**The Dissertation Committee for Xin Chen Certifies that this is the approved version
of the following dissertation:**

Web News in China: A New Hierarchy of Centrality?
An Analysis of the Linking Pattern of China's Online
News Network

Committee:

Dominic L. Lasorsa, Supervisor

Rosental C. Alves

Hsiang I. Chyi

Paula M. Poindexter

Joseph Straubhaar

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Xin Chen, B.S.; M.Ed.; M.S.

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Dedication

I dedicate this work to my parents and my husband

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Web News in China: A New Hierarchy of Centrality? An Analysis of the Linking Pattern of China's Online News Network

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Xin Chen,PhD.

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Supervisor: Dominic L. Lasorsa

The present study explored three questions: What is the linking pattern of China's cyber news space? What are the factors that contribute to this pattern? And what is the distribution of links in real geographic places?

The concept of the cyber news space refers to the globally connected networks of online news production. It is a tool to understand the spatial distribution of online news production and the map of the world as presented in the media.

This study is a content analysis of news Webpages from China's four leading commercial portals. It sampled about 900 news Webpages during the spring of 2008. China's commercial portals are news aggregators and distributors. They are the gatekeepers of China's cyber news space. On their news Webpages there is one hyperlink that leads to the original publisher of the story. These links provide a clue of how news

organizations were connected online. The content analysis coded these links and other information such as media type, production sites and locations of stories.

This study found that the there was a pattern of concentration in terms of the distribution of links among online news organizations. A multiple regression model was used to test the factors that may contribute to this pattern. It was found that geographic location of news organizations was such a factor. The more central a news organization was located, the more links it attracted from the portals.

In addition, this study also analyzed the distribution of links among difference provinces (or province level administrations) of China. It found that Beijing, Chongqing, Guangdong, Jilin, and Shanghai are hubs, while more remote provinces, such as Xinjiang, and Guizhou were largely bypassed.

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Chapter 1

Introduction

The cyber news space

The Internet is the first truly global medium. News organizations from around the world now place their products on the same platform. Information flows on this network at the speed of light. Anyone with access to the Internet has access to constant news flow. The Internet's power of connecting anyone from anywhere is reshaping news production and the news readers' sense of space.

Space is an essential part of news, both in its production and its effects. Every story has a production site. Where news is produced reflects the spatial distribution of media power. Every news organization has a geographic market. Some serve a small town; some are metropolitan; some are national; while a handful of news organizations have a global audience. Just like any other industry, news production can be viewed as a network of nodes of different sizes. There are hubs (such as New York City), ordinary nodes (such as Austin), and by-passed places (such as Lubbock, TX).

Every news story has a "where" element which helps the readers to locate the story in their mental map. Media coverage helps us to cultivate and to maintain a mental map of the world. Walter Lippmann (1922) introduced the concept of pseudo-environment: people actually act in response to their perceptions of the world, not the reality. Perhaps a famous *New Yorker* magazine cover that parodies the New Yorker's mental map of the world offers the best illustration. In it, Manhattan comprises about half

of the drawing and on the opposite side of the land is a fairly large California. Between the two, all other states are squeezed together and indistinguishable. Far over the Pacific are three small pieces of land labeled as Japan, China and Russia. A news medium functions as a bridge between "the world outside and the picture in our heads". Empirical studies (McCombs, 2005) provided evidence of strong media effects, especially for things with which people do not have direct experiences. Media hold the power to highlight some places while rendering others obscure on our mental maps.

The Internet penetrates geographic boundaries to bridge remote places. News organizations must rethink their markets; after all, everyone now has the potential to reach a global audience. Powerful media now possess an easy access to "invade" markets formerly protected by distance; meanwhile, relatively weak media also are liberated from geographic restraints and can seek audiences from far away. The news readers, with their new-found liberty of experiencing global media at their fingertips, are bound to have quite different experiences than ever before. If a Chinese and an American learn news from the same set of news organizations online, will they share a similar mental map of the world? As the Internet reshuffles the geographic distribution of media power, how will it reshape people's sense of space?

This study proposes the concept of the cyber news space as a tool to understand the spatial distribution of news production and the map of the world as presented in the media, which may have strong effects on the audiences' mental map. This concept is molded after Castells' (2000) concept of "the space of flows". Castells defines the space of flows as "the material organization of time-sharing social practices that work through flows" (p. 442). It rises as the Internet and other communication systems became central

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to global networks of production. In the new, digital and universal communication system, "flows of capital, flows of information, flows of technology, flows of organizational interaction, flows of images, sounds, and symbols" (p. 442) are liberated from geographic constrains. Our generic sense of space is space of places, our historically rooted and commonly shared experiences about geographic locations. Contrary to that, the "space of flows" is not about any specific place, but the network and flows upon it.

Space of flows does not deny the space of places but rather builds upon it. Communication technologies do not render geography irrelevant; they redefine geography. "Thus the network of communication is the fundamental spatial configuration: places do not disappear, but their logic and their meaning become absorbed in the network" (p. 442). Much like the railway systems impacted the industrial age, communication technologies redefine places in the information age. Old economy hubs may be marginalized and new hubs emerge as the new network redistributes flows of resources.

In this process, network logics emerge as a new factor in determining the distributions of flows of material, information, and social relationships. These network logics, as revealed by computer scientists and topologists, include the power law distribution, the growth rule and the preferential attachment, concepts which will be defined shortly. In short, the Internet is a hierarchy of connections. The better connected one node is, the more privileged it is. Time and each node's preferential linking determine the distribution of connections; however, technologies are not the only determining power. As Castells noted, "interactive computer networks are growing

exponentially, creating new forms and channels of communication, shaping life and being shaped by life at the same time" (2000, p. 1).

The cyber news space is the globally connected networks of online news production. As stated above, the Internet is integrating every aspect of news production and connecting all news organizations into one global network. As the Internet becomes the medium of our time, news production also falls subject to the network logics. Conversely, real life factors such as geography, the ecology of news production, and the political environment contribute to shaping the networks of online news production.

China's cyber news space

This study offers a network analysis of China's cyber news space. Juxtaposing cyber space with a nation may seem ironic since conceptually cyber space is supposed to be borderless. However, empirical studies find that not only are there gates, gaps, and distance in the cyber space, there also exist national borders (Qiu, 2000). Zook (2001) has done an analysis of all countries' online content production. He found that while some countries are content as Internet importers and exporters, China is an Internet island, where the production of content is self-contained. While maintaining a high volume of online content production, China does not often exchange information with the outside world. Actually, the Chinese government's installation of a so-called great firewall to filter flows of online content into and out of the country is well known. As China emerges as an important player on the global stage, the question arises whether the Internet is changing China or if China is changing the Internet. Therefore, it is important

to analyze what's happening within the borders of China. Note that China in this context strictly refers to the Mainland, excluding Hong Kong, Macau and Taiwan. [1]

China is intriguing. It runs a highly controlled media system, ranked by The Freedom House as No. 177 of 194 countries in the annual ranking of the freedom of media systems in 2005. The press in China is regarded as "not free". In sharp contrast, the media market in China is among the world's most prosperous (Tunstall, 2007). The Internet has become a mainstream medium in China and boasts the world's largest population of Internet users (CIA, 2008). Chinese Internet users regard online news reading as their second most important use of the Internet (CNNIC, 2010). Four Chinese websites have made the list of the world's top 20 websites by traffic (Alexa, 2010) and yet the Chinese government's control over the Internet is regarded as the most sophisticated in the world (Goldsmith & Wu, 2006). The so-called Great Fire Wall works as China's national border in the cyberspace. The Great Fire Wall filters and regulates flows of information into China.

Ordinary Chinese Internet users simply do not have access to many popular Western Websites such as Facebook, Myspace, Twitter, Blogger, Flickr, Picasa, Youtube,

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[1] Hong Kong and Macau are under self-elected regional governments and have very different political and media systems than the mainland. Taiwan's history is equally complex. This island has been separated from the mainland since the Nationalists Party lost to the Communist Party in China's civil war and retreated to Taiwan in 1949. Taiwan identifies itself as the Republic of China, as opposed to the People's Republic of China under the Communists. China claims sovereignty over Taiwan. All nations that have formal diplomatic relationships with China, as well as the UN, officially endorse that claim. Yet Taiwan has been self-governing since 1949 and the Communist Party of China has never set a foot on this island. Despite all the complexity, people on both sides of the Taiwan Strait share the same language, ethnicity (to the majority of the population), culture, believe system and ancestors. Nowadays, economic corporations and cultural exchanges across the strait are frequent and widespread. News from and about Taiwan are also common in Mainland media.

Wikipedia, and most recently, Google (Branigan, 2009; Greatfirewallofchina.org, 2010).

This lends to the appearance that whenever truly innovative Websites rise in the West,

China's reaction is to block the original site and launch its own copycats as substitutes.

By evolving in this manner, China somehow still keeps current with the latest technology

but maintains government control over potentially threatening elements from the Internet.

Although social media and blogs continue to grow quickly in China, they also remain

subject to close government control. Most of the information flows in these newer

channels are entertainment and utilitarian in nature. It is unclear how much impact they

would have on the distribution of news (Colaizzi, 2010). Therefore, this study will leave

these new channels of news diffusion to future study and focus on only portals and

traditional news organizations.

  As the news production moves online, what is the order of China's cyber news

space? Has the network logic reshaped the distribution of media power? What news

organizations have gained centrality and what organizations are marginalized? How are

different geographic locations represented in the cyber news space? How are foreign

countries connected to China's cyber news space? This study tries to seek answers to

these questions by a content analysis of the news sections of China's top four commercial

portals.

  The second chapter provides a brief introduction to Castells' concept of the space

of flows, network logics, and gatekeeping theory. Network logics include the power law

and the principle of preferential attachment. Gatekeeping theory provides an explanation

of online news organizations' actions of preferential attachment. This chapter also covers

the study of the geographic distribution of the Internet. This chapter tries to show how geography affects flows of information in the cyber news space.

The third chapter offers an introduction to China's media reforms, the salient elements in China's media system and the development of online media in China.

The fourth chapter contains research questions and hypotheses; the fifth chapter describes the methods employed; the sixth chapter presents results and the last chapter discusses the implications of this study.

Chapter 2

Theoretical Background

The network of online news production and the control over flows of online news

The term "network analysis" may currently be one of the hottest buzz words among academic researchers, thanks to the Internet. It is widely applied in various disciplines, ranging from computer science, physics, and disease control to economics, sociology and communication. This term applies to the study of such diverse subjects as the physical structure of the Internet, power grids, the transmission of the AIDS virus, large corporations, international financial systems, drug trafficking, e-commerce and online social networking (Barabasi, 2002).

Despite the massive differences among these networks, they all consist of two fundamental elements, according to topologists like Barabasi (2002) Watts (2003), and Huberman (2001) : nodes and links. Nodes are the basic building units of a network. Links are connections between the nodes. Any network starts from one or a bunch of nodes which, once connected, form a network. Some networks are planned centrally and then constructed, while the others simply take root and grow without any central control. Some networks are egalitarian, meaning that all nodes in these networks are born equal. These nodes are essentially the same in terms of their positions in a network, the number of links and the other resources that they occupy. Most networks are non-egalitarian. In these networks, some nodes are superior to others. They can take a more central position,

occupy more resources, or both. According to Barabasi (2002), the most critical resource in a network is links. A non-egalitarian network is essentially a hierarchy of links. The more links a node has, the better connected it is to the rest of the network and the more central its position. The best connected nodes in a network are called hubs. Hubs are vital to the success of a network because of their special role in transmitting the flows of resources (either material or informational) on a network.

The studies of a network always come with analyses of flows on this network. Without the flows, a network is just a lifeless structure. Just imagine a highway system without any traffic, a power grid without any electric current, and a communication network without any signal. We study the network because we want to know how a particular network will carry flows, and how the structure and flows will affect the nodes and the environment of the network. Flows on an egalitarian network often move inefficiently. Imagine 10 nodes arranged in a circle. Each node has only two neighboring nodes, and only links to these two neighbors. Label these nodes in the sequence of A, B, C... J. Suppose node A wants to send a message to node F, which located on the opposite side of the circle. This message has to start from node A, then pass node B, C, D, and E (or on the other direction, node J, I ,H, and G), and finally reach node F, which involves five links. Then suppose we make node C a hub of this network, adding links to it so that it holds a direct connection to every other node. In this new non-egalitarian network, flow now moves much faster. A message from A to F can now take the route of A-C-F, involving only two links. This illustrates the importance of a hub: it essentially provides shortcuts for flows.

The entire industry of news production is a giant network. There are two kinds of nodes in the network of news production: individual and organizational. The individual nodes are news reporters who gather stories, editors who select stories for publishing, and those involved in the transition of news flows. The organizational nodes are news outlets such as news papers, TV stations, news websites, wire services (i.e. the Associated Press), and all other organizations involved in the transition of news flows. There are various kinds of links between these nodes, such as employment of reporters and editors, organizational relationship between reporters and editors, cooperation between news organizations, etc. This network of news production is crucial to the flows of news in the modern society.

Perhaps the best model of flows of news in the modern society is Everett Rogers' model of news production. When a news story breaks, how does it penetrate and permeate society? If you take the entire human society as a giant network, how many nodes can a piece of news finally reach? If the success of news production is measured by the number of nodes this news finally reaches, then how to make the diffusion of a particular piece of news more successful? According to Rogers(1995), the rate at which a piece of news diffuses in a society conforms to the S-shaped curve of innovation. When a news story first breaks, the diffusion rate is low because there usually only exist a small number of witnesses with limited social connections, who can only transfer the flow of this news to a slightly larger social circle. However, if this piece of news reaches some well-connected nodes, such as the opinion leaders of certain communities or even mass media, the diffusion speed would raise sharply. These opinion leaders and mass media are hubs of the network of news communication. Because they can reach a crowd easily,

the news flows now have a shortcut to a large number of nodes quickly. This S-shaped diffusion curve starts to level off after half of the nodes in a network have already received this news, because those without knowledge become increasingly scarce. Therefore, the critical point that determines successful dissemination of a news story stems from whether it will quickly reach major hubs; that is, powerful mass media. Facing hundreds (if not thousands) of news items everyday, which do the news producers decide to publish? This is where the theory of news production joins the theory of gatekeeping.

Gatekeeping, according to Rogers (1995, p. 148), "is controlling the flow of messages through a communication channel." When news initiated in all different nodes compete for the access of critical hubs, these hubs play the role of gate-keepers which control the flow of news in the network of news production. Traditional gate-keeping studies focused on influences from individuals such as news editors. They argued that the so-called Mr. Gates makes the decisions about what news goes in and what news stays out. In *Mediating the Message: Theories of Influences on Mass Media Content*, Pamela Shoemaker and Stephen Reese argued (1996) that routinized judgment lies behind Mr. Gates' decision. The personal bias of Mr. Gates may affect his decision of news selection but this personal influence is only minimal. Mr. Gates must constantly ensure that his news selection remains consistent with his news organizations' polices. Therefore, flows in the network of production are controlled by gate-keeping practices of mass media. The widely distributed stories conform to the routines and polices of news organizations.

It is undeniable that the Internet has become a main stream mass media. How will the Internet change or reshape the network of news production? First of all, the Internet greatly accelerated the flows of news. Via the Internet, news travels at the speed of light all over the globe. Secondly, it greatly enlarged the pool of news from which news organizations select stories for publishing. Now the online news editors from elite news organizations can promptly learn of a story as it transpires in a remote geographic spot which traditional news reporters do not cover. Additionally, the Internet greatly enlarged the reach of an online news publisher. Instead of a newspaper's typically local audience, a news website instead can reach a global audience, at least in theory. The Internet also boosts competition among news outlets. No longer protected by geographic boundaries, local media must compete face to face with powerful national media. The Internet makes it much easier for new producers to stay abreast of their competitors, and to glean news items and ideas from them. This certainly facilitates inter-media news flows. Finally, the Internet also breaks down the wall between news producers and their audiences. Stories reported first by bloggers occasionally make headlines of powerful traditional media. However, since this study focuses only on the news flows among the formal news producers, the topic of bloggers and other audience contributions will be left for future research.

The paths through which news traverses different "gates" of online news outlets make up a network of online news production. The nodes of this network of online news production are news websites. The links between these websites are editor's practices of passing on one story originating from other websites. In the network of online news production, which websites will have the most connections? Which ones will be the hubs

that yield the most influence upon the flows of news? Where are the gates that lead to the successful diffusion of a piece of news? Daniel Sgroi (2008) analyzed the current structure of the Web and found that the Web is evolving into a central star network. The star nodes have significantly more links than others. Their existence increases the cost efficiency and stability of the entire network. The more links a node has, the more central its position on the network, the more power it has over the flows, and the more profit it makes. As star nodes strive for more links, it is possible that one day the Web will be dominated by a single intermediate site. Sgroi predicted this site to be a search engine. In the network of online news production, it is not likely that a search engine will dominate, at least in the near future. The more plausible candidate may be a portal site. Portal sites like Yahoo! have long been prominent online news outlets. In China's network of online news production, portals are the biggest hubs.

It is a common practice among China's news websites to borrow stories from each other. The websites of traditional news organizations not only publish their self-produced stories, but also they republish stories taken from other websites. If a website uses a story from another news organization, it usually puts a hyperlink to the original publisher just under the headline of the story. Thus, the action of mutual citation connects different sites. Flows of stories traverse from site to site in cyber space. Again, these portal sites are the biggest hubs. They have connections with most sites and the largest audience. They take in the largest amount of flows and transmit these stories to the public most efficiently. Which stories the portals choose to publish and which websites they choose to cite greatly affect the flows of news on China's online news network.

Network logics

Topologists like Barabasi (2002), Watts (2003), and Huberman (2001) argue that some universal logics govern all networks. They use the Internet and the Web as the testing fields of the network logic. The network logics they propose are the power law of distribution, the growth rule, and the rule of preferential attachment.

The Internet, according to Severin and Tankard, is "a world wide network of computer networks" (2001, p. 366). One key feature of the Internet is its center-less structure. Rather than stemming from central planning and control, the Internet simply emerged and evolved. Anyone with some basic equipment such as a PC and a connection can easily connect to the Internet and publish online. The Internet has been seen, therefore, as a potential site for the fulfillment of true, absolute democracy. However, as its later evolution shows, although the Internet does not have a center, it is not an egalitarian network at all. There are various hubs that are critical to flows of online information. Hubs are incredibly different from each other in terms of size and power. The Internet is actually a hierarchy of links. The more links a node has, the higher its position on the hierarchy and the more powerful its presence on the Internet. The topologists who studied the Web propose that one way to investigate the Internet as a system the approximation of the distribution of the number of links per node (Krishnamurthy, 2004). A study by Barabasi (2002) found that eighty percent of links on the Web point to only fifteen percent of all Webpages. The more links a node has, the more traffic it will attract, and the more visible and influential it will be in cyber space.

