THE PAST AND THE FUTURE OF INDUSTRIAL POLICY IN TELECOMMUNICATIONS: A COMPARATIVE ANALYSIS OF SOUTH KOREA AND JAPAN

Ruediger Frank
University of Vienna

Both Japan and the Republic of Korea (ROK) have a long and successful history of industrial policy based on a catch-up strategy in economic development. This article will explore how this pattern has influenced reforms in telecommunications since the 1980s, how it is reflected in current visions for the future of the information and communications sector, and how this approach may be extended beyond the original target of catching up towards an active strategy of global leadership. In a strictly comparative treatment of the subject, single issues are identified on the basis of regulatory specifics of the sector for the comparison of the reform paths and are connected to strategic fields for the visions of the future. The Korean and the Japanese ways of dealing with each of these matters are contrasted and similarities and differences highlighted. In conclusion, the paper will offer an explanation for these findings, together with an attempt to understand the varying results of what would appear to constitute the same efforts.

Specifics of telecommunications

The telecommunications industry has a number of features that in the past led to a special treatment of this sector by national governments.[1] From an economic perspective, it is a network-based industry, with very high initial costs that are difficult to recover upon exit. Traditionally, it was assumed that free competition would inevitably lead to a natural monopoly,[2] one reason being a sub-additive cost function created by economies of scale. The monopolist would behave as monopolists do: offer too little at too high a price, with modest and slow innovation and poor quality.[3]

Papers of the British Association for Korean Studies, vol. 10 (2005), pp. 23–42

There are political issues connected to telecommunications, too. Citizens expect the same universal service everywhere at the same uniform price.[4] Communications form a strategic industry, which for many reasons, such as security considerations, is only reluctantly opened to foreigners. Very importantly, with an upward trend, telecommunications is an intermediary product for other industries, comparable to transportation, energy and education.

All this led to one or other form of state intervention, by heavy regulation of a private firm with monopolist rights, by having the services offered through a state-owned corporation, or by the state itself, in the latter case usually represented by the responsible ministry. As many of us will remember, this system did not work well. Prices were too high, while the quality of the service was low, waiting lists for access were long, innovation was slow and alternatives in services and equipment were few. The resulting tasks for a reform programme consisted mainly of the following components: separation of entrepreneurial, industry-promoting and regulatory functions, usually by creating a state-owned business unit first; privatisation of this business unit; introduction of domestic competition in services; introduction of foreign competition; and finally, further regulatory reform (pricing, entry, exit, interconnection). Other issues that are only superficially dealt with in this paper are the relationship between sector-specific regulation and general fair trade policy, as well as the need for asymmetric regulation in the initial stage of transformation from a monopolistic to a competitive market structure.

In the early 1980s, a worldwide trend to reform the regulatory structure of telecommunications started, mainly prompted by new opportunities presented by computers and digitalisation, the emergence of mobile communications, new regulatory models, and increasing scepticism vis-à-vis the theory of natural monopolies. It was one reflection of the Reagan/Thatcher policy of market liberalisation.[5] Korea and Japan were early participants in this development.

Comparing past reforms in Japan and the ROK

From the specifics of telecommunications as briefly described above, we have derived a number of crucial reform tasks that have to be dealt with in one way or another. Several major questions need to be answered for each of the two countries in order to understand the respective reform path. Why was the decision made to reform telecommunications? Who or what influenced the reform process? How did Japan and the ROK approach the separation of business, industry promotion and regulatory functions? How did the reform of fixed services such as international and domestic long-distance and local services proceed? How was competition introduced in mobile communications? And finally, how did both countries handle privatisation of the established carrier(s)?

Why did the reforms start?

JAPAN: The debate about restructuring of the incumbent carrier Nippon Telegraph and Telecom (NTT) started in 1981 after an internal study group of the Ministry of Post and Telecommunications (MPT) proposed the divestiture and privatisation of NTT.[6] The issue has been under debate ever since. It was mainly business pressure that led to a recommendation from the *ad hoc* Committee on Administrative Reform of 1982 to proceed in that way. Support for the reforms came from Keidanren (a Japanese industrial lobby group) and NTT itself, although their ideas of the concrete measures differed markedly from those of the MPT. An additional reform factor was pressure from the Ministry of International Trade and Industry (MITI) to open the market for value-added services to boost the overall economy. The MPT recognised that the sector needed to respond to new demands. In hindsight, it becomes obvious that the origin of the reform debate was more or less an internal one, although the driving forces behind the actual changes were much more diversified.

KOREA: The reforms in the ROK's telecommunications basically started in 1981 with the formal separation of the business unit Korea Telecommunications Authority (KTA) from the ministry, something Japan had done decades before. The initiative for this step came almost exclusively from within the administration and represented a continuation of the successful economic policy of the Park Chung-hee era (1961–79). Impressive results were achieved, new technologies were developed, tele-density was boosted and a whole new sector was created including R&D institutions, service providers, hardware manufacturers and legal institutions. Business played a much less important role than in Japan, although this changed later. The reasons were twofold: the firms directly involved were too young, and the established players, the *chaeböl* (business conglomerates), were under strict control by the state; in fact, they were its agents. However, 'real' reform in the sense of introducing competition and liberalising ownership started much later, towards the end of the 1980s, and was predominantly the result of pressure from the United States (US), which was strongest in value-added services and IT hardware.[7] The Ministry of Communications (MOC) formed a discussion group to cope with the heavy pressure and the American demands; the reform measures of 1990 were a result of these deliberations. The origin of the reform debate was twofold: industrial policy in the 1980s, which had the twin goals of nurturing a new growth sector and of improving the nation's infrastructure, had strictly domestic roots; while the moves towards deregulation and liberalisation in the 1990s appear to have been a reaction to insurmountable external pressure.

