

Avinash Dixit, "On the Governance of Economic Transactions in Development, Reform, and Globalization" (unpublished paper, 2000).

8. Douglass North, *Institutions, Institutional Change, and Economic Performance* (London: Cambridge University Press, 1990).

9. Douglass North, *Institutions, Institutional Change, and Economic Performance*, 3.

10. Douglass North, *Institutions, Institutional Change, and Economic Performance*, 37.

11. Douglass North, *Institutions, Institutional Change, and Economic Performance*.

12. "The Greatest Leap Forward," *Economist*, 7 April 2001.

13. "The Yin Guang Xia Trap," *Cai Jing* (Finance Magazine), August 2001; "The Mai Ke Wen Nightmare," *Cai Jing* (Finance Magazine), March 2002.

14. Yu-shi Mao, personal interview by author (Hong Kong, November 28, 2001); "China Loan Program Helps Beat Poverty—But Mr. Mao's Foundation Runs into a Conflict with the Government," *Wall Street Journal*, 3 April 2000.

15. Phillip Yaohua Wang, (a veteran of Dun & Bradstreet and CEO of China International Business Investigation Co. [Shanghai, China]). Personal interview by author (Hong Kong, October 29, 2001).

16. "The Yin Guang Xia Trap," *Cai Jing* (Finance Magazine), August 2001.

17. "The Mai Ke Wen Nightmare," *Cai Jing* (Finance Magazine), March 2002.

18. Bertrand de Speville, *Hong Kong: Policy Initiatives against Corruption* (Paris: OECD Development Centre, 1997).

19. "Singapore Overtakes HK as Asia's Top Spot for Business," *South China Morning Post*, 25 April 2002.

20. Bertrand de Speville, *Hong Kong: Policy Initiatives against Corruption*.

21. Scott MacDonald and Albert Gastmann, *A History of Credit and Power in the Western World* (New Brunswick, NJ: Transaction Publishers, 2001); Dun & Bradstreet Corporation, *Dun & Bradstreet and the Rise of Modern Business* (New York: Dun & Bradstreet Corporation, 1991); George Steiner and John Steiner, *Business, Government, and Society* (8th edition) (New York: McGraw-Hill, 1997).

22. Scott MacDonald and Albert Gastmann, *A History of Credit and Power in the Western World*, 200.

23. James Barnes, *Wealth of the American People* (New York: Prentice-Hall, 1949), 630.

24. George Steiner and John Steiner, *Business, Government, and Society*, 10.

25. *Dun & Bradstreet and the Rise of Modern Business*, 15.

26. Phillip Yaohua Wang. Personal interview by author.

27. Phillip Yaohua Wang. Personal interview by author.

## Chapter 11

# Social Networks, Electronic Commerce, and Economic Liberalization in China

Jane K. Winn

### THE IMPACT OF INFORMATION TECHNOLOGY ON MARKETS AND RELATIONSHIPS

Information technology has the power to transform both civil society and the market in developed and developing countries alike.<sup>1</sup> The possibility that this transformative power will be used primarily for the benefit of individuals and organizations within developed countries has given rise to a lively debate concerning the growing "digital divide" between developed and developing countries, and between different economic groups within societies.<sup>2</sup> Although information technology has given rise to a global communications network that often lies beyond the control of national governments, the development and implementation of information technologies remain as social processes embedded in local cultures. If the structure of global markets created by common information architecture differs considerably from the structure of diverse local markets, then individuals and organizations operating within those local markets may find themselves at a disadvantage when trying to use information technology to gain access to global markets.

China will doubtless provide a very interesting test of whether a developing country can compete successfully in global markets through greater use of information technology while retaining its distinctive business culture and institutions. Social networks have played a crucial role in China's move to a market economy, in some instances providing a complementary alternative to law and in others, undermining the development of autonomous legal institutions.<sup>3</sup> In the economic analysis of law in Western societies, the role of "social norms" in filling gaps in the normative framework of markets is now well recognized and generally accepted.<sup>4</sup> Social networks in China are supported

by such social norms, and under certain circumstances, can provide an alternative to legal regulation of market behavior by providing incentives for economic cooperation. When social networks reinforce the independence of party-state administration from legal constraints, clientalist state-society relations, or corrupt practices by individuals within government, however, they may subvert efforts to develop China's legal institutions.<sup>5</sup>

The relationship between the growing use of information technologies in society and the vitality of modern legal institutions is uncertain and complex. The increased reliance on information technology within social and economic institutions in the West has often been accompanied by a strengthening of a particular vision of a liberal social and economic order. In the United States and European Union (EU), the growth of computer networks has led first to the creation of a new public space online, followed quickly by a wave of special interest legislation designed to "proptertize" many elements of that public space.<sup>6</sup> Although many hope that the vigorous, participatory environment created by the early, noncommercial use of the Internet can survive the current efforts of content owners to build a closed architecture that controls individual access to content and online behavior, it is unclear whether those hopes are realistic. The only certain consequence for legal institutions of increased reliance on electronic commerce technologies seems to be an increase in controversy surrounding the appropriate role of law in regulating new markets. Given that countries that are more advanced in China in implementing electronic commerce technologies, such as the United States or EU member states, do not yet have coherent, systematic responses to the challenges that these developments pose to their social, economic, and political institutions, it should come as no surprise to find that China is far from articulating a coherent response in this area as well.

