some boundaries have not been explicitly pointed out by prior literature in the US, such as development level boundaries and process boundaries, they seem to be applicable in the US as well. However, relationships across boundaries differ between the two countries in several respects.

First, hierarchical boundaries appear in both China and the US, given that both countries have multiple-level governments. In the US, these levels are federal, state, and local; while in China, they are central, provincial, city, county, and town government. Also, both vertical (direct) administration and non-vertical (indirect) administration exist in two countries. However, relationships across hierarchical boundaries seem to be stronger in China than in the US. In a vertical administrative relationship, in which local offices report directly to a central government ministry, vertical local bureaus under China’s highly centralized system seem to enjoy less autonomy than those under the American federal system. At the same time, in a non-vertical administrative relationship in which a local agency reports directly to a provincial or state government, a central government ministry in China also seems to have more control over local agencies than it does in the US. This is because a central government minister can influence non-vertical local agencies through pressures exerted by the country’s top leaders over provincial
governors, who directly report to the central government under China’s unified system. Under the federal system in the US, state government leaders are independently elected and therefore retain a much higher degree of autonomy. Clearly, the difference in the two countries’ political systems reflects the disparity in the “power distance” value between the US and China. A society with high power distance like China tends to have stronger hierarchical relationships and centralization of power.

Information sharing relations are usually described as lateral networks in the US, but in China they still retain some aspects of hierarchical leader–follower structure, though they do manifest characteristics of collaborative networks as well. We may describe this setting in China as a network of hierarchies within a hierarchy, in which the relations among participant hierarchical organizations display a networked structure, but under a centralized roof. By contrast, the setting in the US could be described as a “network of hierarchies”, in which participant organizations are still hierarchies, but the relationships among them constitutes a lateral and self-adjusting network.

Moreover, cross-sector relationships seem to be stronger in China than in the US. Chinese government enjoys more power over private companies than the US government, given the impact of socialist ideology. Although China has started the transition towards a market-oriented economy for over two decades, the residual influence of the formerly adopted central planning system and all-functional government approach are still substantial. By contrast, the US society has a long and strong market-driven tradition. In addition, relationships across personal boundaries seem to be closer in China than in the US. As prior literature pointed out, China’s guanxi culture goes far beyond the meaning of friendship and networking in the US. By contrast, the degree of individualism is
especially high in the US. These differences reflect both the collectivism and high power distance features of Chinese culture, compared to the individualist and low power distance features of American culture.

Differences across development level boundaries are more pronounced in China than in the US, mainly because China is a developing country which has areas of high economic prosperity. Geographic boundaries appear in both countries given that both China and the US are large in scale. With regard to process boundaries, the comparison does not show evidence of differences between the two countries. Process boundaries seem to exist in both countries under similar conditions.

In terms of barriers and enablers, comparison shows that many factors exist in both China and the US, such as technological barriers, diverse organizational goals and procedures, different perceptions of cost and benefit, project leadership, capability, top executive support, information security concerns, public pressures, etc. Thus, the contexts in both countries share much in common. However, several differences are also evident. First, pressures from legislators, courts, and partisan dynamics, which constitute major barriers in the US, do not exist in China, because China’s one-party system is administration-dominated and has low separation of power. Moreover, although top leadership’s involvement is also identified as a key enabler in the US, the degree of its impact in China seems to be much higher than it is in the US where there is less unity of leadership structure. All the above differences can be attributed to the difference in the two countries’ power distance values.

Finally, the comparison between the two countries also indicates that while the US has established a quite developed and mature governance system, China’s legal, political,
institutional, administrative, economic, and social systems are still under reform and development. As a developing and transitional country, China is currently undergoing economic and social development, infrastructure construction, institution building, and informatization simultaneously. Therefore, many situations in China are changeable. For leaders in China, this can be both an uncertainty and an opportunity to make strategic changes.

These boundaries, barriers and enablers identified in these two chapters indicate the favorableness of situations for leaders working in the context of information sharing - namely, whether the overall situations are favorable or not for leaders in certain contexts. Therefore, the similarities identified in the two countries imply that leaders in both face similar situations and challenges. One the other hand, the differences identified mean that leaders in the two countries confront with some different situations and problems, mainly due to the cultural differences between the two.