What were the driving factors of reform?

JAPAN: As the OECD (1999: 10) observed, Japan usually followed international developments in this area. Numerous delegations and working groups studied the

experience of first movers such as the US and the United Kingdom (UK). To catch up, or better, not to fall behind, was one of the major motivations of the reforms. Another important factor was the rivalry between the ministry—MPT—and the giant carrier NTT. The former wanted to gain control of the carrier, which had an extraordinarily strong position within the Japanese state because of its 220,000 employees and its position as number one in purchasing power among all Japanese companies. Both organisations had a history of about thirty years of parallel existence and competition when the reforms started. Each side regarded reform as a chance to come closer to their goals: the MPT wanted to reduce the monopolistic power of NTT, while the latter saw a chance to gain more independence in its business decisions. Certainly, the unique market structure in Japanese telecommunications played a role, too. Quite extraordinarily, instead of one, there were two players (NTT, and Kokusai Denshin Denwa Co. Ltd.—KDD). Furthermore, no company operated both international and long-distance services until as late as 1997. Last but not least, there were different approaches towards competition in the long-distance market and international service market. In the former, new carriers employed LCR chips built into the customer's equipment to route their calls to the respective carrier's network. New entrants into international services, on the other hand, used separate carrier identification codes to be dialled by the customers. This demanded more marketing efforts, but also created much higher publicity than the LCR chips. A constant source of dynamism was the conflict between the two functions embedded within the MPT. As a regulator, it was responsible for consumer protection; as part of the government, it focused on industry promotion. In light of the close relationship between the state and business in Japan, it is not surprising that the OECD recognised a bias towards the latter function. Regardless of these important domestic factors, foreign pressure played a role, too. It came mainly from the US, although in the later 1990s the European Union (EU) also submitted 'proposals'" to Japan concerning further liberalisation. An interesting detail is that domestic companies utilised foreign pressure as exerted by the American Chamber of Commerce or the European Chamber of Commerce to convey their own concerns and desires to the bureaucracy.

KOREA: Once the decision to change the *status quo* was made, a number of catalysts of further developments emerged. The major driving force was, however, the Ministry of Communications (MOC). Initially, it did not face too much competition from other governmental agencies, mainly because it was agreed that the MOC and its research institute, the Korea Information Society Development Institute (KISDI), possessed superior knowledge and skills in a technically complicated matter.[8] It was not regarded as a serious competitor within the administration either; until the establishment of the Ministry of Information and Communications (MIC) in 1994/5, the MOC was among the least attractive workplaces for young bureaucrats. As mentioned above, providing

the country with an adequate infrastructure and the creation of a new growth industry were primary goals in the first decade of the reforms. Later, the businesses created within this process (hardware producers and the carrier DACOM) started to demand deregulatory measures to expand their operations. The ROK did not have a specific market structure, nor did the conflict between the Korea Communications Commission and the MOC (later MIC) play a noteworthy role in the reform process. Rather, foreign pressure, both bilaterally and multilaterally, exerted a significant influence. Domestic companies, nonetheless, did not hesitate to approach the relevant government agencies directly in case of deregulatory demands. Public scepticism vis-à-vis the chaebŏl, however, limited the publicly executable business pressure on the government. Later, the rivalry between the MIC and the Ministry of Commerce, Industry and Energy (MOCIE), as well as the responsibility for intervention of the MIC and the Fair Trade Commission (FTC), started to determine the reform process. Korea Telecom (KT) was an important factor, too, and President Kim Young-sam himself publicly promoted his vision of the informatisation of the ROK, as did his successor. It was not possible to observe such direct leadership in Japan. Both presidents had a strong wish to raise the competitiveness of the sector in the national interest.

Outsourcing of the business function

Japan: As early as 1952, the Ministry of Telecommunications was turned into NTT, which had the status of a wholly state-owned corporation. In 1952, KDD was founded as a government-regulated corporation with a monopoly for international service, and the supervisory function for both corporations was handed to the newly created Ministry of Post and Telecommunications.

Korea: The Korea Telecommunications Authority (now KT) was founded in 1981. Until that year, its business function was performed by the MOC. The next step was the creation of several monopolistic business units with clearly designated and separated functions, the most important being the telecom operator DACOM for data services (1982) and Korea Mobile Telecom (today's SK Telecom) for mobile communications (1984). Depending on the perspective, this creates the impression that the ROK used the 1980s to catch up with Japan (while in the 1990s it got ahead of its neighbour). The supervisory function stayed with the MOC. The tasks of all carriers were regulated within a new legal framework (the Framework Act on Telecommunications and Telecommunications Business Act), which replaced the former Telecommunications Act at the end of 1983.

Reform of fixed services

Japan: Competition was introduced gradually. In 1985, the first reform started with the enactment of the Telecommunications Business Law. The major changes

concerned the liberalisation of terminal equipment; the simultaneous introduction of competition in telecommunications network infrastructure and services; a regulatory distinction between market participants who owned infrastructure (Type I carriers) and those who leased infrastructure (Type II carriers); the liberalisation of value-added services and networks; and the liberalisation of the sale of telephone sets.

