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

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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. The research conducts 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 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. The case study examines traits, power, behaviors, interventions and success criteria of leadership. 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.

Categories and Subject Descriptors
H.4.2 [**Information Systems Applications**]: Type of systems – *e-government applications*

General Terms
Management, Human Factors, Theory

Keywords
Cross-boundary, Information Sharing, Leadership, Comparative, China, US

1. INTRODUCTION
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. Solving those problems required collaboration across organizational boundaries within one particular country, as well as across national 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 [1][2].

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. Increasing globalization has made it more important to learn about effective leadership in different cultures. 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 [3].

A number of researchers have studied the topic of effective leadership behaviors in Western countries, especially in the US, in the context of cross-boundary information sharing, which is different from leadership within a single bureaucratic organization. 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 [4]. Only a few of cross-national leadership theories are targeted at leaders in the context of cross-boundary information sharing in the public sector. 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.

2. LITERATURE REVIEW
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, as well as effectiveness measurement all appear different from those in traditional organizational forms. Quite a number of researchers have studied these issues.

2.1 Situational Variables

The situations for leaders who are working in the network structure and cross-organizational collaboration are significantly different from traditional organizational forms which are characterized by specialization, centralization, and formalization. Huxham and Vangen [5] 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., [6] 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 [7] 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 [8] 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 [9].

In sum, 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.

2.2 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 [9] 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" [10]. Because participants come from different organizations with various and often conflicting goals, a leader cannot exert formal authority based on hierarchical rank [5]. The success of collaboration cannot be guaranteed by the exercise of traditional, hierarchical power [6]. The authority structure underlying a public sector network initiative, by itself, is not enough to ensure willing and successful participation [1]. Furthermore, giving directives in network settings may actually lead to not just ineffectual but counterproductive outcomes [9].

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 [7]. 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 [1].

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 [1]. Dawes and Préfontaine [11] pointed out that multi-organizational 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 [1], and formal authority helps build trust and confidence among participants [12].

2.3 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 [5, 7]. Leadership traits and skills required for effectiveness in such settings differ significantly from those in a single bureaucratic organization. Mizrahi and Rosenthal [13] 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 [14] 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 [1].

2.4 Leadership Behaviors

Some researchers have studied and observed leadership behaviors in the context of cross-boundary information sharing networks. Brown and Mclean [15] 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 [7]. 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 [16]. Furthermore, Eglene, et al. [1] 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.

2.5 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 [9] 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 [17] 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 [18] suggested that successful leadership behaviors in public networks involve activating, framing, mobilizing, and synthesizing. Hales [19] commented that leaders in a network engage in team leadership, negotiating integrated efforts across boundaries, promoting organizational learning, and conceiving and facilitating change. Zhang [20] 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 [1].

Furthermore, Gil-Garcia, Pardo, and Burke [2] 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.

2.6 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. Provan and Milward [21] 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.

Synthesizing Provan and Milward's model and other relevant literature, Dawes [22] 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.

2.7 Identifying the Gap

Almost all studies that have been discussed so far were developed in western countries, particularly in the United States. 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 [23][24]. Hofstede [25] 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. Thus, cultural values should be included as moderating variables in all leadership theories [26].

Testing leadership theories in different cultures can provide new insights and improve leadership theories [3]. Studies in different countries can help to provide different scripts for effective leadership, assess similarities or differences in various cultures [27], and understand what works and what does not work in different cultural settings [28]. 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 [29].

In sum, a number of studies have been conducted on the topic of effective leadership behaviors, in Western countries, especially in the US, in the context of cross-boundary information sharing, which is very different from the settings in a single bureaucratic organization. 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). 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.

3. RESEARCH DESIGN AND METHODS

This research comprises a comparative analysis between the US and China by taking an inductive and qualitative approach. The research includes two steps.

The first step involves an original case study in China to explore effective leadership behaviors in the context of cross-boundary information sharing initiatives. The selected case study focuses on information sharing and integration in China's product quality inspection environment. Data was collected through in-depth interviews and government documents. Semi-structured interviews were conducted in April 2008 with 21 individuals, each lasting between 1-2 hours. A snowball sampling method was used to identify and select individuals for interviews based on the relevance of the persons' expertise and involvement in the information sharing and integration initiatives to be studied. Interviewees came from multiple sectors, different functional agencies, different levels of government, and different professional backgrounds, in order to gain a variety of perspectives on the case. In addition, secondary documents were collected from websites of related agencies and public newspapers to provide additional understanding of the case context. 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. Interview data was transcribed and coded to identify common patterns with an inductive approach using grounded theory. Patterns based on the coding and analysis was then developed.

