

Telecommunications Law and Regulation

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INTERNATIONAL TELECOMMUNICATIONS LAW

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15.1 INTRODUCTION

Telecommunications is an inherently transnational technology. As such, the development of telecommunications has always required substantial cooperation and agreement between nation states. Cooperation can be seen at a number of different levels, including the need for adherence to certain standards, both technical and operational. Historically, the need for ongoing cooperation between states has meant the establishment of inter-governmental organizations, of which the International Telecommunication Union (ITU) lays claim to the oldest pedigree of any such organization. These inter-governmental institutions have been responsible for laying down much of the framework that comprises international telecommunications law and regulation.

In addition, the nature of the industry demands the construction of communications links across jurisdictions subject to both domestic and international law. As such, the telecommunications industry has been subject to treaties and conventions established under public international law for the treatment and use of common natural resources, specifically the law of the sea and outer space law.

Over recent years, the sources of international telecommunications law has diversified as the industry and national markets have undergone fundamental change. At a technical level, the need for internationally agreed standards has expanded exponentially with the

growth of data communications and the range of services being made available over communication networks. The rate of technological change has required more flexible and dynamic decision-making procedures and institutions. Historically, standards-making bodies comprised monopolistic operators that were part of a national public administration. With market liberalization, the numbers of participants in the standards-making process has risen dramatically, whilst conversely the effective role of governments has diminished significantly. As a consequence, we are witnessing a period of change in those international institutions to which the attention of telecommunications lawyers has traditionally been focused. International industry associations have emerged to challenge the primacy of intergovernmental organizations. At the same time, governments, particularly among developed nations, are increasingly looking to scale-down their involvement in the governance of the telecommunications sector, driven both by a desire to reduce demands on public finance, as well as through a recognition that they are not necessarily best placed to make appropriate decisions in such a rapidly evolving environment.

International telecommunications organizations such as the ITU are also experiencing institutional competition from other intergovernmental bodies, particularly the World Trade Organization (WTO). While the associated multinational trade agreements have focused on telecommunications as a distinct economic activity, a tradable service, rather than simply as a medium or conduit for conducting trade. As the industry undergoes fundamental structural shifts, with operators merging to become global entities as well as pondering the consequences of convergence, attention has shifted to issues of market access as the primary concern in international telecommunications law. The ITU has experienced a loss of status in the face of such new priorities and is therefore engaged in a re-examination of its role in the changing environment.

Despite the global trend towards market liberalization, there continues to be an inevitable divergence of view between developed nations and developing nations towards the telecommunications sector. Whilst all nations recognize the critical role of telecommunications in a nation's economic infrastructure and development, many countries continue to see telecommunications as a public resource and even a natural monopoly in which governments have a right and obligation to intervene. Developing countries are experiencing considerable pressure to embrace the credo of market liberalization from a number of directions. First, the need to attract foreign investment into the domestic telecommunications market. Secondly, developments in technology, particularly Internet-related, increasingly erode the ability of states to exercise effective regulatory control over the sector. Thirdly, developmental organizations, such as the World Bank and the European Bank of Reconstruction and Development (EBRD), have imposed liberalization conditions as part of their loan programmes for infrastructure investment projects in telecommunications.

This chapter broadly examines three substantive aspects of international telecommunications law:

- the construction of international telecommunications network infrastructure, both satellites and submarine cables;

- the structure and operation of the ITU and its rule-making activities, and
- the impact of the WTO and its trade agreements on national telecommunication markets and legal regimes.

15.2 INTERNATIONAL NETWORK INFRASTRUCTURE

As at a national level, the physical construction of telecommunications networks is subject to a particular regulatory framework not applicable to the provision of services over such networks. For example, issues concerning rights of way across public and private property are a central element in the licensing of a public telecommunications operator.¹ At an international level, similar issues arise concerning the rights and obligations of those wanting to construct either wireless (i.e. satellite) or wireline (i.e. cable) networks between sovereign jurisdictions. This section reviews the law governing the launch and operation of communication satellites² and the laying of submarine cables.

15.2.1 Satellite regulation

The launch of TELSTAR I in 1962 marked the beginning of satellite technology for use in telecommunications, broadcasting, and for military purposes. Satellites are now also used for weather forecasting, earth observation and navigation purposes, such as GPS technology. Satellites operate as a radio relay station, receiving and retransmitting signals on specific frequencies, through so-called 'transponders', from and to receivers and transmitters on earth.

Satellite systems can be distinguished into geostationary and non-geostationary systems. A geostationary system (GEO) is based above the equator (around 36,000kms) and revolves at the same speed as the earth, thereby appearing to be stationary (i.e. a synchronous orbit). An advantage of GEOs is the ability to provide continuous and relatively comprehensive coverage of the earth with only three satellites,³ although providers may operate more.⁴ Disadvantages of such systems include the fact that the equator can only accommodate a limited number of systems; while the quality of communications is diminished somewhat by the transmission delay caused by the substantial distance travelled by signals to and from such satellites, particularly for voice telephony.

¹ See further Chapter 7, Authorization and Licensing.

² Issues relating to the assignment of frequency spectrum and orbital slots are discussed in section 15.3.2 below.

³ An idea published by Arthur C Clarke in *Wireless World* in 1945. Coverage does not really extend to regions above latitudes 75° north or south. The angle of elevation in northern Europe does significantly limit reception.

⁴ Inmarsat, at 15.2.1.2, for example, has a constellation of 4 satellites, with 5 providing back-up services.

Recent developments in the satellite market have been in the proliferation of non-geostationary systems operating in medium earth orbits (MEOs), operating at around 10,000 kms above sea level, and low earth orbits (LEOs), operating at around 1,500kms above sea level. Such systems require a considerably greater number of satellites than GEO systems to ensure continuous coverage.⁵

The launch and operation of satellites is subject to international space law. Historically, satellite systems were developed under international conventions between States, such as INTELSAT, INMARSAT, and EUTELSAT. However current non-geostationary systems are multinational private consortia operating under private agreement and subject to national legal regimes.

15.2.1.1 *International space law*

International space law comprises a set of agreed principles embodied in a series of treaties and conventions. These principles encompass the launch and operation of satellites, particularly in respect of liability for any damage caused by the satellite or any other space object.

In 1962, the UN General Assembly adopted a declaration comprising nine fundamental legal principles governing the use to be made of 'outer space'.⁶ This declaration formed the basis of the 'Outer Space' Treaty agreed in 1967.⁷ This Treaty continues to be the primary international legal instrument governing the launch and operation of telecommunications satellites.

In terms of economic exploitation, the Treaty declares that outer space and celestial bodies may not be subject to national appropriation (Article II). States are also responsible under international law for their activities in outer space, whether carried out by governmental or non-governmental authorities; the latter requiring authorization and ongoing supervision (Article VI). Liability for damage caused by any object placed in space would rest jointly with the State that launches, or procures the launch of, the object, and the State 'from whose territory or facility an object is launched' (Article VII). Jurisdiction and control over any object in outer space remains with the State that has registered the object, whilst ownership is unaffected by the presence of the object in space or its return to Earth outside of the registering State (Article VIII). To facilitate international cooperation in the use of outer space,

⁵ E.g. the ICO International MEO system will use some 10 satellites; while Globalstar uses 48 satellites.

⁶ Resolution 1962 (XVIII), adopted at UN General Assembly, 13 December 1963 (GAOR Annexes (XVIII) 28, p 27). The physical boundaries of outer space are somewhat unclear, although 100km above sea level, representing the boundary between the lower and outer atmosphere, is a generally accepted figure: see 'The legal regime of airspace and outer space: the boundary problem', pp 425-456, in Cheng, C, *Studies in International Space Law* (Clarendon Press, Oxford, 1997).

⁷ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (London, Moscow, and Washington, 27 January 1967; TS 10 (1968); Cmnd 3519).

States are required to provide information to the United Nations regarding their activities in, and use of, outer space (Article XI).

The liability provisions of the Outer Space Treaty were elaborated further in a 1972 Convention on International Liability for Damage Caused by Space Objects.⁸ The concept of 'damage' is defined in the following terms:

... means loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organisations (Article I(a)).

Consequential losses, such as future traffic revenues, do not seem to be encompassed within this definition.⁹ Reflecting the terms of the 1967 Treaty, liability lies with the 'launching state'; this encompasses both the state that launches or procures the launch of the space object and the state from where it was launched (Article I).¹⁰ In certain circumstances, this definition could result in there being three potential 'launching states'; for example, where a satellite supplier based in the UK arranges for the launch of satellite for a customer based in France, under a 'delivery in-orbit' arrangement, from a launch service provider based in Kazakhstan.¹¹ Where a launch has involved two or more states, then liability is joint and several (Article V), unless agreed otherwise privately by the parties.¹²

Under the Convention, liability is *absolute* where the damage is caused on the Earth or to an aircraft (Article II).¹³ The only formal claim that has been submitted under article II was by Canada in 1979, claiming US\$6 million from the Soviet Union for damage caused by the radioactive debris from the re-entry of Cosmos 954 in January 1978. The claim was settled for US\$3 million, without liability being acknowledged.¹⁴ Liability is limited to fault-based liability where the damage is to the space object of another launching state caused elsewhere than on the Earth (Article III). A state may claim damages either on behalf of itself; its natural or legal persons (i.e. the state of nationality); or for those sustaining damage whilst in its territory (Article VIII). Claims for compensation are subject to certain time limits and, where diplomatic settlement is not achieved, may be decided upon by a 'Claims Commission' established at the request of either party (Articles XIV–XX).

Underpinning the 1962 Declaration and the Outer Space Treaty was the concept that each State would maintain a register detailing the space objects for which the

⁸ London, Moscow, and Washington 29 March 1972; TS 16 (1974); Cmnd. 5551. The Treaty entered into force for the UK on 9 October 1973.

⁹ See generally Beer, T, 'The specific risks associated with collisions in outer space and the return to earth of space objects—the legal perspective', pp 42–50, *Air and Space Law*, vol XXV, no 2, 2000.

¹⁰ Launching includes any attempts.

¹¹ BNSC, 'Registry of space objects' available at <<http://www.bnsc.gov.uk/content.aspx?nid=5975>>.

¹² E.g. an agreement between Russia and Kazakhstan.

¹³ Unless it can be shown that the damage is the result of 'gross negligence or an act or omission done with intent to cause damage' by the claimant state (Art VI).

¹⁴ Beer, at p 48.

state claimed jurisdiction and control. Such registration procedures were formalized under the 1975 Convention on the Registration of Objects Launched into Outer Space.¹⁵ Under the Convention, the launching state accepted an obligation to maintain a register (Article II), although the contents and conditions of use could be determined by the 'state of registry'. In the UK, the Registry is maintained by the British National Space Centre (BNSC).¹⁶ Certain information is required to be furnished to the Secretary-General of the United Nations for general publication (Articles III, IV).¹⁷ This information should be distinguished from that maintained under the auspices of the ITU in respect of the allocation of frequency spectrum and orbital slots.¹⁸

Aspects of the treaties comprising international space law have been transposed into UK law by the Outer Space Act 1986 (OSA), which is administered by the BNSC on behalf of the Secretary of State for Innovation, Universities and Skills. The Act applies to the 'launching or procuring the launch of a space object'; 'operating a space object' or 'any activity in outer space' (section 1), which are all licensable activities.¹⁹ However, a licence is not required for the leasing or use of space segment capacity, i.e. on a transponder, from an existing satellite operator.²⁰ Under the terms of any such licence, a licensee is subject to a number of obligations, including supplying certain information for inclusion in a register to be maintained by the Secretary of State and to 'avoid interference with the activities of others' (section 5). In terms of liability, the licensee is obliged to obtain third-party liability insurance for any loss or damage arising from the authorized activities (section 5(2)(f)), currently up to a value of £100 million,²¹ as well as indemnifying the government against any claims (section 10). As part of the licensing process, the BNSC will also ensure that the applicant has made appropriate ITU filings for frequency and orbital slots through Ofcom.²² The OSA licensing regime is currently under review, with a view to updating it to reflect 'the evolving international situation, and the challenges posed by future space projects'.²³

In terms of jurisdiction, a satellite system can be distinguished into two components: the 'earth segment' and the 'space segment'. The 'earth segment' comprises

¹⁵ New York, 14 January 1975; TS 70 (1978); Cmnd 7271. The Convention entered into force for the UK on 30 May 1978.

¹⁶ See n 11 above.

¹⁷ The information to be supplied is: the name of the launching state or states; an appropriate designator or registration number for the space object; the date, territory or location of launch; basic orbital parameters and the general function of the space object (see generally <<http://www.oosa.unvienna.org>>).

¹⁸ See section 15.3.2 below.

¹⁹ An example of a typical licence can be obtained at <<http://www.bns.gov.uk/assets/channels/industry/OSA2008Example.pdf>>.

²⁰ BNSC, 'Revised Guidance for Applicants—Outer Space Act 1986'.

²¹ *Ibid.*, at p 2.

²² See Ofcom, 'Procedures for the Management of Satellite Findings', 27 March 2007.

²³ BNSC, 'Review of licensing regime', available at <<http://www.bns.gov.uk/content.aspx?nid=5976>>.

those stations that send ('uplinks') and receive ('downlinks') transmissions from the satellite and which are subject to the laws of the jurisdiction in which they physically located.²⁴ The 'space segment' has been defined in the following terms:

... the telecommunications satellites, and the tracking, telemetry, command, control, monitoring and related facilities and equipment required to support the operation of these satellites. (INTELSAT Agreement, Article 1(h))

Jurisdictional responsibility for the 'space segment' can be sub-divided between the State that launched the satellite and the State from where the satellite is controlled. If control is distributed between multiple sites, then it is the operator's principal place of business.