People's Republic of China (PRC) policies responding to increasing use of information and communications technologies have proceeded from very different premises than those of Western nations.<sup>7</sup> Promoting the use of science and technology has been a fundamental element of China's modernization program for the last two decades, and the PRC has enthusiastically embraced the use of information technology whenever it can be used in service of the larger goal of economic modernization. Unlike the decentralized Internet that exists outside of China, however, the PRC government has established a strict hierarchy of network connections with strict government control over the primary gateway between China and the rest of the world. Internet service providers require a government license, and may only provide access through this portal, in effect giving the government the power to filter and block access to any materials deemed dangerous. Thus online activity in China in principle at least can only take place under the watchful eye of the central state. While this is intended to have a profoundly chilling effect on private activities not officially condoned by the state, it is also in-

tended to leave network access available for economic as opposed to social or political activities.

China's accession to the WTO will put it under pressure to conform its law and market behaviors to liberal standards emanating from the United States and EU.<sup>8</sup> These standards will put pressure on China both to open up communications that take place over computer networks, as well as to strengthen the protection of information passing over those networks subject to intellectual property protections. The agreement on Trade Related Aspects of Intellectual Property (TRIPS) requires developing countries to enact laws protecting intellectual property rights along the lines of laws already existing in developed countries, and to establish mechanisms for the effective enforcement of those rights. While China has been engaged in a process of revising its intellectual property rights (IPR) laws for many years, it is a long way from creating an environment in which IPR of either foreign or domestic owners are accorded anything like the respect they enjoy in Western countries.<sup>9</sup> Unlike the much weaker dispute resolution mechanism used under GATT, which permitted a losing party to refuse to comply with decisions it did not find acceptable, the dispute resolution mechanism of the WTO will give China's trading partners the ability to compel Chinese compliance with WTO requirements or face sanctions.

China thus faces pressure to permit the "proptertization" of its online environment to proceed in a manner similar to that taking place in the West, but in China this would take place largely for the benefit of foreign IPR owners at the expense of local users of content, at least until China's own information technology industries are more competitive globally. China's leaders have recognized the threat that strong enforcement of IPR rises to its autonomy in enforcing economic policies in technology markets, and so has publicly expressed support for projects such as open source software, which if successful, can limit the market power of proprietary technology and software. Unlike many other developing countries, China's overall strategy with regard to the development of strong IPR as a mechanism to provide incentives for technological innovation is doubtless colored by their confidence that China is poised to emerge as an exporter of IPR in the not-too-distance future.

The leaders of China have recognized certain risks to the political status quo that the penetration of information technology into Chinese society poses, such as the increased potential for collective social activity outside state control, or growing foreign control of the network architecture through strong IPR enforcement. A similar threat lurks within an arena that China's leaders may not yet perceive as threatening the maintenance of the status quo. This new, as yet unperceived, threat grows out of advances in electronic commerce technology that will control the process of negotiating and forming contracts using networked computers. Application of contract law, and observance of formal

Western market norms regarding the negotiation and formation of contracts, are often less important in China than showing appropriate deference to political mandates, or accommodating the continued operation of social networks as a system for organizing economic activity. Earlier generations of electronic commerce technologies merely communicated specific and limited information relevant to contracts, such as price, quantity or shipping terms, product ID numbers, and may have had only a modest impact on diverse local business cultures. New electronic contracting technologies, by contrast, are designed to displace a wider range of activities normally undertaken by human intermediaries such as trading company staff or sales representatives. Electronic contracting software can help businesses compete in networked markets if they are willing to formalize and standardize their internal operations, bringing them into conformity with the internal operations of their trading partners. If Chinese businesses need to adopt new contracting technologies in order to compete effectively in global markets, and those contracting technologies were developed on the assumption that Western contract law and Western social norms regarding market activity are universally observed in global markets, then Chinese businesses may find themselves under considerable pressure to conform their behavior to Western legal and social norms in order to make use of new electronic commerce technologies. Using sophisticated software designed to mimic human interaction in the place of actual human intermediaries may reduce the ability of Chinese businesses to respond to political mandates or maintain networks of personal relationships while still competing in global markets.

This pressure to formalize and standardize firm behavior based on Western business administration norms will reinforce Chinese policies to strengthen legal institutions and open local markets to international competition, and will be resisted by all the same interests that resist those changes in other contexts. The Chinese response to this pressure might take several forms: assimilation, or by adapting business practices to make them conform to Western or global norms; marginalization, or by refraining from further opening of local markets to the extent that opening would require conformity with foreign business customs; or localization, or by modifying new electronic commerce technologies to make them compatible with local business customs in addition to or in lieu of foreign business customs. These possible responses are considered in more detail below.

