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Publication Details

Lee, Kwang-Suk (2008). Globalization, Electronic Empire, and the Virtual Geography of Korea's Information and Telecommunications Infrastructure. *The International Communication Gazette* 70(1): 5–22. Available at: <http://gaz.sagepub.com/content/70/1.toc>

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GLOBALISATION, ELECTRONIC EMPIRE, AND THE VIRTUAL GEOGRAPHY OF KOREA'S INFORMATION AND TELECOMMUNICATIONS INFRASTRUCTURE *

BY KWANG-SUK LEE

Abstract / The present study focuses on the electronic infrastructural condition for current global capitalism. This study briefly surveys the genealogy of globalisation theories, focusing especially on Marxist interpretations of capital accumulation on a global scale. The study situates the historical–geographical condition of Korea's informatisation in relation to the new world system which Hardt and Negri have described as 'Empire', the replacement for classical imperialism. Based on this concept of 'Empire', the paper explores how Korea has been rapidly and successfully incorporated into the imperial network by mobilizing her citizens towards high-speed telecom mobility and connexity across the country. It concludes, however, that behind Korea's public image as a global IT leader, the other, darker side of Korea's informatisation is composed of the complex and intricate traits of the local, exhibited under extreme state interventionism and uneven geographies of centrality and marginality.

This study focuses on the new material conditions of globalisation, which is virtually constructed by the worldwide electronic network of capital¹. The virtual geography of globalisation based on mobility and connexity signifies a power shift of capital, and forces local states to affiliate as or integrate into a part of the new world system which Hardt and Negri have described as 'Empire', the replacement for classical imperialism. The survival of local regions depends largely on their close links to the global electronic conduits of capital. Under the new conditions of virtual geographies, inequalities of development and underdevelopment are complicated by whether an entity is 'plugged' or 'unplugged' into the worldwide electronic web of Empire. The present study investigates the new global order of electronic Empire by tracking back the development of Marxist globalisation theories — a series of critical theories extending from classical imperialism to the current discussion of Empire via the dependency theories in Latin America, the world system theory, the cultural complexity theory, and the global-local nexus theory. This study further situates Korea's information and technology (IT) growth within the universal structure of electronic Empire, and reveals it as a desperate striving to enlist the local as an active part of the new global network. Through exploring the historical-geographical development of information and communication infrastructure in Korea, this study views the complex and hybrid mechanisms of pervasive state interventionism both for regulatory control and due to economic imperatives, and concludes that these specific mechanisms of local states must be understood

* This paper will be forthcoming in the peer-reviewed journal of *The International Communication Gazette*

within the holistic perspective of electronic Empire as immanent and ubiquitous power.

This study excludes from its analysis the momentum of resistance which could challenge contemporary global power. Rather than exploring the necessary form of counter-insurgencies opposed to this power, the present study aims to elaborate the structural metamorphosis of capitalism from the old system of imperialism to the dispersal of power throughout the world market under the new system of Empire.

Looking Back to the Age of Imperialism

Fukuyama (1992) admires globalisation as the triumph of capitalism and its market economy, and Friedman (1999, 2006) welcomes a 'flattening' and fibre-optic global world with unbounded enthusiasm. Even if we ignore these popular triumphalists who defend a globalising world as united, it is a harsh reality that the economic logic of contemporary capitalism penetrates every corner of human life across the globe. Already in the middle of the nineteenth century, Marx predicted a global move toward unconstrained capitalist expansion:

All that is solid melts into air [...]. The need of a constantly expanding market for its products chases the bourgeoisie over the whole surface of the globe. It must nestle everywhere, settle everywhere, establish connexions everywhere. [...] In one word, it creates a world after its own image. (Marx and Engels, [1848] 1998: 38–40)

Historically, Marxist critics have defined globalisation as the developed countries and multinationals' imperialist expansion 'without colonies' (Magdoff, 2003) through absorbing surplus from the so-called 'third world' and thus undermining its technological, political, economic, cultural conditions. Confronting the age of imperialism in the nineteenth and early twentieth century, a revolutionary Marxist like Lenin ([1916] 1969) sees the colonialist mechanism of dominance in terms of the rise of monopoly and the export of capital abroad. Luxemburg ([1913] 2003) posits the birth of imperialism in the capitalist need for surplus outlets in non-capitalist formations; Baran ([1957] 1968) sees imperialism as arising from an American capitalism dominated by monopolies; since these are incompatible with growth and technological innovation, he thinks that the only way to escape the monopolistic state of stagnation is by exporting capital, which helps to absorb surplus from underdeveloped countries

like those in Latin America. Though these classical Marxists rarely considered the complex and subtle logic of political, economic, and cultural dominance on a global scale, they contributed to developing the common idea that capitalism always needs to prolong the lifespan of monopolies at the cost of non-capitalist or underdeveloped countries.