15.2.1.2 *International satellite conventions*

With the successful launch of Sputnik I in 1957, the operation of satellite systems was initially a highly charged political arena with important military and therefore 'Cold War' implications. However, the 1962 UN resolution represented an important acceptance by the international community that space should be treated as a common resource of 'all mankind'. In addition, the industry then consisted of national, generally state-owned, monopoly operators. With these factors in mind, it was therefore perhaps inevitable that the first satellite systems were the subject of international treaty, rather than private endeavour.

The first international satellite organization (ISO) was established in 1964 under 'Interim Arrangements for a Global Commercial Communications Satellite System'²⁵ and, subsequently, the Agreement Relating to the International Telecommunications Satellite Organization (Intelsat).²⁶ Intelsat had legal personality (Article IV) and operated in accordance with the inter-governmental Agreement and an 'Operating Agreement'. Member countries were required to grant Intelsat, and certain of its officers and employees, legal and taxation privileges and immunities (Article XVII). Intelsat's stated prime objective was:

... the provision, on a commercial basis, of the space segment required for international public telecommunications services of high quality and reliability to be available on a non-discriminatory basis to all areas of the World. (Article III)

Intelsat comprised 147 member countries and signatories, as well as over 200 'investing entities', in 2001. In the UK, British Telecommunications was the designated signatory to Intelsat, reflecting the governmental origins of the organization; although prior to privatization, more than 20 other UK-based operators were designated as

²⁴ The geographical coverage of a satellite's transmissions is known as its 'footprint'.

²⁵ Washington, 20 August 1964–20 February 1965; TS 12 (1966); Cmnd 2940.

²⁶ See the Agreement relating to the International Telecommunications Satellite Organization 'INTELSAT' (with Operating Agreement), (Washington, 20 August 1971; TS 80 (1973); Cmnd 5416).

'investing entities'. In July 2001, Intelsat became a private company and in 2005 was acquired by four private equity companies.

The International Mobile Satellite Organization (Inmarsat) was established in 1979 as an intergovernmental organization providing satellite services for the maritime and aeronautical sectors, particularly communications in situations of distress and safety.²⁷ In 1994, it established a separate private company, I-CO Global Communications Ltd, to build and provide a non-geostationary mobile satellite-based telecommunications system.²⁸ Until 1999, Inmarsat's organizational structure was very similar to Intelsat. The vast majority of its operations were privatized in 1999 and it floated on the London Stock Exchange in 2005.

A third international satellite organization to which the UK was a member signatory is the European Telecommunications Satellite Organization (Eutelsat), established in 1977 and comprised of 48 member countries.²⁹ Whilst the Convention and Operating Agreement were modelled closely on the Intelsat texts, in contrast to Intelsat only one operator per member is a shareholder, which for the UK was British Telecommunications plc. The prime objective of Eutelsat was 'the provision of the space segment required for international public telecommunication services in Europe' (Article III(a)). As with Intelsat and Inmarsat, Eutelsat was privatized in 2001, providing services through a private company (Eutelsat SA), whilst the intergovernmental organization continues to operate in order to 'ensure that basic principles of pan-European coverage, universal service, non-discrimination and fair competition are observed by the company'.³⁰

With market liberalization, concerns arose that the treaty-based satellite systems could be utilized by incumbent operators to restrict access to space segment capacity and satellite services. In particular, a service provider wanting to purchase satellite capacity was generally required to procure the capacity via their local signatory, i.e. the incumbent operator. Not only did this generate revenue for the signatory, but associated 'coordination procedures' required details of the proposed service to be widely disclosed: e.g.

To the extent that any Party or Signatory or person within the jurisdiction of a Party intends individually or jointly to establish, acquire or utilize space segment facilities separate from the INTELSAT . . . such Party or Signatory, prior to the establishment, acquisition or utilization of such facilities, shall furnish all relevant information to and shall consult with the Assembly

²⁷ See the Convention on the International Maritime Satellite Organization (INMARSAT) (with the Operating Agreement), London, 3 September 1976; TS 94 (1979); Cmnd. 7722. It changed its name in 1994.

²⁸ See generally Case No IV/35.296—Inmarsat-P, OJ C 304/6, 15 November 1995.

²⁹ See the Convention establishing the European Telecommunications Satellite Organization (EUTELSAT) (Paris, 15 July 1982; TS 15 (1990); Cmnd 956, as amended by a Protocol of 15 December 1983, Cmnd 9154). The UK instrument of ratification of the Convention was deposited on 21 February 1985 and the Convention, Operating Agreement and Protocol entered into force on 1 September 1985.

³⁰ See <<http://www.eutelsat.com>>: 'Introduction to Eutelsat'.

of Parties . . . to ensure technical compatibility . . . and to avoid significant economic harm to the global system of INTELSAT. (Article XIV(d))

Such procedures could obviously be abused to restrict competition either directly, by blocking the provision of a service, or indirectly, by the incumbent operator commencing a competing service.

As part of the EU's liberalization programme, Member States party to any of the international satellite organizations, i.e. Intelsat, Inmarsat, Eutelsat, and Intersputnik, were required to notify the Commission of any measures which could breach European competition law.³¹ In addition, a 1994 Council Resolution called for the rules of the international satellite organizations to be adjusted to ensure strict separation between regulatory and operational aspects; as well as separation or flexibility between ownership of investment shares and usage of the systems.³²

To minimize the potentially anti-competitive operation of the satellite organizations, the European Commission believed it was necessary to ensure that 'users obtain direct access to space segment capacity, while providers of this space segment should obtain the right to market space capacity directly to users'.³³ Such direct access has subsequently been implemented in most of the Member States, although through separate ancillary agreements rather than amendments to the provisions of the international agreements.³⁴ However, the Commission did not consider such developments to be sufficient to ensure a fully liberalized market in the provision of satellite-based services. Therefore, Member States now have an obligation to 'take all appropriate steps to eliminate' incompatibilities between the international conventions and the EC treaty.³⁵

In the US, the government took a much more proactive stance towards the anti-competitive position of the ISOs. In 2000, Congress adopted the Open-Market Reorganization for the Betterment of International Telecommunications Act,³⁶ with the express purpose of ensuring that Intelsat and Inmarsat became independent commercial entities with a pro-competitive ownership structure. The Federal Communications Commission was required to determine whether Intelsat, Inmarsat, or any of their successor entities 'will harm competition in the telecommunications markets of the United States' and condition or deny any applications or authorizations

³¹ Commission Directive 94/46/EC of 13 October 1994 amending Directive 88/301/EEC in particular with regard to satellite communications (OJ L 268/15, 19 October 1994), at Art 3.

³² Council Resolution on further development of the Community's satellite communications policy, especially with regard to the provision of, and access to, space segment capacity; OJ C379/5, 31 December 1994.

³³ 'Towards Europe-wide systems and services—Green Paper on a common approach in the field of Satellite Communications in the European Community', Communication from the Commission, COM(90)490 final, 20/11/1990. See also the 1991 Guidelines, at paras 122–128.

³⁴ See Communication from the Commission, 'Fifth Report on the Implementation of the Telecommunications Regulatory Package', November 1999.

³⁵ Commission Directive 2002/77/EC 'on competition in the markets for electronic communications networks and services' (OJ L 249/21, 17 September 2002) at Art 8(2).

³⁶ The 'ORBIT Act', Pub L 106–180, 114 Stat 48 (2000), codified at 47 USC § 761 *et seq.*

where such harm is found to be present or potential. Such a unilateral move was in breach of the US's international treaty obligations under the Intelsat agreement,³⁷ but acted as an effective spur to the privatization process.

With the progressive moves towards full commercialization and privatization, the treaty-based satellite systems are no longer relevant as a feature of international telecommunications law. From a competition law perspective, the process of privatization has raised a number of issues, including the need to ensure that the private operating entities do not retain any of the legal immunities granted to international organizations; and opening up the shareholding to non-participant entities, preferably through a public offering.³⁸ Such operators are now subject to the scrutiny of competition regulators in the same way as other multinational satellite ventures.³⁹ However, the ISOs also had a public service remit, both in general terms of offering services on a non-discriminatory basis, as well as specific service offerings, such as Inmarsat's maritime distress and safety services. Whether the privatized entities will continue to adequately fulfil such public service obligations in a commercial environment, only time will tell.⁴⁰

15.2.2 Submarine cables

Submarine cables have been a component of the international telecommunications infrastructure since 1851, when the first submarine cable for telegraphy was laid between England and France. The first commercially successful transatlantic telegraph cable was operational in 1866; the first transatlantic coaxial copper telephone cable (TAT-1) in 1956, and the first transatlantic fiber optic cable (TAT-8) in 1988.⁴¹ The emergence of satellite technology was generally seen as signalling the demise of submarine cable as a transmission medium. However, submarine cable has continued to prosper and expand as the dominant medium for international traffic due to its superior transmission quality, reliability and security, carrying over 95 per cent of international voice and data traffic.⁴²

³⁷ Sagar, D, 'Privatisation of the Intergovernmental Satellite Organisations', paper presented at the ECSL Tenth Summer Course on Space Law and Policy, Nice, 27 August–8 September 2001.

³⁸ Ungerer, H, 'The transformation of the International Satellite Organisations—some aspects from a European perspective', 11 April 1999: published on the Competition Directorate-General website. See also Press Release, 'Commission gives green light to Inmarsat restructuring', IP/98/923, 22 October 1998.

³⁹ E.g. Commission competition decisions: Case IV/34.768—International Private Satellite Partners (OJ L 354/75, 31 December 1994) and Case IV/35.518—Iridium (OJ L 16/87, 18 January 1997).

⁴⁰ Sagar, n 37 above.

⁴¹ See generally Wagner, E, 'Submarine cables and protections provided by the law of the sea', pp 95–109, *Open Governance: Strategies and Approaches for the 21st Century* (ed Mensah) (Proceedings of The Law of the Sea Institute, 28th Annual Conference, 1994).

⁴² ICPC Presentation, 'About submarine telecommunication cables: Communicating via the ocean', kindly made available to the author, July 2008.

The expense of laying submarine cables has meant that, historically, consortia of operators from different jurisdictions have carried out such projects under private agreement, often referred to as 'cable clubs'. Such 'clubs' usually comprized the monopoly operators from each jurisdiction connected to the cable. In contrast to the first satellite systems, such consortia were not the subject of international conventions. During the telecommunications boom of the late 1990s, the 'club' model was replaced by single private ventures, such as Global Crossing and FLAG, who were able to raise sufficient investment from the capital markets without consortia. However, with the subsequent downturn in the sector, a number of these companies experienced financial difficulties and numerous submarine cable systems have been taken out of service.⁴³ As a consequence, we have seen a return of cable 'clubs' as a financing vehicle for submarine cable systems. Cable laying projects are driven by the perceived growth in demand for bandwidth to carry data traffic, which reflects in part general economic activity around the world.

In terms of regulatory issues, submarine cabling can be divided into:

- the laying of the cable itself;
- the provisioning of capacity in the form of IRUs (Indefeasible Rights of Use) and, subsequently, as International Private Leased Circuits (IPLCs);⁴⁴
- the operation of the cable landing station; and
- the facilities required to connect the operator's domestic network to the cable landing station, commonly referred to as 'backhaul'.⁴⁵

The issue of cable laying concerns issues of public international law and national marine law, in respect of landing rights. The establishment of cable landing stations usually involves a complex array of national and (or) local planning and environmental laws. The provisioning of capacity and 'backhaul' facilities, as well as access to landing stations, has come to the attention of telecommunications regulatory authorities in terms of competition concerns.

In similar fashion to satellites, the international law of the sea governs the laying of submarine cable and associated liabilities for damage, where such cable lies outside the territory of a state. The primary international treaty governing ownership of the seas is the United Nations Convention on the Law of the Sea 1982 (UNCLOS), which only came into force in November 1994.⁴⁶ The UK instrument of accession was deposited on 25 July 1997 and the Convention came into force in the UK on 24 August 1997.⁴⁷ In March 1998, the European Community acceded to the Convention in

⁴³ See Burnett, R, 'The legal status of out-of-service submarine cables', *Maritime Studies*, No 137, July/August 2004.

⁴⁴ For a consideration of the commercial aspects of IRUs, see Chapter 11, at 11.2.

⁴⁵ See Hogan & Hartson, *Submarine Cable Landing Rights and Existing Practices for the Provision of Transmission Capacity on International Routes*, Report to the European Commission, August 1999.

⁴⁶ See UN General Assembly Resolution A/48/263 of 28 July 1994.

⁴⁷ Treaty Series No 81 (1999), Cm 4524.

respect of those matters for which competence has been transferred to it by those Member States that are parties to the Convention.⁴⁸

The Convention divides the sea into five different zones, each subject to different legal regimes:

- *internal waters* are 'on the landward side of the baseline of the territorial sea' and are part of a state's sovereign territory (Article 8);
- *territorial waters* extending 12 nautical miles in breadth and over which the coastal State has sovereignty (Article 3), subject to the right of 'innocent passage' (section 3);
- *continental shelf*, comprising 'the sea-bed and subsoil of the submarine areas that extend beyond its territorial sea' up to 200 nautical miles (Article 76), and over which the coastal state exercises 'sovereign rights for the purpose of exploring it and exploiting its natural resources' (Article 77);
- *exclusive economic zone* extending over a 200 nautical mile zone, where the state has the right to declare exclusive economic interests in the resources (Part V); and
- *high seas* which are open to all states, both coastal and land-locked (Article 87).

A coastal state is entitled to lay submarine cables in its territorial waters, provided that they do not obstruct the rights of use of others, such as innocent passage (Article 21(c)). Any state is entitled to lay cables on the continental shelf, subject to the rights of other users already present; as well as the right of the coastal state to take reasonable measures in respect of exploitation, controlling pollution, and the imposition of conditions on cables entering its territory or territorial waters (Article 79). States are also free to lay cables in the exclusive economic zone (Article 58) and the high seas (Article 87), subject to an obligation to respect existing cables and pipelines (Article 112).