### SOCIAL NETWORKS, COMMERCIAL ACTIVITY, AND ELECTRONIC COMMERCE

The role of social networks in ordering economic activity has been recognized in empirical studies of economic activity in both the West and in

China.<sup>10</sup> Economic theory can easily recognize bureaucracies and markets as competing mechanisms for allocating resources in society, but has trouble with institutional arrangements, such as *guanxi* or networks of social relationships, that defy easy classification as either bureaucratic or market systems. Assimilating empirical insights regarding the importance of social networks in practice into the theory of markets has been a long-standing challenge to the study of law and economics. One attempt to resolve the apparent conflict between social reality and economic theory treats social norms as an additional source of regulation that can reinforce law and private ordering within legal frameworks through contracts.<sup>11</sup> Another notes that social networks may constitute relational contracts, a sort of intermediate economic institution between the atomistic market contract and the bureaucratic firm.<sup>12</sup> However the economic ordering provided by social networks is characterized, the adoption of new electronic contracting technologies will have a significant effect on the vitality and scope of social networks in regulating commercial transactions.<sup>13</sup> While it is not yet clear how the introduction of norms embodied in electronic commerce will change the existing mix of law, contract, and relationship, it seems likely to accentuate the formal at the expense of the informal.<sup>14</sup>

Deference to social networks is clearly an important social norm in Chinese society, but it may be a social norm of a different character than many of social norms identified and analyzed in the context of U.S. economic activity. U.S. economic behavior seems to take place within the context of social norms that concede a fundamental legitimacy to law, while Chinese economic behavior seems to privilege informal norms at the expense of formal law. Thus the substance of social norms in China and the United States may differ significantly both with regard to their normative content as well as with regard to the implicit hierarchy of social norms and law itself. While social norms are an essential part of the regulatory fabric of life in Western nations such as the United States, it seems likely that in some sense they are a more fundamental, persistent, and pervasive source of economic order in China than in the United States. While the persistence of social networks may have impeded the post-1978 development of formal legal institutions in China right up to the present, it is unclear whether they will prove as resilient in resisting the encroachment of norms embodied in technology.

The economic consequences of social networks can also be analyzed in terms of the transaction costs imposed by different forms of economic organizations. From the perspective of institutional economics, rational economic actors will choose between contracts negotiated in competitive markets on the one hand, and bureaucratic mechanisms on the other, for allocating resources with a view to minimizing the transaction costs. Relational contracts occupy an intermediate form of institution for allocating

resources which is less atomistic and discrete than contracts formed under competitive market conditions but is more flexible than bureaucratic structures.<sup>15</sup> In an environment in which institutions supporting the enforcement of legal entitlements or supporting the exercise of autonomy of firms are underdeveloped, reliance on relationships may be an effective strategy for reducing transaction costs of economic activity. Whether relational contracts formed within social networks persist as an important Chinese economic institution may depend on the vigor of alternatives such as modern law and legal institutions, as well as on the ability of those relying on social networks to adapt to the challenges posed by the growing scale and sophistication of economic activity in China generally.<sup>16</sup>

As the emerging global information infrastructure becomes a more important feature of global markets, it seems likely institutions with formalized, standardized operations will integrate more readily into global networks than institutions based on informal relationships and social networks. This is due in large part to the manner in which information flows through markets, firms, and relational contracts, respectively. The sharing of information within relational contracts takes place under very different circumstances than it does in markets or firms. Relationships lack transparency because the exchange of information is one type of value transfer that takes place within the network and that reinforces the viability of the relationship itself. Disseminating information without insisting on a tight nexus of reciprocity would tend to erode the vitality of the relationship by directing value flows to channels outside the relationship. By contrast, the free, public circulation of information about transactions is a hallmark of markets; formalism and accountability which standardize and audit information flows to assure their accessibility and reliability are hallmarks of effective bureaucratic organization.

The problem of "incompleteness" in contracts can be used to illustrate how the greater formality and standardization of contracts formed using new electronic commerce technologies might be easier for businesses in the West to use than for business in China.<sup>17</sup> In standard economic theory, for perfect competition to exist, the transacting parties should both have perfect knowledge of all relevant facts, and the contracts they form should address every possible contingency. In reality, of course, parties enter into contracts with imperfect information about market conditions, and form contracts that address only a few of the possible contingencies that might arise when the contract is performed. For example, the transacting parties might only agree to a generic description of the type of goods to be traded, a quantity term, a price term, and a shipping term. The contract might be incomplete with regard to the date by which performance is expected, or the date after which performance would no longer be accepted.