The richness of hubs can be characterized by the power law of distribution. When first approaching the Internet as a system and studying the distribution of the number of

links per node, researchers assumed the distribution would be normal, meaning that very

few nodes would have lots of links and very few nodes would have a small number of

links as well. Instead, researchers hypothesized that the majority of the nodes would

have an intermediate number of links, and these intermediate numbers should be around

the average number of links of all nodes. However, empirical studies (Barabasi & Albert,

1999; Huberman, 2001) found that on the Internet the distribution of links per node is far

from normal and instead follows the power law. The general formula of the power law

distribution is: $N(k): \frac{1}{k^{\beta}}$, $(k > 0, \beta \geq 1)$, where parameter β is the degree exponent.

When k increases, the value of $N(k)$ decreases rapidly. Therefore, the graph of power

law distribution is a dramatically decreasing curve (figure 1). The lager the β, the closer

the curve is to the Y axis, and larger the decreasing rate of $N(k)$ compared to the

increasing rate of k (adapted from Huberman (2001)). A rough graph of the power law is

shown below:

Figure 1: The power law distribution
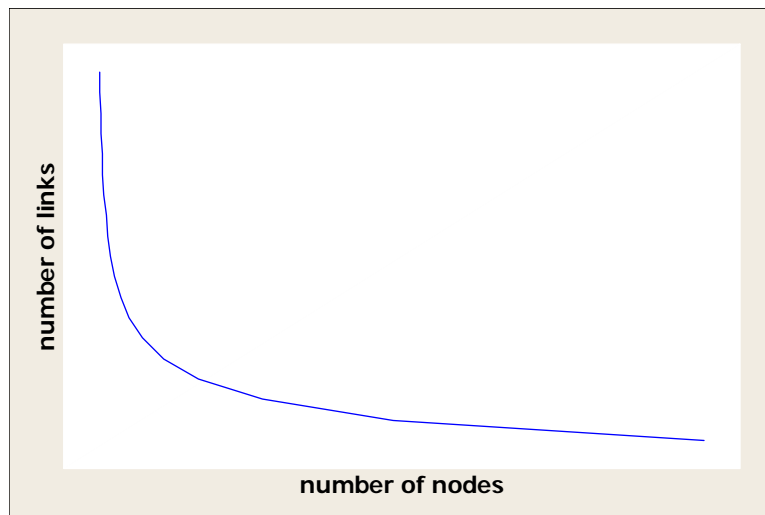
As shown in Figure 1, while the majority of the nodes have a very limited number of links, a small number of nodes can have numerous links. The distribution of links per node remains so skewed that the arithmetic mean can no longer represent a typical node in terms of the number of links attached to it. In fact, the majority of nodes have far less links than the arithmetic mean. The typical number of links that a Webpage contains should be the mode, a statistic that refers to the number of links on the most frequently encountered nodes. Another interesting property of the power law is that it is scale-free. If a system obeys the power law, then no matter what the length scales are, the distribution of the variable of interest remains the same. If one can determine the distribution of links per page, they can predict what the distribution will be for another range of studies. Empirical studies have shown that the power-law nature of the Internet is extremely robust. Huberman and colleagues have uncovered a power-law distribution for the number of visits to a site (Adamic and Huberman 2000), the number of pages within a site (Huberman and Adamic 1999), and the number of links to a page (Albert, Jeoung, and Barabasi 1999).

Other than the power law, there are similar ways to describe the concentration of links: the Pareto's law and the rule of heavy tail. In the 19th century, Italian economist Pareto found that about 20 percent of all families in Italy owned about 80 percent of all land. Also labeled as the 20/80's rule, the Pareto's law often describes the concentration of social resources within a minority of members in a society. The rule of heavy tail is a more graphic description of the same phenomenon. Just like in Figure 1, the curve shows a heavy tail. If one plots the wealth a family possesses against the number of families in the United States, he will certainly get a heavy tail. Similarly, plotting an English word's

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frequency of use against the total number of words in English also results in a heavy tail graph.

Why does the distribution of links on the Internet obey the power law of distribution? If individual actions are random, then why do links concentrate as a result of countless random actions? If we define these well-connected nodes in a network as hubs (Tremayne, 2005), then how does a node become a hub? Barabasi and Albert propose a "rich get richer" model. Two principles comprise the model: the growth rule and the rule of preferential attachment. The growth rule basically involves time. Suppose the networks are assembled one node at a time. In a network, the older a node is, the higher the probability that this node will be linked. If growth is the only rule, then websites established in the early 1990's should have a great number of links, while those established more recently should have less links. This is not the case because of the second rule, the rule of preferential attachment, which assumes that the probability that a new node's choice of an existing node depends on the number of links attached to it. In other words, when a network adds a new node, it most likely links to the ones that are already heavily linked. Over time, the rich get richer. As a result of the combined effects of the growth rule and the rule of preferential attachment, the distribution of the number of links per node inevitably follows the power law.

However, as Tremayne points out (2003), the power law of distribution is ideal. As Figure 1 shows, the tail of a power law of distribution is infinite. In reality, the tail has to be finite. The power law assumes only a negligible cost to add new links. As the cost of adding new links rises, the growth rate of the hubs, or heavily linked nodes, decreases. At the point when the cost is considered too high, the growth of hubs is stunted.

The principle of preferential attachment relates to the quality of each node. In the abstract world of topological research, this quality is simply the number of links. The more links a node possesses, the higher its linkable quality. In the real world, besides how heavily it is already linked, a node has many other qualities that may influence its linkability. When applying the topologists' principles to the real world situation, factor in these "other qualities," which depend on the context of each network under study.

In the context of online news production network, portal news editors' gatekeeping decisions reflect the principle of preferential attachment. Facing a huge pool of online news everyday, the news editors must select carefully. Once they choose a story from certain site, they establish a link between the portal and the original site. This link is a preferential attachment based on the editors' judgment of what is consistent with their portal's routines, policies and best interest.

Empirical studies on the network of online news

The principles of preferential attachment provide the possibility of factoring in real life conditions into the abstract model of the topologists. Tremayne (2003) found that contextual potential of news items fit that condition. Applying the network logics to study linking pattern of online news, he found that international stories tend to contain more hyperlinks than average stories while spot news tends to contain fewer hyperlinks than average stories. International stories provide many possibilities for contextual information such as geography, history, and politics about certain countries or regions. By contrast, spot news's concern focuses on the straight facts and limited contextual possibilities. Therefore, in the network of interlinked news Webpages, contextual potential of each news item is a factor of preferential attachment.

In his latter studies, Tremayne found a series of factors of preferential attachment in different scenarios, thus provided evidence of how life shapes the net through the mechanism of preferential attachment. To study the war blogosphere, Tremayne and students (Tremayne, Zheng, Lee, & Jeong, 2006) used a multiple regression model to look for predictors of the number of incoming links that each blog receives. The regression model includes factors like authorship, politics, post type, affect, responsiveness, gender, outgoing links, and blogger background. The results show that the number of outgoing links and original reporting are two factors that affect how many links that each blog attracts. Another analysis of the political blogosphere (Harp & Tremayne, 2006) shows that the gender of the blogger may also influence each blog's attractiveness to incoming links.

Two years after his original study on the linking pattern of Web news, Tremayne (2005) documented another trend: online news editors prefer in-site archives to resources from external websites when they add links to contextual information for their stories. Analyses of a five-year data set revealed that the use of external links decreased, just as the total numbers of all links increased, over time. Because it takes only a click to move from one news organization to another in the online environment, news editors try to use in-site linking to retain traffic. Technology provided the possibility of an open, free-flow space for news. But the competition between news organizations makes them "gated cyber communities". This study also revealed some other linking preferences: the proportion of external links was particularly low for financial news and international relation stories; military and government websites were the most commonly linked

external sites; and there was no differen   ce between national newspaper websites and national broadcast websites in terms of the use of external links.

Works by Trem ayne are ground breaking in   introducing the network logics to analyze the linking pa tterns of news Webpages and blogs . He found several factors that may affect e ach node's (be it W ebpage, blog or website) decision of preferential linking in a given network. However, he did not exam ine these factor s in a system atic way. The theory of gatekeeping provides an excel   lent standpoint to understand the linking preferences of each node, especially for the nodes in a network of news production.

Gatekeeping: the control of online news flows

A brief review of the gatekeeping theory

Gatekeeping is defined as "the process by which the billions of messages that are available in the world get cut down and transformed into the hundreds of messages that reach a given person on a given day" (Shoemaker, 1991, p. 1). For the past six decades, communication scholars used the concept of gatekeeping to explain the "differential flows of messages throughout time and space" (p. 3). Mass media's selection and representation of news items are most frequently studied. Everyday, a news organization and its representatives make numerous decisions on what items to include from a large pool of messages, how to turn these messages into news and transmit them to the audience. A 'gate' is a point where the decisions of 'in' or 'out' are made.

Since the first pairing of gatekeeping and communication in the 1940s, gatekeeping has become an important area of communication research. Accumulated studies on gatekeeping have explored different aspects of this phenomenon. Before a

message reaches a gate, what characteristics does it have? Which channel does it come from? What are the forces in front of and behind the gate?

Gatekeeping takes place at different levels. Different levels of analysis lead to different questions. The tradition of gatekeeping study started at the individual level of analysis. At the individual level, factors that may affect the results of gatekeeping include: an individual gatekeepers' "personality, background, values, role conceptions, and experiences" (Shoemaker, 1991, p. 34). For example, White's study (1950) of Mr. Gates looked only at individuals' decisions of including and excluding news items. He concludes that individual gatekeepers' "own set of experiences, attitudes, and expectations" (p. 386) form the basis of their professional judgments. News production is an inherently unmanageable task. Routines, "patterned, routinized, repeated practices for forms that media workers use to do their job" (Shoemaker, 1991, p. 48), provide crucial guidelines to individual gatekeepers in determining the flow of information in a communication channel. At the organizational level, gatekeeping analyses focus on issues such as filtering systems, organizational characteristics, organizational boundary roles, and organizational socialization. An organization's structure, culture, strategy, and rules all affect gatekeeping at this level. The extramedia, social/institutional level of analysis concerns factors like source, audience, advertiser, market, government and interest groups.

Gatekeeping has important social consequences. The most obvious effects that gatekeeping has on audience is shaping the so-called 'cognitive map'. Information that passes through the 'gate' comprises what we learn from media as social reality but not information that stops at the 'gate'. Besides, gatekeeping also seems to have the potential

to affect opinions and attitudes. Mass media yield the most influence on shaping people's cognitive map when they present a consonant version of social reality. In that situation, the audience doesn't have much information from which to form alternative views.

Gatekeeping in the network of online news production

The theory of gatekeeping has the potential to explain the formation and structure of the network of news production beyond basic network logics. It adds context to the abstract topological rules. According to Barabasi (2002) and Tremayne (2003; 2005), the entire Internet and the network of interlinked news Webpages are governed by the principle of preferential attachment. In the context of online news production, what makes some online news organizations more preferable than others? By analyzing gatekeeping at the organization level, this study may reveal the factors that influence the nodes' linking decisions in the cyber news space. This study focuses only on gatekeeping at the organizational level because news organizations are basic nodes of the network of news production. Through the gatekeeping actions of each news organization, the network is formed.

An organization is "a bounded, adaptive, open system that exists in an environment, interacts with elements of it, and engages in the transformation of inputs into outputs having effects on its environment and feedback effects on itself" (Adams, 1980, p.322). Gatekeeping, from the organizational point of view, amounts to a series of transactions between the organization and those external to it. Inputs include the population of messages that come to the attention of the communication organization, and outputs comprise those that are selected and transmitted. Gatekeeping, therefore, involves two processes. First there is the selection and rejection of input messages, by

one called a "boundary role person," according to criteria established by the organization. Second is the determination of what the outputs should be, which involves a boundary role person selecting and rejecting from among the input messages according to the criteria of those external to the organization. Therefore, the organization's own criteria should determine the selection of stories for processing and consideration, whereas criteria established by the organization's media clients should determine the stories for later transmission to the clients.

Previous analyses revealed that the Internet is not an egalitarian network. All nodes are not created equal. In the words of Zook (2001), the Internet is a new hierarchy of centrality. The better connected a node in a network, the higher its position in this hierarchy of centrality, and the more influence it yields. Hubs are critical to the success of the diffusion of any piece of news. Consequently, the gatekeeping practices of hubs should have more important social consequences than ordinary nodes. By controlling the flows of news, hubs determine which news items we are more likely to be exposed to, and therefore shape our cognitive map of the world. When the Internet first emerged as mass media, its acclaim centered around bringing diversity to news production (Gillmor, 2004). The Internet breaks down the barriers of news production and gives the voiceless a channel of being heard. However, if the hubs become too dominant on the network of news production, then it remains possible that online media provide a consonant version of social reality. More recent studies found that online media tend to present a homogeneous agenda (Yu, 2005). Hirsch (1981) pointed out that mass media act as cultural gatekeepers for the larger society. It is important to figure out the location of the hubs and what they offer on the network of news production.

Geographic distribution of links

Geography long has been an important factor of news production. Reporters travel to different places looking for stories and to send back to their editors. Once they select day's news, news organizations distribute it to their audience through air, cable or paper. Traditionally, most media mainly serve one local market, which is defined by geographic boundaries. Only the few elite media are able to cover a national audience. Before the Internet emerged as a mainstream medium, both story collection and content distribution were costly. The further a report or a distribution went, the more costly the production. While geography used to be a tight constraint on news production, the Internet has changed the picture. The cost of online communication is almost negligible. Anyone with the access to the Internet has access to the world's online news, no matter where this news is produced or by whom. Any message put online has the potential to reach an audience all round the world. Geographic distances now seem only a click away. The eclipse of geography on the Internet challenges traditional news production. News producers wonder who their audience is; advertisers figure new way to reach their market; and governments worry about regulation in this new, wild terrain.

In the early stages of the Internet, some prophesied (Friedman, 2005) the death of distance. Contrary to this early vision, however, empirical studies found that geography continues to play an important role in online communications. Internet traffic appears to decline with distance and is increasingly concentrated within localities, countries, and regions. For example, Murnion and Healey (1998) found that Web interaction declines with distance. Thelwall (2002) found a similar trend when he analyzed the hyperlink

connections between academic Websites compared to the physical distance between them. After all, content providers, data consumers, and Internet hardwires all have their real-space geographic distribution, which is crucial to the efficacy of online communication (Goldsmith & Wu, 2006). Rather than simply rendering geography irrelevant, the Internet is redefining space " very much like railways defined 'economic regions' and 'national markets' in the industrial economy" (Castells, 2000, p. 443).

From the perspective of geography, two potential trends characterize how the Internet is reshaping the network of news production. One is concentration. On the Internet, news media are no longer confined to a certain geographic locality. Media from all different locations now compete in the same cyberspace. On one hand, this change may give media from more remote geographical places a channel to reach much wider audiences. However, smaller local media may lose the protection from geographic boundaries against powerful media from more traditionally central places, such as big cities. As a result, the network of online news production tends to concentrate on urban nodes.

The other major trend is alienation. The network of online news production is becoming more point-oriented. The other side of the concentration of news flow in big cities is the possible alienation of relative hinterlands of these urban nodes. As news produced in hub locations is being better diffused in the network of online news production, news from the surrounding area of the hubs may have a slimmer chance to pass the selection gate of online news editors. A case from the software industry may provide an analogy. As the information technology industry makes Bangalore a global hub of software production, India's vast inland working class remains left largely

unconnected (Castells, 2000). The same could happen to the network of online news production; while the Internet diffuses the news produced in big cities about global leaders and world-class celebrities, common folks living in the majority of communities may find themselves more and more invisible in the landscape of online news.

Studies of the geography of Internet content creation and distribution revealed the trend of concentration of online content production in the developed world (Zook, Dodge, Aoyama, & Townsend, 2004). Zook (2001) mapped the global distribution both of domain names and users. Internet enables people to go beyond their own geographic confinements for information. If the production of content tends to concentrate on a few nodes, it is likely that people from peripheral areas of the network of content production ingest information produced far away from home. Some urban nodes may gain centrality as production centers while the majority of locales become net importers of online content. How to capture the dynamic of the production and consumption of online content? Where are the production centers and where are the content markets? Zook tackled these questions by analyzing the distribution of domain names in different countries. There were two kinds of top level domain names (TLD): 1) country code (CC) domains such as .cn for China and .jp for Japan; and 2) CONE (.com, .org, .net, and .edu), which are designed for businesses, nonprofit organizations, computer networks, and educational institutions. Zook reasoned that CC domains are more geared toward a domestic audience, while CONE domains are more global-oriented. If a country has large ratio of CC to CONE domains, its global presence is not very strong, despite the fact that all web pages should be accessible world wide. To compare the number of domains and

users across countries, Zook developed a measure called Internet Consumption Quotient (ICQ) to standardize the data. The formula for this measure is:

$$ICQ = \frac{number\ of\ domain\ in\ a\ country\ /\ number\ of\ Internet\ users\ in\ a\ country}{number\ of\ domain\ in\ the\ world\ /\ number\ of\ Internet\ users\ in\ the\ world}$$

Zook calculated two kinds of ICQs: the domestic ICQ and the global ICQ. The domestic ICQ involves just the country code domains (CC), while the global ICQ involves both global top level domains (CONE) and the country code domains (CC). "An ICQ value of greater than 1.0 indicates either strong domestic or global presence" (p. 21). Using these two ICQs, Zook constructed a 2 by 2 matrix in which countries are placed by their strength of both domestic and/or global presence. The result is a matrix with four cells: export enclaves, global traders, content consumers, and Internet islands. The matrix is shown below in figure 2 (slightly modified):

Figure 2: the ICQ matrix

Domestic presence

	Weak	Strong
Global presence — strong	Export Enclaves	Global Traders
Global presence — weak	Content Consumers	Internet Islands

By using this typology, Zook found that by the end of 1999, the United States was the absolute center of the Internet, containing more than half of all domain names in the

world. With strong content production and consumption, it fits in the category of Global Traders. This category includes mostly North American and Western European countries. The next category, the content consumers group, contains countries from Eastern Europe and the developing world. The third category, export enclaves, includes Saudi Arabia, Thailand and Costa Rica. Countries have clear needs to provide information to people outside the country. And the last category, Internet Islands, is comprised of countries with high domestic ICQ but low global ICQ, which means that its online content production is mostly geared toward a domestic audience. China and Russia are such examples.

This study also found that domain names aggregated in big cities, regardless of country variations. The world's top 100 cities (by population) contain over half of the world's Internet domain names, although they only account for 6.7 percent of the world's population. Almost all the world's top 25 cities in terms of total domain names are in the United States, with the only exception of London (4th) and Toronto (24th). The heart of Internet content production remains in Silicon Valley, San Francisco, San Jose and Oakland contain 43.0, 32.1, and 19.1 domains per 1,000 people.