However, the first wave of reform measures in Japan still left much to be desired. Competition was ineffective, no important business decisions were possible without permission from the MPT, there was no competition in local telecommunications, and only a managed competition existed for long-distance and international calls through the MPT's tariff approval system. In 1990, when the first regular review of the NTT Law of 1985 was due, breaking up NTT was seriously considered. The Telecommunications Council proposed the break-up of NTT into a local and a long-distance company. The MPT supported the Council's recommendation, but faced strong opposition from the MITI, NTT, telecommunications equipment companies, Keidanren and the Ministry of Finance (MOF). The main concerns were firstly, that is was too early to make a decision and secondly, that divestiture would adversely affect NTT's share price.

In 1993, telecommunications services through cable TV networks were allowed, but were not able to mount a serious challenge to the established networks. In 1995, the debate about the future of NTT was reopened, this time with proposals from the Prime Minister's Office and the Fair Trade Commission. The result was another compromise. The second reform started in 1996. Its official goals were deregulation, promotion of network interconnection, and reorganisation of NTT. An important catalyst was the adoption of new rules (Annex on Telecommunications) set by the World Trade Organisation (WTO). In June 1997, the Telecommunications Business Law (TBL), the NTT Law and the KDD Law were amended. Some, but not all, entry restrictions for Type I carriers were eliminated, a new interconnection scheme was created and new provisions were made for a numbering plan. The most important measure was the break-up of NTT into one long-distance company and two regional local service companies (NTT East and NTT West) under a holding company (NTT Corp.). Originally, four regional companies were planned. The holding company structure was deemed desirable to secure unified R&D, which was regarded as a Japanese national asset.[9] Nevertheless, real competition has still not been achieved. NTT East and NTT West cannot enter the long-distance market, and it is unlikely that they would compete against each other in the local loop since it would not be in the interest of the holding company shareholders.

A year later, in May 1998, the TBL was again amended. The former approval system for NTT prices was replaced by a notification system; price cap regulation of NTT's local service was introduced, as well as relaxations of restrictions on NTT's international service. The KDD Law was abolished in July 1998, which meant the

lifting of the previous 20 per cent foreign ownership limit and the change in KDD's status from a special to a private company. In addition, the scope of Special Type II carriers was reduced, and the number of Type I and Type II carrier categories went down to three (previously seven for Type I and four for Type II).

KOREA: As in Japan, competition was introduced gradually. Under strong US pressure, by 1992 procurement was liberalised for American bidders and by 1997 for others. The South Korean chaebŏl pushed for a deregulation of the value-added service market, which appears a natural move given the increasing dependency of business transactions on stable access to information and corporate networks.[10] After some reluctant reform measures, which, however, did not address the interests of foreign companies, the US intervened again. Their frustrating experience with the insuperable bilateral pressure from Washington convinced the policy- makers in the MOC that there would hardly be much they could do against further reforms. So they decided to give up direct resistance, to take the initiative and to preserve the chance to actively shape the reform process. After having witnessed the examples of the AT&T divestiture, the privatisation of British Telecom and the beginnings of the privatisation of NTT in Japan, and facing increasing foreign and domestic pressure, the MOC established the Telecommunications Development Council consisting of 96 experts from various fields. This body created a report that formed the foundation for the first telecommunications reform in 1990. As a consequence, full competition was introduced in value-added services, and duopolies were created for paging, mobile communications and international long-distance. The monopoly of Korea Telecom (KT) for domestic long-distance and local services remained intact. What was remarkable was the continuation of industrial policy even under these unfavorable conditions. KT was to be promoted as one of the country's flagship companies, which meant increasing its efficiency by carefully exposing it to competition and by allowing it to enter formerly restricted business fields. Subsequently, KT received the long-desired permission to sell value-added services directly, instead of doing so via DACOM. In December 1991, legislation was amended to introduce two categories of service providers in Korea: those with their own networks (facilities-based service providers) and those without (value-added service providers). This approach was quite similar to what was done in Japan in 1985.

The second reform of 1994 was mainly motivated by the Uruguay Round, the establishment of the WTO and the expected Annex on Telecommunications. With the first civilian president (Kim Young-sam, 1993–7) in office for decades, the state's direct control of businesses weakened and new ways opened for them to express their wishes. Regulations concerning pricing and entry were further simplified to help non-dominant carriers to compete, and a duopoly was created in domestic long distance (DACOM).

Shortly thereafter, the third reform started with the foundation of the Ministry of Information and Communications in 1995. The main feature was the abolition of the duopoly structure, since it was not regarded as having been capable of providing the necessary incentives to make the domestic industry ready for the inescapable foreign competition. Once more, the ROK government acknowledged the superior quality of independent business decisions over administrative measures, and decided to utilise this ability in the context of its industrial policy, rather than wasting scarce resources. Control over pricing and in particular licensing provided sufficient veto power to direct the industry if necessary. In 1997, the duopoly in domestic and international long-distance was abolished with the market entry of Onse, and with Hanaro a second provider received a license for local services.

Later reforms further deregulated entry and pricing, improved interconnection rules and further reduced the entry barriers for foreign ownership. However, the ROK government was able to keep international competition at arm's length for long enough to allow the domestic industry to consolidate its position. Today, foreign companies operate in South Korea only as investors or in strategic alliances with domestic companies, but not independently.

Mobile communications

JAPAN: NTT had a monopoly for mobile communications until 1988. In December 1988, two more companies (so-called New Common Carriers, or NCCs) entered the market with analogue cell phones. In 1992 there followed the separation of the mobile business unit from NTT, which was the result of a compromise in the NTT debate between various governmental agencies. In 1993, this mobile carrier was split into nine companies, in a move reminiscent of the policy in the US. In April 1994, four digital cellular mobile carriers were allowed to enter each of the ten separate markets (Hokkaido, Tohoku, Kanto, Tokai, Hokuriku, Kansai, Chugoku, Shikoku, Kyushu, Okinawa). In the same month, the mobile equipment market was liberalised. Little more than a year later, in July 1995, three Personal Handyphone System (PHS) carriers were allowed to enter each of the ten regional markets, thereby creating a significant degree of competition.

