



Poles of market growth?

Open questions about China, information and the world economy

■ **Dan Schiller**

University of Illinois at Urbana-Champaign, USA

ABSTRACT

Control over communications is a crucial concomitant of political-economic power. China's emergence as an important force within the global capitalist system is thus giving rise to a substantially greater presence in the system of international communications. A series of initiatives, briefly inventoried here, aims to win a place for Chinese interests across the entire spectrum of media and telecommunications systems, spanning hardware, software and services. How should we interpret these in the context of China's rise?

Chinese initiatives in communications and information are best apprehended neither as a developing country's attempt to redress glaring imbalances in the global communications system, though of course they contain traces of this, nor as a current threat to the global dominance of the United States, though over the long term this might change, much as the US challenged and ultimately unseated British control over international communications. Rather, they are seen here as contributing to the ongoing structural reconfiguration of the political economy of transnational capitalism. The likely outcome is greater, rather than lesser, instability.

KEY WORDS

China ■ information ■ media ■ political economy ■ telecommunications ■ transnational capitalism

Two lines of structural change converge on a vital entry point for analysis of the contemporary political economy. First, despite the bursting of the high-tech financial bubble, a worldwide communications and information industry continues to function as a fountainhead of economic development. Second, with its embrace of capitalist social relations, China has become 'the fastest-growing large economy in the world' ('Losing its Balance', 2004: 12) and, therewith, an engine of

market renewal. Are these two poles of growth related? How? What links are being forged between capitalism's most dynamic industry and its most expansionary growth zone?

Discussion begins by making an inventory of Chinese initiatives in information and communications, initiatives which are unfolding across an array of manufacturing, content, and service markets.

Recent Chinese initiatives

China's media content and hardware industries and Chinese media advertisers are establishing transnational affiliations, and using them to broaden and reorganize the domestic market – and vice versa – at a furious pace. In 2002, Xinhua Financial Network, a Hong Kong joint venture in which China's state-owned Xinhua News Agency claims a minority stake, purchased the Asian business-news operations of Agence France-Presse (Pottinger, 2002: B5). In 2001, China allowed AOL Time Warner and News Corp. to transmit Mandarin language television entertainment channels into Guangdong, via CETV and Star TV respectively – in exchange for the two media conglomerates' agreement to carry CCTV 9's 24-hour mainly English language TV channel over US cable systems (Lawrence, 2002: 30–1; Shi, T., 2003). In 2003, however, after having fallen from its comfortable perch in the aftermath of the internet bubble, a straitened AOL Time Warner sold a controlling interest in Chinese Entertainment Television Broadcasting (CETV) to Tom.com, a Hong Kong-based media group controlled by billionaire Li Ka-shing (Mackay, 2003: 18).

Also during 2003, a Chinese company, Yanjing Beer Group, began to sponsor a US National Basketball Association team (the Houston Rockets), which, not coincidentally, showcases the talent of Chinese-born center Yao Ming. About 30 Rockets games were to be broadcast into China during 2003, so that an expected tens of millions of TV viewers would see Yanjing's billboards, which encircle the Houston arena. Yanjing Beer is only one of several Chinese consumer products companies to have crafted sponsorship deals with US and European sports teams (Kahn, 2003: B1, B4).

Chinese production lines, meanwhile, were generating a torrent of television sets. Springboarding from China's domestic market, the world's largest with sales of 33 million sets in 2002 (compared with 25 million in Europe and 26 million in the US) (Ramstad and Delaney, 2003: B4), half a dozen domestic manufacturers set their sights on exports – which accounted for around 15 million sets a year – to three

dozen countries (Yau, 2002: 1). In 2003, TCL, China's second-largest setmaker, partnered with Thomson – the French electronics company that owns the RCA brand – to create the world's largest transnational TV manufacturer (Ramstad and Delaney, 2003: B4; Lau and Cameron, 2003: 17).

In telecommunications, profitmaking opportunities arising from new technologies and strategic leverage built up over the domestic market have combined in support of transnational expansion by Chinese equipment suppliers and system operators. By producing more than 23 million handsets built using components from dozens of outsourcing companies, 20 to 25 Chinese mobile phone manufacturers including TCL, Ningbo Bird and Haier Group acquired control over one-fifth of domestic sales by 2002; by year-end 2003, Chinese companies controlled an estimated 40 percent of an enlarged home market (Batson, 2003: B3; Bolande, 2003: B6; Drucker et al., 2004: B1, B6; Ramstad, 2003a: B7; Ramstad, 2003b: B10; Ramstad, 2003d: B1, B4).

Foreign wireless companies were able to recapture some of the domestic Chinese handset market during 2004, but what the *Wall Street Journal* called 'explosive growth' by Chinese phone companies was already 'set to overflow onto the world stage' (Bolande, 2003: B6).

In a simultaneous bid to shape domestic market development and to use this base as a launch-pad into the global market, Chinese policymakers encouraged development of homegrown technical standards on telecommunications and media products. To the dismay of US corporate rivals and, it is important to add, with mixed success, this strategy was adopted not only for mobile phones, but also for next-generation wireless networking gear, high-definition television, electronic imaging technologies for the digital home market, and DVDs (Chen, 2003b: B4; Chen, 2003c: B6; 'China Rolls', 2003: B8; King, Jr., 2004: B4; Ramstad, 2003e: A22).

Other initiatives in international telecommunications attempted to take advantage of key historical contingencies. On the one hand, global telecommunications faces depressed market conditions as a consequence of a huge (albeit uneven) buildup of network facilities through the 1990s. On the other, China avoided the wholesale global privatizations of the 1990s, whose general result was to transfer significant control over national telecommunications infrastructures to foreign investors and system operators. The result was to grant Chinese network operators, which had presided over the growth of the world's largest national telecommunications market (boasting several hundred million wireline and wireless subscribers by 2004),¹ exceptional opportunities for transnational expansion at bargain-basement prices.²

A consortium led by China Netcom, the second largest carrier in the country, paid \$80 million to acquire a partially owned affiliate of bankrupt regional network Asia Global Crossing with a book value of \$1.2 billion; after China Netcom bought out its partners to become sole owner, this major regional carrier, renamed Asia Netcom, passed entirely into Chinese hands, and began to compete for regional traffic (Boland and Berman, 2002: A3; Leahy, 2003: 18; Schenker, 2004; Sender, 2002: C5). China Netcom also entered negotiations with PCCW, to purchase a major stake in the latter's HKT Telephone system in Hong Kong, seeking to enlarge its market presence in the adjoining Guangdong province, where foreign-owned manufacturing plants are concentrated (Buckman and Wang, 2004: B7). China Netcom planned to list its stock in Hong Kong and New York during 2004, with the aid of Goldman Sachs, Citigroup and China International Capital as lead underwriters – though here the depressed state of the telecommunications industry worked against the Chinese company's intentions (Fong, 2004a: B5; Leahy, 2003: 18).³ Separately, Hutchison Whampoa, based in Hong Kong and controlled by Li Ka-shing, acquired mobile telecom network assets in nine (mostly European) countries, planning to spend \$17.5 billion to build out third-generation mobile phone services in advance of rivals.⁴

In semiconductors and computing, interactions between the Chinese home market development and the transnational industry again were uppermost. According to one estimate, Chinese demand for semiconductors, both for products fashioned to satisfy domestic demand and for exported commodities, increased from less than \$7 billion in 1997 to more than \$28 billion in 2003. In 2003, China claimed 4 percent of global chip-making capacity, compared with 18 percent for North America. To tap into this demand, several Taiwanese-backed start-up chip manufacturers set up shop in China, sustained by investments of nearly \$10 billion over the past three years – with an additional \$5 billion already pledged (Dean, 2004: A1, A16).