2. Comparing Power and Traits

The type and amount of power leaders possess in the two countries also differs. However, in both countries, information leaders tend to have lower power status than business leaders within government organizations. The power status of information leaders in China seems to be lower than that of government CIOs in the US, since a public CIO system has not been established in China. By contrast, in vertical relationships, information leaders in China have much more position power to exercise over their local agencies than what their counterparts in the US have, due to China’s top-down centralized system. With regard to horizontal relationships, the amount of power that information leaders can exert seems quite minimal in both countries. However, under
special circumstances such as a crisis, top leaders in China exert very strong authority to force parallel organizations to collaborate for problem solving. Although a top executive’s involvement is also found to be critical in the US, top leaders in the US federal government do not seem to enjoy position power as strong as their counterparts in China, given that the US has a limited, fragmented, and federal system. We may say that in China’s information sharing context, power is not as dispersed or shared as it in the US, but is still concentrated at higher levels and in certain kinds of positions.

In addition, although leaders in both countries agree that power needs to be accepted by followers and stakeholders to gain full commitment and avoid resistance, it seems that position power exercised by higher level leaders in China is more likely to be accepted and complied with than it is in the US. High power distance culture in China explains this phenomenon. One official addressed this impact of power distance in China explicitly: “The hierarchic concept is strongly rooted in China. Once the central government makes top-down commands, local governments are quite cooperative in general. Chinese are used to being supervised.”

Furthermore, findings also imply that in both countries formal authority is still effective and can provide the basis for information sharing initiatives. Meanwhile, leaders in both countries are also using other more informal influences besides formal authority to ensure successful participation of stakeholders such as personal power, expert power, geographic proximity power, and development power.

In terms of traits of effective leaders, communication skills, holistic thinking and comprehensive knowledge and experiences are critical in both countries. The comparison shows that in both countries effective leaders are required to be capable of exercising
both soft and tough approaches. However, Chinese leaders seem to display a stronger
degree and a wider scale on this aspect than American leaders. As a Chinese proverb said:
“Be tougher on the tough side, and be softer on the soft side.” It is also stressed in China
that for an effective leader both tough and soft personalities are needed at the same time
across all situations. According to prior literature, this finding is a typical feature of a
collectivist society.

3. Comparing Effective Leadership Behaviors and Actions

With regard to effective leadership behaviors and specific actions that could achieve
information sharing success, the study finds that relationship-oriented leadership are
more emphasized in network situations in the US. In China, however, an effective leader
needs to show high task-oriented and high relationship-oriented activities simultaneously,
and they need to be both directive and supportive at the same time. The finding confirms
prior theories that effective leaders in a collectivist society is context-independent, their
behaviors must be appropriate and considerate in all situations.

Furthermore, the study found that under relatively unfavorable situations,
information leaders in China tend to practice more task-oriented behavior and less
relationship-oriented behavior. While in relatively favorable situations, they exercise
more relationship-oriented behaviors than a task-oriented approach. Thus, leaders’
behavior shifts with the situations. Since many unique situational variables in China, such
as stronger hierarchical relationships and centralization of power, are outcomes of the
country’s unique culture, it seems that culture can influence leadership behaviors
indirectly through the mediation of situational variables.
The comparison also found that charismatic or transformational leadership behavior can be seen in American leaders, but seldom in Chinese leaders, probably because of China’s high power distance and collectivism culture, which does not encourage individual heroic behaviors of leaders, especially those at the middle level. Even in the one person in the case study in China who showed some characters of charismatic leadership, it seems that the person gained charisma through values that are highly appreciated by people in a long-term orientation and collectivist society. Thus, the meaning given to charismatic behaviors seems to be different in China.

With regard to specific actions, many findings in China overlap with those in the US. However, the power of some variables differs. Leaders in China have an especially high tendency towards centralization and unification compared to their American counterparts. China’s power distance culture seems to have influences on this tendency. In addition, some leadership actions such as seeking consensus, building relationships, and applying punishment and reward are carried out with different approaches in China and the US. For example, communication in China tends to be indirect; the meaning of building guanxi goes far beyond what “networking” or personal relationships mean in the US. Reward and punishment are achieved in China through peer pressure and face saving effects rather than more direct means as in the US. All these seem to reflect characteristics of collectivist culture. Finally, actions such as developing incremental goals and sharing information voluntarily for returns in the long run may also reflect China’s long-term orientation value, which tends to overcome difficulties with time rather than by will or strength.
4. Comparing Success Criteria

In terms of success criteria of cross-boundary initiatives, findings in China support the four levels of analysis identified in the US: individual, organization, network, and community. Individual benefits refer to political and economic interests to leaders, and organizational benefits refer to the impact on organizational effectiveness and efficiency. Network success means bringing mutual benefits to all participants and achieving the three measures of network success —structural, performance, and process and relationship. Community welfare refers to the common goods to the external community and society. In addition, the case study in China also finds a new criterion, satisfying higher leader’s requests, which obviously suggests the influence of China’s high power distance.