Next, in the second step, the patterns developed in Chinese case were 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. These findings previously discovered include the research of Knowledge Networking in the Public Sector (KN) and Modeling the Social & Technical Processes of Interorganization Information Integration (MIII) conducted by the Center for Technology in Government at University at Albany, as well as other relevant research that has been conducted in the West.

4. CASE BACKGROUND

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). AQSIQ has nineteen in-house functional departments and fifteen directly affiliated organizations, which provide technical and logistical support for AQSIQ programs.

The case involves multiple stakeholders and includes various information sharing relationships across a range of horizontal and vertical "boundaries", providing a robust environment for investigating the research questions of this study. Along the vertical dimension, the case consists of information sharing between 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.

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. These three E-applications are under the big umbrella of a national initiative called the Golden Quality project, aimed at ensuring product quality and food safety in China.

5. FINDINGS

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.

5.1 Comparing Situational Variables

Comparison of situational variables between the two countries indicates many similarities as well as differences. First, hierarchical and departmental boundaries appear in both China and the US, given that both countries have multiple-level and various-department governments. In the US, these hierarchical levels are federal, state, and local; while in China, they are central, provincial, city, county, and town government. Also, 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.

In addition, 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. 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.

Therefore, 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.

5.2 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. One official said 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.

5.3 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.

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. 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.

5.4 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. 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."

5.5 Summary of Comparisons

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 2. Accordingly, a number of hypotheses are proposed in the table as results of comparison.

6. DISCUSSIONS AND IMPLICATIONS

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. 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 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."

Table 2. Comparing the US and China

	Similarities	Differences		Hypothesis
		US	China	
Situational Variables	Hierarchical and departmental boundaries appear in both China and the US	Information sharing relations are often described as lateral networks	Still retains some aspects of hierarchical leader–follower structure	Relationship across hierarchical boundaries is stronger in China than in the US
		Pressures from legislators, courts, and partisan dynamics are important constraints	Pressures from legislators, courts, and partisan dynamics do not exist in China	In the US, pressures from legislators, courts, and partisan dynamics place significant limitations on leaders' choices and discretion
	Top leadership's involvement are identified as a key enabler in both countries	Top leadership's involvement is identified as important	The impact of top leadership's involvement is very high in China	The impact of top leadership's involvement in China is much greater than it is in the US
Power	In horizontal relationships, the amount of power that information leaders can exert is minimal in both countries.	In vertical relationships, US information leaders have weak position power to exercise over local agencies	In vertical relationships, Chinese information leaders have strong position power to exercise over local agencies	In vertical relationships, Chinese information leaders have much more position power over lower level agencies than their US counterparts
	In both countries, formal authority is effective and can provide the basis for information sharing initiatives.	Power is dispersed and shared in the US, as the US has a limited, decentralized, federal system.	Power is still concentrated at higher levels and in certain kinds of positions.	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
Traits	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	US leaders choose soft or tough approaches to fit different situations	In China, an effective leader exhibits both tough and soft personalities at the same time across all situations.	Chinese leaders display a stronger inclination to use both tough and soft behaviors simultaneously than American leaders.

	Similarities	Differences		Hypothesis
		US	China	
Behaviors and Actions		Relationship-oriented leadership behaviors are more emphasized in the US	An effective Chinese leader needs to show high task-oriented and high relationship-oriented activities simultaneously in all situations	Chinese leaders' behaviors are more versatile than American leaders across situations
		Charismatic leaders are found in the US case studies and leadership literature	Charismatic or transformational leadership behaviors are seldom observed in Chinese leaders	More charismatic leaders appear in the US than in China
	Effective communication is needed in both countries	Communication is more direct	Communication is more indirect	Some specific leadership actions are carried out with different approaches in China as influenced by its culture values
	Networking is critical in both countries	Networking consists of a variety of personal and professional relationships	Guanxi in China reflects deliberate cultivation of long-lasting, strong, and complex personal relationships	
	Reward and punishment are used in both countries	Reward and punishment are usually direct and linked to performance	Reward and punishment are achieved through peer pressure and face saving effects	
Success Criteria	Four levels of analysis are identified in both country	four levels identified in the US are: individual, organizational, network and outside community	In addition to the four levels, satisfying higher leaders' requests is an overriding success criterion in China	Chinese leaders value approval of higher level leaders above other measures of success

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 constraints. Henton et al. [10] 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 have some 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.

7. CONCLUSIONS

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. The research conducts 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 context of cross-boundary information sharing in this domain. The case study examines traits, power, behaviors, interventions and success criteria of leadership. 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. The study extends 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.

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, 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.

8. REFERENCES

[1] Eglene, O., Dawes, S. S. and Schneider, C. A. Authority and leadership patterns in public sector knowledge networks. The American Review of Public Administration, 37, 1 2007), 91-113.