By 2003, China's largest PC manufacturer was the Lenovo (formerly Legend) Group with \$3 billion in revenue and 30 percent of the domestic market (Gold et al., 2003: 1, 7). China's domestic market for PCs (expected to overtake Japan during 2003 as the world's second-largest after the US) was beset by intensifying competition and declining profit margins, so Lenovo (a company whose largest originating shareholder was the Chinese Academy of Sciences) was forced to look elsewhere for growth. The company accordingly formulated plans to increase the share of its overseas sales (they comprised less than 7 percent of revenues in 2002) in competition with Dell, H-P, IBM, and

Toshiba (Bradsher, 2003: B1, B3; Buckman, 2003: B1, B4). However, by mid-2004, strategic missteps in both overseas and domestic markets caused Lenovo's progress to falter (Hutzler, 2004: A12).

In internet systems and services, again, efforts to build up leverage in the domestic market combined with a new ability to raise capital via foreign stock exchanges to support both increasing market power and transnational ambition. Huawei Technologies, a burgeoning Chinese telecom equipment maker with projected sales of \$5 billion in 2004, is perhaps the most resounding success story. Huawei began 'a significant US push' in 2002, 'touting its products' similarity to Cisco's market-dominant gear, at lower prices' (Ahmad, 2004d: 15; Thurm, 2003a: B3). In 2003, Huawei teamed with 3Com to produce and sell networking gear to the business market (Thurm, 2003b: B5); and Huawei also announced its first contract, worth \$900 million, to provide a commercial third-generation wireless network for multimedia services to Sunday Communications of Hong Kong (Pringle and Gopalan, 2003: B2). Surviving a challenge from Cisco over intellectual property, by 2004, Huawei was selling its products in 70 countries, winning major contracts from Brazil to Sweden, and had grown into a serious competitor of beleaguered telecom manufacturers based in Europe and the United States (Rhoads and Hutzler, 2004: A1, A13).

Tom Online, a second-tier portal and purveyor of wireless content and online advertising in China, was expected to raise \$195 million on the Nasdaq Stock Market in the US in March 2004; the top three web portals, Sohu.com, Sina.com and Netease.com, were all profitable Nasdaq-listed companies (Chen, 2003a: B1, B3; Fong, 2003: B4B; Fong, 2004c: C16). A somewhat greater measure of international recognition followed in the wake of China's internet initiatives. ICANN, the US organization that controls the naming of websites through the internet's central registry, reconstituted itself in late 2002, in part to allow a Chinese representative onto its new advisory board. Whether or not China – as the *Financial Times* (Harvey, 2002: 6) reported – finds it feasible as a result to 'wield more influence over the Internet', there can be little question that China is trying to promote internet address standards which are less dominated by the US (Ramstad, 2004: B8).

In software and services, policies are again crafted to link transnational market expansion to domestic economic growth and continuing corporate reorganization. In March 1998, acting on then General Secretary Jiang Zemin's edict that 'none of the four modernizations would be possible without informatization', China established a new 'superministry' to promote information industries as a 'new point of

economic growth' (Lederer, 2003; Zhao, 2000: 57). Individual Chinese software and services companies evinced a protean character, as they sought to benefit from the process of 'creative destruction' that economist Joseph Schumpeter identified with market forces. Chinadotcom, a continuing corporate experiment in information market development, began as a web service for the Xinhua press agency in 1997, then as an internet portal partnership with AOL and a Nasdaq listing, and is now trying to carve out its niche by purchasing distressed software companies in North America and Europe to develop a basis for selling software products to Chinese manufacturers (Ramstad, 2003c: B4). China's software and services industry reportedly generated revenues of around \$4 billion in 2003 (compared with \$12 billion for its more visible Indian counterpart), with exports growing rapidly. 'To spur the development of the software outsourcing industry', reported the *Financial Times*, 'China has set up 15 national software industrial parks and is encouraging tertiary institutions to emphasize software development and applications in their curriculums' (Leahy and Lau, 2004: 3).

Which leads us to yet another – increasingly important – sector of the information market. Private investment in China's schools and colleges commenced during the late 1980s, and expanded alongside an explosion in demand for distinction-conferring educational services for middle- and upper-class children. Indeed, in 2002, Chinese consumers are reported to have spent out of their own pockets a remarkable \$40 billion on education (Dolven and Saywell, 2004: A17). Further market growth is expected, not least, in the higher education segment where, beginning in 1999, a 'fee-increase mania' set in. College administrators are exploiting every possible pretext to increase student fees, resulting in what one analyst calls 'bottomless corruption, of a kind probably without precedent in the history of world education' (Xiao, 2003: 246, 244). China's National People's Congress nevertheless ratified the shift, by approving a law in December 2002 to grant private colleges parity with publicly supported institutions in possessing a right to make a 'reasonable profit' on operations ('Private Universities', 2003: A41).

These initiatives are too diverse and substantial to be mere happenstance. But do they possess an underlying political-economic coherence?

China's rise: a threat to US power?

Distinctions among different market segments of course are not only economic but also, especially for the content industries and most

particularly for urban press and broadcast news, political. In what Chan and Qiu call 'a partially liberalized authoritarian media system', even as commercial and market pressures deepen their hold, the Chinese party-state continues to impose a formidable array of political and ideological controls (Chan and Qiu, 2002: 36).⁵ All things considered, the question we are engaging here cuts in a different direction: whether Chinese initiatives in communications and information possess any overarching significance or directionality in the context of the *global* political economy.

Chinese officials are prone to cast these initiatives as a developing country's bootstrapping attempts at economic progress; they may add that they are merely redressing the glaring imbalances that continue to scar the global political economy and, particularly, the global communications system. For example, State Council Information Minister Zhao Qizheng argued that 'Asian countries should set up their own strong media for the sake of speaking for themselves, reporting the facts about their countries, and speaking out to safeguard their national interests' (in Lawrence, 2002: 30).

If Chinese leaders typically minimize their challenge, then United States policymakers are prone to overstate it. Repeatedly, we are told that nothing less than an encompassing threat to US hegemony is in the offing. 'Thanks to dramatic progress in technology, transportation, and communications systems, China will wield far more power in the global economy', declares one of the milder statements of this kind, in the influential journal, *Foreign Affairs* (Hale and Hale, 2003: 37).⁶ What Gilboy (2004: 38) calls a new 'mercantilist economic superpower' is said to be forming.

US state agencies, moreover, have repeatedly acted in ways that are consistent with this perspective, as they move to neutralize or outflank what they deem to be incursions within the strategic information sector. Recent instances include: prosecution by US authorities of US aerospace companies Loral and Hughes Electronics for passing technical information about satellites to the Chinese (Labaton, 2003: C1, C4); locking out the successfully expanding \$2 billion-per-year Chinese space program from the US-dominated International Space Station ('China and a New Space Race', 2003: B6; Hutzler, 2003a: A2; Hutzler, 2003b: B1, B3); rebuffing Hong Kong-based Hutchison from participating in the takeover of a global international telecommunications system possessing US assets;⁷ sending a strongly worded official letter protesting China's attempt to use technical standards to gain traction for its domestic companies in next-generation wireless system markets (King, 2004: B4);

and bringing a trade action against China for supposedly unfairly taxing semiconductor imports.

