Wired for
Modernization in China

Imagine if the Internet took hold in China. Imagine how freedom would spread.
> —George W. Bush, Phoenix, Arizona, December 7, 1999

Most followers of international affairs are now familiar with assertions of the Internet's potential to change China drastically. Certainly, access has grown exponentially since the country's first connection to the Internet in 1993. Domains and web sites have proliferated, while growing millions access the Internet from personal computers at home and the office. In major cities, cafeteria-sized Internet cafés host a generation accustomed more to cell phones and consumerism than to communist dogma. Chinese Internet companies seek and attain listings on U.S. stock markets, while foreign investors hail China's entry to the World Trade Organization. Beijing's municipal government boasts a web site where citizens can e-mail their mayor with grievances. Jiang Zemin, the leader who presided over much of this transformation, has spoken glowingly of "a borderless information space around the world."[1]

Yet tugging at the rhetoric is another reality. China's own information space is restricted by regulations inherited from prereform years. Its expansion is driven by five-year plans. Even as the so-called wired elite mushrooms and gains influence, growing numbers are arrested for expressing antigovernment views online. Falun Gong followers who use the Internet to spread information are sent to reeducation camps. Meanwhile, millions outside China's urban centers still lack telephones, much less Internet access.

Clearly, the hype over China's experience with the Internet belies a far more complicated scenario, one that does not lend itself easily to pat characterizations of political impact. Yet many have tried. A number of inter-

national observers have suggested that the technology poses a potent threat to China's political system, that a tide of forbidden images and ideas will simply sweep away half a century of outmoded thinking. Others believe that the Internet will become a tool of the Chinese regime, which will use increasingly powerful monitoring and surveillance technologies to stay one step ahead of the democracy-seeking masses.

The truth is considerably more complex than either extreme and difficult to discern. In part this is because the government's attitude has been contradictory, leading to uneven and sometimes unintended policy outcomes. The population of Chinese Internet users also defies easy labeling, especially as it expands in scope and scale. Perhaps what is most important is that China's approach to the information revolution is forged by its historical approach to modernization, which itself has warranted volumes of exposition.

Here, we paint a nuanced picture of China's Internet evolution, tracing its beginnings in ministries and inefficient bureaucracies to its myriad current uses in China's government, economy, and society. Even as competing sources of information broaden the public sphere of debate, the Chinese government has pursued a number of measures—from web site blocking to punitive deterrents—designed to shape the physical and symbolic environments in which Internet use takes place. The state is also vigorously encouraging Internet-driven development, harnessing the Internet for specific political and economic aims. Choosing a proactive approach, China has sought to use information technology, and in particular the Internet, to address such high-level issues as corruption, transparency, local government reform, and the development of poor areas. It has incorporated concepts of information-age warfare into its rethinking of military affairs. China has looked abroad for guidance on how to balance ICT promotion with authoritarian political control. Meanwhile, its state-led model of Internet development has served as a model for other authoritarian regimes, such as Cuba's (see chapter 3).

Hence, we argue that the state's attempts to direct and define the political impact of Internet use are, for now, succeeding. By its very nature, however, China's market-led approach is designed to increase popular access to the technology substantially, potentially increasing the government's vulnerability to challenges from Internet use.[2]

From the Iron Rice Bowl to the World Trade Organization

The People's Republic of China is a one-party authoritarian state that has been ruled by the Chinese Communist Party (CCP) since October 1, 1949.

The CCP controls all top government and military positions, as well as the media and security apparatus. It is headed by Hu Jintao, the hand-selected successor to former party chief Jiang Zemin.[3] The National People's Congress, a unicameral legislature that follows party dictates, elects the president and vice president and appoints the State Council, or cabinet. The president appoints the premier.

With nearly 1.3 billion people, China is the largest country in the world, a factor that makes the question of its development globally relevant. Its economy, officially pegged as growing by 7–8 percent a year, is the world's seventh largest. Despite recent growth and development, China is ranked a lower-middle-income country by the World Bank: 18.5 percent of the population lives on less than a dollar a day.[4] While the eastern urban centers have been rapidly modernizing, the vast majority of the population still lives in the countryside. An urban per capita disposable income of $759 in 2000 contrasted sharply with a rural per capita net income of $278.[5] Addressing the significant development gap between the country's eastern and western provinces will be a top economic and political priority in the years ahead.

After decades of inefficient and sometimes disastrous central planning, reforms begun in 1978 at the behest of leader Deng Xiaoping started the country on the slow path to a more market-based economy. Ministries and other government organs were forced to reorganize and adopt competitive practices. State-owned enterprises began the painful transformation from "iron rice bowls," which provided lifetime worker security, to the desired goal of efficient profit-seeking corporations. Sectors such as transport, power, aviation, and telecommunications were encouraged to attract overseas investment, initially seeking cooperation through turnkey and equipment-manufacturing projects rather than the foreign operation of key infrastructure. Although *guanxi,* the system of personal connections used to grease wheels in politics and business, remained important, the government made an effort to institutionalize market reform. National legislation was devised to eliminate favoritism and to attract overseas capital. More recently, the government has begun a five-year legislative work program to develop and revise laws relevant to World Trade Organization entry, including those pertaining to corporations, bankruptcy, trust, unfair competition, telecommunications, and trademarks and patents.

In 1992, Deng Xiaoping undertook a groundbreaking trip to the southern provinces to spur further economic growth. In the wake of that trip, capitalist fervor began to build and reached a fever pitch, particularly in

the southern and eastern coastal provinces. With the aid of special economic zones to attract foreign investment through favorable investment and tax policies, growth in these regions began to outpace inland and rural areas rapidly. In the early 1990s, the largest, most well-connected (and occasionally well-managed) state-owned enterprises (SOEs) were chosen to attract foreign equity capital through listings on the Hong Kong and New York stock exchanges. Meanwhile, the country set up its own domestic stock markets in Shanghai and Shenzhen. The flurry of capitalist activity helped to create an unprecedented crop of Chinese millionaires and has led to a growing symbiosis between the party and formerly reviled private entrepreneurs.[6] At the same time, SOE reform continues to throw millions out of work, causing job seekers to migrate in huge numbers to the cities. With unofficial unions forbidden, labor advocates say scores of factory employees work in unsafe and unsanitary conditions. Peasant and worker protests have erupted in rising numbers. Against this backdrop, the government has highlighted Internet-driven economic activity and education as vehicles to accommodate more of the country's labor force. The CCP leadership also realizes that the development of a knowledge-based economy that significantly boosts standards of living can pay significant dividends in the form of broader support among the population.

Fears of social unrest and anarchy, underscored by personal experience of the chaotic Cultural Revolution during the 1960s and 1970s, have motivated the current generation of Chinese leaders to proceed more cautiously with political than with economic reforms, and at times the leaders have reacted harshly to perceived threats to stability. The government has embarked on an intense crackdown on crime and particularly corruption, seen as an endemic and high-priority problem. Such crackdowns usually involve large-scale capital punishment for convicted offenders: China executes more prisoners each year than all other countries combined. According to some estimates, at least 2,468 people were put to death in 2001 alone.[7] China has dealt with other perceived threats swiftly and harshly, including the pro-democracy uprising in 1989, the more recent emergence of the China Democracy Party, and the rise of the Falun Gong spiritual movement. Increasingly, dissidents and even ordinary citizens who express controversial views on the Internet are detained and punished. Viewed in this context, China's authoritarian system seems to have undergone little significant change in recent years.