The need to protect submarine cables from damage caused by other uses of the sea, such as fishing, dredging, or anchoring, gave rise to the Convention for the Protection of Submarine Cables in 1884,⁴⁹ which is applicable outside of territorial waters.⁵⁰ The Convention was implemented in English law by the Submarine Telegraph Act 1885, although any contradictory provisions within the 1982 Convention supersede its provisions (Article 311.2). Under the Submarine Telegraph Act, it is an offence to unlawfully and wilfully, or by culpable negligence, break or injure a submarine cable under the high seas (section 3), attracting a maximum tariff of five years' imprisonment. Conversely, where a ship owner can prove damage to his equipment in order

⁴⁸ Council Decision of 23 March 1998 concerning the conclusion by the European Community of the United Nations Convention of 10 December 1982 on the Law of the Sea and the Agreement of 28 July 1994 relating to the implementation of Part XI thereof; OJ L 179/1, 23 June 1998: at Annex II.

⁴⁹ Paris, 14 March 1884 (75 BFSP 356; C 5910).

⁵⁰ Primarily in the continental shelf zone: Wagner n 41 above, at p 100.

to avoid damaging a submarine cable, then the ship owner may claim compensation from the cable owner, provided that all reasonable precautionary measures were taken.⁵¹ In 1958, the International Cable Protection Committee was established as an industry body comprising owners and operators of submarine telecommunications cables, including government administrations, in order to promote the protection of submarine cables against man-made and natural hazards.⁵² It has produced a number of recommendations on issues such as 'Cables Crossing Criteria', concerning the placing of new cables near existing systems, which members comply with on a self-regulatory basis.

Although recognition of the value of submarine cables can be seen to date back to the 1884 Convention, our increasing dependence on cable infrastructure, especially for Internet traffic, has led some authorities to implement additional protective measures within territorial waters. In Australia, for example, the Australian Communications and Media Authority (ACMA) has declared a number of protection zones over submarine cables recognized as being of vital significance to the national interest, particularly in terms of the economy.⁵³ If carriers want to lay new cables within the zone, they are required to obtain a permit from the ACMA; while certain types of activity are prohibited, such as trawling, or restricted, such as navigational aids.⁵⁴ Conduct resulting in damage to a submarine cable constitutes an offence, attracting a maximum tariff of ten years, on the basis of strict liability if the cable is within a protection zone.⁵⁵ Similar protection schemes have been adopted in New Zealand, Indonesia and Singapore.⁵⁶

In similar fashion to the international satellite organizations, the cooperative nature of the 'cable clubs' has raised competition concerns.⁵⁷ In a liberalizing environment, competing operators will want to purchase capacity on the cable and may need access to the cable landing stations to physically connect their networks to the international circuits. Cable owners, historically incumbent operators, may delay the provisioning of capacity on the cable, levy excessive tariffs, or make landing station access difficult, in order to obstruct a competitor's entry into the market.

In some EU Member States, national regulators have imposed access and interconnection obligations upon incumbent operators to their submarine cables.⁵⁸

⁵¹ Continental Shelf Act 1964, s 8(1). See *Agincourt Steamship Co Ltd v Eastern Extension, Australasia and China Telegraph Co Ltd* [1907] 2 KB 305, CA.

⁵² <<http://www.iscpc.org>>. There are also national committees, such as the UK Cable Protection Committee (<<http://www.ukcpc.co.uk>>).

⁵³ See, for example, ACMA media release 126/2007: 'Protection zone declared for submarine telecommunications cable off the coast of Perth', 4 October 2007.

⁵⁴ Telecommunications and Other Legislation Amendment (Protection of Submarine Cables and Other Measures) Act 2005, No 104.

⁵⁵ *Ibid*, at Sch 1, Pt 1, ss 36–37.

⁵⁶ E.g. New Zealand, Submarine Cables and Pipeline Protection Act 1996.

⁵⁷ See also Chapter 9, at 9.3.3.1.

⁵⁸ See Hogan & Hartson, n 45 above and the Commission Communication, 'Fifth Report on the Implementation of the Telecommunications Regulatory Package', COM(1999)537, 10 November 1999.

While the Access and Interconnection Directive does not expressly refer to cable landing stations or 'backhaul' circuits, such facilities clearly fall within the concept of 'access', and operators could be required to provide access, either where the operator is designated as having SMP or as a general measure.⁵⁹ In the UK, the Office of Fair Trading (OFT) has investigated accusations made against the UK Cable Protection Committee that it engaged in a collective boycott of an operator, Cityhook plc, and the collective setting of 'wayleave fees' paid to UK landowners for landing cables. The OFT eventually decided not to proceed with the case; although the decision was made on the grounds of administrative priority rather than non-infringement.⁶⁰ At an international level, US operators have complained in the past about access to submarine cable systems in the Indian market, particularly access to cable landing stations owned by VSNL the dominant international carrier, which has resulted in changes in national rules.⁶¹

15.3 INTERNATIONAL TELECOMMUNICATIONS UNION

The International Telecommunications Union (ITU) was founded in 1932, through the merger of the International Telegraph Union and the International Radiotelegraph Union; although its origins can be said to date back to the establishment of the International Telegraph Union by 20 European states in 1865.⁶² As such, the ITU is one of the oldest of the intergovernmental organizations, which illustrates the inherently international nature of the telecommunications industry, both in terms of the scope of services being demanded and the nature of the physical resources involved, specifically radio spectrum. It became a specialized agency of the United Nations system in 1947.⁶³ Based in Geneva, the ITU exists to further the development of telegraph, telephone, and radio services, to promote international cooperation for the use of telecommunications and the development of technical facilities, and to allocate radio frequencies. The basic principles for the conduct of international telecommunication services, the basis for membership of the ITU and its organization and

⁵⁹ Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities (OJ L 108/7, 24 April 2002), under Art 12 and Art 5(1)(a) respectively.

⁶⁰ *Cityhook Ltd v OFT and ors* [2007] CAT 18.

⁶¹ See USTR, 'Results of the 2007 Section 1377 Review of Telecommunications Trade Agreements', at p 14–15. Available from <http://www.ustr.gov/Trade_Sectors/Telecom-E-commerce/Section_1377/Section_Index.html>.

⁶² For a history of the ITU, see Lyall F, 'Communications Regulation: The Role of the International Telecommunication Union', 1997 (3) *The Journal of Information, Law and Technology* (JILT) <http://www2.warwick.ac.uk/fac/soc/law/elj/jilt/1997_3/lyall/>.

⁶³ International Convention on Telecommunications, Atlantic City, 2 October 1947; 1950 UK Treaty Series No 76, Cm 8124.

permanent organs, are contained in the International Telecommunications Convention and Constitution, to which the UK is a party.⁶⁴

The Constitution contains the fundamental principles of the ITU, while the Convention details the operational procedures, which may be subject to periodic review. The 'supreme organ' within the ITU structure is the Plenipotentiary Conference, which comprises every Member State and meets every four years (Constitution, Article 8), the last being held in Antalya, Turkey, in 2006.⁶⁵ Between meetings, a Council, comprising no more than 25 per cent of the total membership, acts on behalf of the Plenipotentiary (Constitution, Article 10(3)). The work of the Union is sub-divided into three sectors:

- the Radiocommunications Sector (ITU-R);
- the Telecommunication Standardization Sector (ITU-T); and
- the Telecommunication Development Sector (ITU-D) (Constitution, Article 7).

The work of each sector is carried out by a series of organizational entities: world and regional conferences, boards, assemblies, and numerous study groups examining particular topics. An administrative 'Bureau', within the General Secretariat, supports each sector, and the General Secretariat is headed-up by the Secretary-General, currently Dr Hamadoun Touré.

The ITU comprises two categories of membership:

- 'Member States', i.e. national governments, of which there are currently 191, although governments may designate national regulatory authorities as their representative,⁶⁶ and
- 'Sector Members', representing all the various categories of player within the telecommunications industry, including regional and international organizations, such as the GSM Association, and the intergovernmental satellite organizations, such as ARABSAT.⁶⁷ In total, these entities number over 700.

Sector members have been involved in the work of the ITU since the Rome Telegraph Conference in 1871, with the sponsorship of a Member State (Convention, Article 19(1)(a), (b)). In 1998, the Convention was amended to enable Sector Members to apply directly to join the ITU; although the applicant's Member State must approve such a procedure (Convention, Article 19(4*bis*)-(4*quater*)). However, despite being eligible for membership, it was not until the Plenipotentiary in 1994 that Sector

⁶⁴ See the Constitution and Convention of the ITU, Geneva, 22 December 1992 (Treaty Series No 24, 1996, Cm 3145); as amended by the Final Acts of the Plenipotentiary Conferences of the ITU, at Kyoto (1994), Minneapolis (1998) and Marrakesh (2002). See generally <<http://www.itu.int/>>.

⁶⁵ The next will be in Veracruz, Mexico, in 2010.

⁶⁶ E.g. Ofcom in the case of the UK, as directed by the Secretary of State under the Communications Act 2003, s 22.

⁶⁷ Note that the historic satellite organizations discussed in section 15.2.1.2 above, such as Inmarsat, now fall under Member State listings, according to where they are established.

Members were able to formally participate in the decision-making processes of the ITU; and only in 1998 that Sector Members were recognized as having formal rights of participation under the Constitution:

In respect of their participation in activities of the Union, Sector Members shall be entitled to participate fully in the activities of the Sector of which they are members, subject to relevant provisions of this Constitution and the Convention:

- (a) they may provide chairmen and vice-chairmen of Sector assemblies and meetings and world telecommunication development conferences;
- (b) they shall be entitled, subject to the relevant provisions of the Convention and relevant decisions adopted in this regard by the Plenipotentiary Conference, to take part in the adoption of Questions and Recommendations and in decisions relating to the working methods and procedures of the Sector concerned.' (Article 3(3)).

A Sector Member may also be authorized to act on behalf of a Member State (Convention, Article 19(9)), which may be the case where an operator continues to be part of the government, often under a specific ministry, or has been conferred with certain special or exclusive rights within the jurisdiction. Sector Members participate in those sectors of the ITU for which they apply, e.g. ITU-R, so participation in one sector does not confer authorization to participate in another.

Despite the enhanced status of the Sector Members, the fundamental legal instruments of the ITU, the Constitution, Convention, and Administrative Regulations,⁶⁸ continue to be under the exclusive jurisdiction of the Member States.

An industry player may also be invited by a Sector of the ITU to participate as an 'Associate' within a study group (Convention, Article 19(12)), with more limited rights of participation, although with an obligation to help defray the costs of the group in which they participate (Convention, Article 33(5)(4bis)). This category of participants was established within the ITU system in 1988, as a means of enabling participation by small entities in the work of the ITU.

With the liberalization of the telecommunications industry and the proliferation of commercial operators, tension has grown within the ITU over the position of industry members within the ITU structure. On the one hand, governments are wary of relinquishing their historic rights to control the organization; whilst on the other hand, they recognize industry's legitimate interests in the work of the Union, as well as wanting industry to contribute any ever greater proportion of the costs associated with its operations and activities.⁶⁹ The issue of industry involvement dominated the 1998 Plenipotentiary Conference in Minneapolis, where a single category of industry membership was finally recognized:

Sector Member: An entity or organization authorized in accordance with Article 19 of the Convention to participate in the activities of a Sector. (Constitution, Annex)

⁶⁸ See section 15.3.4 below.

⁶⁹ See Resolution 110 (Marrakesh, 2002): 'Review of the contribution of Sector Members towards defraying the expenses of the International Telecommunication Union'.

In terms of financing the work of the ITU, the Constitution was amended to place Sector Member contributions on an equal footing to those of Member States (Article 28). In addition, new 'Advisory Groups' were established for each Sector, with a broad remit to review the 'priorities, programmes, operations, financial matters and strategies' of the various bodies within each Sector (Convention, Article 11A, 14A, 17A). These new bodies should increase the influence of Sector Members within the ITU as Member States and industry will participate on an equal footing.

As part of a broad review of the ITU's role and strategy for the future, an ITU Reform Advisory Panel was established at the end of the last decade, comprising both governmental and private sector members,⁷⁰ and made the following recommendation in 2000 with respect to the balance of influence between Member States and Sector Members within the ITU:

The decision-making functions of the ITU should reflect the modern, competitive telecommunications environment in which the private sector plays the lead role while the regulatory agencies act as an arbitrator for the wider public interest.⁷¹

Whilst such sentiment was welcomed by the telecommunications industry, the degree to which Member States continue to intervene in the sector in the 'public interest' may give cause for concern. Currently, there are no institutional procedures to enable Sector Members to appeal against a decision made by Member States or arbitrate in a dispute with a Member State.

The work of the ITU can be distinguished into three major areas: standardization, spectrum management and orbital slots, and development issues.

15.3.1 Standards⁷²

It was the issue of technical standards that gave rise to the establishment of the International Telegraph Union in 1865, when governments recognized the need for standards to extend the telegraph network throughout Europe. Standards represent the cornerstone of the global telecommunications industry, and the ITU is one of the leading international institutions for *de jure* standards-making. The ITU's remit extends not only to technical issues, but also operational and tariffs⁷³ structures for international telecommunication services.

Over recent years, the ITU's pre-eminent position in the standards-setting field has somewhat diminished in the face of regulatory competition from regional

⁷⁰ For a full list of members, see <<http://www.itu.int/newsroom/reform/rapmembers.html>>.

⁷¹ ITU Reform Advisory Panel (RAP), Observations and Recommendations for Reform, 10 March 2000.

⁷² See further Chapter 10, at 10.6.1.2.