To understand what is happening, however, we need to extend the analysis beyond a list of initiatives, and beyond a merely instrumental explanation of action and counter-action. Much of the significance of these events lies elsewhere, beyond any putative zero-sum game between current global hegemon and would-be rival. Attention needs to be focused, instead, on the structural reconfiguration of transnational capitalism with which China's rise is so profoundly intertwined. The question then becomes not simply how comprehensive or immediate a challenge one nation may pose to the other, but what current changes betoken for the structure and function of a more encompassing world political economy. This vital point may be clarified by turning again to recent developments in telecommunications.

Telecommunications and the reintegration of China into transnationalizing capitalism

The US Federal Communications Commission (2001) has documented the 'steady growth in use of US international-facilities for international ... private line services from the United States'. This bland formulation understates the significance of what has occurred. Growth in private line services has been explosive and unprecedented.

FCC data show that the number of activated 64 Kbps equivalent circuits at year-end 2000 was 2,178,926 – a 121 percent increase from 1999 (US FCC, 2001) – and that it had increased to 2,844,862 by year-end 2002 (Hsu, 2003: Tables 5, 6; US FCC, 2003). International Private Line Services accounted for 70–74 percent of the total for each of the past three years, after having experienced disproportionately rapid growth over the preceding period at the expense of telephone calls transiting the public switched network (Hsu, 2001: 3).

In the case of individual country routes, both the pace of growth and the shift toward private lines are especially impressive. The UK, for example, became the US's topmost telecommunications trading partner in 1999 (it was the third largest in 1997), and has remained so: the number of activated 64 Kbps circuit equivalents increased between 1997 and 2002 from 41,739 to 694,019, even as the proportion of International Message Telephone Service (IMTS) to private line (and other) circuits declined sharply, from .77 to .07 (Hsu, 2001: Tables 5, 6; Hsu, 2003: Tables 5, 6).⁸ For Canada, the second top destination for US callers, 95,481 activated circuits in 1997 became 391,449 in 2002, even

as the ratio of IMTS to Private Line Service (PLS) (and others) declined from 1.12 to .32 (Hsu, 2001: Tables 5, 6; Hsu, 2003: Tables 5, 6). For Mexico, activated circuits increased from 60,555 to 233,261, while the ratio decreased from 1.57 to .36. And for China: exclusive of Hong Kong, activated circuits between the United States and China increased from 1,927 to 54,809, giving it a rank between 10 and 12 as a country node for US international telecommunications; while the ratio of private line to public message telecom service declined precipitously, from 3.52 to .03 (Hsu, 2001: Tables 5, 6; Hsu, 2003: Tables 5, 6).

All told, for the top 30 international destinations which together constituted around 96 percent of total active circuits after the turn of the new century, the ratio declined from 1.03 in 1997 to .16 (Hsu, 2001: Tables 5, 6; Hsu, 2003: Tables 5, 6). These figures substantially *understate* the growth of international private lines, mainly because a growing number of newly authorized non-common carrier private cables have been built, and their owners try to sell the bulk of their capacity to end-users, notably internet service providers and foreign carriers. These carriers are not required to report cable capacity to the FCC (Hsu, 2001: 4; Hsu, 2003: 4). Although we lack reliable data and the system continues to undergo rapid change, there can be little doubt that corporate-commercial internet systems known as intranets, together with tradeable business services which incorporate telecoms as an intermediate input, consume a large fraction of this hugely enlarged total. These are not mainly components of the open internet, but specialized, proprietary or quasi-proprietary systems.

Rapid growth of international private line circuits in the Chinese context cannot be fully comprehended as a purely instrumental projection, whether enacted mainly by foreign capital or, on the contrary, by China's own leadership. Beyond the particular social agency that can be assigned responsibility for generating these private networks lies the question of how their development affects the market-opening process itself.

Telecommunications networks function as a critical coordinating mechanism for dispersed corporate production and distribution chains. In this way, they also constitute a basic infrastructure for continuing corporate transnationalization. Improved corporate access at lowered cost to international fiber optic networks indeed is a prerequisite for reassimilating territories and reorganizing new segments of the division of labor into a production system that is by the same token expanded: both outsourced manufacturing, and the offshoring of a growing array of business and commercial services are examples of this still-incomplete process (Drucker, 2004: B1, B2; Fong, 2004b: B1, B2; UNCTAD, 2004).

The takeover of regional network Asia Global Crossing by Asia Netcom in turn may be seen not only as a direct bid for power by 'China', but also as an attempt to participate profitably in the structural reorientation of the Chinese economy toward transnational capitalism. Struggles over the terms of China's WTO accession likewise need to be interpreted on these same two planes: one that involves the play for advantage between particular industrial interests, and another that signifies programmatic expansion of linkages between China's domestic political economy and the transnational capitalism into which it is reintegrating (Zhao and Schiller, 2001).

Processes of structural change thus co-evolve with instrumental actions taken by an unstable and internally conflicted power bloc consisting, as Yuezhi Zhao specifies, 'of the bureaucratic capitalists of a reformed Party state, transnational corporate capital, and an emerging urban middle class, whose members are the favored customers of both domestic and transnational capital' (Zhao, 2003: 53) – and, it should be added, foreign state managers and policymakers. On fundamentals, crucially, these actors are broadly agreed. Each acts to bind the Chinese national economy and its domestic social strata more and more directly and extensively to the vicissitudes of a transnational market system.⁹ The terms and conditions of this process of integration – but not the process itself – are often objects of intense dispute and protracted negotiation.

Viewed from the Chinese side, two interrelated dimensions of this process of structural change stand out. First is the Party State's somewhat undisciplined attempt to secure advantages for domestic capital as its representatives broker (often venally) transnational corporate access to the country's great reserves of cheap labor power and to its expanding domestic market. Second is its again-inconsistent effort to build up individual domestic enterprises into effective transnational corporations.

The first of these strategies is anything but novel. China is not the first country to try to leverage state control over the terms of entry into its domestic market so as to build up its economy and to develop domestic capital; for this strategy echoes a time-tested practice, pursued throughout prior decades with varying success, by countries such as India and South Korea and, before that, by Japan and the United States itself. Inward Foreign Direct Investment (FDI) in China, however, is also being tied in significant ways to a second endeavor: to expand Chinese companies' outward FDI. And in this respect, the contrast with earlier development plans is telling.

Economic development initiatives of the mid-20th century limited

inward and outward FDI, and relied on import substitution (though sometimes more for rhetorical purposes than in reality, see Chaudhury, 1984: 3–22) and strategic linkages between emerging industries, on the grounds that *national* self-determination could be served best by systematically reserving the domestic market for such guided initiatives. Whether state- or corporate-led, the endeavor was framed in terms of *national* development. To be sure, the \$24 billion Three Gorges Dam project, and the nationalism that often infuses it, might be cited as evidence of just such an effort. But even this gigantic project must be set in the context of China's reliance – unparalleled for a developing country – on foreign direct investment, as Gilboy (2004) explains:

Since it launched reforms in 1978, China has taken ... ten times the total stock of FDI Japan accumulated between 1945 and 2000. According to China's Ministry of Commerce, US firms have invested more than \$40 billion in more than 40,000 projects in China. Given its openness to FDI, China cannot maintain its domestic market as a protected bastion for domestic firms, something both Japan and South Korea did during their periods of rapid growth. Instead, it has allowed US and other foreign firms to develop new markets for their goods and services, especially high-value-added products such as aircraft, software, industrial design, advanced machinery, and components such as semiconductors and integrated circuits. (pp. 36–7)

Assimilating the structural logic of the transnational market system requires China's policymakers to employ a conception of the national economy that hostages the social needs of the vast majority of the population to capital's demands for accumulation. This tends to undercut any prospect of national self-determination in the older sense and, nationalist rhetoric notwithstanding, even to render this ideal irrelevant.¹⁰

Because developing communications and information infrastructures have come to constitute a leading edge of transnational capital's overall accumulation project, it has been internalized as a strategic growth target by Chinese leaders. The unprecedented build-out of a high-tech telecommunications grid, which rests on larger capital investments than those needed for the Three Gorges Dam, is one primary exemplar. Another was announced in 1997, when then-President Jiang Zemin stated that:

Science and technology being a primary productive force, their progress is a decisive factor in economic development. We must ... make the acceleration of their progress a vital task in economic and social development ... strengthen basic research and research in high technology and accelerate the pace of applying high technology to production. (Jiang, 1997)

According to this developmental vision, incorporated into the Constitution of the Chinese Communist Party five years later, at the 16th Party Congress in November 2002, the CPC 'must persist in taking economic development as the central task ... give full play to the role of science and technology as the primary productive force' (Communist Party of China, 2002: 4).