Transacting parties may use incomplete contracts for a variety of reasons, including the high transaction costs of anticipating and negotiating terms to deal with all possible contingencies. In the United States, incomplete contracts are interpreted in light of commercial law doctrines which provide standard terms that are deemed to be part of a contract by default if the parties do not expressly agree to the contrary. This type of commercial law doctrine is consistent with the high transaction cost explanation for the routine use of incomplete contracts by sophisticated business people. New electronic contracting technologies can lower the cost of identifying relevant contingencies, and negotiating contract terms to cover them by standardizing and formalizing the process of negotiating contracts. For example, under U.S. law governing sales of goods, even if no warranty term is included in the contract, an "implied warranty" will be deemed to exist that the goods are of conventional quality and condition. New electronic commerce technologies that use standardized vocabularies for expressing ideas about contract terms will lower the cost of replacing such generic "implied" warranties with more specific warranties tailored to the needs of the transacting parties.

Transacting parties in China might use incomplete contracts for a slightly different reason than U.S. parties, and as a result, adopting new electronic commerce technologies would have a different impact on their contracting behavior differently than it would on U.S. parties. Chinese parties disclose only some of the terms of their contracts in formal, written contracts, not because they haven't fully worked out the terms left unexpressed, but rather because the unexpressed terms for all practical purposes cannot be reduced to formal terms. This would be true if individual contracts are merely one part of a long-term relationship embedded in a larger context of social networks, and the performance of individual contracts is understood by the participants in the social network to be subordinated to the obligation to work to maintain the network. Although the practice of sacrificing rights under a particular formal contract in the interest of preserving a long-term relationship has been well documented in American business as well as Chinese business, it seems fair to assume that relative importance of maintaining social networks as opposed to seeking enforcement of legal rights is nevertheless greater in China than in the United States. The use of contracting technologies by Chinese parties may pressure them to turn contracts that were intentionally left ambiguous and incomplete in order to accommodate the operation of social networks into formal, standard contracts describing individual transactions in such specific and complete terms that the parties retain little flexibility to preserve social networks. Under these circumstances, the increased cost of doing business created by the erosion of social networks might more than offset any savings created as a result of lowering the cost of entering into more complete

formal contracts if PRC legal institutions have not yet developed sufficiently to perform the functions now performed by social networks.

Electronic commerce technologies are used in networked markets so they may be subject to "network effects." Network effects arise if the value to one user of a network service increases based on the number of other users there are on the network, but there is no way to collect this increased value associated with growth of the network from individual users. When network effects are strong, then individual users of the network will resist changes either to a new network or to aspects of the network if those changes bring a risk of reducing the number of users on the network. This resistance to change, including even changes that clearly improve the welfare of network users on an individual basis, once a network is up and running and has a large number of users may lead to "lock in."<sup>18</sup> Once specific norms are embedded in the network architecture of global markets, it may become more difficult to change those norms after they are adopted than it was to get them accepted in the first place if lock in is a problem.

The risk that global markets will become "locked-in" to standards that fail to take account of the requirements of diverse legal and cultural systems might be reduced if the process of setting standards for global electronic commerce markets is fair, open, and transparent.<sup>19</sup> While some of the relevant standards may be set by standard setting organizations that conform to those requirements, it is very likely that many of the relevant standards will be set in informal, ad hoc processes that do not permit the participation of all interested parties and also produce proprietary standards. This latter form of standard setting may be less likely to produce inclusive standards that can accommodate diverse business cultures than more traditional standard setting efforts conducted under the auspices of global organizations such as the International Organization for Standards (ISO).

Technical standards can be created in a wide variety of contexts.<sup>20</sup> While certain technical standards are mandated by government regulation, a more important source of technical standards are groups whose membership is drawn from the affected industrial or commercial sectors who set non-binding standards through negotiation and consensus by the parties themselves. Voluntary industry-based standard setting processes date back to the nineteenth century in the United States, when the emergence of a national economy integrated by railroads and telegraph required the definition of national technical standards to guide industry and commerce.<sup>21</sup> Today, non-governmental organizations such as the American National Standards Institute and industry consortia organize meetings of interested parties who jointly formulate standards to govern the development of new technologies. In an era of global economic integration, international standard setting organizations

such as the ISO and the International Telecommunications Union play an increasing role in setting technical standards used within the U.S. economy as well.

### GLOBALIZATION, INFORMATION TECHNOLOGY, AND ECONOMIC DEVELOPMENT

Over the past two decades, the PRC has made considerable progress in liberalizing its legal system, although much remains to be accomplished before it will be capable of operating with anything like the effectiveness of the legal systems of many Western nations. In the last decade alone, a tidal wave of legislation has emanated from the central government, which has been supplemented by legislation from provincial and local authorities. Not only will it be difficult for Chinese individuals and firms to become familiar with the terms of all these new laws, the development for institutional mechanisms for their enforcement lags behind the tempo at which new laws are being promulgated. Major obstacles to the consistent enforcement of these new laws and regulations remain, including the interference of the party-state in the operation of legal institutions, the rise of clientalist institutions mediating state-society relations in a manner that subverts the effectiveness of formal legal institutions and the persistence of social networks as an alternative to law as a source of economic ordering.