The results of comparing the US and China in terms of situational variables, power, traits, leader’s behavior, specific actions and success criteria are listed in Table 12. Accordingly, a number of hypotheses are proposed in the table as results of comparison.

Table 12 Comparing the US and China

<table>
<thead>
<tr>
<th>Situational Variable: Boundary</th>
<th>Similarities</th>
<th>Differences</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>All boundaries identified in China also appear in the US</td>
<td>Information sharing relations are often described as lateral networks</td>
<td>Still retains some aspects of hierarchical leader–follower structure</td>
<td>Relationship across hierarchical boundaries is stronger in China than in the US</td>
</tr>
<tr>
<td>Personal boundary is identified as salient in some situations</td>
<td>Relationship across personal boundaries can be very close</td>
<td>Relationship across personal boundaries is closer in China than in the US</td>
<td></td>
</tr>
<tr>
<td>Development level boundary has not been identified explicitly in the US</td>
<td>Crossing development level boundaries can be very difficult</td>
<td>Differences across development level boundaries are more pronounced in China than in the US</td>
<td></td>
</tr>
<tr>
<td>American government maintains greater distance from private</td>
<td>Chinese government enjoys strong power over private companies</td>
<td>Cross-sector relationships are stronger in China than in the US</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Situational Variable: Barriers and Enablers</th>
<th>Similarities</th>
<th>Differences</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many technological, information, organizational and political barriers exist in both countries</td>
<td>Pressures from legislators, courts, and partisan dynamics are important constraints</td>
<td>Pressures from legislators, courts, and partisan dynamics do not exist in China</td>
<td>In the US, pressures from legislators, courts, and partisan dynamics place significant limitations on leaders’ choices and discretion</td>
</tr>
<tr>
<td>Top leadership’s involvement is identified as important</td>
<td>The impact of top leadership’s involvement is very high in China</td>
<td>The impact of top leadership’s involvement in China is much greater than it is in the US</td>
<td></td>
</tr>
<tr>
<td>Has established a quite developed and mature governance system</td>
<td>Is undergoing economic, social, legal and political development and reform, institution building, infrastructure construction, and informatization simultaneously</td>
<td>More situational variables in China are changeable than they are in the US</td>
<td></td>
</tr>
</tbody>
</table>
### Similarities and Differences in Leadership Dynamics

<table>
<thead>
<tr>
<th>Power</th>
<th>US</th>
<th>China</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>In horizontal relationships, the amount of power that information leaders can exert is minimal in both countries.</td>
<td>In vertical relationships, US information leaders have weak position power to exercise over local agencies</td>
<td>In vertical relationships, Chinese information leaders have strong position power to exercise over local agencies</td>
<td>In vertical relationships, Chinese information leaders have much more position power over lower level agencies than their US counterparts</td>
</tr>
<tr>
<td>In both countries, formal authority is effective and can provide the basis for information sharing initiatives.</td>
<td>Power is dispersed and shared in the US, as the US has a limited, decentralized, federal system.</td>
<td>Power is still concentrated at higher levels and in certain kinds of positions.</td>
<td>Top leaders in the US have less position power than their counterparts in China. Position power exercised by higher level leaders in China is more likely to be accepted than it is in the US</td>
</tr>
<tr>
<td>Communication skills, holistic thinking and comprehensive knowledge and experiences are critical in both countries. In both countries, effective leaders are required to be capable of exercising both soft and tough approaches</td>
<td>US leaders choose soft or tough approaches to fit different situations</td>
<td>In China, an effective leader exhibits both tough and soft personalities at the same time across all situations.</td>
<td>Chinese leaders display a stronger inclination to use both tough and soft behaviors simultaneously than American leaders.</td>
</tr>
<tr>
<td>Relationship-oriented leadership behaviors are more emphasized in the US</td>
<td>An effective Chinese leader needs to show high task-oriented and high relationship-oriented activities simultaneously in all situations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charismatic leaders are found in the US case studies and leadership literature</td>
<td>Charismatic or transformational leadership behaviors are seldom observed in Chinese leaders</td>
<td>Chinese leaders’ behaviors are more versatile than American leaders across situations</td>
<td>More charismatic leaders appear in the US than in China</td>
</tr>
<tr>
<td>Effective communication is needed in both countries</td>
<td>Communication is more direct</td>
<td>Communication is more indirect</td>
<td>Some specific leadership actions are carried out with different approaches in China as influenced by its culture values</td>
</tr>
<tr>
<td>Networking is critical in both countries</td>
<td>Networking consists of a variety of personal and professional relationships</td>
<td>Guanxi in China reflects deliberate cultivation of long-lasting, strong, and complex personal relationships</td>
<td></td>
</tr>
<tr>
<td>Reward and punishment are used in both countries</td>
<td>Reward and punishment are usually direct and linked to performance</td>
<td>Reward and punishment are achieved through peer pressure and face saving effects</td>
<td></td>
</tr>
<tr>
<td>Four levels of analysis are identified in both country</td>
<td>Four levels identified in the US are: individual, organizational, network and outside community</td>
<td>In addition to the four levels, satisfying higher leaders’ requests is an overriding success criterion in China</td>
<td>Chinese leaders value approval of higher level leaders above other measures of success</td>
</tr>
</tbody>
</table>