The obstacles, however, that stand in the way of building a high-tech informational basis for transnational capital – whether of Chinese or foreign origin – remain great. In one estimate based on the number of original research papers published by biologists in internationally refereed 'high-impact' journals, there were a mere 500 productive biologists in China in 2003, compared with 3000 productive biologists of Chinese descent and 40,000 overall in the United States (Wu, 2004: 206). China's R&D budget for 2001 was \$12.5 billion, when the US R&D budget was \$281 billion (Yang, 2004: 211). And China continues to run a deficit on its technology trade with the world (Ahmad, 2004d: 15).

But changes are apparent. In 2002, US colleges graduated 60,000 engineers; China and India together graduated five times that many (Harwood, 2004: A4). Again akin to India, China also has made increasing efforts to entice foreign transnational corporations to send offshore to China back-office information services, as well as basic research, engineering and design, and even financial analysis. Philips has shifted research and development on most televisions, mobile phones and audio electronics to Shanghai, where GE performs important R&D work as well; Microsoft is spending \$750 million over three years on R&D and outsourcing in China (Engardio et al., 2003; Murray, 2003: A1, A6). Intel, Motorola and other high-tech TNCs have set up over 100 R&D centers, mostly in Shanghai and Beijing, to draw on the pool of technical and research talent and to sell more effectively into the Chinese domestic market (Altman, 2003: 1, 11). All told, according to an official source, the world's largest transnational companies had established nearly 400 R&D centers in China by 2001 (Shi, N.D., 2003). From the perspective of foreign capital, it is both the lure of emerging domestic demand and the availability of cheap scientific labor, linked by networks to transnational production chains, that accounts for these moves (Buckley, 2004: C1, C4; Karnitshnig, 2004: A1, A8).

On the Chinese side, in contrast, the effort is to leverage control over inward FDI to build a globally competitive Chinese capitalism which can hold its own in the global information industry. In a progress report offered to the Davos World Economic Forum in January, 2003, the President of China Netcom, Edward Tian (in Lederer, 2003; see also Hale

and Hale, 2003: 43–5), emphasized that the Chinese Communist Party Congress of November 2002 had adopted a ‘very, very important policy – that in the next 10 years China has to build ... an information-led new economy’. Declaring that ‘China can soon become the world’s largest Internet and information economy’ (measured, presumably, by numbers of devices and users), Tian asserted that, over the next decade, Chinese investment is likely to focus ‘more to the software side and service sector’, with the intention to ‘export not only low-cost labor intensive goods but ... software and services to the Western world’. This formulation prompts additional questions about the systemic character of the structural transformation that is underway.

Regional or global integration?

It is indisputable that contributions by Transnational Corporations (TNCs) foreign to the Chinese economic miracle have been enormous. China’s export growth has been remarkable not only for its scale – from \$26 billion in volume in 1985 to \$380 billion in 2003 – but also, as we saw, for its strong linkages to foreign direct investment. Imports, particularly from Asian countries, are also increasingly linked to FDI, as they are used for the reprocessing and export of finished goods (Hale and Hale, 2003: 47). Beginning from virtually none in 1984, FDI had cumulated to around \$400 billion by 2001 (Shi, N.D., 2003; UNCTAD, 2002a: 154). Over the next two years, China attracted more than an additional \$100 billion in foreign direct investment, more than any other country including the US (Wonacott, 2003: A20, A21) – and the same trend continued as of this writing. By 2003, FDI overall accounted for no less than 40 percent of Chinese GDP (Hale and Hale, 2003: 38).¹¹

Crucial questions may be posed, however, in regard to China’s alignment within the system of transnational capitalism. Is China a general-purpose host for FDI from anywhere and everywhere; is it moving into the orbit of one or another leading economic power; or is it successfully transitioning into a transnational economic powerhouse in its own right?

The promise of market entry for foreign capital is tied, we have noted, to a build-up of aspiring Chinese companies into transnational corporations. The goal is to try to transform a group of perhaps 30–50 state-owned enterprises, selling everything from oil and gas to white goods, and from steel and aluminum to PCs, TVs and cellphone service, into globally competitive units of capital by 2010 (Ahmad, 2004d: 14–15). There is already evidence that this effort has been partially

successful. Eleven Chinese companies rank in the *Fortune 500* list of leading global enterprises by revenue (Ahmad, 2004d: 14–15). A survey of around 100 investment promotion agencies by the United Nations Commission on Trade and Development in 2004 revealed that China ranks fifth in the world – ahead of sixth-place Japan – as a prospective source of investment capital (Williams, 2004: 5). Huawei is perhaps the outstanding example of a Chinese company that has rapidly established itself in overseas markets for advanced telecommunications and internet technology.

When a well-integrated national economy itself remains in doubt, owing in part to its problematic interconnections with transnational capital, this challenge should not be cast merely as a scramble to establish ‘national champions’ (Ahmad, 2004d: 14–15). Thus far, at least, Chinese companies have notably ‘failed to develop strong domestic technology supply networks’ (Gilboy, 2004: 43). Nor should the extent of Chinese capital’s global competitiveness be overstated. The difficulties of competing against long-established transnational behemoths are widespread and acute.

Foreign-based transnational corporations *themselves*, on the other hand, generate a very large proportion of Chinese exports and of domestic sales in key market segments. Between 1991 and 2001, the overall share of Chinese exports claimed by domestic affiliates of transnational corporations rose from 17 percent to 50 percent. Likewise, foreign affiliates of TNCs accounted for 23 percent of total industrial value added during 2000–1 (UNCTAD, 2002b: Tables 2–8, 56). In high-technology exports, whose share in China’s overall trading volume increased from 3 percent to 22 percent between 1985 and 2000, foreign affiliates claimed an especially dominant role. In electronic circuits, foreign affiliates took 91 percent of Chinese exports in 2000; in automatic data processing machinery, they accounted for 85 percent of exports; and in mobile phones, foreign affiliates claimed 96 percent of China’s exports in 2000 (UNCTAD, 2002a: 162–3). Overall, some 80 percent of Chinese technology imports and exports are controlled by foreign-owned firms (Ahmad, 2004d: 15). ‘In contrast’, emphasizes an UNCTAD (2002a: 163) report, ‘Chinese domestic enterprises predominate in the low-technology sector, especially in the export of toys, travel bags and yarns and fabrics’.