⁷³ See further section 15.3.5 below.

organizations,⁷⁴ industry bodies⁷⁵ and, most significantly, *de facto* standards organizations such as the Internet Engineering Task Force (IETF) which are able to develop standards much more rapidly than formal bodies such as the ITU. Recognizing such developments the ITU is examining ways to reposition itself:

ITU-T could become a facilitator for collaboration, convening meetings among different standards bodies and industry forums, in particular on interworking between the Internet and telecommunications networks, both fixed and mobile.⁷⁶

As such its standards-development role would be focused on those areas where it currently leads: optical transmission, voice services, numbering, signalling, and network management.

15.3.2 Radiocommunications

The development of radiocommunications at the beginning of the twentieth century also gave rise to the need for international cooperation to avoid harmful interference. The International Radiotelegraph Union, established in 1906, adopted operating principles that have continued to form the basis of the ITU's regulation of radiocommunications: Member States were required to give notice each other of any new service utilizing the radio spectrum and were obliged to ensure that such services did not interfere with other uses of the frequency.⁷⁷

The Radiocommunications Sector of the ITU, primarily operating through the Radio Regulations Board, exercises a regulatory function in respect of the use of two scarce resources, radio-frequency spectrum and orbital slots, both of which require management in order to maximize utilization, as well as prevent interference between services and space objects.⁷⁸ The ITU is responsible for the allocation of bands of the radio-frequency spectrum and orbital slots to Member State administrations and then registers the assignment of particular radio frequencies by an administration to a specific operator in the 'Master International Frequency Register' (the 'Master Register'). The ITU records all satellite filings, both geostationary and non-geostationary, as well as the earth stations that communicate with those systems.⁷⁹

⁷⁴ E.g. the European Telecommunications Standards Institute (ETSI): <<http://www.etsi.org>>.

⁷⁵ E.g. the GSM Association: <<http://www.gsmworld.com>>. It comprises some 449 member companies from 149 countries.

⁷⁶ RAP n 71 above at 3.

⁷⁷ See Allison, A, 'Meeting the challenges of change: the reform of the International Telecommunications Union', *Federal Communications Law Journal*, vol 45, no 3, 1993, at 498.

⁷⁸ Constitution, Art 1(2)(a), (b); Chapter II (Arts 12–16) and Convention, Section 5 (Arts 7–12). The ITU's procedures cover both geostationary and non-geostationary satellite systems.

⁷⁹ See the ITU 'Space Network Systems Online', at <<http://www.itu.int/sns/>>.

Such procedures are designed 'to eliminate harmful interference . . . and to improve use made of the radio-frequency spectrum'.⁸⁰ The overriding objective of the ITU regulatory regime is the efficient use of the spectrum, while ensuring that public safety and emergency communication services, the only other policy concerns directly addressed in the Radio Regulations, are not adversely affected:

Any emission capable of causing harmful interference to distress, alarm, urgency or safety communications on the international distress and emergency frequencies established for these purposes by these Regulations is prohibited. Supplementary distress frequencies available on less than a worldwide basis should be afforded adequate protection.⁸¹

The ITU regime should not, therefore, be viewed as a comprehensive governing framework for the provision of radiocommunication services, since national and regional policies and laws on radiocommunications will generally encompass a much broader remit of issues, including environmental concerns.⁸²

The ITU and Member States have the difficult task of reconciling, on the one hand, that these limited natural resources be used 'rationally, efficiently and economically' with, on the other hand, being expected to bear in mind that countries should have 'equitable access to [the resources], taking into account the special needs of the developing countries and the geographical position of particular countries'.⁸³ The latter phrase provision was introduced to reflect the interests of developing countries who were concerned to reserve a portion of the relevant resources until such time as they were in an economic position to exploit them. To address this tension, the ITU distinguishes between planned and non-planned spectrum bands. The former are subject to a plan developed at ITU regional or world conferences, against which administrations then submit their requirements and the spectrum is shared out; while spectrum in the unplanned bands is distributed on a first-come-first-serve basis. The planned bands enable equitable access, but at the expense of rigidity and tied spectrum that is potentially unused; against the flexibility of non-planned bands that can exclude 'latecomers'.⁸⁴

Despite these coordination procedures, one of the dominant issues of concern in the Radiocommunications Sector over the past two decades has been the problem of overfiling of requests for orbital slots with associated frequencies for satellite systems. In particular, Member State administrations have been accused of filing for 'paper satellites' that have little or no real prospect of becoming operational. The filing is

⁸⁰ Harmful interference is defined as 'Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with the Radio Regulations.' Constitution, para 1003. See also the Radio Regulations, at Art 1(1.169). 'Harmful interference' is distinguished from 'permissible interference' (i.e. interference which falls within certain parameters) and 'accepted interference' (i.e. interference greater than certain parameters, but accepted by two or more administrations).

⁸¹ Article 4, at 4.22. See further section 15.3.4 below.

⁸² See further Chapter 7, at 7.4.4.5.

⁸³ Ibid, Art 44(2). Introduced in the 1973 ITU Convention.

⁸⁴ ITU, 'Overview of the Radio Regulations', available at <<http://www.itu.int/sns/radreg.html>>.

designed to pre-empt competing claims to what is perceived as an ever-diminishing resource in the face of multinational private satellite consortia, such as Globalstar and Iridium. The administration may then be expected to realize the value of the allocation by reselling or leasing the slot to the highest bidder at some later date. In the early 1990s, for example, Tonga applied to the ITU for 31 orbital slots and was awarded 6. Tonga then leased one of the slots to Columbia and auctioned off the remaining slots for US\$2 million each.⁸⁵ Such warehousing practices not only subject orbital slots to financial speculation and give rise to disputes,⁸⁶ they substantially lengthen the procedure for genuine satellite systems to obtain the necessary allocations.⁸⁷

To address the problem of overfiling, it was proposed at the World Radiocommunications Conference (WRC) in 1997 that administrations be required to provide specific evidence of the proposed satellite system, referred to as administrative and financial 'due diligence'. Administratively, the Member State administration would be required to make regular submissions on the implementation of the system, including the contractual date of delivery, the number of satellites procured, and the proposed launch date.⁸⁸ Financial constraints would include an annual coordination and registration charge, as well as a refundable deposit. The latter financial proposals were rejected over concerns that this would effectively represent a spectrum usage charge. Instead, it was agreed that the ITU would be able to recover its full costs for processing such applications.⁸⁹ Such procedures have helped reduce the filing backlog; although ongoing wrangles are taking place between the ITU and satellite operators about the true costs involved and the resulting high fees. This has led to substantial non-payment and arguments over the consequences, namely cancellation of the filing, and who bears the liability for the outstanding invoice, either the operators or the Member States with whom the ITU has a formal legal relationship.⁹⁰

In terms of the spectrum bands, the ITU is also the forum for Member States to debate the allocation or reallocation of newly or prospectively available spectrum. In November 2007, for example, at the ITU's WRC, it was agreed that spectrum within the UHF band, which has traditionally been the exclusive preserve of broadcasters,

⁸⁵ Jasentuliyana, N, *International Space Law and the United Nations* (Martinus Nijhoff, 1999), at pp 309–310.

⁸⁶ Indonesia placed one of its satellites in a slot registered with Tonga on the basis that the 'assignment' was 'wrong in law'. Ibid, at 310.

⁸⁷ See ITU Press Release, 'Scrambling for Space in Space' (Geneva, 16 September 2002), where it is stated that the backlog of satellites awaiting coordination stood at 1200, with between 400–500 new requests each year.

⁸⁸ RRs, Resolution 49, at Annex 2.

⁸⁹ See ITU Resolution 91 'on cost recovery for some products and services of ITU' (Minneapolis, 1998) and Resolution 88 'on the implementation of cost recovery for satellite network filings' (Marrakesh, 2002).

⁹⁰ Sung, L, 'ITU's cost recovery: the satellite factor', *Satellite Today*, 1 September 2004.

would be opened up for use by mobile broadband services.⁹¹ Such spectrum is becoming available worldwide as a consequence of terrestrial television shifting from analogue to broadband signals, which use considerably less bandwidth; commonly referred to as the 'digital dividend'.⁹² Such spectrum is highly sought after because of the quality of signal available and their propagation characteristics, which means the signals travel further and are more capable of penetrating buildings. The signal range means the cost of rolling out wireless broadband networks is considerably reduced, which is obviously beneficial for developing countries.⁹³

15.3.3 Telecommunications development

From 1947, membership of the ITU expanded rapidly among developing nations. As their numbers grew, so did their share of the votes and ability to influence the direction and activities of the ITU. At the Nairobi Plenipotentiary Conference in 1982, such increasing influence resulted in development issues becoming one of the basic purposes of the ITU:

to promote and to offer technical assistance to developing countries in the field of telecommunications, and also to promote the mobilization of the material and financial resources needed for implementation. (Constitution, Article 1(1)(b))

Therefore, since 1982, the ITU has given equal priority to telecommunications development with standards-setting and radiocommunications. The Telecommunication Development Sector operates through a Telecommunication Development Bureau, Telecommunication Development Conferences and associated Study Groups.

In particular, the ITU has worked with other development agencies, such as the World Bank and the International Bank of Reconstruction and Development, to improve the flow of technology, funds and expertise into developing countries. The Reform Advisory Panel has proposed that the ITU's development focus should be expanded 'from technical assistance towards helping developing countries establish pro-market regulatory frameworks',⁹⁴ which would seem to reflect the influence of the WTO in the telecommunications sector.

15.3.4 Legal instruments of the ITU

As an international treaty, the Constitution and Convention of the ITU are legal instruments to which Member States are bound in respect of all telecommunications activities that 'engage in international services or which are capable of causing

⁹¹ ITU Press Release, WRC-07, 'ITU World Radiocommunications Conference concludes after four weeks: International treaty sets future course for wireless', 16 November 2007.

⁹² See further Chapter 7 and Chapter 14.

⁹³ Financial Times, 'Radio spectrum freed for mobiles', 19 November 2007.

⁹⁴ RAP, n 71 above.

harmful interference to radio services of other countries' (Constitution, Article 6(1)). Whilst primarily detailing the rules governing the establishment and operation of the ITU, the Constitution also embodies certain fundamental legal principles governing international telecommunications in Chapter VI. Members give recognition to certain rights of users, i.e. the 'right of the public to correspond by means of the international service' (Article 33). Member States also have an obligation for 'ensuring the secrecy of international correspondence', although subject to the right to ensure compliance with national laws (Article 37). The majority of the principles represent reservations that Members have the right to exercise, such as in respect of the 'stoppage of telecommunications' for reasons of national security, public order, or decency (Article 34) and the 'suspension of services' (Article 35). Member States are also protected from any liability arising from the use of international telecommunication services (Article 36).

There are three unique features of the ITU Constitution and Convention, which differ from traditional public international law. First, the private sector has a specified role in decision-making activities of the ITU, as noted above. Secondly, to ensure legal certainty, Administrative Regulations have a fixed date for implementation and have immediate provisional application unless the revision is formally refused by a Member State (Constitution, Article 54, *3^{pent}*). In addition, a Member State is deemed to have consented to be bound by the revision to the Administrative Regulations, after a period of three years, if it fails to notify the Secretary-General otherwise (Constitution, Article 54, *5bis*). Thirdly, any reservations by a Member State have to be notified prior to the signing of the final acts of a plenipotentiary, since subsequent reservations are not possible. These provisions are designed to ensure legal certainty, which impacts directly on technical implementation issues.

Complementing the Constitution and Convention are Administrative Regulations, sub-divided into:

- International Telecommunications Regulations; and
- Radio Regulations.

The Administrative Regulations comprise the general principles to be observed in the provision of international telecommunication services and networks and the assignment and use of frequencies and orbital slots. Such Regulations 'shall be binding on all Member States' (Constitution, Articles 4(3), 54). At the time of accession to the Constitution and Convention,⁹⁵ a Member State may make reservations in respect of any of the existing Administrative Regulations (Article 54(2)). Any subsequent partial or complete revision of the Administrative Regulations requires a Member State to indicate their consent to be bound, by depositing an instrument of ratification, acceptance or approval or by notifying the Secretary-General (Article 54(3)*bis*);

⁹⁵ I.e. 27 June 1994 in the case of the UK.

although a Member State will be provisionally bound from the entry into force of the revision, if the Member State has signed the revision (Article 54(3) *penultimate*).

Under the Constitution, Member States are also required to:

take the necessary steps to impose the observance of the provisions of this Constitution, the Convention and the Administrative Regulations upon operating agencies authorized by them to establish and operate telecommunications and which engage in international services or which operate stations capable of causing harmful interference to the radio services of other countries. (Article 6(2))

However, this blanket provision is qualified by the concept of a 'Recognized Operating Agency' (RAO):

Any operating agency . . . which operates a public correspondence or broadcasting service and upon which the obligations provided for in Article 6 of this Constitution are imposed by the Member State in whose territory the head office of the agency is situated, or by the Member State which has authorized this operating agency to establish and operate a telecommunication service on its territory. (Constitution, Annex)

Historically, ROAs were generally the state-owned incumbent operator. However, in liberalized markets, the categories of ROAs could potentially extend to any provider of international services, including resale services. In the UK, for example, some ten operators are categorized as ROAs.

The current applicable International Telecommunications Regulations are those adopted at Melbourne in 1988; comprising 10 substantive articles and a series of appendices (ITRs).⁹⁶ Reiterating the Constitution, the Regulations are only binding on 'administrations' (i.e. Member States and recognized operating agencies). Administrations do, however, have the freedom to enter into 'special mutual arrangements' for the provision of international telecommunications networks and services (ITRs, Article 9), which provides considerable flexibility for countries such as the US and the EU Member States, which have regulated to ensure liberalization: e.g. the application of interconnection regulations to intra-EU international traffic. Over the years, there have been inevitable calls for the International Telecommunications Regulations to be revised, driven, in part, by the considerable changes that have occurred in the market since 1988, but also by developing country concerns that the ITRs are too favourable towards richer nations and the dominant global players they represent.