From the late 1960s to the late 1970s there was another theoretical trend in explaining globalisation: the 'dependency theories'. Andre Frank (1969) sees 'underdevelopment' in Latin America as largely controlled by US monopolies. Frank thus views the capitalist system as divided into a centre and a periphery. Frank attempts to explain a continued failure of 'development' in Latin America, even in the era of decolonization. Similarly, Amin (1974) describes a chain of 'metropolis-satellite' or centre-periphery structures using the concept of 'accumulation on a world scale'. Wallerstein (1979) extends Amin's dual system to the hierarchical division of the capitalist 'world system' as a totality divided into three tiers of states, those at the core, at the semi-periphery, and at the periphery. Related to the economic status of the peripheral countries, Cardoso's (1973) 'associated dependent development' and Evans' (1979) 'dependent development' are further examinations of the limited scope of development in the Third World which suggest that 'partial' development or growth can be accomplished under the general conditions of dependency. These dependency theories are devoted to explaining a value chain of accumulation on a global scale, unequal development among states, and the destructive effects of multinational capital to the Third World; they failed, however, to anticipate the East Asian form of state-interventionist 'development', in which states become relatively free of the structural constraints of dependency.

Since the 1980s, facing the 'new' phase of capitalism mediated by the microelectronic revolution, critical media scholars have begun to analyse international flows of information, communication, and culture as much as those of industrial and financial capital: such political economists as Herbert Schiller (1981, 1984) and Hamelink (1984) began to examine the integrated role of information and communication for the general operation of global monopolies as the 'trans-border data flow'. Examining the international traffic of media contents such as film and TV programmes, Guback (1984) presents an analysis of the film business with the state as its active supporter in the national and international arena. Employing the classical view of imperialism, Varis (1984) regards the dominant flows of the US television programs as being similar to the export of commodities in general, rather than as 'cultural' output which should be

'interpreted' and 'decoded' by the audience. A significant theme in research on the international political economy is how the global activities of transnational media and telecommunication industries are freer from the regulatory barriers of other countries than those of industries in the classical sense. This theme has led to such critical topics as following: the monopolistic global media system and the cross-border flows of media outputs (e.g. Herman and McChesney, 1997); the homogenising effects of media contents on indigenous cultures (e.g. Tomlinson's [1991] discussion of 'cultural imperialism' in the critique of global capitalism); and the reorganization of global electronic communications on behalf of capital's demands (e.g. Castells, 1996; Golding, 1996; Mosco, 1996; Schiller, 1999, 2001).

These Marxist scholars' studies of imperialism enable us to see how media monopolies reconfigure the new order of capitalism and reproduce the unequal relations between states. Their perspective, however, is based on a rather simple dichotomy of dominance and subordination in the global economy, which fails to take into consideration the complex and heterogeneous flows of technology, information, culture, and people cross the border.

Whose Hybridity or Complexity?

Critiques of Marxist economic reductionism, which had a tendency to focus on a shift towards a single united world economy, have arisen first from the problematic that globalisation can no longer be understood by simple centre-periphery models or as a single one world-system. One kind of critique arises from a 'loose' structure thesis, which emphasizes the relative independence of 'socio-cultural' factors in the local when subjected to the globalising force (e.g. Robertson, 1990). It is based on the theoretical presumption that there are fundamental 'disjunctures' between economy, culture, and politics; Appadurai (1990) argues that we need to differentiate the manifold spheres of international interaction in terms of 'ethnoscapes' (descriptions of the flows of peoples), 'technoscapes' (of technology), 'finanscapes' (of money), 'mediascapes' (of media contents), and 'ideoscapes' (of ideologies). Sreberny (2005) extends the analysis of globalisation to the multi-dimensional spheres of global culture, including map-making and nation-building, the export of religion, the institutionalization of Western-style education, administration as a 'professional imperialism', colonial languages, the 'pleasure periphery' produced to serve travel and tourism, and the transfer of technology.

These analytical divisions of 'globalisation' into multi-layered mini-globalising processes

have resulted in an awareness of the 'non-linear, fractured nature of cultural globalization' (Ang, 1996: 154) — the so-called 'hybridity' of global culture — in contrast to the replication of uniformity by economic globalisation: some empirical studies, for instance, focus on the independent consumption patterns of TV audiences, which are greatly affected by the 'cultural proximity' created by such factors as local culture, language difference, and local market strength, and other cultural variables (Straubhaar, 1991). These studies were largely based on the successful story of multinational channels such as Televisa (Mexico) and TV Globo (Brazil) in Latin America as a counter to worldwide cultural standardization by global media outputs (Sinclair, 1999)². Defenders of cultural localism note the 'loose' relation between structure as a globalizing power and the local as relative autonomy — a dialectical relation that is conditioned by the 'slightly higher' weight of the former on the latter (Straubhaar, 1998: 6).