What about regional integration tendencies? There are certainly indications that China is becoming robustly interconnected both with Japanese capital and with the East Asian newly industrialized economies. In 2000, Japan supplied 23.7 percent of China’s imports of manufactured

goods, while Hong Kong added 4.9 percent and the rest of Asia (excluding West Asia) an additional 33.1 percent; the US contributed just 12.2 percent and the EU 16.8 percent (UNCTAD, 2002a: 164). China runs trade deficits with Japan, Taiwan, Korea and ASEAN nations (Hale and Hale, 2003: 47). East Asian economies have correspondingly become more reliant on Chinese demand for their own growth, a fact that worries policymakers in, for example, the Republic of Korea (Jin, 2004: 359–60). And Beijing has proposed the creation of a regional Japan-China-Asean free trade agreement (Pei, 2003: 13). Some strategic moves in the information sector are likewise positioned within this same regional context.

The Japan IT Services Industry Association, the China Software Industry Association and the Federation of Korean Information Industries agreed in 2003 to work together and with their respective governments to promote East Asia's use of open-source software in preference to continued reliance on Microsoft (Guth, 2003: B4).¹²

But it is simple-minded to speak of a resurgent, self-contained co-prosperity sphere, under either Japanese or Chinese direction. In March 2004, Hewlett-Packard, a leading PC manufacturer with a 17 percent share of the global market, responded to the East Asian open-source initiative by announcing that it would sell PCs in Asia that were loaded with Linux by a Japanese software maker, Turbolinux (Ishibashi and Dvorak, 2004: B5). Not only do US and European TNCs continue to invest on a very large scale in China; but Japanese, as well as Korean, Taiwanese and other Asia-based FDI in China itself is based on the strategy of exporting to third markets including, preeminently, the US. The aim of foreign direct investment in China by investors in East Asia, underlines the United Nations Commission on Trade and Development, 'is to use China as an export platform for the Western markets' (UNCTAD, 2002a: 155).

On one side, China (replacing the US in this role) has become the biggest exporter to Japan; in 2002, China supplied 18.3 percent (\$61.7 billion) of Japan's imports, while the US accounted for 17 percent (\$57.5 billion) (Associated Press, 2003: W1). On the other side, China overtook Japan in 2002 to become the third-largest exporter to the US (after Canada and Mexico), by sending \$125 billion in exports (Ip, 2003: A2). China's national foreign exchange reserves concurrently increased – to \$258.6 billion by September 2002, the second-largest total in the world (Shi, N.D., 2003), and to \$416 billion by early 2004 (Karmin et al., 2004: C1, C2). Ranking well behind their Japanese counterparts (who increased their purchases of US Treasury bills and bonds from \$318

billion in December 2001 to \$577 billion by January 2004, by which time they were financing about 40 percent of net US Treasury-market borrowing), Chinese investors became the second-largest force in US government debt markets – their purchases growing from \$77 billion in December 2001 to \$148 billion by January 2004 (US Department of the Treasury, 2004). In both cases, the attempt was to shore up the buying power of US consumers who help drive these Asian countries' export growth (Hale and Hale, 2003: 50; Karmin and Richardson, 2003: C1, C12). There is evidence of reciprocity: in the information and communications sector, US technology companies such as Cisco, Microsoft, and Sun Microsystems have helped equip Chinese authorities with hardware and software used to restrict, filter, and monitor Chinese Internet users (Newbold, 2003).

Eluding any simple bipolar configuration, proliferating linkages between China and the world political economy are in fact multiform in character. As is also true for the United States (Du Boff, 2001), China's regional and global market development initiatives are *both* proceeding apace.

Will China provide an escape valve for the global crisis of overproduction?

The two poles of market growth with which we are concerned here share a common origin: capital's deep-seated need, in the face of growing worldwide overproduction throughout conventional industry (Brenner, 2002), to identify and exploit new accumulation sites. On one side, the intensive cultivation of the emerging information sector of the economy arose in response to the 1970s-era profit-slowdown and stagnation throughout the existing economy. Conditioned by this same underlying pressure, on the other side, has been the process of reintegrating China into what is now a more fully transnational capitalism. Because existing markets are glutted, the prospect – still far from actualization – of a vast new market in China for consumer goods and services constitutes an irresistible temptation. The competitive advantages to be derived from sourcing production in China's ultra low-wage labor market prove equally compelling, when rivals threaten to gain them first.

As Chinese companies and affiliates of transnational companies install production lines and infrastructure, and as distribution systems are built, the result is that mountains of commodities are sent out into both China's own domestic market and the greater world economy. Is China's national market growing sufficiently to absorb the surpluses

produced by this huge expansion of output? Or, is China's integration likely to further destabilize transnational capitalism by worsening an already stressful condition of global overproduction?

Chinese policymakers have tried to nourish the soil in which capital can grow by encouraging bank lending and easy credit; these have constituted one of the major props of the country's massive capital spending and rapid economic growth.¹³ In the consumer loan market, credit-card use has begun to proliferate, as transnational market entrants like Citibank move to expand this market beyond the mere 25 million Chinese who now possess credit cards (Baglolle, 2004: C1, C2). All told, however, China's total debt outstanding in 2003 already equaled nearly 160 percent of its economic output (Leggett and Chen, 2003: A2). Room for maneuver via debt- and credit-fueled expansion therefore appeared to be limited.

In March 2004, indeed, Premier Wen Jiabao conceded that 'Deep-seated problems and imbalances in the economy over the years have not been fundamentally resolved' (Kynge and Dickie, 2004: 1). An astonishing 90 percent of China's manufacturing product lines, it is estimated by the financial press, 'are in oversupply' – 'yet investment in fixed assets ... grew by 30% and contributed 47% of GDP' during 2003 (Ahmad, 2004b: 3). This continuing investment binge by domestic lenders and foreign companies was growing unhinged from actual sales and profits – nearly 20 percent of total borrowings are officially accounted as nonperforming – and generated significant inflationary pressures ('China Sets Curbs', 2004: A15; Pottinger, 2004: A15). Thus, existing overcapacity was all but certain to increase, sometimes sharply. During 2003, for example, GM, Volkswagen, Toyota, Honda, Nissan, Peugeot Citroën, DaimlerChrysler, and Ford collectively announced more than \$20 billion of new investment, enough to ensure that, for the foreseeable future, production of vehicles for the Chinese market will provide nearly twice as many autos as can be sold there (Ahmad, 2004a: 6; Wonacott et al., 2004: A13, A15). Attempts by Chinese automakers such as SAIC, Changan Automobile, and Dongfeng Motor to expand overseas – after a decade of growth through partnerships with different transnational corporate auto groups – were motivated, paradoxically, as much by their powerlessness to expand the sated home market as by any gathering corporate strength (Wonacott, 2004: B1, B3).

At the same time, rapid reintroduction of capitalist social relations has only exacerbated the ravages of uneven regional and social development, generating deepening inequality and rising unemployment throughout this heavily agricultural nation.¹⁴ The countryside is home

to seven-tenths of China's 1.3 billion people but, significantly, only half the nation's employment; in these rural districts, perhaps 200 million people are 'mobile', meaning that they migrate continuously to places where work is said to be available. Joining this 'floating population' are additional tens of millions of work-seekers tramping the streets of China's cities (Tso, 2004: 215). No cohesively unified national market yet exists, and it will take years of sustained effort to establish one. Government policy has begun to notice rural China, and the leadership arguably recognizes a tactical need to direct more state spending to the countryside. Once more, however, even if the will to do so exists – which remains far from clear – the room for maneuver is limited. It would be foolish to forecast that limits placed on China's surplus absorption capabilities by unremitting rural poverty and a fragmented national market will be summarily swept aside.