In another study of the distribution of e-commerce across America, Zook (2002) found that e-commerce provides the impetus and means to reorganize the economic and geographic space in which businesses operate. Although not every place will become an e-commerce hub, all regions will be shaped by the way in which firms adapt to this new commercial medium. He found that in terms of e-commerce development, the southern and Midwest regions appear to be lagging behind their counterparts in other parts of the country.

Brunn and Dodge (2001) analyzed the global Internet connections between nations/regions using data on the number of Webpages and hyperlinks gathered from a commercial search engine in 1998. In their analysis, publishing Webpages are regarded as production and the exchange of hyperlinks between nations/regions is regarded as trade. They found that the global linking network largely replicated the global trade system. In general, the global economic powers also are the leaders of Webpage publishing and hyperlink connection. The researchers sampled 174 countries and divided them into a four-level, world-linking system: core, semi periphery, near periphery, and distant periphery. Most of the European countries, Canada and the US, and most countries from East Asia are located in the core, while countries from Sub-Saharan Africa, the Middle East, and Central America and the Caribbean mostly are located outside the core. The authors developed a hyperlink index, patterned after the export-import index used by economic geographers and economists, to measure the balance in international hyperlink traffic: HI=OL/IL*1000. A high HI means a country has many more outgoing links (OL) than incoming links (IL), and a low HI means balance between OL and IL. Their findings show that, again, richer countries tend to have low HI value, indicating more a balanced linking status. Besides economic factors, distance and cultural ties also matter, contributing to the emergence of regional centers. For example, the countries of central Asia, such as Azerbaijan, have a large portion of OLs that go to Russia and relatively fewer OLs go to the rest of the world. This finding shows a distinct pattern of interconnections related to income.

According to the alienation hypothesis, the space of flows is a point-oriented network that connects urban nodes and marginalizes rural areas. The disparity between

the urban poles and their respective hinterlands is one of the biggest problems of the network society. "Territories surrounding these nodes play an increasingly subordinate function, sometimes becoming irrelevant or even dysfunctional" (Castells, 2000, p. 411). His theory remains consistent with other observations of the Internet. Researchers who study the geographic distribution of the Internet in different countries, such as Norway, South Korea, Israel, Palestine, Jordon, China, Japan and the U.S., have found a similar pattern. Rather than the early prediction of uniform and utopian connectivity, the Internet around the world is concentrated on a small number of urban nodes (Zook, 2005). A number of indicators of Internet activity such as bandwidth (Townsend, 2001; Malecki, 2002) or domain names (Zook, 2000; Kolko, 2000) are disproportionately located in urban centers. This geography is marked by significant variation between regions and reflects the history and – economic status of specific regions, in some ways conforming to existing hierarchies, e.g., New York, while in others suggesting new hubs, e.g., Austin, TX (Zook, 2005). In another study, Zook found that three regions, San Francisco, New York and Los Angeles, appear as leading centers for Internet content in the United States (Zook, 2000). These empirical findings argue strongly against notions of uniform deployment of the Internet and instead predict variable outcomes in different cities and parts of the same city.

Chapter 3

China's media system

Media commercialization in China

In a Chinese news organization, what are the most important values which influence the editor's selection of news? Despite the complex and multi-faceted nature of the contemporary media system in China, researchers (Akhavan-Majid, 2004; Chan, 1993; Chan, 1994; Chan, 1995; Chan, Lee, & Pan, 2006; Huang, 2001; Huang, 1997; Lee, He, & Huang, 2007 ; Lee, Zhou, & Yu, 2006; Pan, 2000; Pan & Chan, 2003; Sun, Chang, & Yu, 2001; Xiao & Polumbaum, 2006; Yang, 2007; Yue, 2007; Zhang, 1993; Zhao, 1998) tend to agree that controls from the party-state and the liberating forces of the market are the two deciding factors there.

China long has been criticized for strict state control over its media. Freedom House, an independent organization that publishes annual rankings of the freedom of media in different countries, ranked China the No. 177 out of 194 countries and rated the Chinese press as "not free" in 2005. Their report on China states that its "news media are tightly controlled by the Central Propaganda Department of the Chinese Communist Party, especially concerning topic areas deemed by the party to be politically sensitive… (House, 2005). On the other hand, the media market in China has enjoyed more than two decades of prosperity (Lee et al., 2007). The coexistence of tight government control and a prosperous market may be the most intriguing part of the media system in contemporary China.

The conflict, struggle, coexistence, or even cooperation between this government control and the market forces characterized the dynamic of China's media reform that started three decades ago, when Deng Xiaoping initiated the so-called "reform and open-door policy" in 1978. It is necessary to briefly review the reforms that have shaped and continue to shape contemporary China.

Deng Xiaoping, China's paramount leader, launched the "reform and open-door policy" in the aftermath of the Cultural Revolution (Akhavan-Majid, 2004). As suggested by its name, this policy consists of two major parts: first, the transformation of the economic system from centrally planned to one more market-based capitalist; second, the reopening of China to the outside world. Deng did not launch this policy as a carefully designed plan, but as an immediate action to save China and its communist regime from the possible demise due to the Cultural Revolution. Deng was very pragmatic, as embodied by one of his famous quotes: "It doesn't matter if a cat is black or white, so long as it catches mice" (Quotesdaddy.com, 2009). Directed by this philosophy, the "reform and open-door policy" is an ongoing experiment filled with ad hoc adjustments, pragmatic experiments, and lively analytical discussion.

The first phase of the reforms met immediate success. In the first half of the 1980s, China lifted millions of people out of poverty. In 1981, the poverty rate of the population was 53%, a statistic brought below 20% by 1985 (Ravallion & Chen, 2009). The country legalized and encouraged private entrepreneurship and free-market activities, and in greatly improved general living standards. The Chinese people suddenly found themselves facing never before offered consumption choices. However, about a decade of fast growth also lead to corruption and an imbalance in development, which ultimately

lead to the 1989 student uprising. The students called for more free-market reforms and pro-democracy political reforms as well. The response from the government was the Tiananmen Square Massacre, a crack-down order believed to have come from Deng himself. What followed was two years of stagnant development and overall tightened political control that severely challenged China's movement to a free-market economy and open society.

Once again, Deng Xiaoping single-handedly changed the situation. Although he did not want any progressive change in China's political system, he never wanted to see the failure of the economic reforms. He steered the country back to the track of reforms with his famous "southern tour." In the spring of 1992, Deng quietly traveled to the southern city of Shenzhen, one of five Special Economic Zones (SEZ) designed as experimental fields of free-market economy and a symbol of success of Deng's reforms, without even notifying any of the top Party and government officials. At Shenzhen, he made the historical pronouncement that the a market economy is not incompatible with socialism (Akhavan-Majid, 2004). He further called for bolder and faster strides toward developing a market economy. Interestingly, Deng held no official position at that time, but the entire Party and government apparatus quickly switched track to align with Deng's visions. This movement silenced all doubts and criticisms towards adopting a free-market economy at once. In the following year, the Communist Party declared that achieving a "socialist market economy" was the object of China's reforms. Even the Chinese Constitution was modified subsequently to accommodate this new objective. That was the beginning of the second surge of development in the reform era.

The third surge of development came as China joining the World Trade Organization (WTO), which symbolizes China's full embrace of the global capitalist market. China had applied for a position in WTO for a total of thirteen years until it was finally accepted in 1999.

Three decades of reforms transformed China from a poor communist country on the verge of collapse into an economic powerhouse. China's gross domestic product (GDP) has increased tenfold since 1978. This dramatic gain has made China the second-largest economy in the world, after the U.S., by the end of 2008, based on adjusted price differences (CIA, 2009). Meanwhile, the door is wide open. On one hand, Western investments, merchandises, and pop culture flourish throughout China; on the other, traveling abroad has become a common occurrence among ordinary Chinese over the past 30 years. Perhaps the most intriguing part of China is that despite the tremendous success of the market economy, the dramatic improvement of living standards of the Chinese people, and significantly expanded room for personal choices, political control in this country remains tight. At least in the foreseeable future, Western-style democracy is hardly a possibility (Lee, 2000).

China used to have a strictly controlled media system copied from the Soviet Union. Although the country itself is still developing, the media system in China is quite evolved. From its start, the leaders of the Chinese Communist Party (CCP) recognized the power of media in propagating their political views to the Chinese people (Barnett, 1978). Mao Zedong (Chairman Mao) stressed that the four tasks for the mass media were to "propagandize the policies of the Party, educate the masses, organize the masses, and mobilize the masses" (Hong, 1998). To fulfill these tasks, media should always act as the

Party's "loyal eyes, ears, and tongue" (Chang, 1989, p.163). Since it took power in 1949, the CCP rapidly developed a media system based on the Soviet Union's model, where the state owned and financially supported all media. The structure of the media system was highly centralized and hierarchical: each level of governmental administration (central, provincial, municipal, county, and township) had its own propaganda ministries and news media. At the top of this communication hierarchy sat the Propaganda Ministry of the Party's Central Committee, which determined policies and issued operational directives. Commands from the top were delivered through the Party chain to various provincial, municipal, and local Party propaganda ministries. The propaganda ministry at different hierarchical levels oversaw and censored media at its respective level. Consequently, the official organs of the Party's central committee, such as the *People's Daily*, the China Central Television (CCTV), or the official Xinhua News Agency, were deemed as the most important. Whenever "necessary," media at all levels had to re-print or re-broadcast the editorials or other important materials from these top party organs. All working units (schools, government bureaus, military units and factories, etc.) had to subscribe to party newspapers both from the top level and from their corresponding level. This system of ideological control was so powerful that it touched every social cell (Hong, 1998; Pan, 2000).

Since the late 1970s, reforms have swept every sector of social life in China. The media system was no exception. While the reforms largely changed the media system in China, we must recognize the intrinsic interconnectedness between politics and emerging markets in the course of media change. It is a process of an uneasy collusion between the

party-state authorities and media practitioners in preserving the Party-press system under a market economy (Pan, 2005).

Most analyses of this reform tend to follow a "dissident vs. state" framework derived from "Western historical experience of moving from authoritarian to libertarian press systems" (Akhavan-Majid, 2004, p. 554). In this frame work, media reform in China is described as an ongoing "tug of war" between Chinese Communist party-state and the market forces. As a result of this "war," the party state is experiencing a certain level of "loss of control" over the media system because of the market forces.

First, the reforms always have had a highly confined institutional and ideological space. Second, both officials and media practitioners insist that the reforms consist of changing certain operating mechanisms and rules to better implement the principles and basic rules of the Party-press system. And the last, China's media reforms are not a well-planned and coherent project with a clearly specified destination. At every turn on the rocky path of reform, the highest political authorities reiterate the basic principles of the Party-press system while the establishment intellectuals, such as media scholars and elite journalists expand them (Pan, 2005).

Chen (1998) described China's media change as a three stage process. The first stage, spanning 1949 to the end of 1970s, witnessed the establishment of the party-press system. Toward the end of the 1970s, as a result of the economic reform, markets of equipment, paper, energy and circulation services opened gradually in the second stage. This forced the state budget to cut off subsidies to the media and push them to find alternative financial resources. In the third stage, advertising industry became the primary financial source for media. The fourth stage saw the media conglomeration in the shadow

of the World Trade Organization. Policies permit the media conglomerates to attract capital investment from various sources, such as the stock market (Pan, 2005).

The first significant media policy reform in China was the authorization given to media in 1979 to begin accepting advertising (Akhavan-Majid, 2004). Media reform in the last 30 years is a movement toward extreme commercialization. There are three macro measures of media commercialization by the end of the 1990s: the gradual withdraw and final termination of state subsidies to almost all media organizations; the resurgence of the advertising industry; and media conglomeration (Lee et al., 2006; Pan, 2000).

Before the reforms, all media were mouth pieces of the Party, fully owned and subsidized by the party-state (Hong, 1998). In the early 1980s, budgetary constraints forced the party-state to cut off media subsidies, although the party-state still claimed ownership of all media. Not all media are born equal in terms of subsides reduction. The lower a media positioned in the hierarchy of the old media system, the more likely it would be one of the first ones to have its subsidies cut. For example, organs of the provincial level government had a better chance to keep their money from the party-state than organs of municipal level government. Key organs of the Party's central committee, such as CCTV, Xinhua News Agency, and the People's Daily, were continuously subsidized well into the 21st century. However, even for these key organs, state subsides are not sufficient for them to operate.

The reduction of subsides pushed media to strive for financial autonomy. The alternative revenue source that they found, not surprisingly, was advertisement. This turned out to be a bountiful resource. By the end of the 1990s, the majority of media

outlets had become not only financially self-sufficient but also profitable (Paek & Pan, 2004). The key organs are no exception in their embrace of advertising income. In the book *Reports on China's TV Audience*, the deputy director of CCTV, Yang Weigang, emphasizes that even this state organ needs to worry about program ratings and audience studies to "attract more advertisement" (Yang, 1998, p. 1).

The resurgence of the advertising industry in China involves a story of a difficult start and phenomenal growth. In early 1977, two Shanghai newspapers published the first advertisement of the reform era after acquiring the municipal authority's acquiescence (Huang, 1997). It was a politically risky action because media were regarded only as the mouthpiece of the Party. They were not supposed to profit themselves. Only three months later, the party-state officially approved media "carrying economic information to serve the Party's mission to revitalizing the economy" (Pan, 2005). Advertisement was legitimatized. This is another case where media practitioners moved in advance of policy makers. In 1979 Shanghai TV aired the first TV commercial in China: a 90-second advertisement of Chinese medical wine (Weber, 2000, p. 264).

These initial attempts inspired media organizations, under unprecedented financial pressure due to subsidy cuts, to cultivate advertisement as their primary source of income. Meanwhile, the overall economic growth in China provides abundant opportunities for them.

The biggest growth spur of the advertising industry arrived after Deng Xiaoping's 1992 southern tour. With the surge of the general economy and the rise of consumerism in the early 1990s, the advertising industry soared. According to industry statistics, the annual growth rate between 1992 and 1994 was 93% and 97%. In the 1990s the

advertising revenue of China's media increased 20-fold to RMB 80 billion (about 10 billion U.S. dollars), with an annual growth rate of 35 %—a more profitable investment than tobacco (Yu, 2002). By 2001, China's advertising industry involved 78,000 organizational entities that employed more than 709,000 people. During this period, practically all of the world's top advertising agencies set up branches in China (Paek & Pan, 2004).

China's joining the World Trade Organization (WTO) began the third stage of media commercialization, that is, media conglomeration (Lee et al., 2007 ; Lee et al., 2006; Zhao, 2000). The government officials feared that joining the WTO would invite severe competition from foreign media groups. Domestic media, which only had operated in a quasi market environment for less than 20 years, might lose ground in front of powerful overseas competitors. To absorb the impact of globalization and also to consolidate media control, the party-state took the initiative to organize domestic media into media groups, often in the form of monopolistic conglomerates. The concern over post-WTO foreign competition was so serious that most media organizations sent managers abroad to learn how western media groups operate. China's first conglomerate, the *Guangzhou Daily* group, was launched in the southern city of Guangzhou in 1996. By the year of 2004, there were 38 press groups, eight radio and television groups, and three motion picture groups in China.

Several accounts should be given to the trajectory of the formation of press conglomerates (Lee et al., 2006). First, administrative fiat of the party-state fostered much of the media conglomeration to preempt foreign competition. Second, media from the same geographic region often conglomerated in the same news group. In fact, the

names of most media conglomerates contain names of certain geographic zones, such as *Guangzhou Daily* Group, *Shanghai Media* Group, *Sichuan Daily* group, etc. It is easy to identify to which region a group belongs merely by reading its name. This is actually a residue of the party-press system, where regional media simply served as a propaganda apparatus of regional administration. It also reflects the involvement of regional government in the formation of conglomerates. Third, media conglomerates benefited from the phenomenal growth of the advertising industry, and have accumulated extraordinary wealth. Between 1988 and 1998, the annual rate of return for Chinese newspapers ranged between 17 and 50 percent. As of 1998, print and broadcasting media were among the top four sources of tax revenue for the Chinese state (Kuhn, 2001). Fourth, media conglomerates are preferred to non-conglomerates. They are allowed to expand through acquisition and to venture into non-media business, such as real estate.

The last and most interesting account concerns the internal diversification of media organizations. Each press conglomerate has one "parent" paper, which is the original party organ that serves the wishes of Party Bosses. These "parent" papers are often so dull that they do not make much profit from the market. Even *The People's Daily,* the organ of the central committee of the Party, suffered a circulation drop from 8 million to 2 million between 1980 and 1996 (Zhao, 2000). But that does not bother the press groups at all. They never expected the "parent" papers to perform well in the market. After all, they are there to please the Party. The formation of the press groups resulted in a variety of "offspring" papers, designed to cater the wants of the masses. Then they share profits. An example is the formation of Wenhui-Xinmin press group from Shanghai (Lee et al., 2007). *Wenhui Daily* is a national level party-organ while

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Xinmin Evening News was the organ of Shanghai city government. The marriage of these two papers designated them different roles: *Weihui Daily* remained to be the party organ and "parent" paper while *Xinmin Evening News* shrugs off its Party jacket to become a profitable "offspring" paper. A quote from former general manager of the press group, Gu Xingwei, calls for "short, shorter and soft, softer stories to readers ranging from age 8 to age 80" (Lee et al., 2007 p. 28) as a marketing strategy for *Xinmin Evening News.* . Likewise, some pages of a news paper serve the Party while other pages please the market.

Two decades of commercialization of the Communist Party saw the emergence of multiple structures of power and interests that produce greater leeway for the media in China's rigid context (Lee et al., 2007 p. 27). Scholars and journalists in the Western world, such as Lee, Pan, and Hu, Zengjun Peng, argue that instead of a totalitarian system, media in China have transformed into an authoritarian system reigned by the by two masters of state power and market forces. The clash between these two powers provides challenges and opportunities to Chinese media, rendering an interesting subject to study. As Lee (2000) pointed out, while the new media market is redistributing symbolic power from the Party-state, the western-style democracy is hardly a possibility in China. Instead, the Chinese media system is moving from totalitarian system to market authoritarian system.

The tension between the constraining forces of communist political and ideological control and the liberating force of the market economy (Chan, 1993, 1995; Pan, 2000; Zhang, 1993) remains constant. Having to please "two masters" often frustrates Chinese journalists (Lee, 2000, p. 562; Pan, 2000, p. 257). When the

government terminated subsidies to most media in 1987, journalists and media managers had no guidelines for or experience with appealing to a mass audience in the market setting, and yet were expected to adhere to the Party line at the same time. They were compelled to improvise a variety of seemingly paradoxical editorial or marketing strategies. As a result, ideological diversion and depoliticized entertainment became the staple of Chinese media supply (Lee, 2000).