The research on particularity in Latin America in terms of cultural proximity once again reveals globalisation as a web of 'hybridity', 'complexity', or 'mélange' (Pieterse, [1995] 2005; García Canclini, 1997; Straubhaar and Hammond, 1998). These new approaches view uneven, asymmetric, and even 'unpredictable' links in the global–local nexus as salient in the present phase of globalisation. They aim to negate the dualistic and hierarchical framing of the world in terms of dominant and dominated, coloniser and colonised, and centre and periphery, to engender more fertile possibilities that allow us to see globalisation 'from below' (the local), specifically, to ground critical globalisation studies in praxis (e.g. Kellner, 2002; Robinson, 2005). Globalisation as complex and hybrid enables us to see many deviations from a rigidly 'prefigured' path of a globalizing force into one world-system (Straubhaar and Hammond, 1998), and to perceive socio-cultural complexities as supporting cultural sustainability and participatory democracy in the local or the periphery.

In contrast, rather than seeing the politics of 'hope' or the 'Third Way' in global complexity, some scholars approach complexity as the art of legitimating the scope of global capitalism. For instance, Urry (2005) divides the global system into two main forms, 'global networks' and 'global fluids' (245–249): while global networks are predictable, calculable, routinised, integrated, and standardised (as in global enterprises), global fluids are autopoietic, rhizomatic, and decentralised (as in world money, automobility, social movements, the Internet, the anti-globalisation movement, international terrorism, and so forth); it is the latter that accounts for the aspects of global complexity and hybridity. It is significant that Urry describes

globalisation as 'pools of order that heighten overall disorder' (249). His viewpoint is analogous to Hall's (1991) perspective on global economic and cultural power, which is always 'wanting to recognise and absorb [cultural] differences within the larger, overarching framework' (28). Hall argues that global power never attempts to obliterate differences or complexities: 'it operates through them, it has to hold the whole framework of globalization in place and simultaneously police that system: it stage-manages independence within it [...], without absolutely destroying what is specific and particular' (28–29). Hall describes the 'de-centred' power of globalisation as absorbing the differences of the local; similarly, Urry describes it as 'mobile power' (249): it is based on 'speed, lightness, distance, weightlessness', crossing over both global networks and global fluids. In fact, mobile power achieves new and intricate relations between global networks (the universalising power) and global fluids (the complex localities). Globalisation thus is 'like putting together a jigsaw puzzle: it is a matter of inserting a multiplicity of localities into the overall picture of a new global system [...]. The "local" should be seen as a fluid and relational space, constituted only in and through its relation to the global' (Morley and Robins, 1995: 116–117).

These new approaches to the new intertwined dynamics of the global–local nexus revive the more holistic and pessimistic vision of a 'global state' or 'market state' that 'modulates' the local differences over its global network system, a system of 'Empire'. The present study examines the structure of Empire, in order to situate the historical–geographical condition of Korea's informatisation in relation to Empire's global networks.

Modulating Local Differences 'Smoothly'

Before directly examining Hardt and Negri's (2000) description of Empire, it will be useful to discuss the art of control in modern society. In his 'Postscript on Control Societies', Deleuze ([1990] 1995) develops Foucault's ([1975] 1995) concept of 'disciplines' with the concept of 'controls'. According to Deleuze, the 'disciplinary societies' that Foucault observed arising in the eighteenth and nineteenth centuries should be differentiated from the devices or techniques of power arising in the twentieth century. Deleuze ([1990] 1995) describes current societies as 'control societies', and sees disciplinary societies as being superseded by control societies. Deleuze's division of societies into these two periods — that of discipline and that of control — seems to be directly influenced by the potentials of digital information in modern society and its

application to the reproduction of power systems. He regards control societies as based on digital technology, while disciplinary societies are based on analogue technology. Digital technology facilitates free-floating control and modulates continuous flows of databases without spatial-temporal restraints, while analogue is the logic of 'confinement' and 'mouldings' that divide units up into physical cells and moulds such as factories or prisons. Under digital conditions of control, Deleuze opines that the masses become floating samples and data. In this respect, digital technology becomes a new means for modern power to escape the confinement of fences, barriers, and borders into the free-floating control of flow, speed, and mobility. In relation to the current phase of globalisation, this Deleuzian concept gives us hints about how a global power could have transformed from a centre-periphery system (the logic of analogue) to a complex and dispersed system of global-local nexus (the logic of digital), and how worldwide capitalist power integrates local differences within a globalising force by means of the control of digital technology and its electronic networks.