Yet political reform has not been wholly absent. As Minxin Pei notes, many important political (although not necessarily democratizing) reforms

have taken place since the late 1970s: the strengthening of national and local legislatures, legal reform, mandatory retirement for government officials, meritocracy, and (limited) rural self-government. Such actions have helped to build the institutional infrastructure necessary to safeguard economic reforms. At the same time, these changes have not addressed the Communist Party's continuing monopoly on state power, which limits the effects of continuing civil service reform and grassroots experiments in self-government.[8]

While conventional wisdom tends to envision political change driven by grassroots political pressure, a significant impulse for reform comes from within the government itself. Many current leaders possesses "technocrat" credentials stemming from backgrounds in economics and engineering. These credentials have helped to shape China's current approach to the information revolution. A new generation of leaders, promoted for merit-based reasons as well as party loyalty and communist credentials, is gradually taking command of an increasingly professional bureaucracy. In 1980, only 4 percent of China's ruling elite had a college degree; now more than 90 percent do. Members of this so-called fourth generation—the "baby boomer" crop—have earned degrees from U.S. universities and are more comfortable with non-Chinese culture than are previous generations, although many retain a strong nationalistic orientation.

In the coming years, as WTO–linked reforms take effect, China is likely to experience increasing social and political turbulence. Much depends on the attitude of the new leadership toward political reform. Should such reforms stagnate, leaving an increasingly unemployed population with little outlet for frustration, the prospect of wide-scale unrest is possible. Moreover, increased engagement with the world in general may leave China open to pressure from transnational advocacy networks and other nonstate actors. At the same time, China may push harder for a stronger hand in regional decision making and leadership, through such vehicles as the Asia Pacific Economic Cooperation (APEC) and alliances with central Asian nations. Essentially, China is entering the information age during a period of heightened domestic turbulence and an increased emphasis on foreign policy.

Centrally Planning an Information Age

Control of information has been central to the Chinese Communist Party's governing strategy ever since it came to power. Present-day discussions of

the Internet in China often emphasize the tension the technology high-
lights between economic modernization and political control. Yet this deli-
cate balance has been historically addressed by state strategies toward
earlier ICTs. Current attempts to guide the birth of China's information
age can be better understood within this context.

Under Mao Zedong's command economy, the media's function was to
serve the state through imposing ideological hegemony. This goal was
accomplished by overwhelming the citizenry in every aspect of daily life
with official information and interpretations of reality.[9] Mao's regime was
characterized by the vertical control of communication, exemplified by a
media system that acted as a conveyer belt carrying party thought from
the leaders to the masses. This was complemented by a telecommunica-
tion network that was accessible only to elites, discouraging the public
from communicating with one another.[10]

The necessity of inculcating revolutionary values meant that propa-
ganda work was allotted its own powerful ministry. While the media (ra-
dio, television, and newspapers) were seen as propaganda tools,
telecommunications were classified bureaucratically under the division of
finance and economy. Meanwhile, the policing of telecommunication net-
works was the responsibility of the public security apparatus.[11] This divi-
sion can be seen to this day: Internet content providers have been artificially
divided from Internet service providers and will be allowed different for-
eign ownership limits under the WTO.[12] Meanwhile, control over broad-
band development has become a battleground between the propaganda-
affiliated State Administration of Radio, Film, and Television (SARFT)
and the telecommunication regulator, the Ministry of Information Indus-
try (MII).

With the advent of economic reforms in the late 1970s, the role of the
media began to change. No longer defined as instruments of class struggle,
media organs were promoted as tools of economic and cultural develop-
ment, emphasizing business information and entertainment.[13] Since then,
the responsibilities and functions of media have continued to evolve, shift-
ing in response to both domestic and global pressures. Lynch notes that
commercialization, globalization, and pluralization have all combined to
break down state control over "thought work," or the state's ability to
shape the ideological environment.[14]

Certainly, commercial pressures have been a primary factor behind the
diversification and continuing professionalization of media. With fewer
state subsidies and heightened profit concerns, state-controlled media are

trying to boost their audiences by increasingly exploring previously taboo areas, such as investigative journalism.[15] This more aggressive style of reporting is especially visible in local and provincial publications far from the eyes of Beijing. By making available a wide range of official news in one place, Chinese Internet portals have been encouraging competition between news organizations. This competition is heightened because news at times appears on the Internet either exclusively or before other traditional media outlets can publish it.

Yet commercialization and diversification are viewed with ambivalence by the Chinese leadership. Although Premier Zhu Rongji exhorted the media in 2001 to act as the watchdog of government, encouraging the exposure of corruption and government misdeeds, state regulations and actions have presented a conflicting image. Progressive publishing houses have been reined in, while journalists continue to be harassed and imprisoned for exposing official wrongdoing. An August 2001 campaign to clamp down on the media included a list of "Seven No's," banning media involvement in seven broad areas. These include the revelation of state secrets, interference in the work of the party and government, and the negation of "the guiding role of Marxism." Similar rules exist for news and information on the Internet; many are simply new iterations of past media regulations.

Convergence and Control in Telecommunications

Increased competition and commercialization have also characterized recent developments in telecommunications in China that have been crucial in shaping the current diffusion of the Internet. While public network construction was not a policy priority from the 1950s to the 1970s, in the early 1980s telecommunications was redefined as a key infrastructure essential to economic development. As Yuezhi Zhao puts it, central planning combined with local market incentives contributed to the fastest telecommunications build-up in history.[16] At the same time, supervision of the network fell to several different ministries. Although the Chinese public telecommunication sector was a state monopoly, in practice several administrative bodies carried out regulation. While general operation and oversight fell under the purview of the powerful Ministry of Posts and Telecommunications (MPT), the State Council served as the highest central authority for the telecommunication sector. The State Planning Commission approved the MPT's tariff policy, and the State Economic and

Trade Commission administered such state enterprises as the Directorate General of Telecommunications (the precursor of China Telecom).[17]

In essence, the fragmented regulatory regime foreshadowed the current competition between ministries to stake claims in the developing Internet sector. Although the MPT harmonized policies up until the late 1980s, technological convergence posed increasing complications. While the State Council attempted to manage conflict between ministries, a lack of concrete legislation meant that policy coordination was often left to negotiation and administrative measures.[18] During this period several ministries were campaigning for their own networks to bypass the inefficient MPT–operated public network. These ministries, which included the Ministry of Railways, the Ministry of Electronic Industry (MEI), and the Ministry of Power, eventually succeeded not only in establishing private networks, but in creating the basis for increased competition in the sector. In 1994 the central government formally created Unicom, a network backed by the aforementioned ministries, intended to compete with the MPT's Directorate General of Telecommunications. This branch was renamed China Telecom, responsible for operating and managing the MPT's fixed and mobile networks, while the MPT was left as a regulator.[19]

While partially introducing competition in the sector and establishing an independent telecommunications regulator, the changes also proved cosmetic in some ways since China Telecom remained directly under the regulatory authority's control. During subsequent years, despite continuing attempts to promote competition and standardize the telecommunication sector, bureaucratic sniping and confusion in the chain of oversight caused further policy paralysis. Finally, in 1998, the MPT and MEI were merged into the superministry MII. The MII was charged with administrating and regulating the entire information industry and was organized into departments responsible for policy making, administration, market regulation, and internal affairs.[20]

Throughout all the years of internal fighting and ministerial-level competition, the Chinese telecommunication sector remained nonetheless shielded from outside competition. During much of its history, the CCP has insisted on tight restrictions on foreign investment in what it sees as its most strategic sectors; until recently, therefore, foreign businesses were not allowed to own, operate, or manage telecommunication networks or services. Some analysts point to China's need to bargain for WTO accession as the driving force behind its eventually agreeing to allow foreign investment, while others see the decision as an inevitable by-product of

globalization.[21] Whatever the reason, heightened competition is being hailed by many in China as a new force in standardizing and developing China's telecommunication landscape, although the sector's history suggests that future challenges lie in the realization of that goal.