Pan (2000) has used the term "spatial re-configuration" to characterize the transformation of China's Party-press system. After years of struggle to cope both with the Party line and market competition, China's media system has developed "core" and "periphery zones." The "core" consists of Party ideology, key party organs, and front page news and editorials. The more centrally a media organization or a practice' location in this system, the less likely it is to change. Consequently, reform and market competition often take place in the periphery zones. As described by Pan, the result of this unique "core-periphery" dynamic yields an interesting cultural phenomenon in China's media system:

> Big papers are dull and small papers are hot…The front page of a paper is boring while the entertainment or weekend sections are lively. The flagship paper of a media organization is often numbingly boring while its spin-off publications are sharp. Journalists covering political and economic beats are usually dull while those working on special assignments or covering cultural affairs become 'hot-shots' (p. 274).

Consistent with Pan's argument, political news is in the core and social news is in the periphery zone; party organs are in the core and commercial media are in the

periphery zone; Beijing is in the core and remote inland and costal regions of

China are in the periphery zone.

Media regionalization in China

China's media have a very strong regional element. Although China's media

system remains strictly controlled, the introduction of market forces has greatly altered

the original power structure in the past three decades. The trend of media regionalization

goes hand in hand with market-oriented reforms. Before the reforms, China's media

system was a hierarchy laid out and controlled by various geographic levels. Using Pan's

(2000) idea of spatial configuration, the central media were at the core while the regional

media were in the periphery zones. Since the reforms mostly took place in the periphery

zones, regional media earned more autonomy and were more commercialized than central

media. Tunstall (2007) observed three causes of this trend of regionalization. (1) Beijing

adopted a general policy of encouragement, or at least benign tolerance, toward most

regional and local media, the only exception being those regions primarily occupied by

sensitive ethnic minorities, such as Tibet and Xinjiang. (2) As a consequence of

economic reforms, China's regions are strong, both politically and economically, and

getting stronger. Regional governments and major employers need their own voices to be

heard. As a consequence, regional media have also grown strong. (3) The rapid economic

growth and profound social change taking place in different regions feed the

regional/local media with plenty of news stories and advertising revenue. The growth of

regional and local media industry thus has benefited greatly from the overall development.

China also is dominated by urban nodes. Overall, China's media system is a point

oriented network in which the larger cities serve as significant media locations. While

Beijing is the obvious hub, with the most important central media and plenty of powerful

commercial media, the capital city of a province is typically the home base of both

province- wide and city- wide media (Tunstall, 2007). Because of the trend of

commercialization and regionalization, competition among media in the same city or

among media in the leading provinces is strong. To compete for more advertising revenue,

major regional and local media strive to provide more diverse, entertaining and quality

news service without overtly challenging the Party lines. As a result, the media continue

moving toward regional entertainment, showbiz, crime, gossip, and sports.

Geographically, the contrasts between two major media cities embody the tension

between the core and the periphery zones and between state and market: Beijing and

Guangzhou. Beijing is the center of China's media system. As the capital of the nation,

Beijing is the location of top party organ newspapers, China Central Television (CCTV),

China Central Radio, and the headquarters of Xinhua News Agency. It is also the

location of the Propaganda Ministry of the Party's Central Committee and the center of

media regulation. In most occasions, the voice of the Party is published first in Beijing

Media and then transmitted throughout the entire nation. Beijing is the center of state

power, the core of the political news network. Guangzhou is the capital city of

Guangdong and the center of the Pearl Delta, which served as the "test field" for most of

China's reform policies in the 1980s and 1990s, and therefore is the most innovative and

dynamic area of the country. The Pearl Delta encompasses Hong Kong and the pioneer

cities of China's reforms: Shenzhen, Zhuhai, and Dongguan. If China is now the world's

factory, then the Pearl Delta is China's biggest workshop. This area has served as the

leader in Chinese media innovation as well, especially in alternative newspapers.

Guangzhou is the media center of the Pearl Delta and The *Guangzhou Daily* News Group

comprised first media group in China (Lee et al., 2006). Newspapers from Gurangzhou,

such as *Southern Weekend* (*Nanfang Zhoumo*) and *Southern Metropolitan Daily*

(*Nanfang Dushibao*), are widely regarded as the most daring and respectable media in

mainland China. An example of this cutting-edge reporting includes a story on how Sun

Zhigang, an immigrant worker in Guangzhou, was beaten to death by local policeman in

2003. Their report not only quickly caught national attention but also forced the Chinese

government to renounce an unpopular law that authorized local police to detain

unregistered immigrant workers.

Beijing, Shanghai and Guangzhou are three top metropolises in China. Together,

they accounted for 3.6% of the national population, 11.4% of national GDP and more

than 10% of Chinese Internet users by the end of 2006 (Baidu, 2007; CNNIC, Jan 2007;

中华人民共和国民政部, 2006). They also represent China's top three advertising

markets. Beijing captures 25% of the national total and Shanghai and Guangzhou each

take 10%, respectively (Lee et al., 2006, p. 587).

Lee and colleagues (2007) compared the media landscapes of Beijing, Shanghai

and Guangzhou. Beijing is the national capital and media center. Top party organs, such

as *People's Daily*, *CCTV*, and *China Daily* call it home, and it headquarters China'

official wire service provider, the Xinhua News Agency. It is also home to powerful local

media such as the *Beijing Daily*, and *Beijing Youth Daily*. Various ministries,

departments, and functional bodies all have their own media outlets. Examples of these

media outlets include the organ of China Youth League, *China Youth Daily*, which

enjoys national circulation and a reputation of outspokenness. Beijing also hosts a variety

of tabloids. Some of them specialized in serving the lives of local residents; some specialized in reporting entertainment news or sports news. Three out of China's top four online portal sites have their headquarters in Beijing. Although some of the top media outlets sell nationally, most of them compete horizontally in the local market. Lee characterized media in Beijing as "managed diversity," where they take extra precautions to balancing influences from different lines of government as well as to the pressure from the market.

Shanghai is China's economic capital and largest city and home to three big media conglomerates: Jiefang Daily Press Group, the Wenhui-Xinmin Press Group and the Shanghai Media Group. According to Lee and colleagues, the political economy in Shanghai is "big city, small place." It is a big city because of its prosperous economy. The media advertising revenue in Shanghai totaled to RMB $20 billion, or US $2.5 billion, in the year 2006. The government of Shanghai commands unrivaled economic resources so that authorities can incorporate media into the "prescribed orbit" (p.25). It is also a small place in terms of homogeneity. In contrast to Beijing and Guangzhou, Shanghai lacks diversity in media voices and expressions of different interests. The powerbase of this city is so compact that orders from the core of the power structure to individuals are quick and direct, enabling efficient media control.

Guangzhou holds a unique position in the recent history of the reform and open era. It is where reforms start, where new ideas, models and policies were put into test. It often provides alternative opinions, views, and practices. Part of Guangzhou's difference stems from its geographical distance from the political center of Beijing. Guangzhou is located in the southern costal area called Pearl Delta, close to Hong Kong. Pearl Delta is

China's largest manufacture base and export center. Home to most of the products labeled "made in China" and shipped all over the world, here, private enterprises prosper and foreign investments are abundant. Although its supremacy in manufacturing is challenged by the Yangtze Delta in recent years, the Pearl Delta has cultivated a media landscape in Guangzhou that is quite different from Beijing and Shanghai.

Lee and colleagues summarize Guangzhou's media as "market competition within the party-state ideological limits." Although Guangzhou is only the sixth biggest city in terms of population, it exceeds both Beijing and Shanghai in media reach. Hong Kong television broadcasts filter across into the entire Pearl Delta, influencing ordinary citizens and media practitioners alike. Guangzhou Daily is the first press group and top revenue earner of China. Another press group from Guangzhou, *Nanfang Daily* group earned a national reputation of outspokenness by its two maverick "offspring" papers of the *Nanfang Daily* group: *Southern Metropolitan Daily* (*Nanfang Dushibao*) and *Southern Weekend* (*Nanfang Zhoumo*). These two papers sit at the national forefront of investigative reporting. They advocate liberal ideas and expose wrongdoings of government officials. The Sun Zhigang case, as mention above, was first published in *Southern Metropolitan Daily* in Guangzhou and quickly caught national attention.

A survey (Pan & Chan, 2003) on Chinese journalists shows that younger and reform-minded journalists looked up to *Southern Weekend* as an exemplar of professional journalism. These two papers earn their reputation at a price: their senior editors are frequently replaced by angry officials.

The old party press system of China is a network led by national organs located in Beijing and supported by province-level organs headquartered in the capital cities of

China's provinces in conjunction with other administrative apparatuses (Chan, 1993).

Therefore province capitals are regional media hubs which function as the backbone of

China's network of news production. After years of media reforms, although some

noncapital cities (such as Shenzhen) have cultivated a prosperous media industry and

some province capitals (such as Chengdu and Changsha) are much more visible than its

peers in China's media landscape, province capitals still remain the media centers of

provinces. The media conglomeration further strengthened the province capitals' hub

status; almost all media groups are headquartered in Big Three and province capitals. The

only exception is two municipalities, Chongqing and Tianjin. Municipalities are a very

special kind of city. Because of their importance, these cities are regarded as provinces in

terms of administration. Like all other provinces, the municipalities have an entire set of

media. They are also regional media hubs.

Other cities may also have their newspapers and TV stations, etc., but they are not

hubs large as the province capitals and municipalities. The rural areas of China are almost

negligible in China's map of media distribution. There is simply no known media based

in rural China.

China's online news services

Since the mid-1990s, Internet growth has surged in China. According to the

January 2010 semi-annual *Statistical Survey Report on the Internet Development in*

China (CNNIC, 2010), by the end of 2009, there were 16.82 million domain names, 3.23

million websites and 33.6 billions of Webpages located in China. This country has the

world's largest population of Internet users: 384 million. The national penetration rate

was 28.9%, higher than the global average. More than 90% of Chinese Internet users

accessed the Internet by broadband, while 8% of them are by mobile-only users. The majority of Internet users are male (54.2%), young (83% of them are under the age of 40), and urban dwellers (72.2%). One major trend is that Chinese Internet uses continue to penetrate into the lower education group. The largest education group of Internet users is high school (40.2%). Internet users with some college education used to make up of more than half of the entire online population by the end of 2006 (CNNIC, 2007). Now they only account for one third (34.3%) of Chinese Internet users.

The distribution of Internet users in different regions of China is not even. Two largest cities, Beijing and Shanghai, have a penetrate rate of more than 60%. Among all provinces, Guangdong has the most Internet users (48.6 million) and the highest penetration rate (50.9%). Tibet has the least Internet users (0.53 million), and Guizhou has the lowest penetration rate (15.1%). The provinces located in east costal regions have a penetration rate higher than the national average of 28.9%, while provinces located in the vast inland and remote regions of China tend to rate below national average. It is found that the development level of a province's economic development is positively correlated with the province's Internet development. The higher a province's per capital GDP, the higher its Internet penetration rate and vice versa. Meanwhile, the provinces with the lowest penetration rates also have the highest growth rate (about 50% annual increase) (CNNIC, 2010).

Also unevenly distributed are domain names. According to the January 2007 survey from CNNIC, Beijing alone has about 20% of all domain names. Guangdong (15.6% of all domain names) and Shanghai (9.2% of all domain names) ranked second and third. In terms of providing content, Guangdong could compete with Beijing as a

region, for Guangdong contains the highest percentage of all websites in China (18.3%) (CNNIC, 2007).

The primary application of the Internet in China is online music (83.5%), with news reading a close second (80.1%) and search engine being the third (73.3%). The population of Chinese online news readers has reached 307.69 million in 2009, with annual increase of 31.5% (CNNIC, 2010).

The Internet already plays an important role in Chinese news media. With more than 300 million online news readers and fast increasing advertisement revenue, the Internet is already an established channel where ordinary Chinese folks getting their new from. How does the Internet affect China's existing media system? As in the other parts of the world, the impact of the Internet may come from different angles, with each angle associated with one of the Internet's unique attributes, such as instant upgrades, multimedia, and interaction between the user and the information provider. This study is only concerned with the network feature of online news.

The Internet links up the news reports of geographically scattered local media and creates a national online news network. Official media like the *People's Daily* and CCTV have had a national market for a long time. Local media, especially the local daily newspapers, could hardly reach a non-local audience before most of the media in China began to launch their own websites in the late 1990s. For strong media like the *Southern Metropolitan Daily*, a major commercial daily, the Internet provides an effective channel for reaching a national audience. For some weak dailies, the Internet provides an extra daily feed of additional news, news ideas and examples of practicing journalism. Readers of online news can now not only pay attention to what Beijing is saying or what is

happening in their local community but also follow hot stories that take place in other parts of the country. In other words, local media now have to compete for attention with all of China in this cyber news space. Consequently, local news stories can now become national news issues in the cyber news space. In the past, negative news story in one city often do not appear in the local media of that city, but in media from other cities, especially media from the Pearl Delta. Since all media share one national network of online news, local governments have less ability to "contain" negative news stories within their "territory."

The Internet also provides an alternative route for foreign news. This does not suggest that many Chinese people read news from foreign websites. Language proves to be a big barrier to an ordinary Chinese citizen's access to foreign media. Government blocking is another. Jack Linchuan Qiu (2000) has argued that instead of a global cyber space the Internet has been divided into multiple cyber spaces. Due to the efforts of the Chinese government, there exists a virtual border between China's "domestic cyber space" and "foreign cyberspace." However, the researcher's personal observation is that the Internet at least has changed the Xinhua News Agency's near monopoly of foreign news supply. In the past, only very few elite media in China, such as the *People's Daily*, could afford to send their own journalists overseas to cover foreign news. In most occasions, ordinary media in China have had to depend on the Xinhua News Agency for foreign news. With the Internet, news editors now have access to an unlimited foreign news supply from the global cyber news space. Although they can not just copy and paste every story they find in the "foreign cyber news space," it does provide the ordinary Chinese media a supplemental dose of foreign news. This kind of news tends to belong to

the "peripheral" categories like entertainment, sports, and technology. On the other hand, foreign correspondents, who often are based in major cities like Beijing and Shanghai, also receive help from online news from inland China's local media.

Unlike in the United States, where the websites of major media like CNN and the *New York Times* represent important hubs of online news, in China the major sources of news for online users are commercial portals (Wu, 2005). China's cyber news space started to take shape when the *Hangzhou Daily* launched the first website of a Chinese media in 1995 (Qiang, 2003). In 1997, the *People's Daily* and the Xinhua News Agency launched their own websites. By the end of the twentieth century, most of the traditional media in China had an online version (Xiao & Polumbaum, 2006). The online versions of these media undoubtedly construct an important part of contemporary China's cyber news space. However, these traditional media-backed websites are primitive both in content and format. Unlike the state-run media and their websites, commercial portals in China are all private enterprises. Most of them were started by U.S. venture capital, their founders often hold an advanced degree from American universities, and their stocks are exchanged on the NASDAQ. In the early days of China's Internet, the portals were much more sophisticated in using the innovations of online technology than the state-run online news sources. They provided numerous stories daily, added multimedia and interactive features to their Webpages, and used hyperlinks to back their news stories with related information and background. They were especially good at compiling and packaging news stories to attract their readers. Naturally, the portals quickly surpassed the state-run online sources in traffic and became major players of Internet news. According to Alexa's world website ranking (by traffic), four out of the top ten websites in China are

commercial portals (the rest are search engines, networking sites and online vendors).

Among them, www.qq.com ranked number 2, www.sina.com ranked number 3,

www.163.com ranked number 5, and www.sohu.com ranked number 7 (Alexa, 2008),

whereas none of China's state-owned online media made the top 50 list. Henceforth,

these portals referenced as QQ, Sina, Netease (another name of 163), and Sohu,

respectively.

These portals share many similarities. They are all founded in the late 1990s

when the "dot com" boom reached China. The early forerunners, Sina and Sohu,

followed the business model of Yahoo. Even today, the homepages of these four portals

still look similar to American portal sites such as Yahoo! and MSN. They all provide

abundant and well organized news stories every day. But news is not the only service that

these portals provide. Services like email, online shopping, blog supports, e-book reading,

search engines, online maps, chat rooms, online gaming, etc. are also available.

According to a report by CCIDNET (2006), a market research website, the competition

between Chinese portals is fierce. Each portal strives to find its best market niche. Sina's

strength lies in providing timely and complete news coverage. It is considered as the best

news website in China. It provides far more daily stories than other portals. Sina used to

be the number one portal in China until QQ caught up in 2003. QQ is China's version of

MSN instant messaging. It is the most popular online IM tool among Chinese users. Just

like MSN, QQ links its IM function with its portal service. Because of the popularity of

the IM tool QQ, the portal qq.com surpassed Sina as China's most visited portal. News

service is not the priority of QQ. Netease (www.163.com) tries to attract news readers by

providing better in-depth reports. Sohu tries to survive by buying in smaller websites

which provide a variety of online services, such as online map, mp3 search engine, text message, and online gaming. News service is still a major part of Sohu's business. Today, the term "online news" still means portal news to the majority of Chinese Internet users, not the online version of any traditional media.

Since they are private enterprises, the commercial portals are not under direct control of the Chinese government. That distinguishes them from the traditional media in China. However, this does not mean that the portals can publish anything as they wish. The government has passed a series of specific regulations to supervise commercial portals. One of the most restrictive regulations is that commercial portals cannot produce original news (Xiao & Polumbaum, 2006). They can only utilize news stories from websites of traditional news organizations from mainland China. Nonetheless, the portals perform much better than the online versions of traditional news papers because by copying and pasting from news organizations all over China, they provide timelier, more comprehensive, and better organized reports of events. The non-news services available on these portals may be another reason that they enjoy high traffic. Another consequence of government regulation is that the commercial portals tend to avoid sensitive political topics and emphasize news in the peripheral categories like crime, entertainment, and sports.

A brief summary

According to Castells, the Internet is not only shaping life, it is being shaped by life at the same time. As online news production and distribution becoming mainstream practices in China, the structure of the network of online news production is also being

shaped by real life conditions of China. The purpose of this chapter is to introduce these real life conditions and put the analysis of China's cyber news space into context.

The topologists, such as Barabasi, proposed laws that govern the Internet: the growth rule and the preferential attachment. However, the abstract laws do not work without certain social historical context. After more than one decade's fast diffusion, it is already part of people's everyday reality. Tremayne has successfully combined the rules and norms of news production in reality with the abstract laws in his analyses of news websites and blogs. According to him, the principle of preferential attachment opens doors to real life factors. What this chapter tries to do is to discuss the factors that may have affected the linking preferences in China's cyber news space.