The 'Smooth World' of Electronic Empire

Hardt and Negri apply Deleuze's concept of power and 'control societies' to a 'global society of control' crossing over national boundaries. According to them, we have entered into the new age of 'Empire' in which 'rule has no limits' and 'encompasses the spatial totality' of the globe (Hardt and Negri, 2000: xiv). The establishment of a global society of control 'goes hand in hand with the realization of the world market and the real subsumption of global society under capital' (332). In the immanent and ubiquitous condition of global control by capital, it is meaningless to demarcate geographical zones as centre and periphery, North and South, First World and Third World: 'The geography of uneven development and the lines of division and hierarchy will no longer be found along stable national or international boundaries, but in fluid infra- and supranational borders' (335). This vision of a hybrid totality goes beyond the above-mentioned multi-layered global-local nexus thesis, and argues for a global web structure of control by capital over the 'space of flows'. Under the condition of control, the sovereignty of nation-states has declined, and the network of Empire becomes a description of the physical conduit for contemporary global power. Fundamental sources of modern capitalist power are dependent upon both connexity and mobility. Virilio (1997: 119-145) also describes how the incessant desire of modern capitalism has been promoted by 'speed' and 'mobility'. Enabled by the speed

of electronic networks, the effect of 'temporal-spatial compression' (Harvey, 1989: 121–200) facilitates the production and exchange of immaterial products such as financial capital, electronic business data, and entertainment content. The global conduit of electronic communications becomes the material infrastructure of contemporary global capitalism, also allowing immaterial labour products to be disseminated throughout the entire world.

The present study is interested in the electronic infrastructural condition for current global capitalism, and follows such descriptions as the 'electronic global Empire' or 'e-Empire' (Raley, 2004) or the 'information Empire' (Poster, 2004). These terms are used to designate a new global power which has modulated its worldwide control through media and electronic networks. The complex pyramid of global power has been built on 'access to the means of transportation and the resulting freedom of movement' (Bauman, 2000: 10). The principal strategy in the exercise of power has become extraterritorial and unbounded. The rejection of any territorial confinement means that for the use of power, it rarely matters now 'where the giver of the command is' (11), since power has become dispersive, de-centred, and even hybridised — what Hardt and Negri call the 'smooth world' of Empire. From these ubiquitous traits of the power of capital, we need to observe the virtual geographies of how the invisible web of global fluids enables the concrete redefining of the new global system.

Modulation and Assemblage of Differences

Wide modulation of scope in power is impossible without its being interconnected by networks. If power has difficulties in integrating the liquid, free-floating, and dispersed practices of discipline or control into its library of 'databases' — which constitute a vast network of stored information about the daily activities of the populace (Poster, 1990: 69–98) — power's regulatory mechanisms are likely to be incomplete. It is only possible to implement the current mechanisms of capitalist power by situating them within the electronic network structure. Raley (2004) points out that the current power system has 'energy, movement, and dynamism' (120), which make up 'modulating networks of command' (125). Raley's concept of 'modulating networks of command' is quite useful for analyzing the new practices of modern global power. Raley expresses the modulating system of power as a 'loose assemblage of relations characterized by [...] flexibility, functionality, mobility, programmability, and automation' (132). The technology permitting such an assemblage is the electronic network, which 'abstracts human

bodies from their territorial settings and separates them into a series of discrete flows' (Haggerty and Ericson, 2000: 605). The loose but integrated communication network is an 'instrumental facilitator' of power (Raely, 2004: 135). The new mechanism of power 'need not necessarily operate through domination, subjection, and imposition, because it now operates through insinuation, which is a modal switch of power and consists of hosts accepting rather than rejecting or being forced to accept' (135). When the spatial conduit of electronic communications becomes the material infrastructure of contemporary power, modulation and assemblage become the technical standards of common 'protocols' or 'codes' that link up the free-floating data of individuals, groups, and classes (Galloway, 2001).

In the global system of Empire, it is obvious that new complex hierarchies are reconfigured along with the metropolitan and global cities as command centres and nodal points, 'technopoles' as R&D centres, and the worldwide telecommunication infrastructures as the conduit of capital and information. 'A new geography of centrality and marginality' (Sassen, 2005) is being drawn not so much by national boundaries or cultural proximity as by these virtual networks. The unequal mechanisms among localities depend on whether they have plugged into, switched on, and connected themselves to the transnational networks of Empire.

Summary

This study has briefly surveyed the genealogy of globalisation theories, focusing especially on Marxist interpretations of capital accumulation on a global scale. In the first age of imperialism, critical scholars investigated the absorption of surplus by colonialist expansion to non-capitalist states, and, next, by the export of capital to underdeveloped countries. In the second stage of globalisation studies, scholars considered the 'underdevelopment' or 'dependent development' of the Third World, especially Latin America, with a dualistic structure of centre-periphery and North-South. These dependency theories and world system analyses of globalisation supposed a rigid hierarchical structure of the globalising force over the local. Scholars' recognition of hybridity and complexity in globalisation has led some to view the flexible and multiple status of the local as relatively free from the dominion of global capital. Other scholars, however, have argued that these hybrid and complex traits should be regarded as the sign of global capital's ability to absorb such local differences. This argument is mostly dependent on seeing the global-local nexus as an intricate web structure.