A New Piece of Turf: The Internet

Just as in other countries, China's academic community established the first computer networks, sending the country's first international e-mail through a gateway in Germany in the late 1980s. In the early 1990s, the State Education Commission began building a more comprehensive academic network with funding from the central government. At the same time, the MPT began building its own packet-switching network, establishing its early dominance in voice and data communication. Its competitor, the Ministry of Electronics Industry, also began a set of new networks, known as Golden Projects, to link customs and financial networks.[22] These Golden Projects formed the basis for "informatization," originally used to refer to the use of information technology to streamline government processes and allow the central government better oversight of administrative processes at the periphery. The MEI's involvement in the process also highlights the early competition between various arms of government that persists to this day.

By 1995 the Internet had begun expanding in a somewhat uncoordinated manner, although the State Council still placed controls on organizations involved in its development. In an attempt to recentralize network development, the State Council subsequently set up a steering committee on national information infrastructure to consolidate Internet policy making and assume responsibility for issues related to informatization in China. In 1996 this committee made a key decision to establish an Internet access scheme that featured two tiers: users would connect to the first level, while that level itself connected to the Internet only through a second tier of state-controlled interconnecting networks. Therefore, all international Internet connections were to be made through a small number of state-controlled backbone networks.[23] To this day, the number of these backbone networks—now run by ministries and other competing collections of powerful interests—remains limited, even while Internet service providers (ISPs) and Internet content providers (ICPs) proliferate in the thousands. The future success of the backbones is often predicated on the strength of their political clout: the rising China Netcom, for example, is

partially backed by the Chinese Academy of Sciences, the State Administration of Radio, Film, and Television, and by Jiang Mianheng, a Shanghai information-industry player and the U.S.–educated son of Jiang Zemin.

Despite attempts to centralize administrative oversight, the Internet continued to serve as the battleground for turf wars between various ministries, chiefly the MEI and the powerful MPT. Even though their merger has helped to eliminate much of the bureaucratic paralysis, overlaps as well as gaps in oversight remain. The policing and supervision of the Internet, for example, still fall to the Ministry of State Security. At present, at least nine party and government organizations see the Internet as part of their bureaucratic domain, and both the local and national arms of the bureaucracy have commercial interests in promoting the new technology.[24] In 2000, for instance, the Shanghai Foreign Investment Committee licensed a wholly foreign-owned company to operate as an Internet content provider, an act expressly forbidden by national rules. To this day, various "camps" within the MII still identify with their pre-merger ministries and attempt to stake claims accordingly. Inefficiencies and lack of communication between bureaus also hamper the effective centralized control of the Internet.

Moreover, technological convergence still causes various complexities. The Internet was originally seen as a tool of mass communication as well as an outgrowth of the telecommunication network. As such, it did not fit neatly into either the state's propaganda apparatus or its telecommunication branch, both of which were vertically controlled and separate from each other.[25] The State Administration of Radio, Film, and Television, which falls under the propaganda structure and controls the cable networks, is feuding with the MII over the right to develop and provide broadband capabilities. Although the feud has certainly encouraged the simultaneous and thus more extensive construction of the information infrastructure, at times the bureaucratic battles have led to street battles, complete with wire cutters, armed gangs, and casualties.[26] A line in China's 2001–2005 Five-Year Plan states that convergence will happen, but gives little guidance on its structure or timeline.[27]

Entry in the World Trade Organization has posed further challenges. China has agreed to allow 49 percent foreign investment in value-added services one year after entry and 50 percent foreign ownership two years after entry. It has also agreed to allow, incrementally, the foreign ownership of up to 49 percent of domestic and international packet and circuit-switching services six years after entry. Chinese officials have orally stated

that Internet content providers fall under the category of value-added services, and Internet service providers under the category of switching services, but it is still unclear how much foreign equity participation will be permitted in such areas as the key backbone networks.[28] Many anticipate protracted post–WTO negotiations and disputes.

Regardless of such disputes, Internet diffusion is expected to continue at a fast clip over the next several years. According to the official survey of Chinese Internet users conducted by the China Internet Network Information Center, the number of users reached 33.7 million people by January 2002, a jump of 11.2 million people from 2001.[29] Although growth in user numbers now appears to be slowing, marketing firms still predict that by 2004 China will overtake Japan as the Asian country with the most Internet users.[30] Surveys also indicate that usage is beginning to increase beyond the wealthy, educated elite and that the average age of users will continue to drop. The typical home Internet user, according to a survey conducted by marketing research firm Iamasia, is thirty years old, earns about $221 a month, and is university educated.

Informatization and Its Discontents

Initially conceived of as a far less sweeping concept, informatization has grown to encompass a complete rethinking of how information technology factors into economic, political, and social development. The Tenth Five-Year Plan specifies ambitious targets for China's ICT industry growth, devoting an entire section to "accelerating national economic development and popularizing information technology throughout society."[31] Officials envision ICT implementation and innovation in sectors ranging from education and health to agriculture and industry. Just as the "Four Modernizations" of the late 1970s formed the basis for Deng Xiaoping's comprehensive economic reforms, so the thrust to enter the information age colors much of the country's current approach to political reform and economic development.

The pressures brought on by economic reform underscore the urgency of modernization through informatization. As state enterprises fire millions of workers, China desperately needs to find new ways to employ its huge workforce productively. Many economists see the development of a knowledge-based economy as key to ameliorating the effects of wide-ranging industrial reform. As such, in contrast to some other authoritar-

ian countries, the commercial growth of the Internet is strongly encouraged, albeit under a mass of oft-confusing regulations.

Yet it is obvious that not everyone is benefiting immediately from informatization. A poor telecommunication infrastructure in the impoverished western provinces has led to increased dialogue within China about how to bridge the country's internal "digital divide," or the gap between the technological haves and have-nots. The promotion of the Internet thus forms part of a larger strategy to bridge uneven development between the rich eastern provinces and poor western ones. Government officials also emphasize the potential to leapfrog stages of development and close the gap, not only between the country's east and west but between China and the developed world. At various levels of government, innovative initiatives are being taken to improve rural life through use of ICTs. Many of these initiatives increasingly involve the input of nonstate actors and the private sector, relying on lessons from other developing countries.