China has gone through more than three decades of media reforms. Two major processes involved in the reforms are media commercialization and media regionalization. It is through these two processes that the China's media system has broken away from the old party-press system and developed the unique "core vs. periphery" dynamic, as Pan put it (2000). During commercialization, the organs of China's party press system have founded a number of spin-off media. These so-called "offspring" media are very market-oriented. They often functions as cash cows of their media group. They do not have the same political importance as the organs of the same group but they financially support organs. The development of local media market brought in strong regional factor in China's media system. Although Beijing remains to be the national media center, regional media hubs have also emerged. Regional media provides a much more diversified picture of what is going on throughout the entire nation. This study proposes that the type (organ vs. commercial) and geographic location of each news organization

are two factors of preferential attachment in China's cyber news space. The following

chapter will discuss the research questions and hypothesis in detail.

Chapter 4

Research questions and hypotheses

Research questions

Barabasi and others (Barabasi, 2002; Huberman, 2001; Watts, 2003) have theorized that the power law rules the Internet. That is, a minority of nodes take the majority of resources, be it links, traffic, or attention. Empirical studies have provided evidences to support this theory: Barabasi found (2002) that 80% of all hyperlinks on the Web point to only 15% of all web pages existing at that time; Adamic and Huberman (2000) found that only a small number of websites attract most online traffic; and while some star websites contain numerous web pages, most websites are not composed of very many web pages (Adamic, 1999). Likewise, this pattern should be observed in China's network of online news production:

RQ1: Does the distribution of portal story links among online news

organizations show a pattern similar to the power law?

If the power law distribution holds true, it is natural to ask the location of the hubs, leading to the following additional research questions:

RQ2: From which online news organizations are stories most likely to be

linked by the portals?

Similar to research question one, research question 3 is designed to check if there is a pattern of concentration among production sites.

RQ3: Does the distribution of links among production sites show a pattern

similar to the power law?

And, if there is such a pattern of concentration, then where are hubs of online news productions?

RQ4: In which places are stories produced which are most likely to be linked by the portals?

As stated above, different regions in China have different degrees of representation in the cyber news space. Being prominent in the cyber news space empowers geographic localities. It is important to map the distribution of "online prominence" among different places in China. Future studies could compare this map with the geographic distribution of traditional media in China to see how the Internet may have redistributed media power on mainland China. Such a map may also help researchers of China's media markets to answer questions of audience and the reach of online media. This leads to research question 5:

RQ5: How are different provinces in China connected and represented in the cyber news space?

There are two measures of how a province is linked to the network of news production. One is the number of links, that is, the hyperlink that portals use to connect to the media from each province. The more links a province receives, the more its media contributed to the network, and the more active its media production. The other measure is representation, meaning the frequency with which a province is represented in the media content. Each story has a place element, and each place belongs to a province. Each time a place from a certain province was coded as the main place element of a story; this province was coded as being represented once. The measure of representation reflects how much media spotlights a province receives.

Answers to research question 5 can be sought by applying Zook's measure of ICQ (introduced in Chapter 2). This present study uses two measures formulated after Zook's ICQ to gauge the disparity between different provinces in terms of their connection to cyber news space. Note that China has 32 province-level administrations, including the four municipalities: Beijing, Tianjin, Shanghai and Chongqing. The first measure, called Cyber-news-space Production Quotient (CPQ), is about the relationship between the links that websites from a province have attracted (connections) and the number of Internet users in that province. The formula for CPQ is

$$CPQ = \frac{Number.of\,links.a.province.has.attracted \Big/ Number.of.Internet.user s.in.a.province}{Number.of\,total.link s.in.the.cyber.news.space.in.China \Big/ Number.of.\mathrm{int}ernet.user s.in China} \quad (2)$$

The second measure, called Cyber-news-space Representation Quotient (CRQ), involves the relationship between the times that places from a province have been represented (representation) and the number of Internet users in that province. The formula of CRQ is

$$CRQ = \frac{Number.of\,times.a.province.has.been.represented \Big/ Number.of.Internet.user s.in.a.province}{Number.of\,total.times.that.places.in.China.has.been.represented \Big/ Number.of.\mathrm{int}ernet.user s.in China} \quad (3)$$

CCQ greater than 1 means a strong connection with China's cyber news space; on the other hand, CCQ smaller than 1 means a weak connection. CRQ greater than 1 means strong representation in China's cyber news space, and CRQ smaller than 1 means weak representation in China's cyber news space. CCQ and CRQ allow the construction of a 2 by 2 matrix (as shown in Figure 3) in which provinces can be placed according to

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whether they are heavily linked to China's cyber news space and whether they are

heavily represented in China's cyber news space.

Figure 3: Production vs. representation matrix			
	production links		
		CCQ>1	CCQ<1
media	CRQ>1	media hub	Exporter
representation	CRQ<1	importer	average nodes

The first cell, indicating the national center, includes provinces where the media

are linked heavily to the cyber news space and, consequently, the representations of these

provinces in the cyber news space also are strong. The author expects Beijing to be in this

cell. However, a place with strong media does not necessarily mean the representation of

this place in the cyber news space is as strong. The possibility remains that media in these

places tend to report national news other than local news. The second cell, media hub,

includes places with strong media industry and connection to the national cyber news

space, but the places themselves are relatively less often represented. Media in

Guangdong province are strong and are famous for reporting news that takes place in

other parts of China. Thus it is possible that Guangdong province is in this cell. The third

cell, the attention hub, includes places that do not have a strong connection with China's

cyber news space but somehow have frequent representation. The fourth cells, by-passed

nodes, are places where both the connection and representation are weak, such as some

remote inland provinces. These are places that are at a disadvantage in China's cyber

news space.

The rest of the research questions are about foreign news. China has been criticized as constructing a 'great firewall" which obstructs the flow of foreign information into the "domestic" online news network of China. Where are the gates of the "great firewall", who controls the flow of foreign news and what kinds of foreign news pass through? The last group of research questions asks.

RQ6: Which websites are hubs for foreign news?

RQ7: News from which countries is most likely to be linked to the online news network (or portals) of China?

Hypotheses

The first set of hypotheses proposes to test factors that may affect the number of links that each online news outlet would receive from portals. This research tests two major factors: media types and their geographic locations. Media type refers to whether a medium is a party/government organ or a commercial one. Geographic location concerns a medium's location: the top three cities of China (Big Three), provincial capitals and municipalities, or other cities.

After almost three decades of media reforms, all media in China can be identified as either organ media or commercial media. Before the reforms, only organ media existed. They primarily function as mouthpieces of the Communist Party of China (CCP) and the Chinese government. From the state to provinces to major municipalities, each level of the CCP and government hierarchy has its own mouthpieces. Some major ministries at the state level have their own mouthpiece, as well (the *Legal Daily* of the Ministry of Justice, for example). All organ media explicitly identify themselves as the organ media

of certain CCP branch or government ministries. The mission statement from each one's website carries such easily recognized self identification. Various media reforms introduced commercial media. To cater to the audience and therefore to attract advertisers, organ media launched a variety of so-called offspring media in the early 1990s. Organ media have to function strictly as mouthpieces, but these offspring media were born with only one purpose: profit. They provide the public with much more colorful news on periphery topics such as entertainment, sports, and human interest stories, and serve the local community with practical, everyday information. There are certain redlines that these offspring media can not cross, otherwise they completely embody commercial organizations, just like their western counterparts. So the author labeled them as commercial media. Commercial media quickly became so profitable that the media industry is only slightly less lucrative than the tobacco industry. In the late 1990s, China's party-state initiated a campaign of media conglomeration that consolidated media from the same region into two or three press groups. Each press group consists of a major organ medium and several commercial media. Organ media serve as the head of each press group while commercial media are dedicated 'cash cows'. Overall, the media industry in China has enjoyed prosperity in recent years. There are many more commercial media than there are organ media.

Organ media vs. commercial media, which one would a portal choose? Put another way, as a news organization, how would a portal site make a choice between organ media and commercial media when republishing news stories from various news outlets? Essentially, this remains a gatekeeping question at the organization level. Gatekeeping, from the perspective of organizations, is a "series of transactions between

one organization and those external to it" (Shoemaker, 1991, p. 57). Inputs are messages that come to the door steps of the communication organization, while outputs are those selected and published. When selecting inputs, gatekeepers use internal criteria established by the news organization; when selecting outputs, gatekeepers use external criteria established by the perceived message recipients.

In the online environment, a portal site literally has unlimited messages just a click away; it must continuously make decisions of inclusion or exclusion in order to maintain its 24/7 non-stop news supply. Portal news editors choose stories according to values, rules and routines of the portal site. Then these news editors filter, manipulate and repackage these stories as a working routine for the portal. Only a subset of the included material will be published. And the published content depends on the criteria of perceived readers of portal news. Therefore, to answer the question of whether a portal prefers organ media or commercial media, it is better to look at what kinds of organizations that China's portal sites are and what comprises their audience.

According to the self exclamation (available in their "about us" pages) of the four portal sites' in this study, they are all private companies. Three of them are listed on the NASDAQ stock market, the other is listed on the main board of the Hong Kong stock market. They are dedicated to providing information services to Chinese communities both in and outside the People's Republic of China. They emphasize that their services are "value-added" and toast their provision of "a broad array of choices regarding information, entertainment and communication". No wonder that literature on China's portals label them as "commercial online media" (Wu, 2005; Xiao & Polumbaum, 2006).

It is reasonable to speculate that the internal criteria of the portal sites would prefer stories from commercial media.

On the other hand, according to the annul Statistical Survey Report on the Internet Development in China (CNNIC, 2010), the online news readers in China are young. They use the Internet as their primary approach to obtain information, and online news is their second most utilized Internet service, next only to online music. They are quite versatile in using online services and functions. It is hard to imagine that this population of online news readers would prefer dull organ media over hot commercial media (Pan, 2000). So the criteria of the perceived audience of portal news should also make more stories from commercial media to be published. Therefore, the first hypothesis reads:

H1a: The more heavily linked online news outlets tend to be commercial media.

In China the commercial portals are just news aggregators and distributors. They can not legally produce original news. All of the four portals under study are national news platforms. These portals collect news stories from media all over China, repackage them and provide them to a national audience. In other words, a portal news reader would face an aggregation of news stories produced by media across the country, no matter where this reader lives. This is certainly quite different from the traditional news reading/viewing experience where the local media dominate. So, when portals make their selection of news stories from various media, do they have any preference over media with certain geographic locations? The answer should be yes.

Gatekeeping studies found that when a news outlet uses stories from other organizations, its practices are influenced by the actions of previous gatekeepers. A study

by Whitney and Becker (1981)found that the proportion of news stories from newspaper editors' selection tended to be roughly the same as the proportion of news stories from the outputs of wire services. It is reasonable to expect that commercial portals' gatekeeping practices follow the same rule. The geographic proportion of portals news should match the geographic distribution of previous gatekeepers: online news organizations where portals get their news. In other words, the commercial portals' daily news provision should comprise more news produced in places with high media density and less news produced in places with low media density. For any individual news organization, there should be a correlation between its geographic location and the number of links it receives from the commercial portals.

Geographic distribution of media has been a hot topic ever since the beginning of the Internet. The Internet was prophesied as a net that erases geography, distance, and all other physical and social barriers of communication (Zook, in press). However, empirical studies (Goldsmith & Wu, 2006; Murnion & Healy, 1998) have found that geography continues to play an important role in online communication. After all, every computer (or any other Internet gear) has a location, so does the person before the monitor. The Internet redefines space "very much like railways defined 'economic regions' and 'national markets' in the industry economy" (Castells, 2000, p. 443). It's a mutual process. While the railway redefines space, geographic properties such as terrain, distance, and community also defines the shape of a railway system. Likewise, these geographic properties also shape the Internet and online communication. In this present study, the author would argue that the geographic location of the online news organizations is another factor affecting the linking pattern of the network of online news

production in China. This effect transpires through each single action of preferential attachment by portal editors.

In this study, there are three values of the variable of geographic location: the Big Three, provincial capitals and municipalities, and other cities. The Big Three refers to the cities of Beijing, Shanghai and Guangzhou. Beijing is the national capital. Shanghai is the economic capital; Guangzhou has served for more than 30 years as the frontier of economic reforms and media center where the most alternative voices and deviant ideas from Beijing would be found in mainland China. By 2006, the Big Three accounted for 3.6% of national population, 11.4% of national GDP, and 45% of advertising revenue (Lee et al., 2006, p. 587). Provincial capitals are media centers of each province. In the old party-press system, each level of the government administration had its own propaganda apparatus. The two pillars comprising this party-press system were state media, usually located in Beijing, and the province level media located in the capital cities of each province. That made province capital cities regional media centers. Even after all these years of reforms, capital cities' status as regional media centers remains. Actually, most capital cities are also the political, economic, and population centers of their provinces. Municipalities are a special kind of city. Each municipality has the same political status as an entire province. They are all giant metro centers. There are only four municipalities in China: Beijing, Shanghai, Tianjin and Chongqing. Since Beijing and Shanghai are grouped as part of the Big Three, Tianjin and Chongqing are left with the province capitals. Both of them are also regional media hubs. There are cities that are neither province capitals nor municipalities and yet influential, such as Shenzhen, Suzhou, and Dalian. However, none of them are media hubs like the province capitals. Therefore,

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all other cities are grouped together. There is not a single news organization based in the rural areas. After all, the media industry belongs to urban society. In summation, in China's current media system, the Big Three are national centers, provincial capitals are regional hubs, and other cities are ordinary nodes.

It is reasonable to expect that the commercial portals' geographic linking pattern reflects the reality of the geographic distribution of media in China. That is, media from the Big Three receive the most number of links from commercial portals, followed by media from the province capitals and municipalities. Media from the other cities are not likely to receive very many links. Therefore, the next hypothesis is:

H1b: The more central a media's geographic location is the more links it

receives from the commercial portals.

To test hypotheses H1a and H1b, the researcher proposes a multiple regression model:

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 \qquad\qquad (4)$$

Where y is the number of links that a website has attracted. x_1 (type) is the

type of news organization behind the website. x_1 has two values: 1=organ

medium; 2=commercial medium. x_2 (site) is the geographic location of

the medium behind the website. x_2 has three values: 1= Big Three;

2=provincial capitals and municipalities; 3=other cities.

This multiple regression model will test whether the media type and geographic location of each news organization are two predictors of the number of links this news organization receives from the commercial portals.

According to Pan (2000), the structural dichotomy of China's media system has developed into that of a "core" and "periphery zones". Party ideology, politically sensitive issues, and organ media all belong to the "core", while market competition, entertainment news, and commercial media comprise the "periphery zones". Consistent with Pan's argument, hard news is core and soft news is peripheral in nature. Could news type be a factor that moderates the preferential attachment decisions of portal gatekeepers? Do the portals link organ media for hard news and link commercial media for soft news? Does this core peripheral dichotomy apply to geography? Big cities are in the core and therefore associated with hard news? Remote places are peripheral and therefore associated with soft news? Before proposing any hypothesis, let's first take a look at the distinction between hard news and soft news.

The most basic distinction of news types is a dichotomy: hard news and soft news. Scholars from various traditions of inquiry have approached this distinction (Baum, 2002, 2003; Boczkowski, 2009; Britannica, 2007; Carroll, 1985; Lehman-Wilzig; & Seletzky, 2008; Patterson, 2000; Scott & Gobetz, 1992; Tuchman, 1972; Whetmore, 1987). Hard news is characterized as having high level of newsworthiness (Tuchman, 1972). Factually based (Whetmore, 1987) and public affairs related (Boczkowski, 2009), it demands timely publication (Carroll, 1985; Smith, 1985). Hard news is often presented in primary news space, such as the front page of a news paper, the prime time of television or the homepage of a news website(Baum, 2002, 2003). Examples of hard news include stories of public policies, economics, social events, science and technology, disasters, major accidents, etc. (Patterson, 2000; Poindexter & Harp, 2007). Scott & Gobetz offer a definition of hard news that identifies it as "any story that focuses on issues of ongoing

policy consideration, factual accounting of current public events, or social issues and controversies that concern members of the audience" (1992, p. 408). Another definition from Patterson states that "Hard news refers to coverage of breaking events involving top leaders, major issues, or significant disruptions in the routines of daily life, such as an earthquake or airline disaster. Information about these events is presumably important to citizens' ability to understand and respond to the world of public affairs" (Patterson, 2000, p. 3).

Plainly defining soft news proves more difficult, although scholars and media professionals clearly have some notion of soft news when they use the term. In some cases, soft news simply is defined as the residue of hard news. Immediately following her definition of hard news, Patterson stated that news that is not hard is, "by definition, 'soft'" (Patterson, 2000, p. 3). With that said, Patterson and other scholars did attempt to give some better clues of what soft news is(Lehman-Wilzig; & Seletzky, 2008; Patterson, 2000; Poindexter & Harp, 2007; Scott & Gobetz, 1992), although these clues are often given as the opposite of hard news. Soft news is characterized as opinion-involved and subjective (Lehman-Wilzig; & Seletzky, 2008), sensational (Patterson, 2000), and off beat and colorful (Scott & Gobetz, 1992). Examples of soft news include stories about trends, personalities, or lifestyles (Poindexter & Harp, 2007), gossip, local scandal (of a social variety), and human interest stories, which has "little ramifications beyond their immediate circle"(Lehman-Wilzig; & Seletzky, 2008, p. 3) and does not require timely publication (Boczkowski, 2009). According to Patterson (2000), any news that meets the following three criteria is soft news: (1) news that has no clear connection with policy

issues; (2) news that is sensational, human-interest related, or incidence-based (such as a disaster or crime); (3) news that is more personal, subjective and less institutional.

There has been an increase of soft news in news production in the United States in the past three decades (Patterson, 2000; Scott & Gobetz, 1992), an increase due to the entertainment value of soft news. News organizations produce more soft news as a strategy to attract audience and to win more market share.

From the definition and description above, it is clear that the hard news and soft news dichotomy is consistent to Pan's dichotomy of core and peripheral. Hard news belongs to the core and soft news belongs to the peripheral zones. One can reasonably expect that hard news is associated with organ media and central locations while soft news is associated with commercial media and more remote places.

H2a: News from organ media is more likely to be hard news while news

from commercial media is more likely to be soft news.

H2b: News produced in the Big Three is more likely to be hard news while news from other places is more likely to be soft news.

Chapter 5

Methodology

This chapter offers a content analysis of news from China's commercial portals. The focus of this study is not so much on the contents, but on linking cues imbedded in the contents. It is not really about the commercial portals, but the landscape of online news as constructed by the portals.

Methodological difficulties

This is a study about the distribution of links in the cyber news space. The most ideal approach would involve taking the Webpage as the unit of analysis, recording the number of links that each Webpage attracts, and even tracking the pattern of "who's linked to whom." If that was possible, then I could extensively and accurately map the cyber news space. Unfortunately, reality proves far more complicated, and the road to truth is rarely so straightforward. There are three major methodological difficulties that complicate this current study. These difficulties, and methods with which to cope with them, are discussed below.