KOREA: Korea Mobile Telecom was spun off the KTA in 1984 and was privatised in 1994 under the new name of SK Telecom. After some irregularities, a second carrier (Shinsegi) was licensed in 1994, and in 1996, KT was allowed to re-enter the mobile market with the foundation of KT Freetel. From 1996, fully fledged competition was introduced in South Korea's mobile communications market with a total of five carriers (SK Telecom, Shinsegi, Freetel, Hansol, LG Telecom). In 2002, the number of competitors shrank to three by merger and acquisition, a process that was strongly supported by the government.

Privatisation of the main player

JAPAN: The privatisation of NTT started with the first reform in the mid-1980s. In 1986, 200,000 shares were sold and the managerial autonomy of NTT was increased. Originally, 50 per cent of the shares were to be sold in four equal blocks annually beginning in 1986, but the sale stopped with the third block in 1988 and was postponed until 1998. It was not easy to reform the powerful NTT against its will. This becomes clearer if we understand that the NTT 'family companies' included NEC, Hitachi, Oki and Fujitsu.[11] The KDD Law was abolished in July 1998, which meant the lifting of the previous 20 per cent foreign ownership limit and a change in KDD's status from a special to a private company.

KOREA: Since 1980, there have been four privatisation initiatives in the ROK, each of which more or less coincided with the inauguration of a new president: 1980 (Chun Doo-hwan), 1987 (Roh Tae-woo), 1993 (Kim Young-sam) and 1998 (Kim Dae-jung). The main goals of privatisation are to increase economic efficiency and to improve the quality of service, to reduce direct state interference and to generate resources for reform programmes.[12] Despite detailed programmes and ambitious announcements, most privatisation efforts have proceeded slowly and often behind schedule. KT was no exception to that rule. The MOC regarded the R&D function of KT as important and was therefore hesitant to push ahead with privatisation of the incumbent. The government was fighting on two fronts: it wanted to prevent domination of the flagship carrier not only by foreigners, but also by the chaebŏl, which were eager to obtain a controlling share in KT and had the financial capabilities to do so. The result was a long and slow process. The decision to privatise KT was made in 1989; in 1994, 49 per cent of the shares were to be sold, which by then was the understanding of 'privatisation'.[13]

This situation changed only after the financial and economic crisis of 1997–8, when full privatisation by 2002 was discussed and decided upon. Further catalysts were entry into OECD in 1996 and the WTO telecommunications negotiations. Between 1993 and 2002, shares were sold in ten steps, reducing the state's share to 28.37 per cent as of January 2002 (in 1994, it was still 80 per cent). It is remarkable that the privatisation proceeded, however slowly, given a well-founded fear within the MIC as the largest shareholder that it would lose its importance within the administration and become obsolete. In fact, if the Korea Communications Commission is really outsourced one day and becomes a truly independent regulatory agency, there will be little left for the MIC to do that could not be done within a bureau of another ministry.

Other administrative units also played a role in the privatisation process. The Ministry of Finance's concern about the low share price of KT after the end of the New Economy boom in 2000 contributed to slowing the sale of the shares. However,

the comparison with Japan shows that in the ROK under its presidential system, the bureaucracy, despite its absolute strength, is still much weaker than under the party-centred system in Japan. This can be seen as a structural advantage for South Korea. Furthermore, international pressure seems to have played a much bigger role in Korea than in Japan.

R&D structure

The R&D structure in Japanese telecommunications appears to resemble that of the ROK. The Communications Research Laboratory, like Korea's Electronics and Telecommunications Research Institute (ETRI), concentrates on technological research, while the Telecommunications Advancement Organisation of Japan has its focus on telecommunications policy, including the introduction of advanced technologies and applications to society. In this respect its remit is reminiscent of the function of South Korea's KISDI. In April 2004, the merger of both Japanese institutions was planned, to form the Info-Communications Research Institute.[14] So far, no similar moves have been announced in Korea.

Similarities in the reform process of the past

The ROK and Japan are two different countries, with different political, demographic and geographical conditions. This will naturally produce differences in the reform paths. The starting point of reform in both countries was different, but the goals and motivations were similar. The reform process shows a number of similarities that are not incidental. Some of them are certainly attributable to universal developments, such as digitalisation or the overall neo-liberal trend towards liberalisation and deregulation in the 1980s, the Uruguay Round, the increased readiness of the US to exert pressure on its allies after the end of the Cold War, and so forth. There are, however, similarities that cannot be explained by general global trends: (1) the reforms were composed of individual measures rather than representing a single, comprehensive reform programme; (2) while interest groups in all countries attempt to influence the decisions of the respective regulatory bodies, in Japan and Korea the active role of governmental agencies and the relatively passive role of private corporations stand out; (3) in this context, the reform process appears to be influenced by concepts of industrial policy rather than by a more neutral criterion of efficiency or the broad acceptance of liberal economic principles; (4) intra-agency competition plays a significant role in both countries as a substitute for the checks and balances that would in other cases be provided by the interaction of the state sector and the private sector; in South Korea this competition is utilised to support the head of state through a strategy of 'divide and rule'; and (5) it is remarkable that in both countries, the respective ministry and the Fair Trade Commission have jurisdiction over the sector, although the involvement of

the FTC has been limited in Japan.[15] In both cases, we have witnessed the continuation of established industrial policies, such as picking the winner, designation of strategic industries, pooling of national resources, and protection of the domestic markets. As a result, both countries have developed a reform strategy and embarked on a long process of gradual reform that in many respects is still continuing, although the most spectacular developments lie behind us.