Conclusion

Communications and information have come to comprise a vital economic sector, whose rapid expansion attests to capital's underlying need to arrest stagnation and profit decline. A second growth-engine, born of the same compulsion, has materialized around China's reinsertion into the transnational market system. And yet, as we have seen, these two poles of growth are interconnected – and their junction involves something quite different than the sum of their parts. On the one hand, China's take-off into sustained growth finds a substantial but also a complex expression in information and communications. On the other, the tendency of manufacturers who can relocate to China – as the *Economist* puts it – to 'dictate global prices of everything from steel to microchips' (Ahmad, 2004b: 3) seems likely to accentuate the continuing condition of overproduction, not merely in China, but throughout the world economy. If so, then, paradoxically, the successful exploitation of these two poles of growth will contribute to a resurgence of the very economic crisis that prompted their own prior development.

Notes

- 1 This number is inflated because members of well-off social strata often subscribe to multiple services.
- 2 Chinese carriers are not unique in this regard. Mexico's Telmex, which managed to hold onto its dominant domestic market presence, also snapped up distressed network assets (throughout Latin America), while Indian companies purchased international networks built by US interests (Schenker, 2004; 'Slim Pickings', 2004: 64).

- 3 Its rival China Telecom, the first-ranked operator, had already listed a subsidiary unit on the New York Stock Exchange and in Hong Kong in November, 2002 (Bolande and Berman, 2002: A3).
- 4 Hutchison's 3G services – Europe's first – launched in Italy and Britain in late winter 2003 (Latour and Pottinger, 2002: A1, A13; Ramstad et al., 2004: B4).
- 5 A careful analysis of one important urban party newspaper concludes that 'the influence of the market is getting stronger and stronger' (He, 2000: 142; see also, Zhao, 1998).
- 6 The danger posed by 'China rising' differs, though, with ideological proclivity and material interest. For some, especially smaller US manufacturers reliant on exports, the danger stems from a Communist dictatorship that is sapping US economic power through an undervalued currency. For others, the threat comes less from China's artificially manipulating the value of the yuan than from its implication in an ominous Darwinian turn of the globalization process: low-wage manufacturing there – in China – cascades into declining employment standards and deteriorating community values here, in the United States. Cited as symptomatic is the ascent of Wal-Mart, now the world's largest private employer and retailer, which takes fully 10 percent of US imports from China. See Garten, 2004: 24. In either rendition, the putative fact of a danger to US dominance is never far removed.
- 7 Hutchison Telecommunications Ltd and Singapore Technologies Telemedia offered \$250 million for a 61.5 percent stake in Global Crossing Ltd, an upstart international carrier and one of the bankrupt casualties of the international telecom meltdown. The bidders aimed to pay one cent on the dollar for these network facilities. The transaction required approval from the US Federal Communications Commission (FCC) and CFIUS – the Committee on Foreign Investment in the US. CFIUS is dominated by Executive Branch agencies; and issues of 'law enforcement and national security' are typically in the forefront of these reviewing agencies' concerns. See Leithauser, 2003: 5–6; Romero, 2003: B2.
- 8 Generally, the number of active circuits increased annually through 2000 or 2001, and then declined somewhat, while the proportion of public service to private line service continued to decline or remain stable over this interval.
- 9 Gilboy (2004: 33) explains, 'China now has a stake in the liberal, rules-based global economic system that the United States worked to establish over the past half-century'.
- 10 A point that comes through with great force in a recent novel set in the Three Gorges context (Ying, 2004).
- 11 Total profits earned by foreign funded companies in China came to around \$20 billion in 2000 and, although profits remain uneven and volatile, these companies reinvested \$12 billion of this total in China (UNCTAD, 2002a: 155). According to one report, direct and indirect profits made by US corporate affiliates in China totaled \$2.8 billion in 2001 – considerably less than their counterparts earned in Mexico (\$4.4 billion); on the other hand, a different study found that in 2002, three-quarters of American Chamber of Commerce member corporations active in China claimed to be profitable 'and nearly 40% said their margins in China were higher than their global margins' (Ahmad, 2004c: 10, 9).
- 12 This regional collaboration presumably was prompted in part by Japan's experience in the late 1980s, when it attempted to launch an alternative to Microsoft's proprietary operating system. Japan's effort was curtailed following strenuous US

Government objections on the grounds that it would constitute a 'trade barrier' to US companies, that is, to Microsoft (Yamada, 2003: B10). In a related development, a Chinese computer scientist employed by a Hong Kong company, Culturecom Holdings, has developed a computer chip capable of responding directly to Chinese and other Asian languages, thereby potentially freeing the PC both from microprocessors and operating systems programmed in English and the companies – Intel and Microsoft – that benefit most from this dependence (Ramstad, 2004: B8).

13 For a powerful depiction of the effects on China's peasantry, see Li (2003).

14 And, concurrently, a higher incidence of large-scale social protest: such protests are said to be rising by 50 percent a year according to the Public Security Ministry (Hutzler, 2003c: A11).

References

- Ahmad, S. (2004a) 'A Billion Three, But Not for Me', *Economist: A Survey of Business in China*, 20 March: 6.
- Ahmad, S. (2004b) 'Behind the Mask', *Economist: A Survey of Business in China*, 20 March: 3.
- Ahmad, S. (2004c) 'Bulls in a China Shop', *Economist: A Survey of Business in China*, 20 March: 9–10.
- Ahmad, S. (2004d) 'We are the Champions', *Economist: A Survey of Business in China*, 20 March: 14–15.
- Altman, D. (2003) 'China: Partner, Rival or Both?', *New York Times*, 2 March, Section 3: 1, 11.
- Associated Press (2003) 'China Becomes Biggest Exporter to Japan', *New York Times*, 19 February: W1.
- Baglole, J. (2004) 'Citibank Takes Risk by Issuing Cards in China', *Wall Street Journal*, 10 March: C1, C2.
- Batson, A. (2003) 'China's Cellphone Output Soars', *Wall Street Journal*, 31 July: B3.
- Bolande, H.A. (2003) 'Handsets From China Driving Down Prices', *Wall Street Journal*, 30 January: B6.
- Bolande, H.A. and Berman, D. (2002) 'China Netcom Group to Buy Network', *Wall Street Journal*, 18 November: A3.
- Bradsher, K. (2003) 'Chinese Computer Maker Plans a Push Overseas', *New York Times*, 22 February: B1, B3.
- Brenner, R. (2002) *The Boom and the Bubble*. London: Verso.
- Buckley, C. (2004) 'Let a Thousand Ideas Flower: China is a New Hotbed of Research', *New York Times*, 13 September: C1, C4.
- Buckman, R. (2003) 'Computer Giant in China Sets Sights on US', *Wall Street Journal*, 18 June: B1, B4.
- Buckman, R. and Wang, J. (2004) 'PCCW Nears Deal to Sell Stake in Core Asset to China Netcom', *Wall Street Journal*, 25 August: B7.
- Chan, J.M. and Qiu, J.L. (2002) 'China: Media Liberalization under Authoritarianism', in M. Price, B. Bouzoumilowicz and S. Verhulst (eds) *Media Reform: Democratizing the Media, Democratizing the State*, pp. 27–47. London: Routledge.
- Chaudhury, S. (1984) 'Indian Bourgeoisie and Foreign Capital: A Study of Congress Policy towards Foreign Capital, 1931–1961', *Social Scientist* (New Delhi) 12(5): 3–22.