At the 1998 ITU Plenipotentiary, a resolution was adopted instructing the Secretary-General to establish an Expert Group to advise on the future of the ITRs.⁹⁷ No consensus on the way forward was reached by the following Plenipotentiary in 2002, or again by the 2006 Plenipotentiary, and therefore the review process continues.⁹⁸ However, the 2006 Resolution does, for the first time, put a prospective

⁹⁶ Available at <<http://www.itu.int/ITU-T/itr/files/ITR-e.doc>>. They entered into force on 1 July 1990.

⁹⁷ Resolution 79 (Minneapolis, 1998): 'International Telecommunication Regulations'.

⁹⁸ See Resolution 121 (Marrakesh, 2002) and Resolution 146 (Antalya, 2006).

end date on the negotiations, by resolving that the ITU convenes a conference in 2012 to decide on recommendations to amend the ITRs. One proposal for reform, representing the perspective of certain developing countries, is to give greater granularity to the ITRs by incorporating references to various ITU recommendations in the ITRs, which would then become de facto mandatory upon Member States. Such an approach is being strongly resisted by countries such as the US, however, who believe that such intervention in a liberalized market would be inappropriate.

The current applicable Radio Regulations (RRs) were published in 2008, with the provisions from the WRC-07 entering into force on 1 January 2009. The RRs are contained in four volumes; comprising some 59 articles, 25 appendices, and various resolutions and recommendations. The RRs distinguish between three distinct acts in relation to frequency: 'allocation', 'allotment', and 'assignment' (RRs, Article 1, 1.16–1.18). 'Allocation' consists of an entry in the 'Table of Frequency Allocations' for use in respect of one or more terrestrial or space radiocommunication service. Such services may be categorized as 'primary' or 'secondary' services, on a regional or global basis; with the latter being required to comply with the interference rules laid down for the former, as well as being unable to claim protection from interference from the former. 'Allotment' indicates the use of a designated frequency by administrations for a service in certain countries or geographical areas and under specified conditions. The 'assignment' of frequencies is carried out by Member State authorities through an authorization or licensing procedure, such as under the UK's Wireless Telegraphy Act 2006.⁹⁹ Such assignment is then notified to the ITU for recording in the Master Register.¹⁰⁰ When granting an assignment, Member States are free to derogate from the ITU allocation, but only to the extent that it does not cause harmful interference to others operating in accordance with the RRs (Article 4.4).

To ensure compliance with the RRs, particularly the elimination of harmful interference, an international monitoring system has been established (RRs, Article 16). The scheme comprises the operation of a network of monitoring stations, operated by Member States, either alone or in conjunction with others, and international organizations. The system is voluntary in nature.

In addition to the binding legal instruments, the various bodies of the ITU adopt recommendations, resolutions, and decisions. Whilst the Administrative Regulations comprise the general principles to be complied with, the manner in which they are to be implemented are detailed in ITU-T and ITU-R Recommendations, which represent the bulk of ITU rule-making.¹⁰¹ Such recommendations do not have 'the same legal status as the Regulations' (ITR 88, Article 1.4), although 'administrations' 'should comply with, to the greatest extent practicable, the relevant' recommendations (Article 1.6).¹⁰² Draft recommendations are prepared within the various sectoral

⁹⁹ See further Chapter 7.

¹⁰⁰ E.g. Ofcom, Procedures for the Management of Satellite Filings, 27 March 2007.

¹⁰¹ E.g. over 2600 ITU-T Recommendations are currently in force.

¹⁰² However, see also the opinion of the Advocate-General in *Italy v Commission* [1985] 2 CMLR 368, 373.

'Study Groups' and enter into force either through approval at the relevant assemblies or conferences, or through direct correspondence with Member State administrations (Convention, Articles 11(2), 14(1)).

In the event of a dispute regarding the interpretation of any of the legal instruments, Constitution Convention or Administrative Regulations, settlement will either be achieved through mutually agreed bilateral or multilateral arrangements or, if not settled by such means, via an arbitration procedure (Constitution, Article 56). The decision of the arbitrator(s) shall be 'final and binding upon the parties to the dispute' (Convention, Article 41), although no enforcement mechanism is available in the event of non-compliance. A compulsory arbitration procedure is also provided for under an Optional Protocol to the Convention, between Members that are party to the Protocol.¹⁰³

15.3.5 International accounting rates

As discussed above, the origins of the ITU in the International Telegraph Convention was the need to extend the operation of telecommunication networks beyond national borders. As well as the need for common standards for the transmission of messages between different networks, such international traffic also raised the issue of payments to be made between national operators for the carriage of each other's traffic. The historic regime established for the making of such payments is known as the 'International Accounting Rate system' and the principles of its operation are contained in the ITU's International Telecommunications Regulations (Article 6).

The International Accounting Rate system comprises a series of related rates that are intended to provide for an equitable payment to the terminating operator for the termination of an international call and, where relevant, to any transit operators that have handled the call.¹⁰⁴ The 'collection charge' (ITRs, Article 2.9) is the retail price levied on the originating customer by the originating operator. The 'accounting rate' is essentially a wholesale rate representing the agreed cost of transmitting each unit of traffic between the calling parties.¹⁰⁵ The 'settlement rate' is the payment made by the originating operator to the terminating operator and is usually 50 per cent of the accounting rate. Obviously, such payments are made on a net settlement basis between operators, since traffic generally flows in both directions and therefore it is the operator that originates the most traffic that is required to make the periodic payments.

Although the system is embodied in the International Telecommunications Regulations and has been elaborated as a series of recommendations from the ITU, the

¹⁰³ Constitution, Art 56(3). The UK has ratified the Optional Protocol, 27 June 1994.

¹⁰⁴ Either direct transit or switched transit.

¹⁰⁵ Usually expressed in terms of Special Drawing Rights (SDR), under the International Monetary Fund, or the gold franc: Convention, Art 38; ITRs 88, Art 6.3.1.

system operates through a series of bilateral agreements between telecommunication operators in each jurisdiction:

For each applicable service in a given relation, administrations (or recognized private operating agencies) shall by mutual agreement establish and revise accounting rates to be applied between them. (ITRs, Article 6.2.1)

As noted below, however, these bilateral agreements may still be considered state measures subject to consideration under public international law, such as the General Agreement on Trade in Services.¹⁰⁶

Whilst the essential elements of the international accounting rate system have remained the same over many years, the system was in fact designed to operate under certain conditions, which are no longer present in most telecommunications markets:

- jurisdictional symmetry with respect to both call origination and traffic flows;
- collection charges higher than the accounting rate;
- relatively constant inflation and exchange rates; and
- monopoly operators in each jurisdiction providing the international service.

As these conditions have either disappeared or altered, the international accounting rate system has given rise to substantial payment flows between operators, representing invisible trade imbalances between countries. In 1996, for example, US operators were obliged to pay around US\$6 billion to operators in other jurisdictions, of which it was estimated that 70 per cent constituted 'an above-cost subsidy from US consumers to foreign carriers'.¹⁰⁷

Indeed, under the current regime, the coexistence of liberalized telecommunications markets with traditional monopolistic environments can actually reward the latter at the expense of the former. In particular, a practice known as 'whipsawing' has arisen, whereby monopolistic operators in one country are able to negotiate with competing operators in other countries to achieve substantially lower accounting rates for the termination of traffic originating in the monopoly country. Alternatively, the monopoly operator may lease their own circuit in the liberalized terminating regime, therefore bypassing the accounting regime for outbound transmissions (commonly referred to as 'one-way bypass').

The payment imbalance is exacerbated by the fact that, historically, accounting rates have not been based on actual cost, but were often priced at a premium. For some countries, such as the US, the accounting rate system has therefore come to be seen as an unacceptable regime that positively disadvantages the introduction of competitive markets. However, countries which are net creditors under the accounting rate system, often although not exclusively developing countries, usually view the

¹⁰⁶ See further 15.4.1 below.

¹⁰⁷ Federal Communications Commission, In the matter of International Settlement Rates, Report and Order, IB Docket No 96-261, 7 August 1997 ('Benchmark Order'): para 13.

system as constituting an important source of foreign 'hard currency' revenue for investment into the domestic market, either in the form of network rollout or through subsidizing the cost of access (e.g. line rental). In effect such revenues have been seen as contributing to a universal service policy, at a global level as well as for individual countries.¹⁰⁸ Indeed, the ITU's Secretary General has noted that developing countries receive more revenue from the accounting rate system in one year than they have received from development banks, such as the World Bank, for telecommunications programs during the first half of the 1990s.¹⁰⁹

Over recent years, there has been significant pressure for the international accounting rate system to be reformed.¹¹⁰ Such pressure has arisen from governmental concern to reduce trade deficits, as well as bringing benefits to end-users through a reduction in the cost of international telecommunications. In addition, technological developments have resulted in a proliferation of alternative calling procedures designed, either directly or indirectly, to avoid the normal operation of the international accounting regime. Such procedures can be broadly distinguished into two categories:

- 're-origination' techniques, which take advantage of asymmetric rates on particular routes to minimize the cost of the accounting rates, e.g. call-back,¹¹¹ country-direct, calling cards, refile;¹¹²
- 'bypass' techniques, which completely circumvent the international accounting regime, e.g. international simple resale services, VSATs,¹¹³ Internet telephony.

These practices inevitably lead to a reduction in the revenues of the monopoly provider of international telecommunication services and, in some cases, are infringements of national law.¹¹⁴ However, whilst re-origination techniques represent a loss in collection revenues, the concurrent increase in settlement payments may significantly offset the impact for the incumbent and will encourage the maintenance of high

¹⁰⁸ See Tyler, M, *Transforming economic relationships in international telecommunications*, Chapter 8, Briefing Report for ITU Regulatory Colloquium No 7 (1997). Also, Stanley, K, 'International settlements in a changing global telecom market' in Melody (ed), *Telecom Reform*, pp 371-394 (Technical University of Denmark, 1997).

¹⁰⁹ Tarjanne, P, 'Reforming the international accounting rate system', 2 ITU News (1998).

¹¹⁰ See ITU Report of the Informal Expert Group on International Telecommunications Settlements, March 1997.

¹¹¹ Various forms of 'call-back' exist but it essentially involves a reversal in the direction of the call, e.g. a call from a country with high originating international tariffs is manipulated to appear to come from the terminating country which has low originating international tariffs, using features of call signalling systems.

¹¹² 'Refile' involves routing a communication from country A to country B via a third country, C, where the sum of the tariff rates for calls between A-C and C-B are less than A-B.

¹¹³ Very Small Aperture Terminals, used for satellite-based telecommunications direct to home.

¹¹⁴ See ITU Resolution 21 of the Plenipotentiary Conference, Kyoto, 1994: 'Special Measures concerning Alternative Calling Procedures on International Telecommunication Networks' (revised at the Minneapolis Plenipotentiary, 1998), noted that 86 Member States prohibit 'call-back' (as of October 1998).

accounting rates.¹¹⁵ The ITU is in an uneasy position in respect of such activities and has called upon Member States to take appropriate action against operators in their jurisdiction who are breaching the laws and regulations of other Member States.¹¹⁶

Proposals to reform the system take two main forms. First, there have been moves within the ITU to lower accounting rates towards the actual cost of terminating international calls. Such cost-based tariffing is designed to reflect the regulatory position adopted in liberalized markets, such as that applicable to interconnection agreements.¹¹⁷ It also reflects existing obligations under the 1988 International Telecommunications Regulations, where Member States are required to revise accounting rates 'taking into account relevant [ITU-T] Recommendations and relevant cost trends' (Article 6.2.1). The main relevant Recommendation, D.140, 'Accounting rate principles for international telephone service', calls upon administrations to move accounting rates towards a cost-based approach, by identifying those operational elements that are considered to be legitimate components within the accounting rate:

- international transmission facilities;
- international switching facilities; and
- national extension.

The direct costs of utilizing these facilities, with some allocation of the associated common costs, should comprise a cost-based settlement rate.¹¹⁸ Despite Recommendation D.140 and a fall in accounting rates by 12 per cent over the past three years, many ITU members have viewed progress towards cost-orientated rates as too slow. As a result, an Annex E to D.140 has been adopted containing indicative target rates and specified deadlines for each country.¹¹⁹

The second approach to address the present accounting rate system is through the adoption of a range of alternative rate systems, which are designed to reflect the different conditions present in many markets. Five alternative models have been suggested:¹²⁰

- *call termination charges*, where a single rate charged to terminate into a country from any other country, as is currently operated for the international

¹¹⁵ See Secretary General's Paper on Accounting Rate Reform, ITU-T, COM 3-2-E (November 1996).

¹¹⁶ Resolution 21, n 114 above.

¹¹⁷ See Chapter 3.

¹¹⁸ See D.140, Annex F: 'Principles to be applied by Administrations in developing and using a cost model'.

¹¹⁹ D.140, Supplement 2 (06/2003): 'Updated teledensities and indicative target settlement rates' (1 January 2003).

¹²⁰ E.g. ITU-T Recommendation D.150, 'New system for accounting in international telephony', June 1999.

telegram service. The primary advantages of such a system are transparency and non-discrimination;

- *facilities-based interconnection charge*, as already required under European Union law¹²¹ and generally in operation for mobile roaming;
- *'sender keeps all'*, where no payments are made between national operators, historically the system adopted between the UK and Ireland. Such an approach also reflects the 'peering' arrangements present in the Internet.¹²² However, as with peering, it does operate on a presumption of equality in traffic flows;
- *international private leased circuits*, where the charge will reflect the cost of leasing such capacity;
- *volume-based payments*, fixed per traffic unit carried, as currently used in Internet-based transit arrangements.