Economic development is not the only goal of Internet promotion. Some government officials also see informatization as changing the very scope and structure of government processes, spearheading the campaign for "reform and openness." While some question the sincerity of such efforts, many party cadres and others genuinely desire some level of political reform, even though initiated from within the state. These officials see informatization as a force that will break down dusty hierarchies within the state structure and foster new organizations in a middle layer between the state and society.[32] Those who benefit personally from a less transparent bureaucracy, as well as those who favor a more authoritarian environment in which information resources are restricted, may be wary of the changes that informatization promises.

Finally, the promotion of the Internet is important in the context of China's long, complicated history with the West. As many analysts have noted, underlying much of the rhetoric about informatization lies the hope that by using, adapting, and improving upon a technology originally conceived in the West, China will have finally overcome past humiliations to achieve its rightful place among the pantheon of developed, modern nations.[33] Moreover, despite its WTO entry, China is ambivalent about the effects of economic globalization. In particular, it is worried about challenges to its sovereignty through an excessive dependence on Western ICT products and systems. This has led to the official encouragement of the open-source Red Flag Linux operating system over Microsoft

products and the promotion of a domestic information technology indus-try that shares the leaders' vision of an online landscape with "Chinese characteristics."

All this means that China's leaders recognize the need to nurture a technologically savvy, well-educated, and informed populace that will both benefit from and enhance a knowledge-based economy. Therefore, unlike other authoritarian regimes that carefully mete out access, the Chinese government has chosen to encourage mass Internet usage and education in an environment that it is able to shape if not wholly control. Yet the leadership is also wary of the potential effects of an unfettered flow of information. The networked, decentralized nature of this new medium means Chinese leaders must constantly work to balance ICT promotion with political control. The central leadership must also constantly struggle to construct and maintain a coherent, unified vision for Internet develop-ment, even as various ministries and other organs battle to assume control over an increasingly strategic sector.

Areas of Use

A "Healthy and Orderly" Public Sphere

Much of the speculation about the Internet's political effects in China has centered on its impact on the mass public. Because the medium allows unprecedented access to multiple sources of images, news, and ideas, some believe it can challenge state hegemony over the distribution of informa-tion and ideologies.[34] As more and more of China's educated urban pro-fessionals and youth gain access to the Internet, they are becoming increasingly aware of foreign products, culture, and political norms.

New commercial web sites, featuring topics ranging from pollution to homosexuality, place formerly taboo issues solidly in the realm of public debate. Even official media organs use their web sites to post news that is unavailable in print or on the air.[35] For less than the price of a long-distance phone call, ordinary people can use e-mail to communicate with friends and acquaintances far away. Moreover, in chat rooms and bulletin boards focusing on political and social themes, users are able to circulate news and opinions, thereby generating nationwide discussions not previ-ously possible. Some suggest that as a direct result of participation in these forums, the Chinese people will place demands for political liberalization on the state.[36]

In response to the potential challenges posed by the mass use of the Internet, Chinese authorities have forgone explicit control over every facet of Internet use in favor of seeking to shape what they term a "healthy and orderly" online environment.[37] To do this, they have adopted two main strategies: filtering material and the promotion of self-censorship through regulation, policing, and punitive action. Sites deemed politically sensitive, such as those of overseas human rights organizations and certain news organizations, are blocked by a nationwide firewall.[38] Regulations issued by the Ministry of Information Industry in October 2000 require ISPs to report on users and forbid politically sensitive information from being disseminated on the Internet. These and other regulations make clear that potentially "subversive" comments—including those promoting Taiwanese independence or highlighting Falun Gong practices—will not be tolerated.[39] Web site administrators are required to hire censors, known as "cleaning ladies" or "big mamas," to screen for and quickly remove offensive material from bulletin boards and chat rooms.

In 2001 a three-month police sweep of more than sixty thousand Internet cafés nationwide further encouraged café owners to keep a close eye on patrons and prompted users to patrol their own activities.[40] The official Chinese news agency Xinhua has reported that many cafés have installed a new type of security software that enables local public security bureaus to trace user surfing records as well as remotely monitor café web use, twenty-four hours a day (reportedly, the software is also available for use in homes and schools). Local public security bureaus have set up their own "Internet police" units, dealing specifically with cyberoffenses. Whether or not this comprehensive monitoring is implemented everywhere, the threat alone may be enough to deter users from visiting politically sensitive sites. The government is also actively seeking foreign help with its monitoring technology: fairs organized by the Ministry of State Security have attracted many large multinationals peddling such products as blocking and antihacking software.[41]

To reinforce its message, the government has arrested and detained several Internet users who have fallen afoul of the regulations or otherwise strayed into politically sensitive areas. Commonly, such detainees are not full-time dissidents or activists; many have merely voiced a politically sensitive opinion online. Middle-school teacher Jiang Shihua, for instance, was sentenced to two years in prison for posting the words, "We all think about one sentence that none of us will say: overthrow the Communist Party" while discussing government corruption on the Nanchong city web

site. Others brought to trial include the operator of a Tiananmen-themed site, Huang Qi, and a distributor of the Chinese-language version of *The Tiananmen Papers,* Li Hongmin. While the government has traditionally clamped down on pro-democracy Internet users, it has also begun to apply pressure to hard-line communist critics, who feel that China's economic modernization has strayed from the path of pure Marxism.

By employing this mixture of regulation, policing, threats, and punitive action, the state hopes to contain and define new patterns of independent communication. It is also possible that the government is using the Internet as a form of "preemptive liberalization." In some authoritarian regimes, the state has responded to the challenge of economic liberalization by preemptively allowing forms of political liberalization—such as the broadening of acceptable discourse—to alleviate pressure while enjoying the boosted legitimacy that follows from such actions.[42] In this case, the Chinese government appears to be tacitly encouraging the public to air its views in the somewhat controlled environment of Internet chat rooms rather than in areas beyond state purview.

Yet this emerging public sphere is not easily categorized: while some users laud liberal democracy, others glorify China's Cultural Revolution and nihilistic Red Guards. As the volume and diversity of viewpoints grow, blunt state countermeasures are increasingly being tested. During several incidents Internet users engaged in politically volatile discussions that were both critical and supportive of the government. At times these discussions severely threatened the state's control of information. They also paint a complex picture of emerging trends in both online and offline Chinese public opinion.

For instance, following a Jiangxi province schoolhouse blast in February 2001, Chinese Internet users contradicted the government explanation that a sole madman was responsible for the explosion. They suggested instead that schoolchildren had been forced to construct firecrackers on the school grounds, which is illegal. Many abandoned self-censorship and harshly criticized government policies that failed to tackle such problems as child labor and underfunded schools. Although many of the controversial comments were deleted and chat rooms were shut down, enough posts remained to spark a wider debate, one that extended beyond Jiangxi to mesmerize much of the educated public. The ensuing groundswell of public outrage eventually led to a public apology by Zhu Rongji about the government's handling of the incident. The apology was an unprecedented act, one that underscored the growing importance to the Chinese leadership of both public

opinion and the medium through which it is voiced. For the first time officials were confronted with the Internet's potential to turn a small provincial occurrence into an event of national importance.