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### III. Bringing the Cultural Variable into Leadership Dynamics

#### 1. Impact of Cultural Values on Leadership Variables

Results of the comparison between the US and China indicate that national cultural values can influence leaders’ traits, behaviors, power, situational variables, actions and success criteria. Cultural values have impact in three ways: 1) some variables exist in one country but not the other, for example, pressures from legislators do not exist in China; 2) for variables that exist in both countries, the power of these variables may differ between countries, for example, the difficulty of crossing hierarchical boundaries are greater in
China than in the US; 3) the meaning of some variables or the way they operate carried out may be different between countries, for instance, communication needs to be indirect in China. Clearly, cultural values should be incorporated as a new variable into leadership models to extend current knowledge about leadership dynamics in cross-boundary relationships such as information sharing. One observer in China pointed out the influence of culture explicitly: “The cultural factor is very important. Under the background of Chinese culture, the relationship among people is different from what it is in western countries.”

The study shows that cultural values can directly affect leadership behaviors and choices of action, or indirectly affect them through mediation of situational variables, power, traits, and success criteria. Thus, the impact of cultural influence is both contextual and behavioral. Comparative studies of leadership should not focus on leadership behavior only, but also these other key variables around it.

Specifically, three cultural values, power distance, collectivism/individualism and long-term orientation, were found to have impact on the differences in leadership variables between the US and China. The influences of two other cultural values, masculinity and uncertainty avoidance, were not found in this study.

2. Culture is Changing

The study also finds strong evidence in China that national cultural values are dynamic. A number of interviewees pointed out that culture is changing rapidly in China over the last three decades. Overall, the Chinese society has become more individualistic, more equalized, more democratic, more pragmatic, more interests-driven, and less
ideological. The political philosophy is also moving from regulation-oriented towards more service-oriented, and from rule of people towards rule of law.

For example, some Chinese officials mentioned that the current policy-making process in government has become more formal, and the rule of law has become more mature. “Previously, before laws were made public, the common people had no idea about them. But currently, as early as a bill is drafted, citizens must be informed and invited to make comments.” In addition, with reform and openness, and the development of the Internet, “the voice of supervision and questioning from citizens has become louder and louder.” Officials said that they can no longer force their wills upon others and there is no absolute obedience to authority any more. Moreover, traits of the new generation of officials seem to be different: “This generation in provinces and city governments has great insights into politics, and are open minded to new thoughts. They understand some new government conceptions very well, such as service-oriented government, democracy, etc.” In addition, according to one senior official, the overall political environment in China has shifted from “ideological politics” to what he called “interests politics”, and people in such politics “are very pragmatic, money-oriented, and care about personal interest and local interests only.” Consequently, the collectivist culture is also decreasing: “In the current market-oriented economy, it is impossible to have space for the consideration of the whole nation’s interest. Such a consideration may occur in times of planning economy or Mao’s time. Now, more considerations go to individual interests.”

The changes in cultural values can have impact on all leadership variables. Some measures that worked in the past no longer work in new situations. This may explain why
some findings from studies conducted in China in different time periods regarding cultural influences on leadership are not consistent with one another, and are not supported by this study. For example, the concept of “ideological power” does not hold any more in current China, which is no long ideology-oriented.