The ITU's developmental role has created problems when addressing the reform of the international accounting rate system, since the system is perceived in many Member States as contributing funds to the broader development of telecommunications in their jurisdiction. Indeed, the ITU specifically recommends that accounting rate apportionment in favour of a developing country should be used for telecommunications improvements.¹²³

Pressure to reform the system is also being driven, in part, by decisions made by regulatory authorities in certain jurisdictions. In particular, the Federal Communications Commission (FCC) created considerable consternation in certain countries when it issued its International Settlement Rates Order in 1997.¹²⁴ The Order represented a fundamental policy shift from the previous Uniform Settlements Policy (USP), which had been operating since 1980.¹²⁵ Under the USP approach, all US licensed operators were required to operate under the same accounting rate with foreign correspondents, which addressed the problem of 'whipsawing', as well as obliging operators to maintain proportionate inbound and outbound traffic volumes.

However, the FCC recognized that the WTO 'basic agreement' had the potential to sharply worsen the US's balance of payments deficit on international services, since incumbent operators in non-liberalized markets would be free to establish

¹²¹ See further Chapter 8.

¹²² Ibid.

¹²³ Resolution 22: 'Apportionment of revenues in providing international telecommunication services' (Kyoto, 1994).

¹²⁴ Benchmark Order, n 107 above. The Order was reformed in 2004, to remove its application from routes where US carriers had negotiated benchmark compliant rates. See *International Settlements Policy Reform: International Settlement Rates*, IB Docket Nos 02-324 and 96-21, First Report and Order, FCC 04-53 (rel 30 March 2004).

¹²⁵ Uniform Settlement Rates on Parallel International Communications Routes, 84 FCC 2d 121 (1980); applicable to international telephone services since 1986: See Implementation and Scope of the International Settlements Policy for Parallel Routes, CC Docket No 85-204, Report and Order, 51 Fed Reg 4736 (7 February 1986).

US-based operations subsidized from their monopolistic international revenues. The progress of reform within the ITU was slow, therefore the FCC decided to take unilateral steps to drive the pace of change towards cost-based settlement rates.

The Order lays down benchmark 'settlement rates that carriers subject to our [FCC] jurisdiction may pay for termination of US-originated traffic' (paragraph 312). Countries were categorized into three tiers, representing different stages of economic development. The rates are to be implemented over a transition period, over one to four years, and operators were able to appeal against a rate determination (paragraph 74). The regime came into effect on 1 January 1998 and the first targets were to be achieved by 1 January 1999. The rates were based on a methodology known as 'tariffed components pricing' (TCP), which comprised the three elements specified in Recommendation D.140: international transmission, international exchange, and national extension. All US-licensed carriers were subject to the order, while for foreign-affiliated operators compliance was a condition of obtaining approval for the provision of long-distance services to the home jurisdiction (paragraph 207).

The Benchmark Order generated opposition in many countries, such as the Caribbean region, over the potential impact the order would have on domestic operator revenues. In addition, the European Commission and Japan raised concerns about the compatibility of the Benchmark Order with the US's commitments under the General Agreement on Trade in Services, specifically the principle of 'most-favoured-nation'.¹²⁶

In 1998, Cable & Wireless brought an action before the US courts challenging the legality of the Benchmark Order. Over 100 other petitioners and intervenors, comprising national governments, regulators, and operators, soon joined the case on both sides. The main thrust of the complaint was that the FCC had exceeded its authority through the extraterritorial nature of the Order's provisions.¹²⁷ The court found overwhelmingly in favour of the FCC, holding that it had the requisite powers to make decisions regulating the actions of US-licensed operators, including the contractual arrangements entered into for international settlement rates.¹²⁸

the Commission does not exceed its authority simply because a regulatory action has extraterritorial consequences.

Objections to the use of the TCP methodology were dismissed on the grounds that the FCC had acted reasonably, whilst the petitioners were criticized for withholding actual cost data which could have been used as well as failing to propose alternative methodologies.

During the course of the proceedings, the Australian operator Telstra entered a petition against the Benchmark Order on the grounds that it did not address the issue of international Internet connections. Telstra complained that the Order was based

¹²⁶ Ibid, at para 109. See also section 15.4 below.

¹²⁷ *Cable & Wireless et al v FCC*, No 97-1612, DC Cir, 12 January 1999.

¹²⁸ See 47 USC §205(a), 211(a).

on a circuit-switched environment, where traditionally each correspondent operator is responsible for the provision of half of the international circuit. Telstra argued, however, that in an Internet environment non-US operators were effectively forced to purchase a full-circuit in order to connect to the Internet exchange points based primarily in the US.¹²⁹ As a consequence, US carriers were obtaining significant financial benefits from the current arrangements for international Internet connections. The court denied Telstra's petition as constituting insufficient grounds for overturning the FCC Order, but the issue has subsequently been pursued within the ITU.

In April 2000, ITU-T Study Group 3 approved a draft Recommendation on International Internet Connection that had been proposed by Australia. Draft Recommendation D.120 was presented to the World Telecommunication Standardization Assembly (WTSA) for adoption in October 2000:

Noting the rapid growth of the Internet and Internet based services: It is recommended that administrations negotiate and agree bi-lateral commercial arrangements applying to direct international Internet connections whereby each administration will be compensated for the costs that it incurs in carrying traffic that is generated by the other administration.

For many Internet-based services, such as the World Wide Web, traffic flows are asymmetric, as an individual request for a page generates large flows of data towards the requester. Such data is generally from servers based in the US and connected to the Internet by US operators. Under the draft Recommendation, US operators would have been required to pay transit and termination fees to operators in other jurisdictions, such as Australia, to which the individual requester is connected; rather than the current settlement-free 'peering' system, with operators such as Telstra having to pay for full international circuits.

The draft Recommendation generated significant opposition from the US and Europe, but was supported by many developing nations members. An amended version was eventually adopted at WTSA:

recommends that administrations involved in the provision of international Internet connections negotiate and agree to bilateral commercial arrangements enabling direct international Internet connections that take into account the possible need for compensation between them for the value of elements such as traffic flow, number of routes, geographical coverage and cost of international transmission amongst others. (Recommendation D.50(10/00) *International Internet Connection*)

The shift from mandatory to voluntary compensation enabled the proposal to be adopted, although the US and Greece made reservations and stated that the Recommendation would not be applied in their jurisdictions. Despite the agreed position, it can be expected that the ITU will be required to address this issue again over the

¹²⁹ See further Chapter 8, at 8.7.1.2.

coming years, as Internet-based data communications continue to expand as a proportion of total international traffic.

The international accounting rate system is gradually disappearing in its current form to be replaced by a multitude of different arrangements reflecting the state of liberalization in Member States, technological developments, and the commercial positions of the respective parties. Political pressure to accelerate such change has shifted somewhat in recent years from the ITU to the WTO. A moratorium was agreed between certain Member States not to pursue a legal action before the WTO on accounting rates,¹³⁰ although that has not prevented accounting rate-related issues being argued before the Dispute Settlement Body.¹³¹

15.4 WORLD TRADE ORGANIZATION

The WTO was established in 1994 as part of the final act embodying the results of the Uruguay Round of multilateral trade negotiations.¹³² The function of the World Trade Organization is to facilitate the implementation, administration and operation of certain multilateral trade agreements (Article III(1)). The unique feature of the WTO is the establishment of a dispute settlement body to enforce the obligations accepted by Member States within the context of the agreements.¹³³ The existence of an enforcement mechanism has been a key factor in pushing the WTO to the forefront of intergovernmental organizations.

For the telecommunications industry, the accelerating process of market liberalization coincided with the GATT Uruguay Round, which commenced in 1986. A key feature of the Uruguay Round was that for the first time trade in services was included within the scope of the multilateral negotiations. With the increasing importance of trade in services, particularly for developed nations, telecommunications was recognized as a critical element both as a facilitator of trade in services, as well as an increasingly tradable service in its own right. Such recognition ensured that telecommunications issues moved towards the top of the agenda for countries such as the US and the UK.

At the conclusion of the 'Uruguay Round' at Marrakesh in 1994, a series of trade agreements were adopted, of which only some are of relevance to the telecommunications sector. The GATT¹³⁴ is concerned with trade in goods and, as such, potentially impacts on trade in telecommunications equipment. In 1996, the major developed

¹³⁰ See WTO Report of the Group on Basic Telecommunications (S/GBT/4), 15 February 1997.

¹³¹ See the *Telmex* case discussed below at 15.4.4.1.

¹³² See the Agreement, Establishing the World Trade Organisation with Understanding on Rules and Procedures Governing the Settlement of Disputes and Trade Policy Review Mechanism (Marrakesh, 15 April 1994; TS 57 (1996) Cm 3277; 33 ILM (1994); OJ L 336/1, 23 December 1994). The Treaties entered into force on 1 January 1995.

¹³³ See section 15.4.3 below.

¹³⁴ TS 56 (1996) Cm 3282; 33 ILM 28 (1994).

nation Member States adopted a further agreement within the context of GATT on 'Information Technology Products', which directly encompasses most forms of telecommunications equipment. The Agreement on Trade-Related Aspects of Intellectual Property (TRIPS)¹³⁵ is also of obvious importance to an industry so heavily dependent on its investments in research and development.¹³⁶ Other agreements which can and have impacted on the sector include the Agreement on Subsidies and the Agreement on Government Procurement.¹³⁷ However, this section will examine the General Agreement on Trade in Services (GATS)¹³⁸ as the primary WTO-agreement establishing a framework for international telecommunications law.

15.4.1 General Agreement on Trade in Services

In terms of the scope of GATS, a 'Services Sectoral Classification List' places 'Communications Services' as the second category, which is then subdivided into five sub-sectors: postal services, courier services, telecommunication services, audio-visual services, and other. Category C, 'Telecommunication services', is then further subdivided into 15 further sub-categories, including 'packet-switched data transmission services' and 'electronic data interchange (EDI)'. However, those 15 services are also distinguished into 'basic' and 'value-added' services:

all telecommunication services, both public and private that involve end-to-end transmission of customer supplier information for which suppliers 'add value' to the customer's information by enhancing its form or content or by providing for its storage and retrieval.¹³⁹

The nature of telecommunication services mean they can be further distinguished into a number of categories on the basis of geographical scope (i.e. local, long-distance, and international); mode of transmission (i.e. wire and wireless or radio-based); the use and ownership of infrastructure (i.e. facilities-based or resale), and to whom the services are provided (i.e. public or non-public).¹⁴⁰

The GATS is concerned with four modes of supplying services:

- (1) from one territory to another, i.e. cross-border supplies;¹⁴¹
- (2) the provision to foreign consumers in the service provider's territory, i.e. consumption abroad;
- (3) the establishment of a commercial presence in another state; and

¹³⁵ TS 10 (1996) Cm 3046; 33 ILM 81 (1994).

¹³⁶ See further Chapter 10.

¹³⁷ For a complete list of WTO Legal Texts, see generally: <http://www.wto.org/english/docs_e/legal_e/legal_e.htm>.

¹³⁸ TS 58 (1996) Cm 3276; 33 I.L.M 44 (1994).

¹³⁹ <http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_coverage_e.htm#basic>.

¹⁴⁰ Ibid.

¹⁴¹ This concept was examined in the *Telmex* case at para 7.25 *et seq*.

(4) through the presence of a natural person in another state.¹⁴²

In terms of the telecommunications sector, modes (i) and (iii) are most relevant in terms of business practice.

The GATS contains an annex on telecommunications and, subsequently, a protocol establishing commitments in basic telecommunications. Taken together, these agreements have required Member signatories to substantially open up their telecommunication markets to international competition.

The GATS comprises a number of fundamental 'General Obligations and Disciplines' to which all Members are required to comply from the moment the agreement entered into force (Part II). These general obligations are then supplemented by specific commitments accepted by a Member in a Schedule of commitments appended to the GATS (Part III and IV). Each schedule specifies:

- (a) terms, limitations and conditions on market access;
- (b) conditions and qualifications on national treatment;
- (c) undertakings relating to additional commitments;
- (d) where appropriate the time-frame for implementation of such commitments; and
- (e) the date of entry into force of such commitments. (Article XX)

These schedules represent a baseline or codification of conditions in a specific national market upon which a foreign service provider can rely. In addition, they constitute the starting-point for future negotiations to further liberalize the sector. A commitment may only be modified or withdrawn by a Member after three years from the date it entered into force (Article XXI).

The best known general obligation upon Members is the Most-Favoured-Nation (MFN) Treatment:

... each Member shall accord immediately and unconditionally to services and service suppliers of any other Member treatment no less favourable than that it accords to like service and service suppliers of any other country. (Article II(1))

However, a Member may specify that this principle shall not be applicable to certain measures listed in an Annex on Article II Exemptions.¹⁴³ Such MFN exemptions are subject to review after a five-year period and should not exceed a period of ten years.¹⁴⁴

There is some debate whether the MFN principle should operate in respect of the international accounting rate regime, since in many non-competitive markets the amount an incumbent operator charges for the termination of international calls will vary significantly between different originating jurisdictions. Member States have an obligation to ensure that any 'monopoly supplier of a service' does not act in a manner inconsistent with either the MFN principle or any of the specific commit-

¹⁴² GATS, Art I(2).

¹⁴³ GATS, Art II(2).

¹⁴⁴ GATS, Annex on Art II Exemptions, paras 5-7.

ments made by the Member (Art VIII(1)). However, settlement rates are the subject of bilateral contractual agreements between operators, therefore, it is questionable whether such agreements fall within the jurisdiction of the GATS. The MFN principle would seem to be applicable only if accounting rate agreements were considered to be a 'measure by Members', i.e. taken by governments and authorities or by 'non-governmental bodies in the exercise of powers delegated by central, regional or local government or authorities' (Article I(3)(a)). Where an operator falls into the latter definition, it may then be unclear whether a bilateral agreement constitutes the exercise of a delegated power, even if in compliance with an ITU recommendation to which the Member State administration has accepted.