Globalisation as Empire upgrades these global–local debates with the concept of a global society of control. It shows how the current digitised patterns of a globalising force that the electronic networks make possible are able to absorb the differences and complexities across the world through ‘modulating networks of command’ and ‘insinuation’. Thus, Empire no longer designates the Pax Americana or the ‘Triad’ of economic powers, but rather the interconnected web of the world market. The worldwide web structure becomes ‘mobile power’, the overarching regulatory control of global capital. The new ‘hypermobile’ power is able to ‘lay an abstract space over concrete territorial configurations’ (Morley and Robins, 1995: 75) and construct a global space of control through weaving hyperspace. The present study takes this theoretical approach, but will, in addition, consider the active role of the state as agent of local and global capital.

Under this new condition of virtual geography, it is natural that South Korea's government and business sector are urgently struggling to incorporate the country into the electronic mode of Empire so that it can achieve a ‘functional’ position as one nodal point of Empire's global networks. In the Second World War, during the Japanese occupation of Korea, Japanese military imperialism forced Koreans to build a national road and railway network across the Korean Peninsula to make it accessible to the vast markets of China; the current Empire's project, however, will not need the violence of physical mobilization to subordinate the local under its global order: to obtain membership in the global society, Korea now must voluntarily build information infrastructures across the entire country and plug itself into the Empire's electronic networks. Survival in the age of Empire depends on local abilities to function as a part of the imperial web structure.

The Virtual Geography of the IT Infrastructure in Korea

The present study examines South Korea's historical and geographical processes of installing the information and communication infrastructures throughout the country with the twofold goal of enlisting South Korea as an Asian hub of global Empire and of normalising control by technological artefacts. This study sees the major shifts in the practices of power arising concurrently with the major shifts of the political system in Korea — from the military dictatorships (1963–1992) to the civilian governments (1993–present)³.

Table 1. The Major Shifts in the Practices of Korean Government's Power

	Authoritarian governments (1963–1992)	Civilian governments (1993–present)
Major drive	Disciplinary control	Neoliberal marketism
Secondary drive	Industrial development	Normalising control
Main infrastructures	Highways, subways, computerisation of residential ID numbers	Korea eXpress train (300km/h), Internet backbone, mobile and satellite networks

Table 1 shows that state interventionism in South Korea has moved in two main directions, that of political regulation and that of economic expansion. While the military regimes began to introduce the computerisation of administrative affairs for the purpose of disciplinary control of the citizen, the civilian governments have rapidly built the Internet backbone and wireless networks to adapt themselves to the global trend of neoliberalism⁴. During both periods, a common goal has been the 'war of speed' aiming at both control and growth. This local dynamic was not so much decided by a simple affiliation into the global Empire as by complex processes of domestic control and economic development through the mass mobilisation of the citizens toward informatisation. In Korea, the major drive of informatisation has been not only the state's desire to support domestic conglomerates (the Korean form of crony capitalism), but also its desire to regulate the citizens by the normalising control of network technology. It is interesting to see how the legacies of control constructed by the military regimes became the material grounds of the electronic backbone networks that are furthering the current capitalist accumulation in Korea. Korea's function as a part of the electronic Empire thus comes from the desire for social control no less than from the economic motive to plug into the global network. The next two sections of this paper will investigate in detail the historical and geographical development of communication infrastructures that has conditioned the globalising dynamic of Korea.

Computerisation and Informatisation as the Technique of Governmentality

Foucault ([1979] 1991) describes 'governmentality' as the art of exercising power on things, in other words, the scientific management of population and the constitution of political economy. He views the power shift in eighteenth-century Europe as one 'from a regime dominated by structures of sovereignty to one ruled by techniques of government' (101). This concept

illuminates how Korea's power systems have developed the regulatory mechanism of a science of knowledge (*savoir*). Foucault's concept of governmentality presents a vision of the exercise of rule as far more than simply its direct discipline or violence. The management of population or statistics is weighted more on the side of shaping the 'general' conditions of the population than of the direct management of its individual bodies.

In Korea, the first computerisation policy was directed primarily at gathering and storing information about citizens so it would be immediately available to both the national and the local authorities; this was the new technique of governmentality under the military regime. This project of regulating the whole of the citizenry was established under Cheong-Hee Park's presidency (1963–1979). In 1968, Park, the first dictator who came to power by military coup, introduced a notorious registration system for the whole populace. This ID system evolved to facilitate the government's control by means of computer databases, as mandated by Park's order of administrative computerisation in January 1975 (NCA, 2005a). The government's electronic databases accumulated a great deal of personal information, collecting over 140 different pieces of profiling information for each individual.

While governmental computerisation was implemented primarily due to a desire for control over the citizens, Park was also ambitious to promote the national economy, especially by constructing national highway and railway infrastructures, such as the Kyong–In highway line linking Seoul and Incheon, a satellite city, in 1968, the Kyong–Bu highway line between Seoul and Busan in 1970, and the first railway line transporting commuters from Seoul to Incheon in 1971. The highway and railway infrastructures were closely tied to the government's project of economic modernisation, to save on the costs of transporting goods and services, and to speed up the mobility of the labour population. The rapid construction of national roads and railways under the military regime was a typical case of state interventionism aimed at promoting industrial economies that were lagging behind. The geographical biases of such development, which was aimed linking only large metropolitan areas, have caused serious social issues such as a high concentration of the population in a few cities, regional inequalities, environmental destruction, and so forth.