The very definition of China's cyber news space poses the first difficulty. If the cyber space truly has no borders, then how to define an area that could be designated "Chinese"? No matter how virtual cyber space may look, it still has a material base. According to Castells' theory about the space of flows, the cyber news space has three layers of material support: the network of circuits and computers, the geographic spots that wired by these circuits, and the people who construct and use these circuits and computers. The Internet is global, but every computer has a geographic location.

Furthermore, people who input and retrieve information online have a location and citizenship. That makes the Internet subject to the controls of nations. The cyber space is no longer the virtual Wild West it used to be. As Goldsmith and Wu (2006) pointed out, the cyberspace is not truly borderless. As governments become more sophisticated in maintaining national borders in cyber space, scholars ask whether there is *a* cyberspace or multiple cyber spaces (Qiu, 2000). For example, the Chinese government is infamous for using firewalls to ward off "improper" information. People within the borders of China do not currently have access to common western websites such as www.facebook.com, www.twitter.com, www.youtube.com, www.picasa.com and www.flickr.com.

The second difficulty is the massive size and ever-changing nature of China's cyber news space. The Internet presents serious challenges to the method of content analysis (Neuendorf, 2002; Riffe, Lacy, & Fico, 2005). According to Neuendorf, research on online contents is "plagued by the difficulty in establishing a population and a sampling frame" (Neuendorf, 2002, p. 88). As previously stated, there are millions of Webpages published in China. Although they certainly are not all news Webpages, this figure still belies the enormous size of China's cyber news space. Moreover, this cyber news space is not static. Any given minute, there are new Webpages added and old ones deleted; new links established and old ones removed.

The third and maybe the toughest difficulty addressed by this study has is how to track the links. For any node in any network, there are two kinds of links. Those attached to yourself and those you attach to others. Researchers of the Internet (Berners-Lee & Fischetti, 1999; Brunn & Dodge, 2001; Zook, 2002) simply separate these two kinds of links as incoming links (IL) and outgoing links (OL). On the web, OLs are easily to

record: they are right there on the Webpage; but ILs are invisible to the reader of the

Webpage. Given a Webpage, how do you know how many links are attached to it?

Unfortunately, according to the network logic of Barabasi, ILs have more importance

than OLs. They are the most important index of how central a node is in a network. The

more ILs a node has, the more likely it is to become a hub. And on any network, hubs

dominate. Search engine providers like Google seem to know the trick of recording ILs.

They use the number of links that a page has attracted as an index to rank their search

results. Since the algorithm of calculating incoming links lies precisely at the heart of

what makes Google so profitable, it is no wonder all search companies want this trick up

their proverbial sleeves. Academic researchers have to look for other clues.

Content selection

Based on the reasons above, this study defines China's cyber news space as the

collection of all news Webpages published and stored in computer hosts within the

borders of the People's Republic of China, excluding Hong Kong, Macau, and Taiwan. [2]

The population of this study encompasses all news Webpages from China's top

four portals: QQ, Sina, Netease, and Sohu. These four portals are all among the top 50

most visited news websites, according to the Internet traffic tracker, Alexa

(www.Alexa.com) (2008). Unlike the United States, where the websites of traditional

news outlets remain important news providers in cyber news space, online news readers

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[2] Hong Kong and Macau used to be colonies of the United Kingdoms and Portuguese, respectively. They were only returned to China in the late 1990s. They are now China's Special Administration Regions, where highly autonomous governments are allowed. Taiwan is more controversial. China (the People's Republic of China) claims sovereignty over the island. All countries that have a diplomatic relationship with China, the UN and most of major international organizations agree with that. Taiwan has never declared independence. However, the communist government of China has never set a foot on Taiwan. The island has been self-governing under the title of the Republic of China since the Nationalists retrieved from the mainland after losing the civil war to the Communists in 1949. Hong Kong, Macau, and Taiwan all run a democratic government and a free media system, which is very different from the Mainland's.

in China regard the commercial portals as their primary online news source (CNNIC, 2010). Although most of China's traditional news outlets do have their own online version, the traffic they attract lags far behind that of the commercial portals. On the other hand, commercial portals in China are prohibited from producing original news. Rather, they are news aggregators and distributors. They constantly gather news from other news organizations to provide online readers a picture of the world. Sampling from the commercial portals' news supply may be the best way to map the landscape of online news in China.

Because of the ever-changing nature of online content, it is difficult to collect after-the-fact data, as in traditional newspaper content analysis. A practical approach adopted by researchers (Tremayne, 2001, 2003; Tremayne, 2005; Tremayne, Weiss, & Alves, 2007; Tremayne et al., 2006) involves collecting data from the Web to determine a time frame and date/time of data collection first, and then to download contents on the predetermined date/time. The present study follows this approach.

The time frame was initially set up as the spring of 2008, namely February, March, and April. However, March was excluded because there were two events that may affect the neutrality of the sample. One was the annual sessions of the National People's Congress, which took place in the first two weeks of March. These two weeks were a politically sensitive period during which the government overwhelmed the market forces in China's media practices. Normally, the government would require that media devote significant space to cover these sessions. At the same time, coverage of "negative news," such as accidents, corruption, and scandals, was minimized. So these two weeks should not warrant inclusion in the sample. The riots in Tibet are another reason for excluding

March. The March 14th riots were said to be the biggest since the Communists took power in China in 1949. Not only was domestic media coverage heavily tilted toward the controversial plateau, but once again flows of news that traversed in and out of China were under the strictest inspection. Domestic media all aligned with the government. It was not a time for any daring news organization to push the boundaries. So the two weeks after March 14th were also excluded. As the entire month of March was removed, the researcher opted to substitute the month of May. So the sampling frame of this present analysis is all news pages from QQ, Sina, Netease, and Sohu in February, April and May of 2008.

This study uses a constructed week for random sampling. Studies of sampling techniques found that one constructed week is sufficient to represent six months' content of daily newspapers, and two constructed weeks are sufficient to represent one year's content of daily newspapers (Riffe et al., 2005).The population of this study contains only three months' online content. Since this study downloads contents from these websites twice a day (at 9am and 9pm) the amount of downloaded information can be considered as equivalent to half a year's content of daily newspapers. Therefore, one seven-day constructed week should be sufficient.

For data retrieving, this study uses the software Grabasite. With Grabasite, if you input one url, then it will download all Webpages associated with that url. For example, if you type in www.auto.yahoo.com it will download all Webpages associated with auto.yahoo.com. Grabasite also allows the user to set a limit of the layers of Webpage they are going to download.

News is an important service of these four commercial portals. They all provide a special "news" section. The homepages of these news sections function like the front pages of newspapers. Much like the layout of Yahoo! News, these home pages are mainly lists of headlines. The headlines themselves are hyperlinks which, when clicked, lead the reader to another Webpage with the body of the story. There is always a *yaowen* (headline news) section which takes the top of the home pages. Headlines listed in the *yaowen* section are considered the biggest news of the day. Under *yaowen*, the sites list news headlines in different categories: such as politics, business, science, social news, sports, entertainment, etc. Only a fraction of news in each category can have their headlines listed in these homepages. In each category, there is a small hyperlink *genduo* (more), inviting readers to click in for the complete list of news in this category for a more visual presentation of the layout of the news section homepages). Each portal constantly updates their stories. The flows of news are enormous. For the sake of efficiency and convenience, traditional content analyses of news papers often sample only the front page stories. Similarly this study only includes stories that have at least a headline listed in the news homepages, where stories have the best chance to reach audiences.

The url of these homepages are constructed as: news.PortalName, such as news.sina.com.cn, news.163.com, news.sohu.com, and news.qq.com. With some simple specification, Grabasite automatically starts downloading all Webpages whose urls begin with news.PortalName. This study only allows two levels of downloading. That is, only the news homepage and stories that are given a headline in the homepage are downloaded. Many stories run more than one Webpage. Then only the first pages of these stories are

collected. There are also news Webpages whose urls begin with a more specific topic, such as finance.PortalName, or sports.PortalName. These Webpages are similar to the "inside" pages of newspapers. They construct a softer zone for more comprehensive coverage on specific topics. News, opinions, blogs, and archives all can be found here. Since Webpages of this kind are not given the front-page salience and it is hard for the software to distinguish news from opinions, they are all excluded from the sample. This study only includes texts; it excludes all pictures and multimedia contents for the sake of clarity.

There are a total of 4751 news Webpages downloaded in the constructed week. Then the researcher took a random sample from these 4751 Webpages by selecting every fourth story. The result is a sample of 1187 stories. After cleaning, the sample contains 962 stories. Table 1 shows that Sina is the biggest online news provider, followed by Netease, then by QQ and Sohu.

Table 1: News distribution among portals			
	Frequency	Percent	Valid Percent	Cumulative Percent
Sina	409	42.5	42.5	42.5
QQ	187	19.4	19.4	62
Netease	218	22.7	22.7	84.6
Sohu	148	15.4	15.4	100
Total	962	100	100	

The Operationalization of coding categories

The last methodological difficulty of this analysis, as mentioned above, is how to define links operationally and how to track the links. One way to cope with this difficulty is to track the obvious clue: the hyperlinks imbedded in Webpages, like Tremayne (2003; 2005) has done. This approach has two limitations. Firstly, it could only track outgoing

links. There is no way of discerning how many incoming links a Webpage attracts, not to mention how to further analyze the linking pattern. Secondly, as Tremayne (2003) has found, online news organizations are increasingly becoming gated communities where only in-site links are allowed. Out-of-site links once used to provide contextual information are substituted with links leading to in-site archives. That personifies exactly the situation with news Webpages from China's commercial portals.

Fortunately, there is another clue. All these news Webpages from the portals provide a link to the online news organization that originally produced a story. On each news Webpage, just below the headline of the story, there is this link to the original publisher of that story. Since any story in this study comes with one and only one of such kind of link, this study's unit of analysis is called a story link: a story with a link. Although this is still an outgoing link that provides no information on how well-linked a story is, we can learn how well-linked an online news organization is by recording and compiling these links. Once obtaining that information, it is also possible to discern the hubs, ordinary nodes, and by-passed nodes of China's cyber news space as reflected in the commercial portals' daily news provision. This information also enables further analysis of the portals' preferential attachment. What makes online news organizations hubs or by-passed nodes in China's cyber news space? This analysis may provide some clues.

To compile the information about the distribution of links among online news organizations, the coders must record the titles of the original publishers. Once the original publisher of each story is tracked, it is easy to learn how many links each online news organization has received within the sample.

This study proposes two possible factors that may affect on a commercial portal's linking decisions: the media type of each online news organization and its geographic location. Media type is coded into two categories: Party organ and commercial medium. In China, although all media are state-owned, some are explicitly designated as 'Party organs' (e.g. the official People's Daily and the "organ paper" in each province of municipality) (Pan & Chan, 2003). One can easily check a party organ's identification by checking its mission statement. If a news organization is party organ, it usually explicitly states its association with certain Party or government branch. Commercial media is defined as everything but Party organs. Therefore, all non-organ media belong in this category.

The factor of geographic location has seven categories: Big Three, province capitals and municipalities, other cities, rural areas, foreign, other, and, the last category, HK, Macau and Taiwan. Big Three refers to the big mega media centers of China: Beijing, Shanghai and Guangzhou. The category of province capitals and municipalities includes the 27 province capitals (not including Guangzhou) and the rest two municipalities (not including Beijing and Shanghai). These 29 cities are backbones of China's media system and regional media centers. All other cities, big or small, are all coded as "other cities." The remaining four categories are self-explanatory.

There is another geographically related variable: spot, which refers to the place where a story actually happens. The values of this variable are the similar to these of the factor of geographic location: Big Three, province capitals and municipalities, other cities, rural areas, other, and the last category: HK, Macau and Taiwan. The only difference is that the category of foreign is removed here.

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This study also explored the relationship between news type and media type, and between news type and production site. There are only two categories of news type: hard news and soft news. The researcher uses the definition from Scott and Gobetz for hard news: "any story that focuses on issues of ongoing policy considerations, factual accounting of current public events, or social issues and controversies that concern members of the audience" (1992, p. 408). This study also explored the relationship between news type and media type, and between news type and production site. This study uses Patterson's (2000) definition of soft news: the residue of hard news. Any news not qualified as hard news is coded as soft news.

Lehman-Wilzig; & Seletzky (2008) discussed one methodological weakness of using the distinctions of hard news and soft news. That is the gross way of measuring "soft news". "In brief, whatever is not 'hard' news is ipso facto defined as 'soft' news and vice versa"(p. 8). They proposed adding another category: "general news" as a buffer between the two poles of "hard" and "soft". However, as Patterson (2000) pointed out, media professionals and scholars clearly have some notion of soft news. They may not be able to define soft news plainly but they still can sort stories into their respective correct categories of the dichotomy. Adding another category of "general news" will not likely better clarify the distinction. A better way to reduce the ambiguity of the distinction is to follow Patterson's (2000) three criteria of soft news: (1) news that has no clear connection with policy issues; (2) news that is sensational, human-interest related, or incidence-based (such as a disaster or crime); (3) news that is more personal, subjective and less institutional.

If a story is a piece of foreign news, requirements dictate that the coders record from which country the story comes. The "demographic" information of each story (its file name as downloaded, the date of this story, the name of portal where it is collected, and whether it is a news story) is also recorded. And these "demographic" categories are placed at the top of the code book.

The two coders recruited for this content analysis both are Chinese online news readers familiar with the content and layout of the portals news. This study calculated the "percent agreement"(Riffe et al., 2005, p. 149) for intercoder reliability. Riffe and colleagues (Riffe et al., 2005) pointed out that a random selection of about 10%-25% of the content samples is adequate for reliability testing. Therefore, in this study, two coders worked on 10% of all the 1,500 stories to test intercoder reliability, with 83% agreement. The intercoder reliability by variable is available in appendix B.

Chapter 6

Results

Descriptive analysis

The concentration of story links

A total of 154 news organizations are linked by the portals. To find an answer to research question one, this study plotted the number of news organizations against the number of story links each organization received and got a graph similar to the graph of power law distribution. As Figure 4 shows, two news organizations have attracted a lot more story links than others. They are the two official news agencies of China: Xinhua News agencies and China News Net. Two hundred stories from Xinhua News Agency were republished, accounting for about one fifth of the entire sample. Another 154 stories, slightly less than one sixth of the entire sample, came from China News Net. Together, these two news agencies contributed about one third of the total stories that the portals publish each day. Since Xinhua News Agency and China News Net have too many story links, Figure 4 does not illustrate very clearly the distribution of story links among other news organizations.

Figure 4: Distribution of story links among news organizations
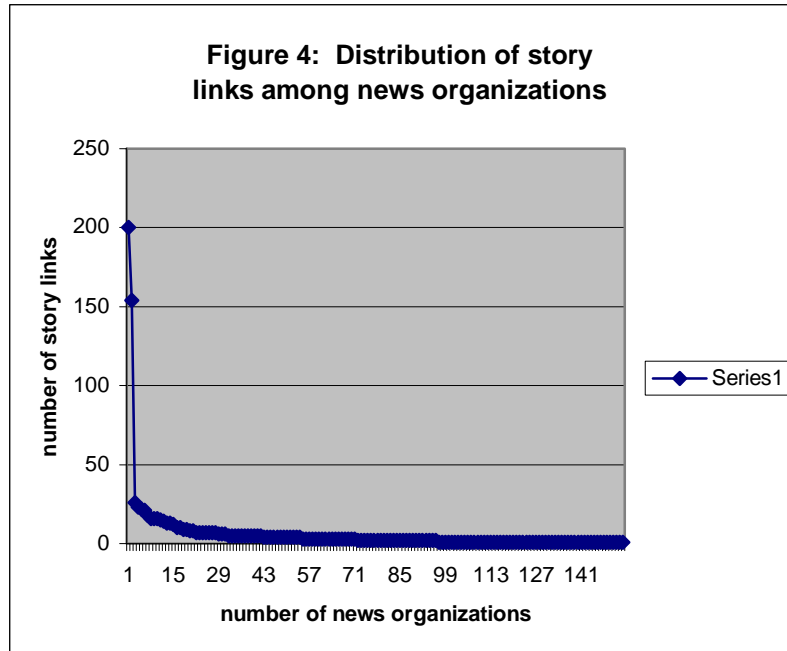
Figure 5 is a close-up of figure 4. With two news agencies removed, Figure 5 illustrates that the distribution of story links among other news organizations still conforms to the power law. Only a handful of organizations received more than 20 story links. The curve takes a sharp turn to become rather flat when the number of story links per organization sits around eight. Most of the new organization receives less than eight story links. More than one third of the total number of news organizations received only one link.

Figure 5: Distribution of story links among news organizations (wire services removed)
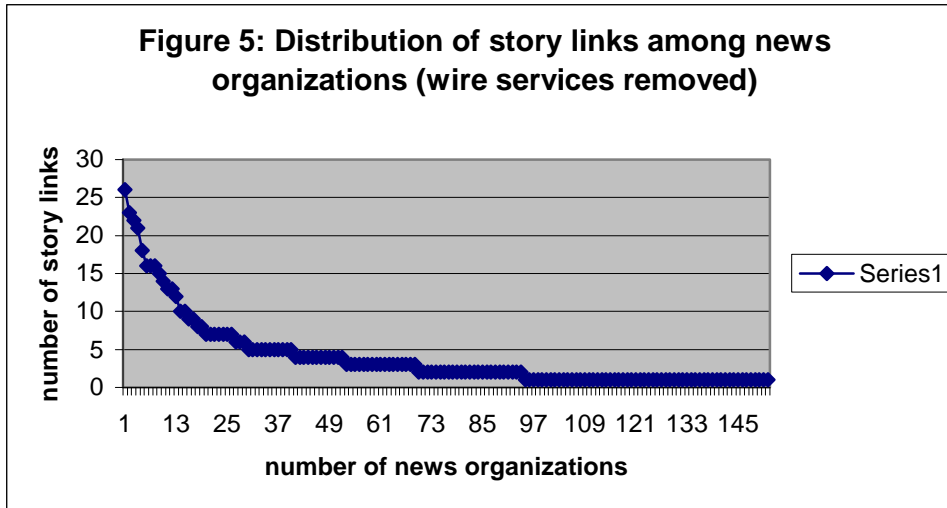
The next task involves looking for the hubs of the network of online news production. Research question number two queries: Which news organizations received the most story links? Table 2 lists news organizations that have received at least eight story links. Also included in this table are media type (whether it is an organ media or a commercial medium) and the geographic location of each media (labeled as production site). Clearly Xinhua News Agency and China News Net are primary hubs. They are followed by five media, all of which has more than 20 story links. They include the People's Daily, the official organ media of the Communist Party of China (CPC), located in Beijing; and Guangzhou Daily, the organ medium of the Guangzhou CPC branch, located in the southern city of Guangzhou. The other three are all commercial media, two from Beijing, one from Guangzhou. These 19 news organizations in Table 2 accounted for 614 story links sampled, more than 64% of the grand total. The rest of the 132 news organizations share the rest of 348 story links, for a grand total of 962 story links.