Comparing future visions for telecommunications

The info-communication policy-making bodies in the ROK and Japan have created hundreds of pages of all kinds of White Papers, strategies, visions and so forth. Continuing with the approach applied above, of choosing categories and comparing the positions of both countries, we can posit the most important questions as: who is responsible for information and communication policy planning? What are the strategic goals? Which ways will lead to success? How aware are the planners of possible obstacles? Which sectors and products are regarded as particularly promising?

Status of the industry

The starting points for developing future visions in Japan and South Korea are not the same, but are still very similar. In both countries, the IC industry is growing faster than the rest of the economy and receives special recognition. With regard to international technological competitiveness, Japan shows a remarkable strength in various types of hardware, such as intelligent home appliances and mobile terminals, and a surprising weakness in terms of software, including security, content, internet and other software. According to the MPHPT (2003: 10), the Japanese strengths are the result of "farsighted" R&D co-operation between the private and public sectors.

The informatisation index developed by the International Telecommunications Union is used to measure progress in a number of IT-related fields, and is explicitly used by the National Computerisation Agency (NCA) as a benchmark to assess the effectiveness of the Korean policy.[16] South Korea's ITU informatisation level is increasing steadily, from 22nd in 1995–7 to 19th in 1999, 17th in 2000, 16th in 2001 and to 12th in 2002.[17] Korea is already doing quite well in a number of information-related indicators, such as broadband access and the relative number of internet users. These fields are seen as particularly important on account of their intermediary nature and spillover effects; all potential growth industries as identified below in one way or the other depend on these networks. The numbers show the leading place the ROK occupies in broadband internet access, although the other parties appear to be catching up.

Table 1: Broadband access as of June 2002 (source: NCA 2003:34)

	Digital Subscriber Line 12/2001	Cable 12/2001	*Total 12/2001*	DSL 6/2002	Cable 6/2002	*Total 6/2002*	Per 100 citizens 6/2002
Japan	1,524,348	1,303,000	2,839,348	3,300,926	1,626,000	5,014,026	3.9
ROK	**5,178,323**	**2,936,280**	**8,146,001**	**5,734,690**	**3,287,464**	**9,058,517**	**19.1**
USA	3,947,808	7,050,000	12,783,214	5,082,856	9,200,000	16,068,262	5.6
EU	4,117,078	1,644,760	5,953,312	6,170,006	2,251,608	8,751,222	2.3
UK	140,000	208,000	350,000	299,000	452,994	751,994	1.3

Meanwhile, Japan emphasises its low broadband prices. Furthermore, since over 80 per cent of all cellphone subscribers in Japan use mobile internet services, the country has a leading position in this field globally.[18]

Information and communications (IC) policy planning

With regard to the quantity of strategic papers, both countries do quite well. Visions are produced regularly. However, if compared to Korea, we find less direct leadership by the head of state in Japan, rather, an attempt to create a broad consensus. Koreans also seem to be more interested in all kinds of numbers and indices than Japan. Importantly, the state's role in the development process is much more emphasised in Korea.

JAPAN: To promote its national IT strategy, the Japanese government has established the IT Strategic Headquarters, which operates on the basis of a newly promulgated IT Basic Law. The IT Strategic Headquarters has taken a number of measures to streamline efforts towards e-Japan, including a revision of the related priority lists and the creation of an expert study group. Another influential institution is the MPHPT's Telecommunications Council.[19]

KOREA: Informatisation as an industrial policy was launched in 1993, with projects such as popularising PCs, building the Korea information infrastructure, adjusting the legal and administrative structure, introducing or enhancing competition, liberalisation and deregulation. Since 1996, three master plans have been developed to promote informatisation: the first in 1996; the second in 1999 (Cyber Korea 21); the third in 2002 (e-Korea Vision 2006). Co-ordination takes place in various forms. At the top, the president himself is involved through the Informatisation Strategy Meeting and the Informatisation Promotion Committee. The main job of the government is "to make the IT industry grow" by rendering support in the following fields: expansion of IT infrastructure, assistance to new business establishments,

development of new technology, management of human resources and improvements in related laws and regulations. The private sector is expected to continue its efforts to lead in new industries on the basis of "creativity and self-regulation". Investments are to be expanded in technology development for strategic value-added services.[20]

Strategic goals

JAPAN: The declared aim of the Ministries of Public Management, Home Affairs and Post and Telecommunications (MPHPT) is to make Japan "*The* world's most advanced IT nation" (emphasis supplied) by 2005, to become a country that is emulated by others and where the most important new developments and trends originate from.[21] Clearly and explicitly, Japan aims for the leading role, hoping to overcome US dominance in the field and to balance growing Chinese influence in more traditional industries. The number of broadband users is expected to increase more than threefold from 19.55 million (28.2 per cent) in 2002 to 59.67 million (67.1 per cent) in 2007, while the market size will grow fivefold to 10.2 trillion yen in the same period.[22]

KOREA: The goal of future policies on information and communications is to further develop the knowledge-based economy, to "boost the nation with the vision of informatization",[23] to secure "Korea's prominent status in the Global Information Society",[24] and to become a global leader. South Korea emphasises international co-operation more strongly than Japan. Compared to earlier "visions", the goals are still ambitious, but appear to be more realistic and mature. As we can expect from a vision, Korea wants to be at the forefront of development, but there are no claims to become the only country accomplishing this task.