China's leaders have proved equally, if not more, sensitive to nationalistic criticism. The U.S. spy plane incident on Hainan Island in 2001 also touched off a flurry of online activity. The national mouthpiece newspaper, the *People's Daily,* has a "Strong Country" web forum, set up earlier by the newspaper to stoke nationalism after the bombing of the Chinese embassy in Belgrade. It witnessed an outpouring of vitriolic jingoism and anti-Americanism. Similarly hued postings also rose in volume following the September 11 terrorist attacks on the United States. On both occasions, censors struggled to keep up with the scope and scale of comments, often deleting the most extreme anti-American postings.

Such incidents illustrate how the Internet is increasingly crystallizing public dissatisfaction with government while amplifying, however artificially, nationalistic sentiment. When dissatisfaction and nationalism overlap, they can place significant pressures on the regime. The government has historically used nationalism to bolster its public support and divert attention from domestic problems. Thus, during normal periods, much official news on domestic web sites features a nationalistic tone or anti-Taiwan or -American rhetoric. Yet during times of crisis, the government is especially sensitive to nationalist critiques that question the regime's legitimacy, particularly because such criticism has been used to overthrow Chinese rulers in the past. In essence, the Chinese government is still trying to finesse the delicate line between massaging nationalism to boost regime legitimacy and inadvertently encouraging overly militant public opinion that questions the regime's qualifications and capacity to lead. Although the opinions expressed online may not necessarily represent those of the population at large, web forums have undoubtedly helped to magnify this phenomenon, encouraging concrete state reactions.[43]

In sum, the public use of the Internet presents myriad challenges to China's government. Many of these challenges are currently being countered within China's established framework of Internet control through a combination of reactive and proactive government strategies. These actions can be seen in the fact that most users do practice some form of self-censorship, generally avoiding politically sensitive web sites and the expression of controversial opinions on politically sensitive topics. The government can also rely on the natural predilection of many Chinese Internet users: like Internet café patrons around the world, Chinese café-

goers more often than not spend their time playing games and e-mailing friends rather than attempting to contact overseas Falun Gong or Western news media sites. Surveys of Internet users find that most spend little time attempting to access proxy servers that allow access to forbidden sites.[44] Many users also favor some form of regulation of the Internet.[45] In many ways, there is an increasing convergence between current usage of the medium and the official vision for the Internet's development.

Yet, as users become more comfortable with the medium and the self-expression it enables, the government's existing strategies may be unable to circumscribe the growing online public sphere. For the state to realize its informatization goals fully, it has no choice but to continue its strategy of increasing mass access to the Internet, including the expansion of home access and the technological prowess of everyday users. The result is likely to be a population more difficult to monitor and potentially harder to restrain than the current generation of Internet users. Particularly in times of crisis, the government's efforts to control the online discourse may be overwhelmed, as in various incidents throughout 2001. As such, while the online population evolves, the government is likely to let its strategy evolve accordingly.

Development and Dissent in Civil Society

Internet use by domestic civil society organizations presents another, equally visible difficulty.[46] Recent reforms have led to changes in the relations between the Chinese state and society, creating space for rapidly forming and evolving groups that increasingly wield economic and political power.[47] Since the state views the emergence of large independent groups as a threat, it has attempted to disable quickly those it considers politically threatening. When these groups have used the Internet to organize and communicate, the state has responded with a series of technological measures, restrictive laws, and well-publicized crackdowns.

The Western media have chiefly focused on the case of the Falun Gong, the spiritual movement that has used the Internet to coordinate protests in China and spread information around the world. Although it has since evolved into a transnational movement, Falun Gong originally gained critical mass in China in the late 1990s, when followers started using the Internet to circulate the teachings of founder Li Hongzhi. The group soon established the Internet as the primary medium from which new and essential teachings could be downloaded and through which widely dispersed

followers could establish local contacts. Falun Gong has also used the Internet to present a public face to the world and counter Chinese government claims about its practices.[48]

After an April 1999 protest that was in part organized over the Internet, authorities moved quickly to suppress the group's web use within China, shutting down its domestic web sites and blocking public access to those overseas. Subsequent Internet regulations included clauses forbidding the circulation of the "teachings of evil cults." Although the transnational group still relies on the Internet, mainland Chinese followers now find it difficult to communicate by e-mail with those overseas; increasingly, domestic adherents rely on pay phones and other low-end ICTs, which are less easy to trace.[49] While some mainland Chinese followers possess the technical prowess necessary to access overseas Falun Gong sites and evade identification, the government's campaign to eradicate the bulk of the domestic movement—in part by blocking their access to technology, in part through arrests and brainwashing—appears to be succeeding.

Other groups and individual dissidents who have sought to use the web to disseminate information have also met with arrest and imprisonment. Although it never attained the status of a formal opposition party, the now-dispersed China Democracy Party also claimed the Internet was critical to its formation and rapid early mobilization. In 1998 the group used e-mail to publicize its platform, growing from twelve to two hundred members and forming branches nationwide as a result, according to its founders.[50] The government halted the movement by arresting members and imprisoning them on charges of sending e-mails to exiled dissidents. Meanwhile, Shanghai software entrepreneur Lin Hai was arrested for providing a Washington, D.C.–based pro-democracy publication, *VIP Reference,* with domestic e-mail addresses.

On the other hand, state-connected CSOs not only have access to the Internet but are encouraged to use it in innovative ways to organize and disseminate information, in line with China's overarching plan for informatization. Organizations such as the All-China Women's Federation (ACWF) have made Internet use and skill acquisition a priority at all levels of the hierarchy. Originally a "mass organization" designed to act as a transmission belt from the party to the masses, the ACWF is changing and becoming modern, using e-mail and informative web pages to increase its contacts with overseas women's groups. The ACWF has also begun making extensive use of the web to disseminate health and domestic abuse information to rural Chinese women, although the success of

such campaigns largely depends on the extent of Internet access in the countryside. Officials clearly see the Internet as increasingly crucial in augmenting their continuing work to educate rural women and to lift them out of poverty.

In essence, the government's unstated policy is to crack down harshly on a few key examples of politically sensitive Internet use while simultaneously increasing Internet access and usage in the rest of the public sphere. Since this policy, however, does not rely on carefully meting out access to the politically loyal, opponents of the regime will benefit from Internet use, at least until detected and identified as a threat, to the same extent as do sanctioned organizations. Government-connected CSOs such as professional associations, official trade unions, and other mass organizations may also leverage their increasing independence to use the Internet for nontraditional areas of development, perhaps posing conflicts with state goals.

Transforming Bureaucracy, Shaping Opinion

With no formal opposition parties, the Chinese government dominates the use of the Internet in the political sphere.[51] The successful use of the medium is seen as crucial to China's heralded reform and openness program, designed to bring administrative and political processes into step with the modern world. The state's Internet use in this area can be grouped into two main subdivisions, e-government and propaganda.[52]

A large part of China's informatization strategy is the implementation of e-government programs at various levels of bureaucracy. The Internet and related technologies are seen as helping to strengthen state capacity through administrative streamlining and automation, increasing citizen satisfaction with government by providing government services to the public online, and in some cases promoting increased bureaucratic transparency. In January 1999 China Telecom and the State Economic and Trade Commission launched the "Government Online" project, which is meant to bring all central government departments online within the next few years. Beginning with simple goals, such as the posting of government functions online, the project seeks to implement widespread online administration, using electronic databases and online document transfer to increase administrative efficiency. Although China's ambitions for e-government still outstrip its achievements, many departments and organizations have established rich web sites, while an increasing number are putting databases and archives on the web and using intranets to boost efficiency.