Table 2: The most frequently linked online news organizations					
Chinese title	English title	Story links	rank	Media Type	Production site
新华社	Xinhua News Agency	200	1	official news agency	Beijing
中国新闻网	China News Net	154	2	official news agency	Beijing
人民日报	People's Daily	26	3	Organ	Beijing
南方都市报	Southern Metropolitan News	23	4	commercial	Guangzhou
环球	Globe	22	5	commercial	Beijing
广州日报	Guangzhou Daily	22	6	organ	Guangzhou
新快报	New Express	21	7	commercial	Beijing
京华时报	Beijing Times	16	8	commercial	Beijing
国际在线	International Online	16	9	commercial	Beijing
现代快报	Modern Express	16	10	commercial	Nanjing
中国日报	China Daily	15	11	organ	Beijing
成都商报	Chengdu Business News	14	12	commercial	Chengdu
中国网	China Net	13	13	commercial	Beijing
东亚经贸新闻	East Asia Economic and Trade News	12	14	commercial	Changchun
南方网	Southern Net	10	15	commercial	Guangzhou
新闻晨报	Morning News	9	16	commercial	Shanghai
海峡都市报	Strait Metropolitan Times	9	17	commercial	Xiamen
新民日报	Xinmin Daily	8	18	commercial	Shanghai
东方网	Oriental Net	8	19	commercial	Shanghai
subtotal	Top 19 organizations	614	\	\	\
total	Other organizations	348	\	\	\
grand total	All organizations	962	\	\	\

The third research question centers on the geographic location of media linked by China's commercial portals. These geographic locations are labeled as production sites: cities where news stories are produced. This study includes 31 production sites. A link to the production site is defined as one instance in which a story produced in this city was chosen by the portals. Xinhua News Agency and China News Net are national news agencies headquartered in Beijing. They have bureaus all over China and in foreign countries. It is hard to tell where a news agency story is produced. So the analysis of the distribution of story links among production sites does not include the news produced by these two agencies. According to Figure 6, the distribution of story links among

production sites also shows a pattern of power law: one city is the absolute leader; another city takes about half as many story links as the leader; a third city again takes about half of what the second has; and the rest of all cities receive only scant story links. The curve drops sharply at first, and then it turns rather flat after the third nod, forming a heavy tail.

Figure 6: Distribution of story links among production sites

number of story links (y-axis): 0, 50, 100, 150, 200, 250

number of production sites (x-axis): 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31

Series1
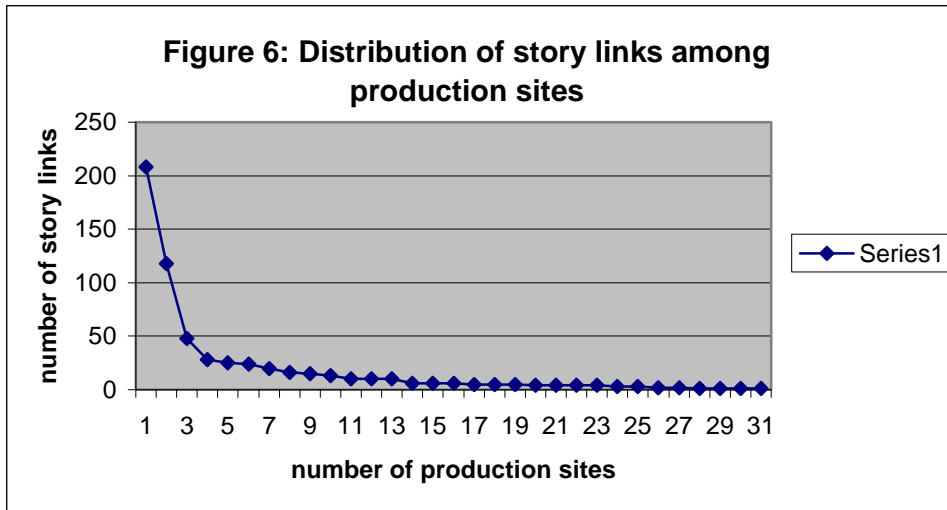
Table 3 shows the rank of news production sites (by number of story links received), which answers research question number four. This analysis excluded story links two wire services: Xinhua News Agency and China News Net because these two wire services have multiple production sites nationwide. It is impossible to identify the production site of any story from Xinhua and China News Net from the acquired data. The analysis of the other story links shows that Beijing as the national center of news production. More than 200 stories produced in Beijing were republished. Guangzhou is the second, receiving more than 100 story links. Shanghai had much fewer story links, only 48. Overall, the Big Three are absolute centers of news production. Together, they produced 374 stories, more than half of the national production. Province capitals are regional hubs. There are 27 province capitals in China, 21 of which are included in this

sample. They received a total of 189 story links, which means each province capital averaged nine story links. The city of Chongqing, a municipality in the southwest of China, also earned hub status. The other cities are marginalized in the network of news production. Only five cases from the category of "other cities" are included. And they only received 18 story links altogether. Furthermore, 10 of these 18 story links came from the group outlier: Xiamen. It is one of the five special economic zones designated in the early 1980s, and a city only a strait across from Taiwan. Another surprising from table 3 is that Shenzhen, the once alternative media center and one of the top advertising revenue earners in China, received only one link.

Findings from table 3 (next page) reveals that the old party press system still constitutes to be the backbone of China's network of news production. Despite 30 years of commercialization, most news production stems from Beijing and province capitals. Guangzhou is the only major exception.

Table 3: Rank of Production Sites			
In English	In Chinese	type of city	Frequency
Beijing	北京	Big Three	208
Guangzhou	广州	Big Three	118
Shanghai	上海	Big Three	48
Chengdu	成都	province capital	28
Nanjing	南京	province capital	25
Chongqing	重庆	municipality	24
Changchun	长春	province capital	20
Hangzhou	杭州	province capital	16
Zhengzhou	郑州	province capital	15
Changsha	长沙	province capital	13
Fuzhou	福州	province capital	10
Kunming	昆明	province capital	10
Xiamen	厦门	other cities	10
Guiyang	贵阳	province capital	6
Nanchang	南昌	province capital	6
Xian	西安	province capital	6
Lanzhou	兰州	province capital	5
Nanning	南宁	province capital	5
Wuhan	武汉	province capital	5
Haerbin	哈尔滨	province capital	4
Hefei	合肥	province capital	4
Jinan	济南	province capital	4
Qingdao	青岛	other cities	4
Shijiazhuang	石家庄	province capital	3
Tianjin	天津	municipality	3
Baoji	宝鸡	other cities	2
Shenyang	沈阳	province capital	2
Haikou	海口	province capital	1
Lasha	拉萨	province capital	1
Leshan	乐山	other cities	1
Shenzhen	深圳	municipality	1
subtotal	all above	\	608
national wire services	multiple sites	\	354
grand total	all production sites	\	962

Province analysis

The following is a province analysis that answers research question number five. According to table 4, six provinces or municipalities qualify as media hubs. They are Beijing, Chongqing, Guangdong, Jilin, Shanghai, and Tibet. Both the CPQ and CRQ of these provinces and municipalities are higher than one, which means strong production

and strong representation in China's cyber news space. Among them, Beijing is the absolute center. Its CPQ and CRQ are much higher than the rest of the provinces. It is a little surprising that Guangdong province does not have a very high CPQ or CRQ given the fact that the city long has had a strong media industry. Studies(Lee et al., 2006; Tunstall, 2007) suggest that Guangzhou, the capital city of Guangdong, is an important site of news production, second only to Beijing, a suggestion confirmed by the present study. Data from table 4 shows that Guangzhou ranked as the number two production site among all cities within this study. Both CPQ and CRQ from Guangdong are probably diluted by the size of its online population. With more than 18 million Internet users, Guangdong holds by far the largest online population among all provinces (almost two thirds more than the second province: Shandong). Three of the four municipalities entered this category: Beijing, Chongqing and Shanghai, whose locations lay in the north, southwest, and east of China, respectively. Tianjin is the only municipality that ranked as an average node. This may due to the fact that Tianjin is geographically too close to the national media center, Beijing. There are only about 75 miles between these two cities. In the age of Internet, this distance is negligible and it explains how the media power from Beijing overshadowed Tianjin. It appears that Beijing, Shanghai, Chongqing and Guangzhou made the four poles of China's media map, both in terms of production and representation. Beijing is the absolute national center, and the other three are regional hubs. There also are two unexpected provinces in this category: Jilin and Tibet. Tibet's inclusion makes more sense: its online population is too small. With merely 160 thousand online users, Tibet gets a fairly good pair of CPQ and CRQ ratings, even though it only scores once both in terms of production and representation. The province of Jilin does not

house a very big online population, but it still gets a good number for production and representation. Since there is no literature or data which suggests that Jilin holds more media power than other provinces, it is probably a random error that it scores better on CPQ and CRQ.

	Internet users (in the thousands)	story links	times of representation	CPQ	CRQ	type
Table 4: Province connection analysis						
Beijing	4,680	208	141	10.01	7.08	media hub
Chongqing	2,200	24	23	2.46	2.46	media hub
Guangdong	18,310	119	79	1.46	1.01	media hub
Jilin	2,710	20	21	1.66	1.82	media hub
Shanghai	5,100	48	33	2.12	1.52	media hub
Tibet	160	1	1	1.41	1.47	media hub
Fujian	5,160	20	19	0.87	0.87	average nodes
Guangxi	3,740	5	5	0.3	0.31	average nodes
Hainan	1,170	1	2	0.19	0.4	average nodes
Hebei	6,310	3	12	0.11	0.45	average nodes
Heilongjiang	3,660	4	4	0.25	0.26	average nodes
Henan	5,170	15	19	0.65	0.86	average nodes
Hubei	5,320	5	22	0.21	0.97	average nodes
Hunan	4,080	13	23	0.72	1.32	average nodes
Inner Mongolia	1,600	0	2	0	0.29	average nodes
Jiangsu	10,270	25	21	0.55	0.48	average nodes
Jiangxi	2,850	6	8	0.47	0.66	average nodes
Liaoning	4,830	2	10	0.09	0.49	average nodes
Ningxia	420	0	0	0	0	average nodes
Qinghai	370	0	1	0	0.64	average nodes
Shaanxi	3,950	7	9	0.4	0.54	average nodes
Shandong	11,260	8	16	0.16	0.33	average nodes
Shanxi	3,800	1	6	0.06	0.37	average nodes
Sichuan	6,900	29	28	0.95	0.95	average nodes
Tianjin	2,600	3	7	0.26	0.63	average nodes
Zhejiang	9,770	16	16	0.37	0.38	average nodes
Anhui	3,370	4	15	0.27	1.05	Importer
Gansu	1,520	5	7	0.74	1.08	Importer
Guizhou	1,420	6	9	0.95	1.49	Importer
Xinjiang	1,550	0	8	0	1.21	Importer
Yunnan	2,750	10	16	0.82	1.37	Importer
total	103,840	188	285	/	/	/

The majority of the provinces (20 out of the 31) fall into the category of ordinary nodes. Both the CPQ and CRQ of these provinces are lower than one, which means that these provinces do not produce strong media content, rendering their representations in the cyber news space weak. They are just ordinary nodes in the network of news production. Somehow they maintain a balanced production and representation, albeit neither is very high. Yet some nodes in this category are different than their peers'. Note that Inner Mongolia, Ningxia and Qinghai all have scores of zero in CPQ or CRQ (Ningxia scores zero for both). That clearly indicates that these provinces are media poor. They do not produce many stories and are not represented very often in China's cyber news space. In the new hierarchy of centrality, those scored zero are lowest.

The importer group includes Anhui, Gansu, Guizhou, Xinjiang, and Yunnan. These provinces are production weak (CPQ) but somehow have better representation. While the production side of these provinces is weak, they attract media from other provinces (probably national media from Beijing) to cover stories that happened within their borders. They do not contribute much to China's cyber news space but still maintain visibility. They are labeled as importers because they tend to import coverage instead of producing their own.

The last group is called exporters, the opposite of the importer group which has stronger production combined with weaker representation. However, there is no province eligible for this category. If a place has a strong media industry, it is bound to be represented frequently in the cyber news space. After all, media professionals concentrate in the base of their organizations. It is much more convenient for them to find stories near home.

Note that data from table 4 are too rough to yield definitive conclusions; this table does provide an initial division of provinces into useful ideal types.

The gatekeeping of foreign news

Foreign stories accounted for about one-third of all stories sampled (962). However, one-third of these 297 stories are from a single news provider: the Xinhua News Agency. Another 52 stories are from another wire service: China News Net. These two wire services provided half of all foreign news (Table 5). Therefore, although there are lots of foreign news stories on China's network of online news, the main producers still remain the two official wire services: Xinhua News Agency and China News Net. This answers research question number six.

Table 5: Most linked foreign news providers		
news organization	count	percentage
Xinhua News Agency	104	35
China News Net	52	17.5
Others	141	47.5
Total	297	100

Research question number seven asks where the 297 foreign stories come from. As Table 6 shows, most of the foreign stories are from the United States. There are 73 stories that originated in the United States. Japan ranked second with 24 stories, followed by the United Kingdom (21 stories) and Iraq (16 stories).

Table 6: Most linked foreign countries		
country	count	percentage
US	73	24.6
Japan	24	8.1
UK	21	7.1
Iraq	16	5.4
other	163	54.8
total	297	100

Results of hypotheses testing

This study proposed two factors that may affect the commercial portal's decisions of preferential attachment: media type and each news organization's geographic location (labeled as site). The author made the hypotheses that the more heavily linked online news outlets are commercial portals; and the more central a news organizations geographic location is, the more story links it receives from the commercial portals. The following multiple regression model was proposed to test these hypotheses.

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2$$

Where y is the number of story links that a website has attracted. x_1 (type) is the identification of news organization behind the website. x_1 has two values: 1=organ media; 2=commercial media. x_2 (site) is the geographic location of the medium behind the website. x_2 has three values: 1= Big Three; 2=provincial capitals and municipalities; 3=other cities.

The results (table 7) show that the coefficient of the predictor x_1 (type) is not statistically significant. This does not support H1a because the commercial variable was excluded from the model. Whether a website is a commercial medium or an organ medium does not impact the number of attracted story links.

The coefficient of the predictor x_2 (site) is significant. Site is a predictor of the number of story links that a news organization receives from the commercial portals. News organizations located in Big Three attracted more story links than those located in province capitals and municipalities, whereas the news organizations located in the big

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cities have attracted more story links than those located in small cities. Therefore, the
more central a news organization's location, the more likely it will attract story links
from the commercial portals. H1b was supported.

Table 7: Regression of the number of story links		
Predictor	Coefficient	T
Constant	**7.017	3.39
Type	-0.009	-0.01
Site	*-1.756	-2.31
*p<.05, **p<.01		

The second groups of hypotheses encompass the association between news type
and media ID and the association between news type and spot. Table 8 shows that there is
more soft news than hard news. Stories from organ media are more likely hard news,
while stories from commercial media are more likely soft news. H2a is supported.

Table 8: Cross-tabulation of news type vs. media type			
	organ media	commercial media	Total
hard news	174 (52.4%)	222(35.2%)	396 (41.2%)
soft news	158(47.6%)	408 (64.8%)	566(58.8%)
total	332(100%)	630(100%)	962(100%)
$\chi^2 = 26.47$, d.f.=1, p<.01,			

In the analysis of news type and spot, province capitals and municipalities and
other cities are combined to create the "cities" group. Again, foreign news was removed
because it lacks relevancy here. Table 9 shows that news produced by media located in
Big Three are more likely to be hard news while news from media located in cities and
rural area are more likely to be soft news. H2b is supported.

Table 9: Cross-tabulation of news type by spot				
	Big Three	cities	rural area	total
hard news	114 (52.8%)	79 (24.9%)	8 (15.7%)	201(34.4%)
soft news	102 (47.2%)	238 (75.1%)	43 (84.3%)	383(65.6%)
total	216(100%)	317(100%	51(100%)	584(100%)
$\chi^2 = 52.581$, d.f.=3, p<.01,				

Chapter 7

Discussion

The concentration of news production

The findings of this study confirm the power law distribution of news production and distribution in China's cyber news space. A small number of hubs grab the most story links while the majority of nodes must share the rest. Both the distribution of story links among news organizations (figure 4 and figure 5) and the distribution of story links among production sites (figure 6) show a heavy tail.

Hubs sit at the center of the cyber news space, for they are the most connected. They are crucial to the flows of news in this cyber news space. According to Rogers (1995), the diffusion of news follows an S-shaped curve. A piece of news only starts to diffuse rapidly once it reaches the hubs of the news distribution network. In other words, hubs control the flows. They yield the power to determine the success of the diffusion of any given piece of news. Although the Internet was designed and constructed as a decentralized network, the emergence of hubs means that if one can control certain hubs he at least holds control over nodes directly connected to those hubs. In the cyber news space, those who control the hub sites control the production and distribution of news online, and control what online news users would perceive as the picture of the world. In that sense, hubs also are gatekeepers of the cyber news space, for gatekeeping means controlling the flow of messages (Rogers, 1995).

The findings of this present study show that two official wire services, Xinhua News Agency and China News Net, reside at the center of China's cyber news space. The

commercial portals attached about one third of the total story links to the websites of these two wire services. According to Hong (1998), official wire services are one important tool of the authorities in China for news control. News deemed as important, sensitive, or needing to be controlled is required to be covered and distributed by official wire services only. All other media are allowed merely to copy and paste what Xinhua has said and are prohibited from original reporting on this news. The fact that official wire services are primary hubs of China's cyber news space means that the Chinese government still controls the flow of news in the online environment. One important social consequence of gatekeeping is that those who control the flows of message through a gate have the most influence on the audience's cognitive map. By being the biggest gatekeeper of news flows, the Chinese government holds a strong influence over what the Chinese news readers perceive as the picture of the world and their opinions about news events.

Aside from these two news agencies, 17 other news organizations emerge as second-tier hubs. They accounted for another one third of total story links. Fourteen of the 17 news organizations are commercial media and three are organ media. As stated before, organ media are straightforward mouthpieces of the Communist Party of China and the Chinese government. Commercial media are market-oriented and more willing to cater to the needs and tastes of ordinary people. Therefore, the gatekeeping practices of commercial media are very different from organ media. The fact that commercial media make up most of the second-tier hubs signifies another important force directing the news flows on the Internet: the market. The tension and cooperation between government control and market forces has long been the theme of studies on the media in China. The

findings of this study show that government and market continue to be the forces behind the hubs' gatekeeping practices which control flows of news in the online environment.

The geographic distribution of links also shows a pattern very similar to the power law. Beijing is at the center of the network of online news production. It grabbed about one third of all links from the commercial portals. Guangzhou took approximately half of what Beijing had. Shanghai, in return, took about half of what Guangzhou had. Together, the Big Three accounted for more than half of all news produced in China's cyber news space.