From 1987 on, the policy focus of computerisation moved towards informatisation, focusing on building a national Internet backbone network to achieve technological rationalisation in such areas as employment, economic statistics, transportation, education, and

banking, as well as on the electronic management of residential IDs (NCA, 2005a). Electronic networks became appealing to the government, not merely as a conduit of control, but also because of the economic possibilities available if domestic capital was able to efficiently plug into the global networks of Empire.

Becoming a Nodal Point of Electronic Empire

State interventionism under the military regimes — chiefly by violent labour control and a vast amount of investment in transportation infrastructure — brought about a remarkable growth of the Korean economy. Since the mid-1980s, South Korea has not fit the concept of ‘underdevelopment’ as seen in much of in Latin America. Paul Wolfowitz, the current World Bank president, recently visited Seoul and praised Korea as the ‘world IT leader’, and the Korean informatisation index has jumped into the first tier of information wealth within a short time span (NCA, 2005b). Despite the financial crisis of 1997, the main drive for unrestrained economic growth has been to mobilise the citizens towards high-speed IT mobility and connexity throughout the country (e.g. Kim, 2006; Jin, 2005): for instance, with heavy involvement from France’s Train à Grande Vitesse (TGV), Alstom, and the French transportation engineering firm Systra, in 2004 a high-speed eXpress railway line from Seoul to Busan was built at a total cost of \$16.3 billion. Its transport speed of 300 kilometres per hour amounts to a speed more than one hundred times faster than that of the first railway in Korea⁵. The construction of a high-speed railway is changing our perception of physical distances markedly.

In the digital sphere, the national desire for electronic mobility was first expressed in the 1995 Framework Act on Informatisation Promotion (FAIP, Act No. 4969). The Korean government’s basic information policy has been oriented toward setting up economic ‘efficiencies’ in the national and global market. The Act has been used to provide economic momentum to allow the bigger IT businesses to increase their market share with the formal support of the Korean government, primarily through building the backbone of a national high-speed Internet network. The FAIP thus meant that the government would directly intervene at the policy level in the nascent market of IT industries and force them to restructure themselves toward IT competitiveness in both the local and the global knowledge market. The ostensible purpose of the FAIP is to allow Korea to take its place as a functional part of global Empire and to contribute to the development of the national economy, thereby promoting informatisation and

achieving an advanced information and communications industry infrastructure; this was concretised in the government's project for building 'the high-speed IT Infrastructure' implemented between 1995 and 2005 (NCA, 2005a). The Korean government's information backbone network project was originally motivated by the US 'Information Superhighway' project in 1993, which was further developed by Japan's 'Pilot model' and the EU's 'Euro-ISDN' in 1994. In order to establish a US-style nationwide information superhighway network, the Korean government invested public funds of about \$450 billion over eleven years. The Korean government currently celebrates the synergistic effects of the national information superhighway network — chiefly, the bureaucratic efficiencies brought about by the technological rationalisation of interconnecting the public institutions electronically and the growth of the IT-related new economic market.

The business-oriented goal of FAIP and the national project of IT infrastructure were further developed in the second policy plan, 'Cyber Korea 21' (CK21), issued in March 1999. According to CK21, the quality of life in Korea would be improved by the rapidly increasing opportunities derived from connecting to the commercial broadband Internet made possible by the implementation of major electronic networks for e-commerce. The market-initiative has culminated in the most recent version of the government's IT policy, 'E-Korea Vision 2006' (EKV06). In the *Informatisation White Paper 2003* (NCA, 2003), EKV06 states that its goal is both to promote the 'information society' at the national level and to gain 'strong ties of international cooperation toward the global information society' (10).

Table 2. Domestic/International Connexity of Major Commercial Networks

(Unit: bps)

Network (company)	Domestic connexity (IX plus ISPs)	International connexity
Kornet (KT)	235.5G (70.5G + 165G)	28.5G (US: 21.2G, Asia: 7.3G)
Boranet (Dacom)	168G (70.5G + 97.6G)	12G (US: 7G, Asia: 5G)
Hananet (Hanaro Telecom)	153G (123.5G + 29G)	7.7G (US: 4.96G, Asia: 1.15G, others: 1.7G)
Other major five networks (Onse Telecom, Thrunet, Enterprise Network, Dreamline, Samsung Network)	151.3G (79.3G + 72G)	1.35G

* Source (NCA, 2005b: 72–74)