With regard to cultural differences across regions in China, the study did not find strong evidence. Though some local differences are found across provinces in China, these local differences seem to be more the results of disparity in economic development than the consequence of regional culture.

3. Bringing Cultural Values into the Leadership Model

Based on the analysis of culture’s influence on leadership, this study developed a new model by adding national cultural values into the dynamics among leadership variables in the context of cross-boundary information sharing and integration (see Figure [24]). The model includes three layers of relationships. The first layer refers to the relationship among leaders’ traits, power, behaviors, actions and success built upon this empirical case study in China and previous literatures. In short, leadership behavior is a function of leader’s traits, power, and feedback of prior success; leaders’ power is determined by leaders’ traits and feedback of success; leaders can affect success through an array of actions. The second layer addresses the impact of situational variables on leadership variables in the first layer. It emphasizes that leaders’ power, behaviors, actions and success are all embedded in and influenced by particular situations in a country. In this study, leader trait is defined as an inherent character of leaders, and cannot be easily influenced or changed by situational variables; therefore, it is left outside of the box of situational variable in the model. The third layer then focuses on the
influences of dynamic national cultural values on all variables in layer one and layer two. Namely, cultural values can affect and interact with leader traits, power, behaviors, actions, and success either directly or indirectly. The study therefore extends current knowledge about leadership behaviors in cross-boundary information sharing and integration in the public sector to a new international context and includes a new variable, cultural value, into the model. In addition to information sharing initiatives, the findings of this study may also continue to better understanding of other cross-boundary collaboration and networking activities.

Figure [24] Influences of Cultural Values on Leadership Variables

IV. Discussions and Implications for Practitioners

The case study in China can have a number of implications for leaders in China who are working on cross-boundary information sharing initiatives. Findings regarding boundaries and barriers suggest that information leaders need to pay attention to both explicit and hidden boundaries and barriers. Leaders need to think and act both vertically
and horizontally. Leaders need to identify and pay attention to the boundaries and barriers explored in this study, and take advantage of potential internal and external enablers. They must take into consideration all potential technological, information, organizational, legal and political factors. An information leader needs to dig out underlying intricacies and complexities when assessing and tackling a specific information sharing and integration initiative. Moreover, leaders need to realize that formal position power must be accepted by stakeholders and followers in order to be effective. In addition to position power, leaders can also employ other sources of power, such as personal power, expert power, geographic proximity power and development power, which may be more effective in helping them to achieve goals. Leaders can also employ both task-oriented and relationship-oriented behaviors to facilitate cross-boundary information sharing, and use the two flexibly depending on the situations. Under each type of leadership behaviors, there are a number of specific actions that leaders can consider in order to change the situations and achieve success. However, information leaders also need to realize that some situations are out of their control. They have to take those situations as given context and work within them. Finally, information leaders should put more emphasis on network success and community welfare than on individual benefits, higher leaders’ satisfaction, and their own organization’s effectiveness, in order to achieve more success of cross-boundary information sharing initiatives.

With regard to top political leaders in China, they need to pay more attention to institution building and put more efforts to make the legal, political, administrative, economic and social environment more favorable for cross-boundary information sharing and integration initiatives. They can attempt to make some strategic change to shift the
motivation mechanism for information sharing from looking up at top leaders to caring for needs of lower level staff and the general public. This new mechanism could lead to more sustainable cross-boundary information sharing initiatives and provide better public service.

The comparative analysis shows that leaders in the US and China share many similar challenges and behavior patterns. Based on the commonalities, leaders in both countries can exchange many experiences and learn from each other about how to facilitate cross-boundary information sharing. On the other hand, given the two countries’ cultural differences, a number of leadership variables do differ between the US and China. That is to say, some situations that exist in one country may not exist in another country, or may not exist in the same way or to the same degree in the country; the meaning of a concept in one country may not mean the same thing in another country; what works in one country may not work in the other country; what worked in the past may not work today. Therefore, before transplanting experiences from the one country to another, leaders need to know not only what works in another country, but also examine what situational and contextual variables make it work there.