Technical norms embedded in electronic commerce technologies will play an increasing role in this already volatile mix of ordering institutions. Reidenberg has labeled the normative content of information technology "lex informatica"—a sort of successor to the traditional customary law of commerce, the *lex mercatoria*.<sup>22</sup> Lessig has commented at length on the ability of software to function as a sort of legal code as well as computer code, and has argued that unless attention is paid to the relationship between traditional social and legal values embodied in formal legal institutions and those embodied in information technologies that control human behavior, traditional values may be undermined.<sup>23</sup> While the traditional social and legal values that Lessig champions in the context of U.S. society—the classic hallmarks of civil society and liberalism—may not be the same traditional social and legal values that these technologies will threaten to erode in Chinese society, the character of the threat remains the same. What is at risk in the Chinese context is the flexibility and resilience of the local business culture, which has made important contributions to China's recent economic success, if distinctive elements of that culture are incompatible with the use of sophisticated electronic commerce applications first developed and implemented in societies with very different local business cultures.

Unlike many developing countries, China has developed a wide-ranging and aggressive plan for upgrading the technological architecture of its markets.<sup>24</sup> If any developing country has a chance to become a leader in technological innovation in the global information economy, China does because of the huge economic and human capital resources it can bring to bear on the problem. Whether China's leaders will realize their goals of improving economic efficiency and raising the level of economic development through the effective use of technology while keeping a tight rein on the political and social uses of technology remains to be seen. In addition, because of China's accession to the WTO, it will increasingly be forced to cede control over many elements of its science and technology modernization program to market forces.

China's recent entry into the WTO is the culmination of decades of economic liberalization and opening to the West. While the process of meeting its obligations as a WTO member in terms of law reform and effective market access may be slow and painful, it seems unlikely that the general trend toward market reforms can now be reversed. In the realm of information technology, China's obligations to open its markets for telecommunications services and to strengthen the enforcement of IPR are essential parts of the process of expanding the role of electronic commerce in the Chinese economy.

Liberalization of telecommunications will have two likely effects on the growth of electronic commerce: it will increase the number of Chinese with effective access to networked computers and thus the global information economy, and it will make the government's task of controlling the content of electronic communications more difficult. Although the absolute number of individuals with Internet access is high (around 45 million in 2002 according to the CIA World Factbook), Internet users are concentrated in major metropolitan areas and penetration of Internet access in rural areas remains very limited. In 2000, the PRC government issued regulations governing the licensing of Internet access providers and establishing their liability for the transmission of prohibited content, even through the acts of third-party subscribers to their services.<sup>25</sup> This is the opposite of the liability rule adopted in the United States and EU which treat Internet service providers as the equivalent of telephone service providers and shelter them from liability for third-party content, rather than treating them as the equivalent of traditional publishers.<sup>26</sup> Through a variety of regulations, such as prohibiting portal sites from providing links to foreign news sites without government authorization, the PRC has made clear its intention to control the flow of information through computer networks in China. Whether implementation of the "Great Firewall of China" is in fact feasible remains unclear.

Part of the package of rights and obligations associated with WTO membership is compliance with TRIPS. TRIPS requires developing countries that are net importers of IPR to enact comprehensive IPR laws and to insure that they are effectively enforced. This represents merely a continuation of a process of strengthening IPR laws and enforcement that has been underway in China for at least a decade.<sup>27</sup> The politics of strong IPR legislation and enforcement in economic development is a topic that has been widely discussed in other contexts and is beyond the scope of this chapter. The following discussion regarding standardization of contracting procedures and communications is in some ways analogous to this debate because it focuses on the development of technical norms within core economies and their export to peripheral economies in a manner that is likely to privilege the interests of developed rather than developing countries. Given the nascent state of new, more powerful electronic contracting technologies, it will be unclear for some time how the norms embodied in that technology will affect developing countries, and whether the threat of lock in to those technical norms in the global information architecture will ever be realized.

#### POSSIBLE CHINESE RESPONSES TO CROSS-BORDER ELECTRONIC COMMERCE

In China today, the volume of cross-border electronic commerce is much more significant than the volume of domestic electronic commerce, and it is likely that this asymmetry will persist for some time.<sup>28</sup> Even taking into account China's much larger economy, however, the total volume of electronic commerce transactions is behind that of Japan, which is the regional leader in the use of electronic commerce technologies. Current rates of electronic commerce utilization in China also remain far behind those of Taiwan or Japan; but it is worth noting that utilization rates in Taiwan, Japan, and even the EU are behind those in the U.S. domestic economy. Chinese firms today communicate with overseas trading partners using e-mail or EDI in a manner similar to faxes or telexes—someone converts the information to human readable form and walks around the plant to give instructions based on that information.