Ways to success

JAPAN: The Japanese goals are to be reached by concerted efforts of the private and the public sector; however, no details are revealed, and neither is a possible role for government. As a benchmark, Japanese IT policymakers look to the US and the ROK. It appears there is a tendency to downplay the latter's success. The MPHPT identifies a number of strategic areas on which respective efforts should concentrate (for more details, see below). A major issue is the creation of an appropriate network infrastructure, including various fixed and wireless broadband services.[25] However, no concrete measures beyond a general macroeconomic policy are mentioned in the materials analysed,[26] an impression that has been supported by limited number of interviews with Japanese officials. The White Papers usually do not go beyond the acknowledgement of national and international trends and some future projections, in sharp contrast to the targeted South Korean strategies described above. This does

not mean that the state is not involved in IT promotion; there are numerous examples such as the cooperation between Japan Broadcasting Corporation (NHK), commercial broadcasters and the MPHPT in the filed of digital terrestrial broadcasting.[27] However, it is not clear whether the state plays a leading or a supporting role in such alliances.

KOREA: The ways to reach these goals involve what we have already seen in the case of telecom reform: a fruitful co-operation between various groups within society, namely the state, private companies and the public, each with its own tasks. The NCA suggests striking a balance between the promotion of the IT industry to "create supplies" and an active informatisation policy "to create demands", and goes on to state that "[t]here is no doubt that national informatization policies such as founding highly advanced informatization promotional funds and building high speed information infrastructure … and e-government indeed contribute to shape an early stage of markets that is vital to the development of the IT industry."[28]

The active promotion of the use of high-speed data networks has to be understood in this context. All detailed measures are related to either one or other of these two components. Such measures call for: building a high-speed network; pushing the sale of computers; promoting various applications such as e-learning, e-government, e-commerce; improving the legal framework related to information and communications; fighting undesirable developments such as hacking, viruses, SPAM, etc.; and enforcing international co-operation for the information society, in particular with China and Japan. The policy-makers in the ROK have explicitly realised that certain old concepts have reached their limits and need to be replaced. They want to advance from quantitative expansion to qualitative accomplishments, from the creation of new industries by the government to laying the foundations for new industries, and from a catch-up strategy to a leading strategy. These efforts will lead, it is hoped, to a number of improvements in various fields. These concern a higher quality of life, lifelong learning and a culturally enriched life, the creation of new jobs and the growth of new industries, enhancement of productivity in existing industries and in the public sector and improvements in public services. The internet, according to MIC (MIC 2002:22) will increase transparency of decision-making. Key success factors are the establishment of a comprehensive framework and system to promote informatisation; the establishment of a vision for the information society in response to changes in the environment; an upgraded information infrastructure; strategic investment in key sectors and the promotion of market competition; and the establishment of cultural compatibility with information technology.[29]

Awareness of problems

The JAPANESE vision does not explicitly identify possible obstacles, but acknowledges the digital divide within society and the need to take countermeasures. Furthermore,

general economic difficulties are mentioned, but rather as something that development in the IT sector will help to overcome and not as an obstacle in the latter's progress.

The KOREAN vision concentrates on overcoming a number of difficulties, showing the ROK's very pragmatic approach. The major problems as seen by the policymakers and outlined by MIC (MIC 2002:14–16) are: (1) the slow spread of informatisation in the public sector; (2) low IT investment among small and medium enterprises; (3) the adverse effects of IC technologies (hacking, viruses, privacy); (4) insufficient investment in R&D and human resources; (5) the entry of "new economic superpowers" such as China and the EU; and (6) the digital divide as a social problem.

Strategic sectors and products

Both countries agree on a number of strategic fields with high future potential. These are all kinds of e-commerce, e-government, m-commerce, broadband internet and VoIP (voice-over internet protocol, or simply internet telephony). E-government and the internet content business are particularly strongly emphasised in both countries, as is the expansion of broadband networks. However, the detailed emphasis is not always congruent.

JAPAN: The Japanese ideas seem to be more detailed, but less focused, at least in the general strategic documents that I have analysed. An exception is the expansion of broadband networks, for which plans appear to be more sophisticated in Korea. A number of products and technologies such as IP telephones, wireless LANs, home appliances, telematics (convergence between mobile internet and GPS) are only mentioned in the Japanese vision. The same is true for 'ubiquitous networks' (usable anytime and anywhere); Japanese policymakers pin high hopes on this new technology, expecting that it will "solve or reduce the economic and social problems Japan is currently facing".[30] The Japanese aim to be the ones who introduce this technology to the world and secure first mover advantages, such as setting technological standards, etc. Concerns over privacy and information security "need to be wiped out".[31] Other future trends, which are not explicitly mentioned in the Korean vision, are the convergence of communications and broadcasting, particularly with the introduction of digital TV and radio; the expected impact of quantum technology and bio-technology on information and communications; the so-called time-stamp technology for online commerce, and stratospheric platforms as an alternative to satellites (automatically operated, unmanned airships that remain continuously at an altitude of about 20 km).

A brief comparison of the above-mentioned Korean and Japanese plans with the 'e-Europe 2005" action plan reveals a similar emphasis on broadband expansion, the connection of schools and the administration to such networks, attempts to bridge the

digital divide within society, and on computer and network security. In addition to this, the Europeans seem to regard online health services (e-health) as an important field for the future, as well as legal problems in connection with electronic commerce.[32] Co-operation between private and public institutions is planned in Europe as well, but the role of the state will be limited to that of a co-ordinator and to the provision of the necessary framework, which comes closer to the official Japanese policy.