[2] Gil-Garcia, J. R., Pardo, T. A. and Burke, G. B. Government Leadership in Multi-Sector IT-Enabled Networks: Lessons from the Response to the West Nile Virus Outbreak. City, 2007.

[3] Yukl, G. Leadership in Organizations. Prentice Hall, Upper Saddle River, NJ, 2002.

[4] Smith, P. B., Peterson, M. F. and Wang, Z. M. The managers as mediator of alternative meanings: A pilot study from China, the USA, and UK. Journal of International Business Studies, 27, 1 1996), 115-137.

[5] Huxham, C. and Vangen, S. Leadership in the shaping and implementation of collaboration agendas: How things happen in a (not quite) joined-up world. The Academy of Management Journal, 43 2000), 1159-1175.

[6] Mintzberg, H., Jorgensen, J., Dougherty, D. and Westley, F. Some Surprising Things About Collaboration—Knowing How People Connect Makes It Work Better. Organizational Dynamics, 25, 1 1996), 60-71.

[7] Schneider, M. A Stakeholder Model of Organizational Leadership. Organization Science, 13, 2 2002), 209-220.

[8] Crosby, B. C. and Bryson, J. M. Leadership for Common Good: Tackling Public Problems in a Shared-Power World. Jossey-Bass, City, 2005.

[9] O'Toole, L. J. Treating Networks Seriously: Practical and Research-Based Agendas in Public Administration. Public Administration Review, 57, 1 1997), 45-52.

[10] Henton, D., Melville, J. and Walesh, K. Grassroots Leaders for a New Economy; How Civic Entrepreneurs are Building Prosperous Communities. Jossey-Bass, San Francisco, CA, 1997.

[11] Dawes, S. S. and Préfontaine, L. Understanding New Models of Collaboration for Delivering Government Services. Communications of the ACM, 46, 1 2003), 40-42.

[12] Pardo, T. A., Gil-García, J. R. and Burke, G. B. Building response capacity through crossboundary information sharing: The critical role of trust. . IOS Press, City, 2006.

[13] Mizrahi, T. and Rosenthal, B. B. Complexities of coalition building: Leaders, successes, strategies, struggles, and solutions. Social Work, 46, 1 2001), 63-79.

[14] Dawes, S. S. and Pardo, T. A. Building Collaborative Digital Government Systems. Systematic Constraints and Effective Practices. Kluwer Academic Publishers, City, 2002.

[15] Brown, C. V., McLean, E. R. and Straub, D. W. Partnering Roles of the IS Executive Information Systems Management, 13, 2 1996), 14-18.

[16] Anderson, R. H., Bikson, T. K., Lewis, R., Moini, J. S. and Straus, S. G. Effective Use of Information Technology: Lessons about State Governance Structures and Processes. RAND Corporation, City, 2003.

[17] Luke, J. S. Catalytic Leadership: Strategies for an Interconnected World. Jossey-Bass, San Francisco, 1998.

[18] Agranoff, R. and McGuire, M. Big Questions in Public Network Management Research. Journal of Public Administration Research and Theory, 11, 3 2001), 295-326.

[19] Hales, C. 'Bureaucracy-lite' and Continuities in Managerial Work. British Journal of Management, 13, 1 2002), 51-66.

[20] Zhang, J. Cross Boundary Knowledge Sharing: A Case Study of Building the Multi-purpose Access for Customer Relations and Operational Support (MACROS) System. State University of New York at Albany, Albany, N.Y., 2003.

[21] Provan, K. G. and Milward, H. B. Do Networks Really Work? A Framework for Evaluating Public-Sector Organizational Networks. Public Administration Review, 61, 4 2001), 414-423.

[22] Dawes, S. S. Measures and conditions of success in public sector knowledge networks. Center for Technology in Government, University at Albany, City, 2008.

[23] Hofstede, G. Motivation, leadership, and organizations: Do American theories apply abroad? Organizational Dynamics, 9, 42-63 1983).

[24] Yiu, L. and Saner, R. Determining the effectiveness of global managers: Propositions for future research Human Resource Development Quarterly 11, 3 2000), 319-324.

[25] Hofstede, G. Cultural constraints in management theories. Academy of Management Executive, 71993), 81-90.

[26] Chemers, M. M. An Integrative Theory of Leadership. Lawrence Erlbaum Associates, Mahwah. N.J., 1997.

[27] Ayman, R. Leadership perception: The role of gender and culture Academic Press, City, 1993.

[28] Triandis, H. C. The contingency model in cross-cultural perspective. Academic Press, City, 1993.

[29] Dorfman, P. W. International and cross-cultural leadership research. Blackwell, City, 1996.

[30] Shenkar, O. and Glinow, M. A. Paradoxes of organizational theory and research: Using the case of China to illustrate national contingency. Management Science, 40, 1 1994), 56-71.