In addition, by taking another country as a mirror, leaders in one country can recognize the advantages and disadvantages in their own country more clearly and understand its own system better. The comparison between the two countries seems to indicate that information leaders working on cross-boundary information sharing initiatives in China’s centralized and authoritarian system face a more favorable situation--fewer boundaries, few constraints, and more power--than their counterparts in the US. Therefore, on one hand, the system in China has its advantages in terms of
facilitating cross-boundary information sharing. It could enable quicker and more efficient problem solving, especially with top leadership involvement in crisis situations. Some officials in China made this argument: “A researcher in Germany argued that ‘do not say that socialism does not have advantages’. In a socialist country, it is easy to accomplish and carry out a task. Take the Three Gorges dam project for example. If it were in a capitalist nation, various opinions may come out around it. But in China, no matter whether the decision is correct or not, the project can be implemented immediately. This is the advantage of a socialist system, especially in vertical (direct) administration”. Another commented, “As long as the central government is determined to do it, it can be carried out and implemented very soon. I think it is almost impossible to make that happen in America.”

On the other hand, this system in China also has severe drawbacks and risks as the case study indicates. First, officials in this top-down system lack strong motivations to span boundaries to improve public service. Second, when top leaders’ decisions and interventions are wrong or inappropriate, the absence of strong checks and balances cannot effectively avoid or correct system-wide mistakes or abuse of power. Third, this centralized system discourages flexibility and innovations at lower levels, and sometimes even impedes horizontal collaboration in local government. Fourth, authority may not be accepted, and the effectiveness of a project is not always guaranteed, especially in a non-vertical (indirect) administration. One interviewee in China commented: “When administrative orders are carried out, their real effectiveness is far below what is expected. If administrative orders always took effect and if the policy was on the right direction,
China’s system should be far better than that of the United States, and China should have far exceeded the US. However, that is not the case in reality.”

By contrast, information leaders in the US are faced with more boundaries and constraints. As Henton, Melville, and Walesh (1997) pointed out, while the shared-power environment in the US has enhanced many aspects of democracy, it also makes leadership more difficult. On the flip side, this system has some advantages for information sharing initiatives. It allows more autonomy, encourages more voluntary information sharing initiatives, and facilitates innovative ideas at lower levels.

The findings of this comparative analysis also have implications for transnational collaboration between the two countries. For leaders in the US, the study implies that it is critical to develop “guanxi” and personal friendships with Chinese leaders and to avoid direct confrontation and criticism for the sake of “face saving”. It is also important to raise attention of top leaders in China and seek their in-person involvement and to show consideration to middle-level leaders’ concern of ensuring top leaders’ satisfaction and consent. For leaders in China, the study implies that in a negotiation they should not focus on influencing a few top leaders only, but also pay attention to other key stakeholders, as the US has a decentralized, power-shared system, and some American leaders are not as powerful as they might think. Also Chinese leaders should not be easily offended by frank and direct communication of American leaders.

In addition, the study has shown that China is undergoing legal, political, institutional, administrative, economic, and social transformation all at one time, and many problems will need a long time to be solved. This indicates that leaders in China face a quite complex and uncertain situation, in which some transnational problems
between the two countries are also China’s domestic challenges, and these cannot be solved easily or in a short period of time. One manager in China commented: “The food safety issue is not only related to informatization, but also to basic infrastructure and situations in our country. No matter who is the Premier, even if the US president becomes China’ premier, he cannot find a better way. It is a real problem without ideal solutions yet.”

Given the complex situation, simply imposing pressures on Chinese leaders or criticizing them will not solve problems, but may be considered as offensive, and will make prospects for collaboration even worse. Instead, leaders in the US can take a more constructive approach. The fact that many situational variables in China are still under transformation mean that the US has many opportunities to influence Chinese leaders to make the transformation towards being more favorable for transnational collaboration between the two countries. Supporting Chinese leaders to strengthen China’s systemic capacity for cross-boundary information sharing could benefit transnational collaboration between the two countries in long run. In addition, many experiences in the US may be helpful to leaders in China, such as drafting legislation and designing governance architectures to facilitate information sharing, establishing a public CIO system, and building cross-boundary CIO coordination mechanisms.

The study shows that culture in China is changing rapidly. The direction of these changes indicates that in the long run cultural values of the two countries are getting closer rather than farther apart. More dialogue and interaction between the two countries can facilitate such understanding and cooperation.
V. Limitations and Future Studies

Overall, the research design and methods of this study have taken a number of measures to ensure the reliability as well as validity of the research. However, some limitations still exist.