Article VI of the GATS addresses 'domestic regulation'. It requires Members to ensure that any authorization procedures are handled 'within a reasonable period of time' (Article VI(3) and are capable of 'objective and impartial review' by a judicial or administrative body (Article VI(2)). Such commitments are obviously applicable to licensing procedures for the provision of telecommunication services. In addition, there is an on-going commitment to develop disciplines to ensure that 'qualification requirements and procedures, technical standards and licensing requirements do not constitute unnecessary barriers to trade' (Article VI(4)).

Competition law issues are addressed under Part II, 'General Obligations and Disciplines', in Articles VIII 'Monopolies and Exclusive Service Suppliers' and IX 'Business Practices'. Such rules may be used to prevent an abuse of dominant position or restrictive trade practices. These provisions can be seen as being of particular interest to telecommunication operators trying to provide services into countries whose legal systems have historically had no legal rules addressing general competition issues.¹⁴⁵

In contrast to the GATT, the principle of 'national treatment' constitutes a specific commitment applicable to particular service sectors and detailed in a Members' Schedule to the GATS:

... each Member shall accord to services and service suppliers of any other Member, in respect of all measures affecting the supply of service, treatment no less favourable than that it accords to its own like services and service suppliers.' (Article XVII)¹⁴⁶

The other key specific commitment under the GATS concerns 'market access' (Article XVI), under which Members detail those service sectors into which service suppliers from other Members may enter.

¹⁴⁵ E.g. Asian countries.

¹⁴⁶ See GATT (1947), Art III, 'National Treatment on Internal Taxation and Regulation'.

15.4.2 Telecommunications Annex

At the time of the GATS, Members also adopted a supplementary Annex on Telecommunications. Its objective was to clarify the position of Members 'with respect to measures affecting *access to and use of* public telecommunications transport networks and services' (paragraph 1). The Annex is therefore concerned with the supply of value-added telecommunication services over such public networks and services rather than any right to provide the networks and services. These obligations are incurred, therefore, whether or not the Member has liberalized the provision of basic networks and services.

The Annex imposes obligations of transparency of conditions of access and use, including tariffs, terms and conditions, and specifications of technical interfaces with the public networks and services (paragraph 4). The first draft of the Annex stated that access and use should be on cost-orientated terms, but this was removed in the face of opposition.¹⁴⁷ Access should be 'non-discriminatory', a term which embraces both the MFN and national treatment principles. Service providers should be permitted to attach terminal equipment to the public network; interconnect private circuits and utilize any operating protocols that do not interfere with the availability of the public network (paragraph 5(b)). In terms of restrictions, Members may only impose conditions that are necessary:

- to safeguard the public service responsibilities of the suppliers of public networks, i.e. the universal service obligation;
- to protect the integrity of the network; or
- to comply with a Member's commitments in its Schedule (paragraph 5(e)).

Such conditions may include restrictions on the resale of such services, compliance with any 'type-approval' regime,¹⁴⁸ or licensing and notification obligations. In addition, developing countries may impose conditions 'necessary to strengthen its domestic telecommunications infrastructure and service capacity and to increase its participation in international trade in telecommunications services' (paragraph 5(g)). To assist the growth of telecommunications in developing countries, developed Members are encouraged to make available information and opportunities concerning the transfer of telecommunications technology and training to the least-developed countries.

15.4.3 Fourth Protocol

At the conclusion of the 'Uruguay Round', ministers adopted a decision to enter into further voluntary negotiations on the liberalization of trade in the provision of basic

¹⁴⁷ Stated in Zutshi, B, 'GATS: Impact on developing countries and telecom services', p 24, *Transnational Data and Communications Report*, July–August 1994.

¹⁴⁸ See Chapter 5, at 5.4.3.

telecommunication networks and services.¹⁴⁹ Pending the conclusion of these negotiations, Members were granted a MFN exemption for measures affecting the provision of such basic telecommunications.¹⁵⁰ These negotiations, carried out under the auspices of the 'Group on Basic Telecommunications', were scheduled to conclude no later than 30 April 1996. However, by the deadline there had been insufficient offers from Members to enable a conclusion to be reached; therefore negotiations were continued until an agreement was finally reached on 15 February 1997.¹⁵¹

This agreement is commonly referred to as the 'Basic Agreement on Telecommunications', although the term is somewhat misleading since the agreement consists primarily of a series of 'Schedules of Specific Commitments and a List of Exemptions from Article II concerning basic telecommunications' submitted by some 69 Members.¹⁵² These commitments supplement or modify any existing submissions made by Members and are annexed to the existing schedules through a device referred to as a Protocol, which becomes an integral part of the GATS (Article XX). As such, these submissions constitute the fourth Protocol to have been entered into by certain Members of the WTO. The Fourth Protocol was intended to enter into force on 1 January 1998; however, further delays meant that it became effective on 5 February 1998.

Supplementary to the Schedules, the Chairman of the Group on Basic Telecommunications issued two explanatory notes clarifying certain issues applicable to the scheduling of commitments. First, a 'basic telecom service' was defined in the following terms:

- (a) encompasses local, long distance and international services for public and non-public use;
- (b) may be provided on a facilities-basis or by resale; and
- (c) may be provided through any means of technology (e.g., cable, wireless, satellites).¹⁵³

Second, any qualifications referring to market access being limited due to the availability of spectrum/frequency were compatible with the GATS and did not need to be specifically noted.¹⁵⁴

The 'Basic Agreement' has been seen as the most significant development in the global liberalization of the telecommunications market. It has been estimated

¹⁴⁹ 33 ILM 144 (1994).

¹⁵⁰ GATS, Annex on Negotiations on Basic Telecommunications.

¹⁵¹ For a detailed history of the negotiations, see Sherman, L., "'Wildly enthusiastic" about the first multilateral agreement on trade in telecommunications services' (1999) 51(1) *Federal Communications Law Journal* 61-110.

¹⁵² The initial 69 governments have since been joined by 8 further governments. See the WTO Secretariat compilation available at <http://www.wto.org/english/tratop_e/serv_e/recap_e.xls>. The 15 EU Member States submitted one schedule: see Annex to Council Decision (97/838/EC) of 28 November 1997 concerning the conclusion on behalf of the European Community, as regards matters within its competence, of the results of the WTO negotiations on basic telecommunications services; OJ L 347/45, 18 December 1997.

¹⁵³ Note by Chairman, S/GBT/W/2/Rev.1, 16 January 1997.

¹⁵⁴ Note by Chairman, S/GBT/W/3, 3 February 1997.

that the Member countries represent over 90 per cent of global revenues in telecommunications.¹⁵⁵ The commitments made by Members encompassed market access, foreign direct investment and, for the majority of Members, adherence to a set of pro-competitive regulatory principles. The Protocol addressed the introduction of competition into the four biggest bottleneck markets within telecommunications: satellite services, international public voice telephony, domestic long distance, and the provision of the local loop.

In respect of the MFN exemptions, a number of countries specified accounting rates as outside the scope the 'Basic Agreement', including India, Pakistan, Sri Lanka, and Turkey. The US maintained a MFN exemption for DTH and DBS satellite services to enable the continuation of existing 'reciprocity' regulations.

15.4.3.1 *Reference paper*

One unique feature of the Fourth Protocol was the adoption of a 'Reference Paper' by 57 of the 69 Member signatories as an additional commitment incorporated into the Schedules. The Reference Paper comprises a set of definitions and principles on the regulatory framework governing the provision of basic telecommunications.¹⁵⁶ The principles address particular objectives for the establishment of a pro-competitive regulatory regime, rather than the mechanisms or processes for their achievement. As such, the Reference Paper represents an important body of international legal principles for the telecommunications sector, of considerably greater significance than the ITU constitutional principles.¹⁵⁷ In addition, where a Member State has incorporated the Reference Paper into its Schedule of Commitments, the principles are enforceable before the WTO Dispute Settlement Body.

In terms of competition law, the Reference Paper firstly defines two key concepts, 'essential facilities' and 'major supplier':

Essential facilities mean facilities of a public telecommunications transport network or service that

- (a) are exclusively or predominantly provided by a single or limited number of suppliers; and
- (b) cannot feasibly be economically or technically substituted in order to provide a service.

A *major supplier* is a supplier which has the ability to materially affect the terms of participation (having regard to price and supply) in the relevant market for basic telecommunications services as a result of:

- (a) control over essential facilities; or
- (b) use of its position in the market.

¹⁵⁵ See Spector, PL, 'The World Trade Organisation Agreement on Telecommunications', pp 217–222, *The International Lawyer*, vol 32, no 2, Summer 1998.

¹⁵⁶ Council Decision, n 152 above, p 52.

¹⁵⁷ See section 15.3.4 above.

The concept of 'essential facilities' originates in US antitrust law, although it has also been embraced within European Union competition law.¹⁵⁸ The concept of 'major supplier' is similar to the traditional competition concept of dominance, and is similar to the current EU concept of an 'organization with significant market power'.¹⁵⁹ The perspective of the Reference Paper is the supplier's ability to affect access to the market by others, which reflects its international trade origins.

The first two substantive issues addressed in the Reference Paper concern controls to be placed upon the ability of a 'major supplier' to be able to restrict competition. First, a supplier who, alone or with others, constitutes a 'major supplier' must be subject to 'appropriate measures' to prevent anti-competitive practices, whether current or future. Three specific anti-competitive practices are then listed:

- cross-subsidization;
- the use of 'information obtained from competitors with anti-competitive results', such as the forecast traffic volumes in interconnection arrangements; and
- 'not making available to other services suppliers on a timely basis technical information about essential facilities and commercially relevant information which are necessary for them to provide services' (paragraph 1.2)

Second, interconnection with a major supplier should be 'ensured at any technically feasible point in the network'. Such interconnection should be on non-discriminatory terms and conditions, on the basis that such terms and conditions should be no less favourable than that provided for its own 'like services', echoing the 'national treatment' principle under the GATS. The interconnection must be achieved in a timely fashion and on 'cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided'. Interpretation of this critical concept of 'cost-oriented' is already the subject of international dispute. Finally, the request for interconnection may be in respect of points which are not offered to the majority of users.

Building on the Annex on Telecommunications, the procedures and arrangements for interconnection with a major supplier must be transparent, including publication of 'either its interconnection agreements or a reference interconnection offer'. A service supplier must have recourse to an independent domestic body to resolve any disputes that may arise in respect of interconnection.

The other four issues covered in the Reference Paper address broader aspects of a pro-competitive telecommunications market:

- defining a 'universal service obligation' will 'not be regarded as anti-competitive *per se*', provided they are addressed in a transparent and non-discriminatory

¹⁵⁸ For US law, see *MCI Communications v AT&T*, 708 F 2d 1081 (7th Cir 1983), 464 US 891 (1983); for EU law, see Case C-7/97 *Oscar Bronner GmbH & Co KG v Mediaprint Zeitungs-und Zeitschriftenverlag GmbH & Co KG and Others* [1998] ECR I-7791.

¹⁵⁹ See further Chapter 5.

manner and are necessary to achieve the universal service defined by the Member State (paragraph 3);

- reflecting Article VI of the GATS, any licensing criteria must be publicly available, as well as 'the terms and conditions of individual licences'; and the reasons for any licence denial must be made known to the applicant (paragraph 4);
- although the need for, and form, of any regulator is not addressed, the Reference Paper imposes an obligation upon a Member State to ensure that any such regulator(s) are 'separate from, and not accountable to, any supplier of basic telecommunications services' (paragraph 5);
- the allocation and use of scarce resources, 'including frequencies, numbers and rights of way', should be carried out in an objective, timely, transparent, and non-discriminatory way (paragraph 6).

Whilst the Reference Paper addresses 'ends' rather than 'means', its influence is likely to be considerable at both a national and international level. First, as part of the Schedules of Commitments, the Reference Paper represents a Member State commitment to which foreign service providers may refer. Second, over time national legislators are likely to reflect and incorporate such principles into domestic law. Third, the Reference Paper represents a baseline from which any future multilateral negotiations will depart.

15.4.4 Status of WTO law

The Reference Paper, as a unique set of international legal principles for the telecommunications sector, is not only pro-competitive, but would also seem sufficiently detailed to constitute possible grounds upon which to instigate legal proceedings in the event that a Member State failed to comply. However, this begs the question of the status of the WTO agreements in the legal order of those some 60 nations that have incorporated it into their Schedule of Commitments. This issue can be further distinguished into two questions:

- whether the WTO agreements, and in particular the Reference Paper, may be used in the interpretation and application of national or regional (e.g. EU) telecommunications regulations; and
- whether the Reference Paper could be used as the basis for initiating proceedings before a court in the event of a conflict with existing regulations, i.e. have direct effect?

Within the European legal order, the Court of Justice has addressed the first issue, that of interpretation, on a number of occasions. In *Commission v Germany (International Dairy Agreement)* [1996] ECR I-3989, it was held that where the Community has entered into an international agreement, the provisions of secondary Community legislation 'must, as far as possible, be interpreted in a manner that is consistent with

those agreements' (paragraph 52). Further, in *Hermès International v FHT Marketing* [1998] ECR I-3603, the Court held that national courts, when interpreting a Community measure that falls within the scope of a WTO agreement, must apply national legislation 'as far as possible, in the light of the wording and purpose' of the agreement (paragraph 28). Therefore, a court should consider the principles contained in the Reference Paper when interpreting the application of European telecommunications laws implemented in national law.