The widespread implementation of sophisticated electronic contracting technologies within China is therefore still many years away. When it is finally achieved, however, it may entail a major transformation in the internal operations of Chinese firms. The character of the transformation may include greater reliance on transparent, auditable procedures inside firms; greater sharing of transaction information with market participants outside of social networks; diminished subordination of firms to clientalist controls invoked on

behalf of the Party or government officials; diminished reliance on social networks as an alternative economic ordering, and greater reliance on technical norms or formal law. Assuming these are in fact the most important potential costs and benefits of greater use of electronic contracting technologies within Chinese firms, local responses may vary widely from enthusiastic embrace to outright rejection. The various possible responses can be grouped into three large categories of response: assimilation of Chinese firm behavior into Western norms of firm behavior; marginalization of Chinese firms in global markets due to resistance to the use of standardized contracting technologies; or the localization of new technologies to current conditions in Chinese markets, easing the path to greater utilization in China while possibly raising the costs of access to Chinese markets by Western firms.

If electronic commerce technologies embody formal, rational principles of business administration that differ significantly from local custom and practice in Chinese firms (or for that matter, many small enterprises in the West), then the globalization of commerce through advances in information technology will pressure diverse local institutions to conform to Western norms. Proponents of a form of "vulgar" Weberian modernization theory would applaud this pressure as merely accelerating a necessary and appropriate change in the local business culture of developing countries.<sup>29</sup> This pressure to assimilate to Western norms of economic behavior might act as a sort of Trojan horse bringing in the rule of law through the network architecture.

As Shaomin Li points out, however, any period of transition from significant reliance on informal norms and social networks to formal norms and Western customs and practices may increase instability in the short term in Chinese markets rather than reducing it.<sup>30</sup> If firms make ad hoc decisions to adopt new technologies that require more formalism, transparency, and accountability, it is unclear that greater rationality in economic activities will immediately necessarily result in the aggregate. Social networks that permit participants to share risk informally may be undermined by greater transparency of information and reduced ability to make ad hoc modifications in terms during the performance of contracts, yet the eclipse of the informal would not guarantee an equally rapid emergence of modern alternatives. For example, the ability of Chinese firms to engage in modern risk analysis to control and reduce risk, and to use insurance to spread risks may not increase quickly enough to offset the erosion of informal risk management systems. Ad hoc, piecemeal assimilation of modern electronic commerce systems will not guarantee greater economic efficiency unless the management infrastructure necessary to exploit fully new technologies is also in place.

Chinese firms may refrain from full participation in global markets due to reluctance or inability to make the necessary changes in business practice to

adapt to the requirements of new electronic commerce technologies. This might relegate Chinese firms to more traditional, less profitable sectors of the economy, or diminish Chinese control over sectors of the economy that are most actively engaged in global competition in favor of foreign-controlled firms. The Chinese government's policy of retaining control over Internet content and access for political ends may inadvertently contribute to this kind of marginalization of Chinese firms in economic arenas if it has a chilling effect on the rate of growth of computer networks and their utilization rates by firms.

It is possible that Chinese firms will never face a stark choice between assimilating Western norms of economic behavior or finding themselves marginalized in global markets. This is because emerging technologies of electronic contracting might achieve widespread adoption in a form capable of accommodating a wide range of diverse local business cultures. In the alternative, lock in may never emerge as a problem if the basic standards governing electronic contracting are open, public standards and competitive markets produce a wide array of electronic contracting technologies that are interoperable and that individually permit considerable variations in firm behavior.

Recent studies of the development of "cross-border production networks" in the electronics industry in East Asia provide grounds for optimism in this regard.<sup>31</sup> East Asian markets for electronics became dramatically more competitive during the 1990s, yet the production networks that tied U.S. multinational firms to much smaller trading partners throughout East Asia showed signs of remarkable diversity in institutional form. Contrary to predictions that global competition would produce convergence in organizational form, production networks that combined formal corporate organizations with relationship-based networks were better able to respond to changing market conditions than organizations that relied exclusively on conventional legal forms. During the 1990s, the Japanese experienced a major erosion in their competitive position in the electronics industry although they continued to rely on very stable, relatively inflexible relationships between Japanese multinational firms and their small and medium-sized trading partners inside Japan or throughout East Asia, indicating that the choice of formal or relational structure alone was not determinative. It is therefore clear that even though global production "networks" and Chinese social "networks" are very different types of networks, they are not necessarily incompatible with each other.<sup>32</sup> Perhaps the same holds true of global information technology networks and Chinese social networks as well.