One standard criticism of the case study is that its findings cannot be generalized and thus has restricted external validity. However, case study researchers also argue that the purpose of case study design is not to generalize to other cases or to populations beyond the case. Instead, they aim to generate an intensive examination of a case (Bryman, 2004). Consequently, the critical question of case study is not generalization, but the quality of the theoretical reasoning (Mitchell, 1983; Yin, 1984). Regarding the limitations of comparative research, Dyer and Wilkins (1991) pointed out that due to the need for comparison, a researcher needs to develop an explicit focus at the outset, which may limit the open-ended nature of an inductive study.

Particularly, the fact that only one case was studied in China might undermine to what extent the findings from the case can represent effective leadership behaviors in China. Moreover, the comparative analysis in this research is not conducted in a parallel fashion, and the cases for comparing in the two countries are neither in the same policy domains, nor at the same government level. The case in China studies both central and provincial levels, the US cases are mostly at the state level. Interviewees in China are mainly information leaders, while research subjects in the US are mostly business leaders. As a result, people may question whether the findings of the comparison actually represent the similarities and differences between the cases rather than between the countries, given that both China and the US are large and heterogeneous countries.
However, these problems could be alleviated to some extent by the design of interviewing independent observers and experts from third-party institutes and analyzing relevant secondary-data. The viewpoints from a more broad and general perspective could increase the representativeness and external validity of the findings. In addition, the focus of the study is not on the phenomenon of a particular policy domain or at a particular government level, but on the phenomenon in information sharing initiatives in general. Therefore, as long as the cases for comparison in both countries share some fundamental features of information sharing initiatives, threats to the validity of the study will be limited.

Furthermore, since the data collection relied mainly on asking people questions, bias may occurred due to differences between the stated and actual behavior of the participants, the effect of socially and organizationally desirable responses, the sensitivity of the questions, and memory problems. In addition, the case study in China focuses on studying middle-level information officials, so findings of this study may not applicable to high level executive leaders. Finally, it should be noted that due to the rapid recent development of China with regard to its political, economic, social, and even cultural context, the findings of this research may not be valid across time.

Based on the limitations stated above, future studies can consider a number of directions. First, more case studies or quantitative studies can be conducted to test and modify the findings of this research. Second, conducting parallel comparative studies, which are carried out in two or more countries simultaneously using the same or similar instruments and targeting similar subjects, can remedy some of the limitations of this study. Moreover, in addition to studying middle-level information leaders, future study
can also attempt to reach higher level political leaders and compare their perceptions and behaviors with those at middle-levels studied in this research, as leaders at different levels may have different perceptions and behaviors. Moreover, researchers can also take a longitudinal approach to examine the impact of evolving cultures on leadership behaviors over time. Finally, based on the results of comparative study, future studies can further extend their focus to transnational issues which involve interactions between two or more countries. Transnational research may have some new significant implications for both researchers and practitioners in countries studied.
Reference


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Appendix I: Interview Protocol

Interviewer: Give this Introduction

Before I begin the interview, I’d like to go over the background and purpose of the interview and give you a chance to ask questions. I am required by law to inform you about the research and ask for your consent because the research involves human subjects. Let me give you the consent form. (Hand out a copy of the consent form already dated and signed with my name.)

I won’t go over this sheet verbatim. Rather, I’ll just highlight the most important points. I am a PhD student at the Rockefeller College of Public Affairs and Policy, University at Albany, State University of New York. I am conducting a study to learn about how to improve information sharing in government. The purpose of this research is to test in China some leadership behavior hypotheses in cross-boundary information sharing initiatives developed in the US and then to compare the results of the two countries to identify the similarities and differences between them.

I now request the opportunity to interview you about your experiences with information sharing and integration. Your participation is completely voluntary. You can, of course, refuse to answer any particular question and you can leave the interview at any time. We will be recording the interview using audio tapes and notes, unless you object to being taped.

Please take some time to read the information page before you start to be interviewed by me. Please don’t hesitate to ask any questions as you go through it. When you are ready, please let me know and keep this consent form with my signature for your record.
Interviewees:
Key administrative, program, and technical professionals involved in the case.