In fact, several departments, ministries, local governments, and other organizations have been making innovations on their own. The Ministry of Agriculture has quietly been implementing its own informatization process since 1997, which predates the central government's official program by two years. In 1998, when government organs were ordered to streamline operations, the ministry cut its staff by 45 percent, leaving it short of workers. It had no choice but to automate some of its systems; by January 2000 the entire ministry had undergone this process. Through the use of intranets, documents can now be reviewed and approved online; meanwhile, the intranet serves as an internal publishing platform, making department processes more transparent to managers. The ministry's Infocenter also provides managers with an internal network of agricultural information that aids in the construction of large-scale databases on farm statistics. Information is collected and disseminated through information kiosks at local levels of rural government.

In the cities, municipal governments are moving aggressively to provide citizen services online. The Beijing city government's web site is quite sophisticated, featuring professionally designed graphics and many helpful links. Visitor options include information about government services, new updates on laws and regulations, a local news center, and an e-mail section that allows visitors to e-mail Beijing's mayor with suggestions or criticisms of municipal government. A separate forum also gives visitors the opportunity to ask questions and have them answered on the site.[53] Beijing provides an example of the e-government direction other municipal governments may take.

Such moves are taking place amid a general movement toward greater accountability, transparency, and citizen interaction with government. An increasing number of official and academic studies in China are examining the link between the anticorruption movement and the Internet. A small but growing number of measures exist to increase transparency and accountability through the use of new ICTs. In 2000, the MII and the National Coal Bureau partnered with a private company, ECantata, to institute a system of online reverse auctions to replace the wheeling and dealing that typically characterize coal procurement in China. Such measures, which form part of the government's "sunshine purchasing" policy, use the Internet to help reduce graft in procurement and to boost efficiency.

Alongside its e-government program, the Chinese government is strengthening its uses of the Internet to distribute propaganda and engage

in thought work. These practices, long crucial to the effective functioning of China's communist regime, have been adapted to the information age, primarily through use of web sites that present a new and often more subtle rendering of the government's perspective.

The government has set up specific web sites to publicize its perspective on current events. This is especially relevant when the government claims that "misinformation" is being disseminated by opposing groups, as in the case of the Falun Gong. Various reports in English and Chinese feature testimonials from "reeducated" Falun Gong practitioners and photographs of self-immolating protestors in Tiananmen Square. More subtly, the *People's Daily* maintains a strong web presence that is significantly livelier than its stodgy print counterpart. It offers an increasing mix of sports and lifestyle news, coupled with popular, nationalistically themed chat rooms that compete with those run by private companies.[54] The online English version of the *People's Daily*, designed to present a modern face to the rest of world, features news as well as links to government white papers, selected works of Deng Xiaoping, and the Chinese constitution. All these measures fit neatly into the government's plan to build a large, coordinated online propaganda system. The State Council Information Office has established an Internet Propaganda Administrative Bureau, responsible for "guiding and coordinating" web news content, while propaganda chief Ding Guangen has directed major state media organs to use the Internet fully.[55]

In addition to distributing propaganda on the global Internet, the government is reviving the idea of a national intranet, which is intended to substitute for the global Internet by providing online services paired with acceptable content (whose exact nature has yet to be detailed) for Chinese citizens.[56] Called CNet, the planned intranet is characterized as a proprietary communication and data network that will feature better security and "homegrown technology." Although such ideas have been discussed and deferred for a number of years, their perpetual revival as a national priority demonstrates the state's continued determination to address the infiltration of foreign ideas.

In general, Internet use in the political sphere has proved to be a net benefit for the Chinese government. Increasingly sophisticated e-government measures are geared toward service provision, which helps to increase citizen satisfaction with the government, and perhaps to provide a form of legitimacy that somewhat replaces the representative process. Reform-minded officials are pushing the use of the Government Online

project as a tool to flatten and streamline China's government structure, as well as to reform governance itself. Such efforts, which mirror the plans for e-government programs in a variety of countries, will also help to strengthen state capacity from within. Meanwhile, propaganda organs are benefiting from Internet use, helping the government to reach a new, younger audience.

E-Commerce: A Bounded Frontier

Investors in China's Internet industry often liken their experience to prospecting in uncharted territory, with the possibility for untold riches or unexpected heartache always around the corner. It is true that the industry has generated a number of homegrown millionaires, many of whom highlight the pioneering aspects of capitalist freedom to be found in the Internet sector. Such romantic visions often belie the fact that the government has meticulously targeted China's ICT industry as a significant component of the country's economic development plan and has every intention of maintaining state control over what is admittedly a dynamic and unpredictable environment.

On a broad level, many believe that Internet-driven economic development may eventually help to create an entrepreneurial, market-oriented population that will push for political liberalization. Supporters of normal trade relations with China also assert that foreign investment in China's Internet sector will help open the country to more objective news and information, aid in the creation of a democracy-boosting domestic entrepreneurial class, and pressure the Chinese government to institute less restrictive policies on freedom of information. For now, however, the state (in the form of the MII, local government arms, or other bureaucratic organs) still retains great control over China's nascent private sector. It manifests influence in various ways, from domination of the country's ISP sector to the supervision of content provided by private ICPs.

Given the ICT industry's increasing relevance to the Chinese economy as a whole, such state influence is not insignificant. From 1996 to 2000, the ICT industry was the fastest-growing sector in the Chinese economy. Officials put the volume of e-commerce at $9.3 billion in 2000, which, though small by global standards, is high given China's still-developing financial markets. The electronic manufacturing industry has also grown substantially in recent years, with electronic products accounting for 23 percent of total imports and 21 percent of total exports in 2000.[57]

At the local level, the state has promoted high-technology industrial zones (as in Beijing's Zhongguancun district), which incubate domestic Internet start-ups and encourage homegrown talent.[58] It has also encouraged the graduates of China's top universities to stay at home and work in the technology sector rather than leave for lucrative positions abroad, a strategy that ties into the government's ambition to nurture a technologically savvy population that will power economic modernization.

Government influence is powerful, if subtle, in the realm of Internet service provision. The rapid proliferation of ISPs has led many observers to assume that private companies are driving expansion and collecting the bulk of profits. In fact, the sector has been dominated from the beginning first by the MPT and later by the MII through its high bandwidth ChinaNET backbone. ChinaNET–affiliated providers, which have leveraged their connections and financial resources to weather early fluctuations in the sector, are able to attract and keep the largest number of users. Independent ISPs struggle to cope with high MPT leasing fees and a lack of funding. Although leased line fees have been dramatically cut in the past few years at the behest of Zhu Rongji and other central leaders, cash-strapped independent ISPs have not been able to pass the reductions on to consumers. Many have given up trying to manage their own service, instead simply reselling regional ChinaNET–branded Internet connections. In late 2000, 90 percent of ISPs had a reselling arrangement.[59]

On the regulatory front, the government has taken a somewhat Janus-faced approach, attributable more to a lack of bureaucratic coordination than an overarching strategy. The result has thrown both domestic and foreign Internet entrepreneurs off balance. On the one hand, efforts are being made to safeguard intellectual property, pass investment legislation, and provide a fair investment environment in order to produce the type of stable e-commerce climate that attracts risk-averse foreign investors. On the other hand, the government continues to issue conflicting regulations, many of which have the effect of frightening or coopting the developing Internet entrepreneurial sector.