If Chinese business practices are simply incompatible with the form and function of electronic contracting technologies developed in the West, however, then Chinese firms may have some hard choices to make. But if Chinese

firms can find ways to adapt technologies developed in other contexts to make it easier for Chinese firms to adopt them, then Chinese firms would reap the efficiency and strategic benefits of greater use of new technologies while avoiding the costs of internalizing Western business norms. With regard to use of Chinese characters or conformity to PRC law, this would not be too daunting a task. But if at the core of Chinese business practices there is a preference for social networks over formal institutions and relationships, then there may be a fundamental divergence between what computers are capable of doing and Chinese business conventions. This is in marked contrast with the business conventions of some other East Asian societies, such as Malaysia or Indonesia with large Muslim populations. The highly complex and formalistic character of the rules governing commercial transactions contained in Islamic law create huge transaction costs for humans trying to comply with Islamic law, but create problems that in principle computers should be adept at solving.<sup>33</sup> By contrast, the kind of opacity and particularism often characteristic of modern Chinese business practices seems almost antithetical to the formalization and standardization at the heart of new electronic commerce systems. This incompatibility with Western business conventions is further exacerbated by the slow transition from Party control over the economy to greater reliance on market institutions, and the general lack of familiarity with Western accounting and management conventions.

It is unclear how technology standard developers can represent Chinese business norms within software systems. The highly subjective and contextualized process of subordinating the short-term self-interest of a firm to the wishes of the Party or a local government official is not something that can be modeled the same way a statutory mandate to obtain express consent to a particular, discrete transaction can be modeled. If the subtle mechanisms that permit the coordination of individual, relational, and governmental interests to be harmonized without explicitly articulating each one or their hierarchical relationship to one another are reduced to a formal model, then in some sense they will have been utterly transformed if not simply destroyed. A strategy for embedding opportunities for the exercise of human discretion into the operation of electronic contracting systems even if they come at the expense of greater automation and efficiency might be one way to try to resolve such a conflict.

Assuming such obstacles to adapting new technologies to contemporary Chinese business practices could somehow be overcome, then a proclivity for social networks as a form of business organization would not necessarily tend to exclude Chinese firms from competing in global markets. Such Chinese localized technologies might be interoperable with systems embodying Western norms, or they might be incompatible with them. If development of Chinese

alternatives succeeded in fragmenting global standards, then given the size of the Chinese market, it might be possible for the Chinese to require Western firms to internalize the costs of accommodating incompatible systems, rather than permitting Western firms to impose on Chinese firms the costs of adapting to Western standards.

Another solution might be the development of intermediate technologies to facilitate the gradual modification of contemporary Chinese business practices. The risk that local businesses will be pressured to adopt incompatible administrative systems as a necessary precondition of gaining access to global markets can be reduced if new technologies are implemented gradually. The development of electronic commerce technologies "localized" for conditions in Chinese markets might promote the gradual convergence of Chinese and Western business practices while reducing the risk that global markets would be fragmented by incompatible technological standards.

## CONCLUSION

Electronic commerce technologies are undergoing profound changes that may have the effect of requiring Chinese businesses to transpose an ever-greater number of their current business practices into formal, automated systems designed with reference to Western business practices. Social networks as a system of organizing transactions, capital, and knowledge transfer can coexist with advances in information technology, such as electronic commerce systems limited to telexes or electronic messages containing only price, quantity, and shipping terms. As global networks become capable of automating contract negotiation and performance, however, that coexistence may be called into question. If new electronic commerce applications achieve widespread acceptance in global markets, then network effects could give the norms embedded in those technologies a mandatory quality usually reserved for law. Chinese firms may find that in order to compete in global markets, they must have access to sophisticated electronic commerce technologies, and in order to use those technologies effectively, they must adopt Western-style business administration systems. However, such pressure on local firms to make wholesale changes in their administrative systems might be avoided if electronic commerce applications can be developed that are more clearly compatible with current Chinese business practices, whether as part of a strategy of gradually integrating local Chinese markets into the global information infrastructure, or as part of a strategy to develop distinctive electronic commerce applications uniquely adapted to Chinese conditions.