It is astonishing that online news production in China is so much concentrated in the Big Three. Recall that during the early days of online news production, the Internet was acclaimed as a democratizing force (Qiu, 2000). It was predicated that it would provide more peripheral, remote places channels to have their voices heard by the entire world. Findings from this study show only the opposite: while the peripheral places do get a channel to reach out on the Internet, they also are marginalized in cyber news space because they are not linked well.

Chinese news organizations started publishing online in the late 1990s. Around the same time, Chinese media underwent a wave of conglomeration. Interestingly enough, this wave of conglomeration was initiated by the party-state of China in order to absorb the impact of globalization and to consolidate control. As a result, there were 38 press groups, eight radio and television groups and three motion picture groups in China by 2004 (Lee et al., 2006). These press groups are actually heritages of the old party-press system, in which each province holds a complete set of media (news papers, TV, radio, etc.) and host these media in its capital city. In the process of conglomeration, each

province conglomerates its media into press groups or TV groups, etc., updating the old party-press system with western management and a corporate face. Places with a strong media industry, like Beijing, Guangzhou and Shanghai, may host more than one press group. Each press group holds the dual mission of serving both the local governments and local markets. China's media system always has a strong provincial element. Although media from Beijing, Guangzhou, and Shanghai are influential, China is large enough for local and regional media to prosper in their own regional markets. However, it seems that in the cyber news space, the Big Three (especially Beijing) monopolize too many links. Stories produced in these metro nodes flood to news readers located in every corner of the vast land of China. The regional media groups, no matter how their businesses are in the offline world, are not scoring very well in the new hierarchy of centrality in the cyber news space.

Representation and the mental map

Another finding involves the by-passed places in the cyber news space: the rural areas of China. The amount of news produced in the rural area is zero, which comes as little surprise because the industry of news production is an urban phenomenon. There is no news production in the rural area. Even the *China Agriculture Daily* is produced in Beijing. That does not mean there is no news from the rural area. Media in cities are responsible for coverage of stories from its corresponding rural areas. Another measurement, place representation, is more meaningful in gauging how the cyber news space covers the real geographic space. As table10 shows, only 51 stories that happened in the rural area of China are linked by the commercial portals, accounting for only 5.3% of the total links sampled. Rural China is largely by-passed in the cyber news space. For

an online news reader from a farming or a fishing village, it is difficult to find news that pertains to his rural community. All he reads about is what happens in big cities and foreign countries. If rural areas are obscure enough in mass media, coverage of them is almost negligible in the cyber news space. If one's mental map of China is cultivated by reading news online, that mental map would be one of scattered urban nodes. The corresponding hinterlands only look vast and empty.

One interesting finding is that more than 30% of total stories are foreign. In other words, more than one third of China's cyber news space is allocated to the representation of foreign lands. Chinese media are no longer secluded mouthpieces of the Party. They do have a global perspective. However, a closer examination shows that more than half of all foreign news flow into China through two gates: Xinhua News Agency and China News Net. Producing foreign news is very costly, and therefore not all news organizations can afford a foreign bureau. It is normal for most news organizations to use stories from wire services for their foreign news page, as is the case here in the United States as well as in China. Because the two major gates through which foreign news flows in China are official wire services, the Chinese government keeps control of to what foreign news online Chinese news readers receive exposure.

The further away the origin of a piece of news, the more ambiguous the story usually is, and the easier for the gatekeepers to manipulate the news. The Internet was once believed to be the solution to this problem. Cyber space was believed to be without borders. People interested in news that happens on the other side of the Earth can easily log on to online news websites on the other side of the planet to learn about the news. Much of the misunderstanding and stereotyping caused by distance could be greatly

reduced if not erased. Findings from this study only confirm what empirical studies have repeatedly found: news does not flow free in cyber space.

Tremayne has shown organizational boundaries in cyber news space in the United States. He found that as online publishing becomes a mainstream practice, news organizations are less likely to add links to external sites in their own stories. Instead, they add links to their internal archives in their stories they require contextual information. By internal linking, news organizations make news websites gated cyber communities in and of themselves.

There also exist national borders in cyber news space, at least in the minds of the government officials of mainland China (Qiu, 2000). They imagine cyber space as divided along real-world borders where modern states rule. And certainly there are boundaries between "domestic cyberspace" and "foreign cyberspace". Their reason, according to Qiu, is simple but crucial: "so far no cyberspace can exist without tangible subsistence including the devices, the technicians, the users and the sociopolitical context in which all their nonvirtual components are put together to support and arrange the mediascape of the virtual world" (2000, p. 3). It is obvious that the Chinese government successfully maintains a national border online and controlling the domestic cyber news space of China by blocking foreign websites and providing abundant flows of foreign news through official news organizations at the same time.

Preferential attachment

When Barabasi proposes the principle of preferential attachment, he describes it as an abstract law. According to Barabasi, the better connected nodes are always preferable when new links are assigned. However, he did not explain what makes a node

better connected, other than coming to a network early. Tremayne applied the principle of preferential attachment to study news Webpages and blogs, and found factors that influence the linking behavior of nodes in the network of online news or blogsophere. The concept of gatekeeping is useful in explaining nodes' practices of preferential attachment in the network of online news production. After all, messages in cyber news space flow through links and gatekeeping has been used to explain the "differential flows of messages throughout time and space"(Shoemaker, p. 3) for over six decades. Gatekeeping theory provides the abstract rule of preferential attachment with context. It better explains why some websites are more preferable in the network of online news production.

Gatekeeping happens at different levels. The control of news flows are influenced by forces from individuals, communication routines, organizations, and to extramedia institutions. Organizational level analysis is appropriate for this study. Taking online news organizations as a node, this study examined the preferential factors in the commercial portals' linking pattern. Commercial portals are obvious hubs of news flows in China's cyber news space. The four commercial portals under study (sina.com, sohu.com, 163.com and qq.com) sit at the top of the traffic ranking of all websites in China, whereas no websites of traditional news media made the top 50 list (Wu, 2005). If online news organizations are gated cyber communities as Tremayne has discovered (2005), what stories are permitted into the gates of the commercial portals?

The commercial portals remain the most important news aggregators and distributors in the network of online news production in China. Stories available from the commercial portals provide the most representative, albeit nonrandom, sample of China's

cyber news space. The portals are prohibited from producing original news. They can only republish news from the websites of other news organizations. Each time they publish a story from one website, they build a link to that news organization. The more links a news organization has, the more central its location in the cyber news space. Likewise, each time a story form a geographic location enters the "gates" of the portals, that location is granted a link to the network of online news production. The more stories that are published by the portals from a certain place, the more links that a place accumulates, and the more central it is in China's cyber news space. Because of the portals' gatekeeping power, being linked to the portals are important to any event, place, people, or organization to be noticed by online news readers.

This study proposed two preferential factors in the commercial portals' linking pattern: type (media type) and site (the geographic location of each news organization). The reasoning was that commercial portals make gatekeeping decisions based upon their organizational values, self-identification, and their perceived audiences. The results show that whether a story is from a commercial medium or party organ does not make any difference in the portal's linking preference. The only factor that matters is the production site of the story. The commercial portals seem to overly prefer stories produced in a handful of media hotspots, especially the Big Three: Beijing, Guangzhou and Shanghai. Other cities do not score very well in terms of being linked. The rural areas are simply left out.

As one explanation for the finding that media type does not make any difference, this study only sampled the homepages of the news section. These homepages are roughly equivalent to the front pages of traditional newspapers. According to Pan (2000),

over 30 years of market-oriented reforms have created a spatial dichotomy in China's media system. On one hand, it is one of the world's most strictly controlled systems; on the other, China's is one of world's most prosperous media markets in the world. The secret to the coexistence of government control and market force is that they operate in different zones. The Party State controls what they consider as the core, and leaves the market mechanism work in the peripheral zones. This core vs. peripheral dynamic works in every facet of the media system: party organs are core and commercial media are peripheral; front pages are core and other pages are peripheral; political news is core and entertainment news is peripheral; and Beijing is core and other cities are peripheral. Note that the core vs. peripheral dynamic is anything but absolute. It more closely resembles a spectrum with two clear poles and grey areas in the middle. Although commercial portals are peripheral compared to traditional news organizations, the home pages of their news section still belong to the core zones. The editors of these commercial portals must empirically balance the controls from the party state and the pressures from market competition while select news for publishing. As a result, media type does not show any difference in terms of linking.

The study also found that commercial media are more likely to be linked for soft news and for stories produced in the more peripheral places. These findings are consistent with Pan's theory of the spatial dichotomy of a "core" and "periphery zones" in China's media system. That is to say, the cyber news space in China is very much like the offline media system in China. The Party State affects the flows of news by controlling the hubs sites. Its primary strategy is focusing on the core and letting go of the peripheral zones. As the web grows, the Chinese government gets more sophisticated at administrating

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cyber news space. Commercial portals, just like the majority of news organizations in China, feel the pressure from the Party State. The government is certainly a factor influencing the gatekeeping practices of the online news organizations.

With all that said, one can not overlook the power of the peripheral zones. Rogers (2000) found that some peripheral nodes are critical to the diffusion of innovation. These nodes are not well connected in a certain network but have the sole or few connections to another network. They are important bridges to the world outside. Peripheral zones are usually located far away from the core where the influences from the core are the weakest. Therefore, peripheral nodes are the most likely to introduce fresh ideas or information from outside a network or simply to be the origin of innovation themselves.

The cyber news space is not built in the air. Its roots, such as news professionals, news organizations, and wires all are thoroughly material. Thirty years of market-oriented reform has not build a western style media system in China, but it has brought a modern media industry and changed Chinese people's perception of the world forever. Likewise, the Internet is not likely to bring free flows of news to Chinese people, but it has established a new media order in cyber-space: portals have replaced traditional news organizations as people's primary approach to online news. As the government, news organizations and news readers all try to adapt to the online environment, change is taking place.

Diffusion of news on the Internet

Some say that the Internet is bringing down gates of news makers and empowering ordinary folks (Gillmor, 2004). True. The Internet is a fundamentally democratic platform, on which anyone can link to anyone. It is a global network with no

center. Anyone can post a piece of news online that can reach a global audience without the assistance of any news organization. The barriers of news diffusion such as organizational boundaries, national boarders, and geographic distances can now be breached or bridged with one small link.

According to Rogers' (1995) theory on the diffusion of news, the diffusion rate of a story spikes if and only if it reaches a mass medium. It is critical to the success of the diffusion of any story in the modern society whether or not it is being published by formal news organizations. Is the Internet making the S-shaped curve of news diffusion obsolete? Maybe and maybe not.

Yes, the Internet provides a particular message the opportunity to bypass formal news organizations to reach the masses. When anyone who receives an exciting story passes it on to ten friends through email, or twitter, or facebook, or YouTube, or instant messaging, or text messages, or whatever any of the convenient ways the Internet provides us information, maybe there is no sudden spike of diffusion and the story still disseminates quickly. However, no matter how exciting or inspiring this person-to-person transmission of news is, it does not characterize online news diffusion. As long as well-connected hubs exist in a network, the diffusion of news in this network is likely to follow the S-shaped pattern as described by Rogers. Because hubs are well-linked, they have the potential to pass on any message to many other links at once.

The Internet is a network dominated by hubs (Adamic, 1999; Albert, 1999; Barabasi, 2002). In his study of links and news webpages, Tremayne found (2003) that a small number of pages have hundreds or even thousands of links while the majority of pages has very few. That provides empirical evidence that hubs do exist in the network of

online news production. The findings of this study confirm the concentration of links and the importance of hubs. It is another piece of evidence that Roger's S-shaped pattern of news diffusion still holds relevance in the age of the Internet.

Gatekeeping of links

Links provide perhaps the most pivotal resource online. The more connections one has, the more affluent one is. How do hubs emerge? In a network where anyone can link to anyone, casting links to other nodes is like casting votes. The collective linking actions of individual nodes make some nodes hubs. It is necessary to distinguish incoming links (links that a node attracts) and outgoing links (links that nodes attach to other nodes). Incoming links bring in traffic and attention. Hubs are privileged because they have a lot of incoming links. Outgoing links re-direct traffic and attention. Although any node can send outgoing links to others, links from hubs carry much more weight than links from an ordinary node, an obvious example of which is Google. As one of the most connected sites on the Internet, Google enjoys the highest traffic of all sites(Alexa, 2010). As a search engine, Google provides lists of outgoing links to other webpages. Ranking high on Google's searching results is so important for any site that desires traffic that many sites compete for a top spot of Google's searching results. The same holds true for Yahoo. An essay by Association for Computing Machinery (Jun2006) found that online news outlets manipulated their headline composition so that their stories could rank higher in the likes of Google and Yahoo. A link (especially a well placed one) from search engine giants and major portals are just too valuable to miss. The major hubs of the Internet have become the gatekeepers of links.

Google and Yahoo differ even from each other. Google makes its linking decisions based on algorithm but Yahoo uses editors to make these decisions. Other major hubs of the network of online news, such as www.cnn.com and www.nytimes.com do have Mr. Gates as well. Tremayne found (2005) that when making linking decisions, the Mr. Gates of online news websites only link to pages from their own sites. It is clearly their strategy to retain traffic. Although the authority of Mr. Gates of formal news organizations is being challenged by Mr. People., they have yet to lose the control of what makes up the news of the day.

Republishing and linking

In China, four leading commercial portals comprise the hubs of the network of online news. Portals are important news aggregators and distributors of China, but are prohibited from producing their own news. They only republish stories from other news organizations. Like the news websites in the United States, when they put links in their news webpages, they only provide in-site links. There remains one exception: a link to the original publisher of the story sits under the headline. Clicking that link will lead a reader to the website of the news organization that first publishes the story.

Tremayne's studies (2007; 2006) on links and blogs only discusses incoming links. On the contrary, this study only focuses on outgoing links. Analyzing incoming links locates hubs; analyzing hubs' outgoing links is actually a study of the gatekeeping of links. Note that in this study one story comes with one and only one link. The researcher used story link to refer to the portals' outgoing links. Portals are largest hubs of online news aggregation and distribution in China. Analyzing the pattern of the

portals' gatekeeping practices reveals the factors that affect the flows of online news in China.

News agencies as a control mechanism

News agencies are news wholesalers (Boyd-Barret, 1996, 2000). Major news agencies such as the Associated Press and Reuters have established international reporting networks and distribute news to clients worldwide. News agencies provide domestic clients with a collection of wire services combining national and international news. They give clients access to a wider and more reliable supply of international and domestic news than any single client could provide unilaterally.

In the era of the Internet, news agencies face a series of challenges (Boyd-Barret, 2000). One is the networking power of the Internet. When people can exchange news fast and easy online, is a wholesaler still important? One news organization may not unitarily provide a range of news that is as wide and reliable as news agencies can, but a network of interlinked news organizations may. As noted earlier, the Internet is bringing down gates and democratizing news production and distribution; however, the Internet does not simply sweep away the old system. There still remains the logical flow involved with reporting, collecting and distributing news. Maybe we still need a news wholesaler in the online environment. After all, even in the market place of merchandises, wholesaler Amazon fares better than eBay which provides platform to person to person exchanges.

Portals provide news agencies a venue through which to continue its wholesale business. That is exactly the evidence found by this present study: China's Xinhua news agency and China News Net accounted for about one fifth of all story links. Moreover, these two news agencies are state-owned. They report directly to government

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ministries(Boyd-Barret, 1996). They are vehicles for dissemination of state information and propaganda to global or domestic audience. Apparently the Chinese government found a method by which to control the unlimited kinds of linking possibilities: control the hubs. The portals are major hubs of China's online news network. Connecting the portals' outgoing links with stories from official news agencies is a clever way to deliver government information and propaganda to audience while marginalize other alternatives.

Limitations and suggestions

This study only examined the formal online news organizations and only the news section. News not only disseminates through these more mainstream channels but also through instant messaging (especially via cell phones), social networking sites, video sharing sites, etc. These areas are peripheral and uncharted. They are waiting for future research.

Appendix A

Master codebook

Coder: The initials of the coder

_____

ID: Story identification (the file name of each news webpage)

_____

Date: Story date (month and date)

Portal: Portal name
    1=Sina
    2=QQ
    3= Netease (163)
    4=Sohu

News: Is it a news story? Skip the story if the answer is no.
    1= yes
    0= not

Publisher: Original publisher (the news organization where the portal get the story) of the story.

    _____

Commercial: Is the original publisher a party organ or a commercial medium (check the "about us" link in the original publisher's homepage, if the publisher explicitly identify itself as an "organ", then code it as an organ. Otherwise, code it as a commercial medium)?
    1= Organ
    2=Commercial medium

Site: Which geographic level is the original publisher located at?
    1=Big Three (Beijing, Shanghai, Guangzhou.)
    2=province capitals and Tianjin, Chongqing
    3=all other cities except for HK, Macau , and cities from Taiwan
    4=rural area
    5=foreign
    6=other
    7=HK, Macau, Taiwan

Foreign: Is it a foreign story (stories that happens on foreign soil)?
    0= no
    1= yes
Country: If it is not a foreign story, input a "\". If it is, then in which country did the story take place?

    _____

Province: If it is a foreign story, input a "\". If not, then in which province did the story take place (input "\" if not applicable)?

    _____

Place: In which geographic level did the story take place?
    1=big three
    2=province capitals and municipalities
    3=other cities
    4=rural area
    5=other
    6=HK, Macau, or Taiwan

News type: Is this story a piece of hard news or soft news (Hard news is defined as any story that focuses on issues of ongoing policy consideration, factual accounting of current public events, or social issues and controversies that concern members of the audience. Soft news is defined as the residual of hard news)?
    1= hard news
    2= soft news

Appendix B

Intercoder Reliability by Variable

Variable	Intercoder Reliability
News	88%
Publisher	95%
Commercial	80%
Site	80%
Foreign	87%
Country	84%
Province	81%
Place	81%
News type	75%
average	83%

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Vita

Xin Chen was born in Chengdu, China on August 2nd, 1977 as the only child of Daimo Chen and Huafang Yang. She received a B.S. in Sociology in 2000 from Nanjing University, Nanjing, China. During the following year, she was employed as a reporter at *New Economy Times* at Chengdu. She came to the United States in 2001 to attend the graduate school of Texas Christian University in the School of Education and earned a M.Ed. in 2003. In August, 2003, she entered the graduate school of the University of Texas at Austin. While pursing her Ph.D. in the School of journalism, she received a M.S. in statistics from the College of Natural Sciences in 2006. She has published her research in *Social Science Computer Review* and presented papers at two national conferences and one regional conference.

  Permanent address: 4712 Parkmount Dr, Fort Worth, TX 76137,

fishcx@hotmail.com

This dissertation was typed by the author.