Due to these strong national and global policy drives, in mobile communication, Korea currently supports the technological standards of both the code division multiple access (CDMA) and wideband CDMA (WCDMA) mobile communication networks. The ranges of data transmission are from 9.6Kbps to 2.4Mbps in the CDMA, and up to 2Mbps in the WCDMA (NCA, 2005b: 80). The number of mobile phone users in Korea is rapidly growing — as of January 2005, there were over 36.5 million registered users out of a population of 48 million — and the high-speed data service of mobile phones utilises the seamless wireless communications throughout the country. As of September 2005, the Internet backbone network enables the transmitting of digital data at a rate ranging from 2.5 to 10 gigabytes per second (Gbps). As the national public backbone nodes, the Korea Internet eXchange (KIX) of Seoul and Busan's Internet eXchange (BIX) provide connection bandwidth capacities of 51.3Gbps and 8.6Gbps, respectively (NCA, 2006: 101).

Table 2 shows both the domestic bandwidth of Internet connection of some major commercial companies and their international connectivity (a total of 50Gbps) to the global electronic network. In addition to the connection of domestic commercial networks to the electronic Empire, non-commercial backbone Internet networks used by educational institutions and intelligence agencies also provide an international link of 775 megabytes per second (Mbps) via KIX to the US (NCA, 2005b: 75), and the Korea Advanced Research Network for international R&D collaboration has international links to Japan (1Gbps), China (310Mbps), the US (1Gbps), and Europe (155Mbps). Moreover, 11 submarine optical cable lines for international data transmission have been installed in the cities of Taejeon, Keoje, and Busan, with a total capacity of up to 19 terabytes per second (Tbps) (NCA, 2005b: 78). The number of satellite communication facilities has also greatly increased: 40 satellite antennas across seven regions now cover overseas phone, broadcasting, data transmission, and Internet services with high-speed connections to international satellites such as Intelsat, Asiasat, Panamsat, and Telstar (NCA, 2005b: 79).

Since the mid-1990s, the Korean government's desire for strong ties to electronic Empire has resulted in subordinating its information policies entirely under supranational economic institutions that represent the global economic order of intellectual property regimes. Law and policy around intellectual property (IP) has been entirely subordinated to international agreements and the interests of domestic IP holders: South Korea became a party to the World

Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) in 1995, the Berne Convention for the Protection of Literary and Artistic Works in 1996, and the World Intellectual Property Organization (WIPO) Copyright Treaty in 2004. The rapid enlistment of Korea into the new 'global quasi-government' (Hardt and Negri, 2004: 175) and into the electronic network of Empire signifies that Korea is taking an active part in the new knowledge-based economic order of globalisation. Within the global geography of the electronic Empire, Korea's functional role is as a nodal point of East Asia both for disseminating the ideas of the quasi-governmental nerve centres and for switching the local networks into the global electronic impulse.

In sum, the modern historical-geographical development of the national IT infrastructures in South Korea has been a vigorous struggle to improve the mobility and connexity of capital; this can be seen in the industrial railways, the highways and subways, the high-speed railways, and the high-speed broadband Internet and mobile communication networks. Although Korea's informatisation policies under civilian governments have been driven largely by neoliberal economic imperatives, the desire to control the citizenry has never disappeared from the time of the authoritarian governments onward. Due to the advanced network infrastructure, the invention of positive technologies for free-floating control has become the most significant of all, because it can hide under an ethical patina the real intention of control directed at establishing the new digital rule of cybersociety. Moreover, the state never forgets its role as ally of the national and multinational *Chaebols* — the large family-owned Korean conglomerates such as Samsung and LG in mobile electronics — and of the telecommunication duopolies Korea Telecom and Dacom in IT infrastructure projects.

Conclusion

The 'challenge of Asian IT activity', including Korea, can be seen as one example of the complexity and hybridity of the local in relation to the global prospects of electronic Empire (Boyd-Barrett, 2006). In fact, through its computer-networking infrastructure, South Korea is transforming itself into the first tier of next-generation IT businesses. The government has even launched the slogan 'U(biquitous)-Korea', which is intended to encourage the integration of all communication systems and electronic devices; the government hopes thereby to promote the image of South Korea as one of the world's most developed Internet and wireless nations.

From the vantage point of electronic Empire, the 'Asian challenge' is no longer a direct economic threat to Empire; rather Asia assumes functions within the worldwide network, part of which consists of Asian nodal points such as Hong Kong, Singapore, Seoul, and Beijing. These Asian nodal points for Empire also reproduce the uneven development of geographies within each national boundary. As shown in Korea's geographical history of transportation and information infrastructures, these nodal points are largely centred in a few major metropolitan cities, while other cities and regions are relatively alienated from the societal benefits of networking. The IT successes in Asia have emerged from a harsh remodelling of inclusion and exclusion among locales, cities, regions, and provinces, coerced by the interventionist hand of the state.