1. What is your role in your organization? How long have you been in your position? How long have you worked for this organization?
2. Please tell me about one important cross-boundary information sharing initiative you have been involved in
   (Probes: What are the main goals of the initiative? How did it get started? What organizations are involved and why are they involved? Is this your first information sharing project or do you have other experiences?)
3. What is your own role in the initiative?
   (Probes: has your role changed over time? What are the most important activities associated with your role?)
4. What are some of the barriers to achieving the goals of the initiatives?
   (Probes: are the barriers the same for all the organizations involved or do you think different organizations face different barriers?)
5. What factors (such as incentives, resources, or rules) help the organizations involved to achieve the goals?
6. Please tell me about one problem or issue that you helped resolve and how you did it.
7. What else have you done, or will you do, as a leader in order to carry out this cross-boundary information sharing initiative successfully?
8. What kinds of leadership behaviors do you think are more acceptable in cross-boundary information sharing initiatives? What kinds are less acceptable? Why or why not?
9. Do you think these actions are effective for the success of cross-boundary information sharing initiatives? Why or why not?
10. What factors help you judge whether a cross-boundary information sharing initiative is successful or not?
11. What would you change about the way this particular initiative is organized or carried out?
12. What are the anticipated next steps in this initiative?
13. What lessons have you learned from this experience that will be helpful in future information sharing initiatives?
Appendix II: Interview Consent

Leadership Behavior in Cross-Boundary Information Sharing Initiatives: Comparing the U.S. and China

Lei Zheng
PhD student at the Rockefeller College of Public Affairs and Policy,
University at Albany, State University of New York
Phone: 518-368-0480

Purpose:
The purpose of this research is to test in China some leadership behavior hypotheses in cross-boundary information sharing developed in the US and to compare the results across the two countries to identify the similarities and differences and to explore the impact of political, economic, social and cultural factors on those similarities and differences.

Participation:
As a participant in this case study, I request your permission to interview you about your work in this regard, and if necessary to contact you by phone or email for clarification. I am interviewing participants to seek answers to questions on these information sharing efforts. This interview will take approximately 90 minutes.

Rights:
Your cooperation in this study is completely voluntary. If you prefer not to participate or if you choose to withdraw from the study at any time, you may do so without penalty. You may stop participating at any time. The information you provide will be used for research purposes only. This interview will be recorded using audiotape equipment and fieldnotes, unless you object to being taped. Please keep a copy of this form for your own records. For questions about the research, you can reach me at 1(518) 368-0480 or mail me at lzheng@ctg.albany.edu; or reach Dr. Sharon Dawes, my academic advisor at 1(518) 422-3892 or mail her at sdawes@ctg.albany.edu. If you have any questions concerning your rights as a research participant that have not been answered by the investigator or if you wish to report any concerns about the study, you may contact the University at Albany Office of Research Compliance at 518-437-4569 (toll free 800-365-9139) or mail to: orc@uamail.albany.edu

Confidentiality:
To protect your privacy and that of your colleagues, all transcribing of tapes will be done by myself only. Fieldnotes, audiotapes, transcripts, and analysis will be kept by me in perpetuity and will be locked in a cabinet and available to myself only. My personal computer is protected by a firewall and password. Presentations, reports, and publications will focus attention on general findings about the agencies and organizations involved in the study which will be referred to by name. Interviewee's contributions will be referred to by type of informant, and, to the extent possible, these contributions will be reported in ways that avoid identification of those individuals. When a point can be made only by identifying a person, or when concealing identity is not possible due to the small sample size of persons or organizations involved or the uniqueness of the subject under study, those individuals’ prior permission will be requested.

Benefits and Risks:
The benefits of this study will accrue directly to the agencies involved to improve their capabilities in cross-boundary information sharing. Other agencies and organizations may find the results of use. Any individual benefits will be related to improvements in systems management.
and information sharing. Any potential risks to individual participants related to job and position are dealt with by a number of confidentiality measures including physical security of the interview data, opportunity to review and comment on the research report, and express advance permission to identify an interviewee in the report.

**Procedures to be followed:**
Data collected from this interview will be transcribed and analyzed. A final report will be developed based on the analysis. Before the final report is made public, you will receive a copy of for review and comments.
Leadership Behavior in Cross-Boundary Information Sharing Initiatives: Comparing the U.S. and China

Lei Zheng
PhD student at the Rockefeller College of Public Affairs and Policy, University at Albany, State University of New York
Phone: 518-368-0480

INTERVIEW CONSENT

Statement from the Researcher

I certify that in my judgement all IRB requirements have been satisfied.

SIGNATURE OF RESEARCHER ________________________________

PRINTED NAME OF RESEARCHER ________________________________

DATE ________________________________