- Chen, K. (2003a) 'Now, a New Way Cellphones are Hot in China', *Wall Street Journal*, 22 September: B1, B3.
- Chen, K. (2003b) 'China Sets Own Wireless Encryption Standard', *Wall Street Journal*, 3 December: B4.
- Chen, K. (2003c) 'China Sets Limits on Wireless Sales', *Wall Street Journal*, 10 December: B6.
- 'China and a New Space Race' (2003) *Chronicle of Higher Education*, 26 September: B6.
- 'China Rolls Out DVD Alternative Called the EVD' (2003) *Wall Street Journal*, 19 November: B8.
- 'China Sets Curbs on Money and Credit Growth' (2004) *Wall Street Journal*, 25 March: A15.
- Communist Party of China (2002) 'Constitution of the Communist Party of China Amended and Adopted at the 16th CPC National Congress on November 14'. [www.china.org.cn], consulted February 2003.
- Dean, J. (2004) 'Long a Low-Tech Power, China Sets its Sights on Chip Making', *Wall Street Journal*, 17 February: A1, A16.
- Dolven, B. and Saywell, T. (2004) 'China Goes for Private Lessons', *Wall Street Journal*, 6 January: A17.
- Drucker, J. (2004) 'Global Talk Gets Cheaper', *Wall Street Journal*, 11 March: B1, B2.
- Drucker, J., Pringle, D. and Ramstad, E. (2004) 'Pricing Pressure Squeezes Cellphone Makers World-Wide', *Wall Street Journal*, 15 January: B1, B6.
- Du Boff, R.B. (2001) 'NAFTA and Economic Integration in North America: Regional or Global?', in V. Mosco and D. Schiller (eds) *Continental Order? Integrating North America for Cyber-Capitalism*, pp. 35–63. Lanham: Rowman and Littlefield.
- Engardio, P., Bernstein A. and Kripalani, M. (2003) 'The New Global Job Shift', *BusinessWeek* online, 3 February 2003 [www.businessweek.com], retrieved 8 March 2004.
- Fong, M. (2003) 'China Has Much to Game Going Online', *Wall Street Journal*, 5 November: B4B.
- Fong, M. (2004a) 'China Netcom Sets Its Sights Abroad', *Wall Street Journal*, 26 February: B5.
- Fong, M. (2004b) 'The Spam-China Link', *Wall Street Journal*, 19 March: B1, B2.
- Fong, M. (2004c) 'Tom Online to Make Nasdaq Debut', *Wall Street Journal*, 10 March: C16.
- Garten, J.E. (2004) 'Wal-Mart Gives Globalism a Bad Name', *Business Week*, 8 March: 24.
- Gilboy, G.J. (2004) 'The Myth Behind China's Miracle', *Foreign Affairs* 83(4), July/August: 33–48.
- Gold, A.R., Leibowitz, G. and Perkins, A. (2003) 'A Computer Legend in the Making', *McKinsey Quarterly*, March: 1, 7.
- Guth, R.A. (2003) 'Asia to Develop Software to Rely Less on Microsoft', *Wall Street Journal*, 17 November: B4.
- Hale, D. and Hale, L.H. (2003) 'China Takes Off', *Foreign Affairs* 82(6): 36–53.
- Harvey, F. (2002) 'China Registers Its Eager Interest in Running of Internet', *Financial Times*, 26 November: 6.
- Harwood, J. (2004) 'Competitive Edge of US is at Stake in the R&D Arena', *Wall Street Journal*, 17 March: A4.
- He, Z. (2000) 'Chinese Communist Party Press in a Tug-of-War: A Political-Economy

- Analysis of the Shenzhen Special Zone Daily', in C.C. Lee (ed.) *Power, Money and Media: Communication Patterns and Bureaucratic Control in Cultural China*, pp. 112–51. Chicago, IL: Northwestern University Press.
- Hsu, C. (2001) International Bureau Report, '2000 Section 43.82 Circuit Status Data'. Washington, DC: Federal Communications Commission International Bureau, June.
- Hsu, C. (2003) International Bureau Report, '2002 Section 43.82 Circuit Status Data'. Washington, DC: Federal Communications Commission, International Bureau, December.
- Hutzler, C. (2003a) 'China Launches Manned Spacecraft', *Wall Street Journal*, 15 October: A2.
- Hutzler, C. (2003b) 'China's Space Program is no Small Potatoes', *Wall Street Journal*, 15 September: B1, B3.
- Hutzler, C. (2003c) 'China's Top Cop Wields Nightstick More Subtly than Beijing Used To', *Wall Street Journal*, 13 March: A11.
- Hutzler, C. (2004) 'In China, Turf Battle Rages', *Wall Street Journal*, 29 June: A12.
- Ip, G. (2003) 'Trade Gap Widens to Record Level', *Wall Street Journal*, 21 February: A2.
- Ishibashi, K. and Dvorak, P. (2004) 'H-P to Sell PCs Running on Linux in Asian Market', *Wall Street Journal*, 17 March: B5.
- Jiang, Z.M. (1997) 'Hold High the Great Banner of Deng Xiaoping Theory for an All-Round Advancement of the Cause of Building Socialism with Chinese Characteristics into the 21st Century', report delivered at the 15th National Congress of the Communist Party of China on September 12 [www.china.org.cn/english], consulted March 2003.
- Jin, D.Y. (2004) 'Political Economy of Communication Industry Reorganization: Republic of Korea, 1987–2002', PhD dissertation, University of Illinois at Urbana-Champaign.
- Kahn, G. (2003) 'Yo, Yao: What's up with Chinese Ads in Texas?' *Wall Street Journal*, 7 February: B1, B4.
- Karmin, C. and Richardson, K. (2003) 'Sliding Dollar's Fate May Be Decided in Asia', *Wall Street Journal*, 20 January: C1, C12.
- Karmin, K., Dvorak, P., Day, P. and Sesit, M.R. (2004) 'Japan Pays for Low US Interest Rates', *Wall Street Journal*, 18 March: C1, C2.
- Karnitschnig, M. (2004) 'Vaunted German Engineers Face Competition from China', *Wall Street Journal*, 15 July: A1, A8.
- King, Jr., N. (2004) 'China Urged to Drop Tech Rule', *Wall Street Journal*, 4 March: B4.
- Kynge, J. and Dickie, M. (2004) 'Chinese PM Warns of Threat to Rapid Growth', *Financial Times*, 15 March: 1.
- Labaton, S. (2003) 'Adviser to US Aided Maker of Satellites', *New York Times*, 29 March: C1, C 4.
- Latour, A. and Pottinger, M. (2002) 'Can Li Ka-Shing Make New Phones Ring Up Big Profit?', *Wall Street Journal*, 20 November: A1, A13.
- Lau, J. and Cameron, D. (2003) 'TCL May Float 25% of its TV Joint Venture', *Financial Times*, 4 November: 17.
- Lawrence, S.V. (2002) 'Broadcast News, Chinese Style', *Far Eastern Economic Review*, 2 May: 30–1.
- Leahy, J. (2003) 'Saved Asia Netcom Aims for Break-Even', *Financial Times*, 12 March: 18.