ISPs and ICPs have had to contend with new legislation that both mimics past media regulations and attempts to forge new ground. New decrees forbid ICPs from providing information that "undermines social stability," while requiring ISPs to tabulate users. Despite causing an outcry among human rights and free-press activists overseas, such regulations have been largely accepted by Internet companies, which have shown a propensity to self-regulate, self-censor, and determine for themselves

which regulations are likely to be strictly enforced.[60] The largest portals feature a mix of sports, entertainment, and current events, and many have veered clear of politically sensitive areas, such as the provision of foreign affairs news that deviates from the party line. Since the state controls the broad regulatory environment as well as the minutiae of operating licenses, many take pains to cultivate good relations with the government at various levels.

In fact, many of China's up-and-coming Internet entrepreneurs see a substantial, if evolving, role for government in the Internet sector. Often heralded in the Western media as the future of a freer China, these businesspeople usually have visions for Chinese Internet development that are inherently pragmatic and complementary to state strategy. In early 2002, for instance, more than one hundred Internet industry entrepreneurs signed a pledge to promote self-discipline and encourage "the elimination of deleterious information [on] the Internet." Although this language may be viewed as merely rhetoric, many Chinese Internet companies seem to lack the desire to push for free expression, considering such activity to be a risky business proposition, if nothing else.[61]

Therefore, although Internet entrepreneurs note that their relations with the government are increasingly consultative, giving them some input into the policy-making process, few are willing to push the state on politically sensitive topics. On issues relating to the press and freedom of speech, many technology tycoons are conspicuously silent. This is hardly surprising, given that the companies were formed to make money and not to seek political change. Some Chinese Internet entrepreneurs note that Western observers often possess misguided expectations for the Internet's political impact in China because they fail to realize the realities of China's reform timetable and the government's proactive role in advancing it.[62]

Foreign media multinationals seem equally unlikely to push for a broadening of acceptable media parameters in China, having frequently toed the government line rather than challenge it.[63] In 2001 America Online signed a landmark deal with the Chinese government to broadcast a Mandarin-language cable channel into southern China; the channel features only politically and culturally inoffensive programming. AOL also recently unveiled a joint venture with Legend, the Chinese computer maker, but refused to specify whether any future Internet service run by the company would, if requested, provide officials with the names, e-mail, and other Internet records of political dissidents. Meanwhile, U.S. Internet corporations were silent when human rights organizations asked them to come

to the defense of a Chinese businessman arrested for posting controversial articles on a web site.[64]

Such action (or lack of action) makes sense in the context of business practices that place great importance on good relations with government agencies. Although free-trade proponents suggest that foreign investment will help to reduce so-called crony capitalist practices, there is little evidence that foreign investors are inherently opposed to a reliance on guanxi. Like domestic entrepreneurs, many take pains to cultivate government relations and to adhere to what are often euphemistically termed local business practices. To what extent the post–WTO expansion of foreign ownership limits will affect issues of information freedom in China is therefore difficult to determine.

Another political side effect of foreign investment may be the enhancement, intended or otherwise, of the ability of the state to monitor and control Internet use. Through its Golden Shield project, the Ministry of State Security has courted the foreign makers of blocking and antihacking software. Overseas human rights groups have raised concerns about this and other projects designed to harness foreign technology for information control. Given the increased domestic acceptance of electronic surveillance tactics in the United States following the September 2001 terrorist attacks, such concerns are likely to find diminished purchase with both foreign investors and government policy makers.

In general, the demonstrated ability of the state to channel investment and to control the fortunes of domestic and foreign investors appears to have had the effect of keeping the emerging entrepreneurial class grounded in "a culture of dependence and anxiety," even as this class extols its newfound capacity to generate wealth.[65] As such, it remains to be seen if (1) an entrepreneurial class will emerge as an economically independent and powerful social force, and (2) it will take an active interest in politics, much less the politics of opposition. Foreign and domestic Internet companies seem likely to play a limited role in promoting political liberalization, especially if many choose to continue their policy of cooperation and consultation, rather than confrontation, with the state.

Cyberactivism and Cyberwar across Borders

As with other authoritarian regimes, dissidents and activists outside China have initiated some of the most large-scale and well-publicized web activity dealing with the country, from information gathering and dissemination to

overt calls for political action. Such groups as Human Rights Watch, Human Rights in China, and the Committee to Protect Journalists post the news of arrests and human rights violations, circulate online petitions, and maintain e-mail databases of Chinese dissidents and other activists.[66] United States–based Chinese dissidents also maintain Chinese-language web sites and sometimes use e-mail to disseminate information within China.[67] The international arm of the Falun Gong has also used the Internet to influence international policy toward China, posting the details of Chinese government crackdowns on sites hosted by overseas servers.

Dissidents and other activists are growing increasingly sophisticated in their efforts to avoid Chinese censorship. Some, like the Washington, D.C., publisher of the *VIP Reference* e-mail newsletter, use tactics similar to those of spammers, changing headers to disguise e-mail origin and constantly shifting the e-mail addresses from which material is sent.[68] Others rely on software such as Peekabooty, which uses a combination of encryption and peer-to-peer software to make the sender anonymous.

Although such actions have primarily been the domain of transnational advocacy networks, the U.S. government has been increasingly involved in similar efforts (with a shift in focus, however, since the 2001 terrorist attacks). Voice of America's (VOA) new web site provides news and audio broadcasts in fifty-three languages. Meanwhile, California-based SafeWeb, already partially funded by the U.S. Central Intelligence Agency, has been seeking funding from VOA's parent agency to provide new computers that run software specifically for the Chinese audience.[69] Although it is unclear whether state-funded and transnational actions can affect internal Chinese politics, it has already begun to affect the country's foreign relations.[70]

For the most part, Internet use in the international sphere is out of China's direct control, so the government must respond by proactively disseminating its own point of view abroad. Its main strategy consists of posting counterinformation on government and government-sponsored web sites to influence both domestic and international opinion. Such efforts, while still rudimentary, are likely to become more sophisticated as propaganda workers use the full range of web resources.

Some international organizations claim that China is going beyond mere propaganda in countering politically sensitive Internet use in the international realm. The Falun Gong, for instance, contends that the Chinese government also uses information warfare techniques—hacking into web sites and spreading viruses—to disable and discredit its own organiza-

tions.[71] Reportedly, the government uses the same techniques in response to attacks by dissident hacker groups.