KOREA: A Korean speciality is the vision to become a cyber-hub in Asia. This is part of a general excitement about the hub issue; it is decelerating in the ROK, but there are now cautious signs in the Democratic People's Republic of Korea (DPRK) pointing in this direction. The ROK government wants to foster new knowledge-intensive industries such as bio-tech, nano-tech, culture-tech, environmental-tech and space-tech. The public sector's competitiveness needs to be enhanced. An expected growing demand for culture (in cyberspace) has to be met. The government intends to maximise the ability of all citizens to utilize IC technologies in order to participate actively in the information society, to strengthen global competitiveness of the economy by promoting informatisation in all industries, to realise a 'smart' government structure with high transparency and productivity, to facilitate continued economic growth by promoting the IT industry and advancing the information infrastructure, and to become a leader in the global information society by taking a major role in international co-operation. To make this possible, every household is to have broadband access by 2005, and 90 per cent of the population are to become internet users.[33] In the relevant materials, we find all kinds of 'e's (for electronic), such as e-government and e-commerce (B2C, B2B, G2B), as well as 'm's (for mobile), such as mobile internet, m-biz (GPS, Sales Force Automation, Field Force Automation, etc.) and m-commerce (banking, e-shopping, mobile payment). The internet in its various forms plays a central role in these future concepts, including further improvement of access (ADSL, CATV, Apt. LAN, W-LAN, 3G), VoIP, IPv6 (the latest version of the internet protocol), digital contents industry (web-casting, music and video downloads, education, games, digital images), and software (9.84 per cent of the IT industry's sales). NCA reports (NCA 2003:42–44) that protection against hacking, SPAM, viruses and privacy invasion will have a great future in the bio-identification industry.

Conclusion

This paper has thrown up divergences in the paths to telecommunications reform between the ROK and Japan. But as has been shown above, there are many similarities, too. Some of them are certainly attributable to universal developments, others, as it seems, point to a more direct link between the two national economies

and the political systems. Both countries chose a slow and gradual process; both opted for an active role for government with a desire for industrial targeting. In both cases, intra-agency competition played a significant role as a substitute for the checks and balances provided in other societies by the interaction of the state sector and the private sector. Both countries had to react to foreign pressure, although the latter appears to have been higher for Korea. The principle of economic policy in both countries was and is a division of labour between the government and private industry. From this point of view, both countries do the same, but Korea does it much more openly and, depending on the perspective, with more success. The main reason, I would suggest, lies in the political system.

In Korea, the government is more autocratic and therefore able to issue orders, channel and pool resources, etc., much faster and in a much more focused manner (for an excellent account, see Kong 2000). The high risk of such an approach is reduced by leaving private industry enough manoeuvering space, i.e. by carefully integrating market dynamics into a state-led concept. It appears that the DPRK is attempting something very similar, which, if true, would be a strong argument in favour of viewing traditional institutional factors as the underlying reason (institutions defined as 'the rules of the game' in a society; see North 1992:3). 'Korea Inc.' (see Woo 1991) did not die in 1979 after the death of Park Chung-hee, nor in 1987 with the beginning of democratisation, and not in 1997–8 with the financial and economic crisis. It appears to be still intact and highly successful. Competition is explicitly utilised as a tool of industrial policy. Among the political reasons for the ROK's success with this policy are a strong president and, I would suggest, the absence of an established system of political parties. This makes long-term targeting of politicians more difficult and reduces the influence of interest groups on the decision-makers in the administration. The latter usually rise (and disappear) quite quickly and therefore have to be identified and approached in person. This process may well take longer than the period they are in office (the average tenure of office of ROK prime ministers between 1979 and 2000 was 10.6 months; see Frank 2003) and therefore leads to sometimes desperate and not very professional 'lobbying' efforts. The need for speedy and effective lobbying increases the risk of publicity, which in turn increases the transaction costs of such influence.

In Japan, with its party system, private businesses have their long-established ties with the *circles* of prospective leaders, represented by the political parties. This makes influence much less visible, less risky, a viable long-term investment and certainly more efficient. This has not prevented the surfacing of major cases of corruption such as the Recruit scandal of 1988–9, the Kyowa affair in 1991, the Sagawa Kyubin scandal of 1991–3 and the Genecon shoku in 1993. These events, however, support the hypothesis that efforts concentrate on party and bureaucracy and not on a single person at the top.[34] It appears that the Japanese government with its various agencies

that are captured by influential interest groups has to consider industry's needs much more directly than in Korea. This slows down the decision-making process and often prevents quick and powerful action. In addition, the power of the prime minister appears to be less absolute than that of the South Korean president, reducing his potential to accelerate developments. The inter-agency rivalry within the Japanese bureaucracy seems to be much more indigenous by comparison with the ROK.

Finally, we should not forget that the geopolitical position of the ROK and its historical experience make it easier for politicians to appeal to nationalist feelings, both in a protective and an active direction. This ideological factor mobilises energies and overcomes hurdles in a manner that neither a consensus-based nor a less homogeneous society can possibly achieve. Last but not least, its weaker position *vis-à-vis* foreign pressure has forced Korea to become more competitive in many fields, including industrial policy.