Hardt and Negri's thesis of Empire has advanced the discussion of globalisation through their hypothesis that in a global rule the material condition of 'the survival of the fittest' has been transformed from the fixed structure of development and underdevelopment into the issue of connexity to the network of Empire; however, this thesis overlooks many of the complex layers through which the political entities of local states integrate with a globalising force. While the globalising force of capital has become more and more dominant, it connotes 'a global system of multiple local states, structured in a complex relation of dominion and subordination' (Wood, 2003: 20). Hardt and Negri's perspective does supply some answers as to how to situate the remarkable Asian IT growth within electronic Empire; however, its local mechanisms need to be specified by concretely examining the cooperative relationship between local Asian states and capital accumulation.

What is needed is a model specific to Asian IT economies in globalisation that describes the 'tendency toward deformation' of IT growth under conditions of extreme state intervention, a deformation which includes such phenomena as the increase of inequalities between major metropolitan centres and other areas of the same country, environmental destruction, harsh labour control, and crony capitalism. Under the universal dominion of electronic Empire, the survival of states depends increasingly on their mobility and connexity to the world market. This study has given an overview of Korea's international electronic data links by means of satellite, submarine fibre-optic lines, backbone Internet networks, and R&D networks. Superficially, the story of the IT struggle in Korea is the story of its successful incorporation into the imperial network; the less public side of the story is much darker.

It is a story of pervasive interventionism by an authoritarian state and its 'market-friendly' IT policies, in the form of weighting all the advantages toward the Korean type of crony capitalism, a close symbiosis between bureaucratic state systems and the *Chaebols*, or dynastic, family-owned conglomerates. The Korean government's *Chaebol*-driven growth policies enabled domestic conglomerates such as Samsung and LG to suppress workers' attempts to organize and unionize. The *Chaebols*' brand images as the high-tech global leaders, therefore, spring not only from their own successful business strategies and goals but also from their special mode of capital accumulation aided by state interventionism, that is to say, from a structural symbiosis between the anti-labour business climate in *Chaebols* and the state's regulatory labour control. Additionally, the prerequisites for the connection of Korea to the global electronic Empire were the dissemination of the ideology of technological development to the citizenry and the accumulation of capital through harsh labour control locally through the collaboration between businesses and the state. Another significant fact is that the national IT infrastructure originated historically from the state's administrative computerisation for regulative control, and only later was its function transformed to serve the commercial purposes of IT businesses.

These distorted and deformed embryological origins inscribed in Asian IT growth are often ignored as trivial affairs, while the rapid and visible growth index of IT businesses are praised indiscriminately. Behind its public image as a global IT leader, however, the other, darker side of Korea's informatisation is composed of the complex and hybrid traits of the local, posited under the material condition of global capitalism's new electronic Empire.

Notes

1. The present study investigates mainly the worldwide electronic network as a conduit of capital. The other significant momentum of capital accumulation in the digital age — the privatizing mechanisms of 'immaterial' or intellectual labour in a global scale — are beyond the scope of the present study. It is now clear, however, that the expropriation and privatization of the common cultural assets of humankind have become the ultimate goals of contemporary capitalism, which also accompanies the construction of a new virtual geography of electronic connectivity and mobility. For instance, Hardt and Negri (2004) describe the expropriation of value in the age of digital capitalism as 'the capture of value' that is produced by cooperative labour and that must be protected by powerful intellectual property laws.
2. Similar to the pan-Spanish 'Telenovela' culture, which is relatively independent from the monolithic cultural dominance of the Hollywood production system, Korea's cultural products — notably, its blockbuster movies, television programs, fashion, and popular music — have become favorites among Asians and even among Latin Americans. The so-called 'Korean Wave' (or *Halryu*) refers to the growing appeal of Korean popular culture in other Asian countries, and is often theoretically explained by 'cultural proximity,' a phenomenon first identified by empirical studies of the TV-watching patterns of Latin Americans.
3. In another article, I examine in detail how the techniques of power were gradually transformed from a centralized and hierarchical model into a distributive and dispersed network model (Lee, 2007). I explore how, at the institutional level, during the period of repressive and disciplinary society in Korea (1948–1992), the regulatory control systems of the state were mainly performed by two formidable apparatuses: the national ID system and the National Security Law. On the other hand, the deployment of institutional power since 1993 has been based on the logic of free-floating control, dispersion, normalization, and modulation of digital databases.
4. By definition, neoliberalism arises from a pervasive global force to entirely reconfigure society by national and international business powers, going beyond the classical claims of the *laissez-faire* market operated by the 'invisible hand'. To optimize conditions for capital accumulation within a nation, a market-friendly public policy is essential in neoliberalism, which consequently causes cut-backs in welfare provision, health care, public education, core social services, and at the same time market incentives in the form of tax breaks, the provision of infrastructure at state expense, and the opening of local markets known as 'structural adjustment' to global forces (Harvey, 2006: 23–26).

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5. See the following site describing South Korea's high-speed railway, <http://www.railway-technology.com/projects/koreatgv/>

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