Such activities would be in line with the Chinese military's strategy to develop an information warfare capacity that will allow it to project sovereign power more effectively on an international scale.[72] The People's Liberation Army's (PLA) interest in telecommunication networks and their potential is not new. In the mid-1970s, the PLA was one of the first top-level organizations to press for its own alternative network, to bypass what it saw as the unreliable and slow public switched network of the MPT.[73] The development of dedicated PLA communication networks is now a top national priority, with the capacity of PLA communication networks having increased tenfold since the early 1990s. According to one estimate, dedicated PLA communication systems are thought to account for 20 percent of the central government's allocations for telecommunication budgets.[74]

Recent writings by Chinese military specialists show that China is increasingly focusing on "asymmetric warfare" options, including guerrilla war and cyberattacks against data networks.[75] In recent years, U.S. newspapers have reported suspected Chinese hacker attacks on U.S. weapons laboratories, and military experts believe that China is willing to reduce its standing army while increasing its reliance on a "multitude of information engineers and citizens with laptops instead of just soldiers."[76] Although Chinese hacker attacks on U.S. web sites in May 2001 did little more than deface home pages, the continuing study and development of information warfare can be seen as a top-priority government measure in line with a general strategy of informatization and the country's goal of modernizing and transforming its military establishment.

Finally, a significant political effect of international Internet use may lie in the expressions of nationalism by the overseas Chinese diaspora. Just as extreme expressions of domestic nationalism on the Internet are now posing a problem for Chinese leaders, their international counterparts present a more diffuse, and less easily addressed, challenge. During the May 1998 riots targeting ethnic Chinese in Indonesia, the Internet enabled the coherent expression of Chinese nationalism around the world, galvanizing widespread protests by overseas Chinese. Although the mainland Chinese press remained silent about the events in Jakarta, the Internet helped to inform and politicize Internet users in mainland China, culminating in a student-led demonstration in Beijing.[77] The transformation of overseas saber rattling online into concrete protest in the capital was no

doubt one of the most worrying aspects of the phenomenon for Chinese leaders. In the future, the government may seek to block overseas sites that attempt to foment nationalist dissent, but since such sentiment can swiftly materialize on any number of Chinese-themed sites and bulletin boards, total blocking action would likely be futile. As such, the combination of domestic and transnational nationalist critiques during times of crisis may present the government with an even more severe challenge, one over which it has little direct influence.

It is possible that, as the Chinese user base grows, international advocacy campaigns may find a wider audience and greater leverage within China. As China increasingly opens its markets to the West and attempts to gain international legitimacy as both an economic and political world power, it may prove more susceptible to forms of Internet-based advocacy. Moreover, as Dai Xiudian points out, although dissidents based outside China currently reach only a small part of the total population, their target audience is intellectuals and students, a group strongly represented among the first wave of Internet users. Intellectuals and students have also been the community historically involved in organizing protests and pro-democracy movements.[78]

Conclusion: Change without Collapse

Through measures ranging from blunt punitive actions to the subtle manipulation of the private sector, the Chinese state has been largely successful to date in guiding the broad political impact of Internet use. This should not be confused with overt central control over every facet of the Internet. Many analysts accurately note that the Chinese state is increasingly fragmented and unable to monitor the Internet in its entirety; that bureaucratic battles plague the medium's development; and that access to forbidden information has become much easier as the technology has spread. While all these points are undoubtedly valid, they do not necessarily challenge the assertion that the state is effectively controlling the overarching political impact of the Internet. This political impact stems from several areas, including Internet use in the civil societal, political, economic, and international spheres. In all these areas, the reach of the state is still felt at a profound level, regardless of whether it has been achieved intentionally or by default.

In the realm of civil society, the central government has largely been able to shape the environment in which Internet use takes place, mainly by

encouraging a level of self-censorship that still allows access to a plethora of information on the Internet. By offering some preemptive liberalization, the government may also head off more serious challenges in the future. In the economic arena, the government has shown that its ability to impose dictates on domestic and foreign companies extends well into the Internet sector, despite a proliferation of private companies that provide access and content to the public. At the same time, the government is harnessing the Internet to strengthen the state's institutional capacity through anticorruption and e-government measures. It is also countering the international use of the Internet with a heightened ability to influence global perceptions of China and its policies.

This is not to say that the government's ability to manipulate the political ramifications of Internet use is perfectly sustainable over the long term. The realm of public use, for instance, features a growing potential for political impact. One Internet entrepreneur has predicted that in five years China will have 300 million Internet devices, spanning cell phones and computers.[79] Although such estimates may be high, it is true that Internet access will continue to expand considerably, with the state's blessing, in the coming years. By wholeheartedly endorsing a market-led model of Internet development and by encouraging mass access, the state faces the increased probability of political challenges stemming from Internet use.

In fact, much of the Internet use most challenging to the state has taken place during times of crisis, such as during the U.S. spy plane incident. Heated anti-American sentiment, which reached a crescendo after the terrorist attacks on America, still simmers in many web forums and is likely to remain highly volatile in the post–September 11 environment. As Nina Hachigian argues, during a crisis, the Internet may refocus national discontent in unprecedented ways.[80] An unforeseen international incident, for instance, might precipitate a groundswell of public discontent that could mesh online with overseas Chinese nationalist sentiment, creating a potent challenge to the regime. In such an instance, the Chinese authorities appear to have two choices: responding harshly, setting off a chain of repercussions, or shifting to a more hard-line foreign policy in order to accommodate an increasingly agitated populace. Neither choice is likely to lay the groundwork for constructive liberalization, and both would at least temporarily enhance authoritarian tendencies.

The increasing openness and competition promoted by China's entry in the World Trade Organization may also shape the Internet's political impact, even if changes are incremental. As China's transition to a market

economy encourages bureaucracies to fight for lucrative pieces of turf, the Internet has proved to be an irresistible lure. While such battles may speed infrastructure development, they do not facilitate effective centralized co-ordination and supervision. This presents one of the biggest challenges to the Chinese government: ensuring that future Internet development takes place according to centrally crafted timetables and blueprints. World Trade Organization entry is likely to cause further turbulence, if not substantial destabilization, in central steering. Given the high priority of informatization in the central government's design for economic and po-litical reform, a further loss of control over the process would represent a genuine political setback for the regime.

In essence, the Internet's development in China is taking place against a highly fluid backdrop. Various forms of Internet use may erode authori-tarian control in a number of ways. The public use of the medium, espe-cially as it evolves, may prove to be, if not a catalyst, then a point of inflection along the road to concrete political change. Yet this change may not necessarily be of a democratic nature. Should popular nationalistic sentiment coalesce on the Internet into a significant opposition movement, the consequences may not bode well for stability or liberalization. The idea of a wired populace spontaneously pressing for democracy tends to appeal to Western policy makers. Yet Internet use that strengthens state capacity may be more conducive to long-term liberalization than Internet use that weakens the state in certain areas. Current e-government mea-sures designed to boost transparency and promote efficiency may in fact gird the capacity of state institutions to weather a future political transi-tion.

On its own, Internet use is unlikely to launch the dawning of a new political age in China. Concrete political change is likely to depend on several slow, incremental steps, many of which may have no connection to the Internet. At the same time, it is possible that Internet use may set the stage for gradual liberalization, facilitating a future transition from au-thoritarian rule. All told, the Internet is likely to contribute to change within China, without precipitating the state's collapse.