- Leahy, J. and Lau, J. (2004) 'Frontier of a New Global Contest', *Financial Times*, 1 June: 3.
- Lederer, E.M. (2003) 'Official Says China Will Soon Surpass US to Become World's Largest Internet and Information Economy', Associated Press, 25 January [lexis-nexis.com/universe/], consulted March 2003.
- Leggett, K. and Chen, K. (2003) 'For China, Question of Debt is Crucial', *Wall Street Journal*, 20 January: A2.
- Leithauser, T. (2003) 'Global Crossing Buyout Gets European OK; Companies Await Approval from CFIUS, FCC', *Telecommunications Reports Daily*, 17 January: 5–6.
- Li, C.P. (2003) 'The Crisis in the Countryside', in C. Wang (ed.) *One China, Many Paths*, pp. 198–218. London: Verso.
- 'Losing Its Balance' (2004) *Economist*, 20 March: 12.
- Mackay, A. (2003) 'Tom.com Buys Stake in AOL China TV Unit', *Financial Times*, 3 July: 18.
- Murray, M. (2003) 'GE's Immelt Starts Renovations on the House that Jack Built', *Wall Street Journal*, 6 February: A1, A6.
- Newbold, J.R. (2003) 'Aiding the Enemy: Imposing Liability on US Corporations for Selling China Internet Tools to Restrict Human Rights', *Journal of Law, Technology and Policy* No. 2 (Fall), [www.jtp.uiuc.edu].
- Pei, M. (2003) 'A Docile China is Bad for Global Peace', *Financial Times*, 12 March: 13.
- Pottinger, M. (2002) 'Xinhua Seeks Asia News Unit Owned by French Press Agency', *Wall Street Journal*, 11 December: B5.
- Pottinger, M. (2004) 'China's Premier Lists Concerns about Economy', *Wall Street Journal*, 15 March: A15.
- Pringle, D. and Gopalan, N. (2003) 'China's Huawei Wins 3G Contract', *Wall Street Journal*, 19 February: B2.
- 'Private Universities May Profit in China' (2003) *Chronicle of Higher Education*, 14 February: A41.
- Ramstad, E. (2003a) 'China's Cellphone Market Has Even More Room to Grow', *Wall Street Journal*, 20 October: B7.
- Ramstad, E. (2003b) 'China Has Cellphone Hangover', *Wall Street Journal*, 2 September: B10.
- Ramstad, E. (2003c) 'Chinadotcom Reshapes Itself', *Wall Street Journal*, 12 December: B4.
- Ramstad, E. (2003d) 'China's Makers of Cellphones Thrive at Home', *Wall Street Journal*, 21 August: B1, B4.
- Ramstad, E. (2003e) 'In Tech, China Is Setting the Standard', *Wall Street Journal*, 10 September: A22.
- Ramstad, E. (2004) 'Chip that Speaks Languages of Asia Levels Playing Field', *Wall Street Journal*, 9 February: B8.
- Ramstad, E. and Delaney, K.J. (2003) 'Thomson to Create Venture with China's TCL to Make TVs', *Wall Street Journal*, 3 November: B4.
- Ramstad, E., Gopalan, N. and Sing, C.K. (2004) 'Hutchison Whampoa Cellular Service Takes Off', *Wall Street Journal*, 19 March: B4.
- Rhoads, C. and Hutzler, C. (2004) 'China's Telecom Forays Squeeze Struggling Rivals', *Wall Street Journal*, 8 September: A1, A13.
- Romero, S. (2003) 'Hong Kong Company May Alter Deal to Buy Global Crossing', *New York Times*, 1 March: B2.
- Schenker, J.L. (2004) 'US Loses Dominance in Global Telecoms', *International Herald-*

- Tribune*, 24 August [<http://www.iht.com/articles/535472.htm>], consulted September 2004.
- Sender, H. (2002) 'Asia Global Crossing Bid Signals Chinese Arrival as Merger Players', *Wall Street Journal*, 19 November: C5.
- Shi, N.D. (2003) 'Shi Guangsheng on Achievements of China's Foreign Trade and Economic Cooperation', [www.china.org.cn], consulted February 2003.
- Shi, T. (2003) 'AOL Time Warner/News Corp. Deal: Win-win or not?', [<http://journalism.berkeley.edu/projects/asiaprojects/shi.html>], consulted January 2003.
- 'Slim Pickings' (2004) *Economist*, 20 March: 64.
- Thurm, S. (2003a) 'China's Huawei Halts US Sales Amid Cisco Claim', *Wall Street Journal*, 7 February: B3.
- Thurm, S. (2003b) 'China's Huawei, 3Com to Form Venture to Compete with Cisco', *Wall Street Journal*, 20 March: B5.
- Tso, T.C. (2004) 'Agriculture and the Future', *Nature* 428 (6979), Supplement 11 March: 215.
- UNCTAD (United Nations Commission on Trade and Development) (2002a) *Trade and Development Report 2002*. New York: United Nations.
- UNCTAD (United Nations Commission on Trade and Development) (2002b) *World Investment Report 2002*. New York: United Nations.
- UNCTAD (United Nations Commission on Trade and Development) (2004) *World Investment Report 2004*. New York: United Nations.
- US Department of the Treasury (2004) 'Major Foreign Holders of Treasury Securities', [www.treasury.gov/tic/mfh.txt] and [www.treasury.gov/tuc/mfhhis01.txt], consulted March 2004.
- US FCC (Federal Communications Commission) (2001) 'International Bureau Releases 2000 Year-End Circuit Status Report for US Facilities-Based International Carriers Reflecting Steady Growth in Capacity Use', press release, 29 June.
- US FCC (Federal Communications Commission) (2003) 'International Bureau Releases 2002 Year-End Circuit Status Report for US Facilities-Based International Carriers', press release, 24 December.
- Williams, F. (2004) 'China "Set to Join League of Biggest Direct Investors Abroad"', *Financial Times*, 5 May: 5.
- Wonacott, P. (2003) 'US Pursues a Trade Ally in Beijing', *Wall Street Journal*, 18 February: A20, A21.
- Wonacott, P. (2004) 'Global Aims of China's Car Makers Put Existing Ties at Risk', *Wall Street Journal*, 24 August: B1, B3.
- Wonacott, P., White, J.B. and Shirouzu, N. (2004) 'Car Companies Jockey for Slice of China Market', *Wall Street Journal*, 8 June: A13, A15.
- Wu, R. (2004) 'Making an Impact', *Nature* 428 (6979), Supplement 11 March: 206.
- Xiao, X.H. (2003) 'Industrializing Education?', in C. Wang (ed.) *One China, Many Paths*, pp. 237–49. London: Verso.
- Yamada, M. (2003) 'Asian Countries Seek Windows Alternative', *Wall Street Journal*, 2 September: B10.
- Yang, X. (2004) 'An Embryonic Nation', *Nature* 428 (6979), Supplement 11 March: 211.
- Yau, W. (2002) 'TV Makers Win Tariff Fight: Trade Breakthrough Clears Way for Cheap Chinese Exports to Flood European Union Markets', *Business Post*, 5 September: 1.
- Ying, H. (2004) *Peacock Cries at the Three Gorges*. London: Marion Boyars.

- Zhao, Y. (1998) *Media, Market, and Democracy in China*. Urbana: University of Illinois Press.
- Zhao, Y. (2000) 'Caught in the Web: The Public Interest and the Battle for Control of China's Information Superhighway', *Info* 2(1), February.
- Zhao, Y. (2003) 'Transnational Capital and the Chinese State Communication Industries in a Fractured Society', *The Public/Javnost* 10(4): 53–74.
- Zhao, Y. and Schiller, D. (2001) 'Dances With Wolves? China's Integration with Digital Capitalism', *Info* 3(2): 137–51.

Biographical note

Dan Schiller is Professor of Library and Information Science and Communication, University of Illinois, Urbana-Champaign. A historian of telecommunications and information, he is the author of *Digital Capitalism: Networking the Global Market System* (MIT, 1999), and other books.

Address: Graduate School of Library & Information Science, University of Illinois, 501 E. Daniel St, Champaign, IL 61820-6211, USA.

[email: dschille@alexia.lis.uiuc.edu]