## NOTES

1. United Nations Conference on Trade and Development (UNCTAD), *E-Commerce and Development Report* (New York: United Nations, 2001).
2. Mark Warschauer, *Technology and Social Inclusion: Rethinking the Digital Divide* (Cambridge, MA: MIT Press, 2003).
3. Stanley Lubman, *Bird in a Cage: Legal Reform in China after Mao* (Stanford, CA: Stanford University Press, 1999), 113–18; David Wank, *Commodifying Communism: Business, Trust and Politics in a Chinese City* (Cambridge, MA: Cambridge University Press, 1999), 93–115.
4. Robert D. Cooter, “Decentralized Law for a Complex Economy: The Structural Approach to Adjudicating the New Law Merchant,” *University of Pennsylvania Law Review* 144, no. 5 (1996): 1643–96; Eric Posner, *Law and Social Norms* (Cambridge, MA: Harvard University Press, 2000).
5. The chapter by Randall Peerenboom in this volume.
6. Lawrence Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World* (New York: Random House, 2001); Susan Sell, *Private Power, Public Law: The Globalization of Intellectual Property Rights* (New York: Cambridge University Press, 2003); Carl Shapiro and Hal Varian, *Information Rules* (Boston: Harvard Business School Press, 1999). In the 1990s, intellectual property laws were strengthened in both developed and developing countries. These reforms were by their supporters justified as necessary to create adequate incentives for further technological innovation. They were decried by their opponents as the privatization of what would otherwise be in the public domain undertaken for the benefit of powerful special interests within developed countries at the expense of consumers within developed countries and of less developed countries. This expansion in the scope of intellectual property rights, or the “propertization” of ideas, is a dimension of the “Washington Consensus” on national and international economic reform that dominated the 1990s.
7. Xing Fan, *Communications and Information in China: Regulatory Issues, Strategic Implications* (Lanham, MD: University Press of America, 2001); Jiang-yu Wang, “The Internet and E-Commerce in China: Regulation, Judicial Views, and Government Policies,” *Computer & Internet Lawyer* 18, no. 1 (2001): 12–18.
8. Qingjiang Kong, “Enforcement of WTO Agreements in China: Illusion or Reality?” *Journal of World Trade Law* 35, no. 6 (2001): 1181–1214.
9. William Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford, CA: Stanford University Press, 1995).
10. Seok-choon Lew, “The Development of the Township-Village Enterprises and the Re-Institutionalization of the Family in China” (paper presented at the International Conference on Social Networks and Civil Society: A Comparative Approach, Hong Kong, 1–4 April 2002; the chapters by Shaomin Li and Randall Peerenboom in this volume; Stewart Macauley, “Non-Contractual Relations in Business: A Preliminary Study,” *American Sociological Review* 28 (1963): 55–69; Oliver Williamson, *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting* (New York: Free Press, 1985).
11. Robert D. Cooter, “Decentralized Law for a Complex Economy.”

12. Oliver Williamson, *The Economic Institutions of Capitalism*; Jane Winn, “Relational Practices and the Marginalization of Law: Informal Financial Practices of Small Businesses in Taiwan,” *Law and Society Review* 28, no. 2 (1994): 193–232.
13. Jane Winn, “Emerging Issues in Electronic Contracting, Technical Standards and Law Reform,” *Uniform Law Review/Review de Droit Uniforme*, NS-vol. 7 (2002–2003): 699–711.
14. Jane Winn, “Islamic Law, Globalization and Emerging Electronic Commerce Technologies,” in *Strengthening Relations with Arab and Islamic Countries through International Law: E-Commerce, the WTO Dispute Settlement Mechanism and Foreign Investment*, ed. International Bureau of the Permanent Court of Arbitration (The Hague: Kluwer Law International, 2002), 27–42.
15. Oliver Williamson, *The Economic Institutions of Capitalism*.
16. The chapter by Shaomin Li in this volume.
17. Ian Ayres and Robert Gertner, “Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules,” *Yale Law Journal* 99, no. 1 (1989): 87–136.
18. Carl Shapiro and Hal Varian, *Information Rules*.
19. Jane Winn, “Islamic Law, Globalization and Emerging Electronic Commerce Technologies.”
20. Carl Cargill, *Open Systems Standardization: A Business Approach* (Upper Saddle River, NJ: Prentice Hall, 1997).
21. Albert Chandler, *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA: Belknap Press, 1997).
22. Joel Reidenberg, “Governing Networks and Cyberspace Rule-Making,” *Emory Law Journal* 45 (1996): 911–30.
23. Lawrence Lessig, *Code and Other Laws of Cyberspace* (New York: Basic Books, 1999); Lawrence Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World*.
24. UNCTAD, *E-Commerce and Development Report*.
25. Jiang-yu Wang, “The Internet and E-Commerce in China: Regulation, Judicial Views, and Government Policies.”
26. Jane Winn and Benjamin Wright, *Law of Electronic Commerce* (4th ed.) (New York: Aspen Publishers, 2001).
27. William Alford, *To Steal a Book Is an Elegant Offense*.
28. UNCTAD, *E-Commerce and Development Report*.
29. UNCTAD, *E-Commerce and Development Report*.
30. The chapter by Shaomin Li in this volume.
31. Michael Borrus, Deiter Ernst, and Stephan Haggard, “Introduction: Cross-Border Production Networks and the Industrial Integration of the Asia-Pacific Region,” in *International Production Networks in Asia: Rivalry or Riches?* ed. Michael Borrus, Deiter Ernst, and Stephan Haggard (New York: Routledge, 2000).
32. Hon-Chu Leung, “Overlapping Networks and Flexible Manufacturing: A Structural Analysis of Hong Kong-Based Garment Industry,” in *The Chinese Triangle of Mainland China, Taiwan and Hong Kong*, ed. Alvin Y. So, Nan Lin, and Dudley Poston (Westport, CT: Greenwood Press, 2001).
33. Jane Winn, “Islamic Law, Globalization and Emerging Electronic Commerce Technologies.”