In terms of rhetoric, Japan appears to have become more aggressive in its future strategies after the prolonged business slump of the 1990s. Two features in particular can be found in the Japanese visions that not too long ago would have to be expected elsewhere: an excessive usage of superlatives (best, lowest, fastest) and an occasional mentioning of shortcomings of competitors, such as network crashes or the alleged inferior quality of 3G services. It remains to be seen which side will be more successful. The political conditions in Korea are moving dynamically towards a point where the strategies described will be hard to maintain and will necessitate the development of new paradigms; however, the future of the IC/IT industry certainly depends on how well the gigantic Chinese market can be utilised. In this respect, Japan appears to be in a less advantageous position.

Notes

1. Welfens and Graack 1996:127.
2. Bain 1956:15f.
3. Blankart und Knieps 1996
4. Belitz *et al.* 1992:29
5. See Tunstall 1986 for the USA and Beesley 1992 for the UK.
6. OECD 1999:9.
7. Choi 1999.
8. ibid:5
9. OECD 1999:9.
10. Choi 1997:82.
11. OECD 1999:11.

12. PBC 1998:3.
13. Choi 1998:256.
14. MPHPT 2003:67.
15. OECD 1999:18.
16. NCA 2003:14.
17. NCA 2003:19; NCA 2002
18. MPHPT 2003:6.
19. MPHPT 2002:6.
20. NCA 2003:8ff.
21. MPHPT 2003:4.
22. MPHPT 2003:5.
23. NCA 2003:11.
24. NCA 2003:13.
25. MPHPT 2003:5
26. MPHPT 2002 and MPHPT 2003.
27. MPHPT 2002:11.
28. NCA 2003:7
29. MIC 2002:13
30. MPHPT 2003:9
31. MPHPT 2003:11
32. EC 2002.
33. MIC 2002: 20–22
34. For more details, see Manzenreiter 1999, Yamamura and Yasuba 1987, and Pascha *et al*. 2003.

References

Bain, Joe, 1956. *Barriers to New Competition: Their Characters and Consequences in Manufacturing Industries*. Cambridge MA:

Beesley, Michael E., 1992. *Privatization, Regulation and Deregulation*. London: Routledge

Belitz, Heike *et al*., 1992. *Die Entwicklung des Marktes für Telefone in der Bundesrepublik Deutschland: Auswirkungen der Liberalisierung des Endgerätemarktes*, Discussion Paper No.96. Bad Honnef: Wissenschaftliches Institut für Kommunikationsdienste

Blankart, Charles B., and Günter Knieps, 1996. *Regulierung von Netzen?* Discussion Paper, Economic Series No. 80. Berlin: Humboldt University

Choi Byung-il, 1997. 'Political economy of telecommunications market opening in Korea: interplay of domestic and foreign interests', *Global Economic Review*, 26/2:75–91

Choi Byung-il, 1998. 'Telecommunications regulation in Korea: evolution and current status', *Korean Journal of International and Comparative Law*, 26:243–76

Choi Byung-il, 1999. 'Telecom reform in Korea: interplay of domestic interest and foreign pressure', paper presented at the International Conference on Economic Reform of the APEC Economies, Institute of Policy Studies, Victoria University of Wellington, July 1999

EC, 2002. e*Europe 2005: An Information Society for All*. Brussels: European Commission

Frank, Ruediger, 2003. *Regulierung in der Republik Korea: Kennzeichen, Reformen und der Telekommuniationssektor*. Frankfurt: Peter Lang

Kong, Tat Yan, 2000. *The Politics of Economic Reform in South Korea*. London and New York: Routledge

Manzenreiter, Wolfram, 1999. 'Wirtschaft und Staat im Japan der Spätmoderne: Von Sato bis Obuchi', in Sepp Linhart und Erich Pilz (eds), *Ostasien: Geschichte und Gesellschaft*. Vienna: Promedia:133–51

MIC, 2002. *E-Korea Vision 2006: The Third Master Plan for Informatization Promotion (2002–2006)*. Seoul: Ministry of Information and Communication

MPHPT, 2002. White Paper on 'Information and Communications in Japan: Stirring of the IT-Prevalent Society'. Tokyo: Ministry of Public Management, Home Affairs, Post and Telecommunications

MPHPT, 2003. White Paper on 'Information and Communications in Japan: Building a New, Japan-Inspired IT Society'. Tokyo: Ministry of Public Management, Home Affairs, Post and Telecommunications

NCA, 2002. *IT e-Newsletter*, vol.2, no.10 (3 September 2002). Seoul: National Computerization Agency

NCA, 2003. E-Korea 2003: Informatization White Paper. Seoul: National Computerization Agency

North, Douglas C., 1992. *Institutionen, institutioneller Wandel und Wirtschaftsleistung*. Tübingen: J.C.B. Mohr

OECD, 1999. *Regulatory Reform in Japan*. Paris: OECD

Pascha, Werner, Paul Kevenhörster, und Karen Shire, 2003. *Japan: Wirtschaft, Gesellschaft, Politik*. Opladen: Leske + Budrich

PBC, 1998. *Information Package on Privatization Policy in Korea*, Planning and Budget Commission, 3 July 1998, in http://210.111.128.46/data/e_bbs/PrivatizationPlan.htm, accessed on 14 February 2000

Tunstall, Jeremy, 1986. *Communications Deregulation*. Oxford: Basil Blackwell

Welfens, Paul J. J., and Cornelius Graack, 1996. *Telekommunikationswirtschaft: Deregulierung, Privatisierung und Internationalisierung*. Berlin; Heidelberg; New York: Springer

Woo, Jung-en, 1991. *Race to the Swift: State and Finance in Korean Industrialization*. New York: Columbia University Press

Yamamura, Kozo, und Yasukichi Yasuba, 1987. *The Political Economy of Japan*, vol.1: *The Domestic Transformation*. Stanford: Stanford University Press