With regard to the second issue, that of direct effect, the final recital in the Community Decision adopting the WTO agreements states:

... by its nature, the Agreement establishing the World Trade Organisation, including the Annexes thereto, is not susceptible to being directly invoked in Community or Member State courts.¹⁶⁰

Despite this, the European Court of Justice has been required to consider the issue of the status of WTO agreements on a number of occasions, most significantly in *Portugal v Council* [1999] ECR I-8395.¹⁶¹ First, the Court addressed the status of the WTO agreements in the legal order of the Member States, concluding that:

... the WTO agreements, interpreted in the light of their subject-matter and purpose, do not determine the appropriate legal means of ensuring that they are applied in good faith in the legal order of the contracting parties. (paragraph 41)

Second, their status within the Community legal order was examined. The Court considered that the WTO agreements were based on the 'principle of negotiation' which distinguished them from other international agreements that were recognized as having direct effect (paragraph 42). The Court also noted that the EC's major trading partners did not give direct effect to the agreements, which would effectively disadvantage the Community in future negotiations. Therefore, the Court concluded that:

the WTO agreements are not in principle among the rules in the light of which the Court is to review the legality of measures adopted by the Community institutions. (paragraph 47)

The Court's reasoning in this case has been heavily criticized for undermining the status of the WTO agreements.¹⁶² However, the Court did confirm its previous jurispru-

¹⁶⁰ Final recital in Council Decision 94/800/EC, of 22 December 1994, concerning the conclusion on behalf of the European Community, as regards matters within its competence, of the agreements reached in the Uruguay Round multilateral negotiations (1986-1994) OJ L336/1, 23 December 1994.

¹⁶¹ See also Case C-93/02 *Biret International v Council* [2006] 1 CMLR 17, where the court confirmed the existing position, but did leave open the possibility of private claims against EU institutions based on EU measures that are found to violate WTO law by the Dispute Settlement Body, a position which had been suggested by Advocate General Alber [2003] ECR 10, at para 24.

¹⁶² See generally Zonnekeyn, G, 'The status of WTO law in the EC legal order' (2000) 34(3) *Journal of World Trade Law* 111-125; and Griller, S, 'Judicial enforceability of WTO law in the European Union: annotation to Case C-149/96, *Portugal v Council*' (2000) 3(3) *Journal of International Economic Law* 441-472.

dence that the GATT rules could have direct effect where either the adoption of the measures implementing obligations assumed within the context of the GATT is at issue; or a Community measure refers expressly to specific provisions of the general agreement (para. 111).¹⁶³ In this regard, it is interesting to note that the European Commission's 2002 package of measures in the telecommunications sector, make explicit reference to the commitments made by the Community and its Member States in the context of the Fourth Protocol to the GATS.¹⁶⁴

In terms of UK law, the general applicability of the WTO agreements is somewhat uncertain due to the lack of clarity as to which aspects of the agreements fall within the competence of the Community, as opposed to the individual Member States. The problems raised by such joint competence were examined inconclusively in a dispute brought by the US against the Community, the UK, and Ireland, in 1997, in respect of the tariff classification of Local Area Network equipment.¹⁶⁵ In terms of the regulation of the provision of telecommunications services and networks, it would seem that the Community has competence in all aspects addressed in the Reference Paper.¹⁶⁶

In the absence of direct effect, either under European or national law, the only mechanism under which a party could seek enforcement against a Member State for failure to comply with their obligations in respect of the telecommunications sector is through the WTO Dispute Settlement Body.

15.4.5 Dispute resolution

One unique feature of the multinational trade negotiations concluded in 1994 was the establishment of a dispute settlement mechanism applicable to the trade agreements.¹⁶⁷ For the first time, disputes between Member governments about compliance with an international treaty can be submitted to an independent body, the Dispute Settlement Body (DSB), and a defaulting party may be made subject to enforcement procedures.¹⁶⁸ The 'Understanding' encompasses the GATS and therefore is applicable to disputes concerning commitments made in respect of national telecommunications markets.¹⁶⁹

¹⁶³ See Case C-280/93 *Germany v Council* [1994] ECR I-4973, paras 103–112.

¹⁶⁴ E.g. Directive 02/21/EC on a common regulatory framework for electronic communications networks and services (OJ L 108/33, 24.4.2002) at Recital 29.

¹⁶⁵ Customs Classification of Certain Computer Equipment, WTO doc. series WT/DS62, WT/DS67 and WT/DS68. See also Heliskoski, J, 'Joint Competence of the European Community and its Member States and the Dispute Settlement Practice of the World Trade Organisation', in *The Cambridge Yearbook of European Legal Studies*, Vol 2, 1999, pp 61–85.

¹⁶⁶ See Opinion 1/94 of the Court of Justice [1994] ECR I-5267.

¹⁶⁷ See generally, Merrills, JG, *International Dispute Settlement* (3rd edn, Cambridge University Press, 1998).

¹⁶⁸ The dispute settlement system under GATT 1947 was essentially a conciliation procedure.

¹⁶⁹ *Ibid*, at Appendix 1.

Under the agreed procedures, a Member government may request the establishment of a Panel by the Dispute Settlement Body with the following terms of reference:

To examine, in the light of the relevant provisions in (name of the covered agreement/s cited by the parties to the dispute, the matter referred to the DSB by (name of party) in document . . . and to make such findings as will assist the DSB in making recommendations or in giving the rulings provided for in that/those agreement/s. (Article 7.1)

However, it would not seem appropriate to characterize the DSB as a judicial body. The Panel shall comprise three individuals chosen by the DSB secretariat with the consent of the parties. In the absence of agreement, the Director-General may appoint the panellists. After an investigation, the Panel submits a report to the DSB for consideration, detailing the Panel's findings and conclusions. The DSB will usually adopt the panel report unless one of the parties notifies the DSB of its intention to lodge an appeal to the Appellate Body (Article 17). The Panel or Appellate Body will decide whether a particular Member State measure is inconsistent with the terms of the relevant agreement and may recommend ways of overcoming the issue. A Member, against whom a decision has been reached, is obliged to implement the recommendations and rulings of the DSB within a reasonable period of time (Article 21).

In the event that a Member fails to comply, the Understanding allows for the payment of compensation or the suspension of concessions (Article 22). The ability to suspend trade concessions granted to an infringing Member is the real stick within the dispute settlement procedure under the WTO. A complaining party may be able to suspend concessions or obligations not only in the sector of dispute (e.g. telecommunications), but also, where appropriate, in other sectors under the same agreement (e.g. GATS), or even under another covered agreement. Any such concession must be authorized by the DSB and should be 'equivalent to the level of the nullification or impairment' (Article 22.4).

Whilst the WTO dispute procedures are between governments, industry obviously plays an important role in bringing such matters to the attention of governments. Under European law, complaints may be submitted in writing to the Commission and a formal examination procedure may be invoked prior to the decision to pursue a dispute.¹⁷⁰ In the US, the Office of the United States Trade Representative (USTR) is required to annually solicit comments from industry on the implementation of the 'Basic Agreement' pursuant to the Omnibus Trade and Competitiveness Act of 1988.¹⁷¹

¹⁷⁰ See Council Regulation (EC) No 3286/94 of 22 December 1994 laying down Community procedures in the field of the common commercial policy in order to ensure the exercise of the Community's rights under international trade rules, in particular those established under the auspices of the World Trade Organisation; OJ L 349/71, 31.12.1994.

¹⁷¹ 19 USC s 1377. A determination that a foreign country is either not in compliance with a telecommunications-related agreement that it has entered into with the US; or denies US companies the market

The dispute settlement procedures have so far been invoked in respect of very few disputes in the telecommunications sector. Formal proceedings before the DSB have been pursued by the European Commission against Korea¹⁷² and Japan in respect of preferential trade practices in favour of US suppliers of telecommunications equipment, both of which were resolved by agreement.¹⁷³ Proceedings have also been brought by the US against Belgium, regarding telephone directory services,¹⁷⁴ which was settled. The only case to reach a Dispute Panel and a formal decision was a claim made by the US against Mexico, the so-called 'Telmex case', discussed below.

In the vast majority of situations, however, it is the threat of WTO proceedings that is used as a stick to encourage resolution through negotiations. The US has been particularly willing to issue such threats, such as against Canada, regarding discriminations against US-based carriers transmitting international traffic,¹⁷⁵ and Germany, regarding Deutsche Telekom's failure to meet interconnection obligations and discrimination against foreign carriers for call completion.¹⁷⁶

Both the European Commission and the US have threatened to take action against Japan over the introduction of the Long-Run Incremental Cost methodology for interconnection rates, as current rates are not considered to meet the 'cost-orientated' principle required under the Reference Paper.¹⁷⁷ Such threats underpinned on-going bilateral negotiations, which reached a successful conclusion in July 2000.¹⁷⁸

15.4.5.1 *Telmex*

The *Telmex* case concerned a preferential arrangement between Telmex, the Mexican incumbent, and the US operator Sprint. Other US operators, such as AT&T and MCI, complained to the US government that this arrangement was discriminatory, and therefore in breach of Mexico's commitments under the GATS, the Telecommunications Annex and the Reference Paper. Following the lodging of a formal complaint before the WTO, the Mexican regulator, Cofetel, issued new regulations requiring Telmex to terminate the preferential arrangement and provide non-discriminatory treatment to all foreign long-distance operators. Despite this, the US decided to proceed with

opportunities provided for under the agreement, is treated as a violation of a trade agreement under the Trade Act of 1974, s 304(a)(1)(A), 19 USC §2101.

¹⁷² WT/DS40 'Korea—Laws, regulations and practices in the telecommunications procurement sector', 5 May 1996. See also Agreement on telecommunications procurement between the European Community and the Republic of Korea; OJ L 321/32, 22 November 1997.

¹⁷³ WT/DS15 'Japan—Measures affecting the purchase of telecommunications equipment', 18 August 1995.

¹⁷⁴ WT/DS80 'Belgium—Measure affecting commercial telephone directory services', 13 May 1997.

¹⁷⁵ See 1998 Annual Report of the President of the United States on the Trade Agreements Program, at 257.

¹⁷⁶ See 'US warns on German telecoms', Financial Times, 12 August 99. See also 1999 Annual Report, at 293.

¹⁷⁷ E.g. 'US uses WTO threat to challenge Japanese pricing' (20 September 1999): <<http://www.totaltele.com>>.

¹⁷⁸ See USTR Press Release: 'United States and Japan agree on interconnection rates', 18 July 2000.

its request to the DSB for the establishment of a panel, which was duly formed in August 2002. The Panel was required to make determinations on a number of issues, both of fact and law, interpreting the various WTO agreements, as well as broader issues of international telecommunications law.¹⁷⁹

In terms of findings of fact, the 'relevant market' was disputed, with Mexico arguing that the operation of a traditional accounting rate regime for international calls meant that the 'relevant market' had to be two-way traffic, not just the termination of communications into Mexico, as argued by the US.¹⁸⁰ The Panel accepted US evidence that demand substitution was essential to the market definition process and that an outgoing call was not a substitute for an incoming call.¹⁸¹ In terms of market power, the Panel concluded that Telmex was a 'major supplier' on the basis of its position under applicable domestic rules, which granted Telmex the right 'to negotiate settlement rates' for the entire Mexican market.¹⁸²

On matters of law, one fundamental issue to be determined was whether conduct of a major supplier could be considered 'anti-competitive' if such conduct was required by law. Surprisingly, the European Commission, as a third party to the proceedings, supported Mexico's position that state rules could not be considered an anti-competitive practice. However, the Panel held that 'a requirement imposed by a Member State under its internal law on a major supplier cannot unilaterally erode its international commitments' made under GATS and related measures.¹⁸³

The Panel concluded that Mexico has failed to meet its commitments under both the Annex on Telecommunications and the Reference Paper. Under the Annex, Mexico had failed to comply with Articles 5(a) and (b) in respect of access to and use of the 'public telecommunications transport networks', on a facilities basis, on reasonable and non-discriminatory terms. Under the Reference Paper, Mexico's obligations to maintain 'appropriate measures' preventing anti-competitive practices (at 1.1) were held to have not been met, as well as its obligations to ensure that Telmex provided interconnection at 'cost-orientated rates' (at 2.2(b)). However, since Mexico had not made commitments for non-facilities based services, it was found not to have violated any of its obligations in respect of such services.

Both sides in the dispute had reason to be unhappy with aspects of the Panel's conclusions, but neither party chose to appeal and, in June 2004, the parties reached an agreement resolving the dispute;¹⁸⁴ with Mexico subsequently amending its resale regulations in August 2005 in full compliance with the DSB's recommendations.

¹⁷⁹ See 'Mexico—Measures affecting Telecommunication Services', Report of the Panel, WT/DS204/R, 2 April 2004.

¹⁸⁰ Ibid, at paras 4.151–4.158.

¹⁸¹ Ibid, at paras 7.149–7.152.

¹⁸² Ibid, at paras 7.153–7.155.

¹⁸³ Ibid, at para 7.244.

¹⁸⁴ WT/DS204/7, S/L/162, 2 June 2004.

15.4.6 The Doha round

As already noted, the process of trade liberalization under the WTO regime is an ongoing one, with multinational negotiations attempting to broaden and deepen the commitment of Member States to free trade. The current round of negotiations formally commenced at Doha, Qatar, in November 2001.¹⁸⁵ In parallel with these negotiations, Member States are negotiating and entering into bilateral trade agreements with trading partners, at a level which generally goes beyond that which states are prepared to commit at a multinational level. Telecommunications forms a component of the current round, with the major industrialized countries calling upon other countries to make commitments to fully liberalize and the 'elimination of MFN exemptions for telecommunication services'.¹⁸⁶ Other than such calls for adoption, however, there is little by way of substantive proposals to amend the existing agreements; which is illustrative of how far and successful the current agreements have been in terms of fundamentally changing national and international telecommunications law.

15.5 CONCLUDING REMARKS

The international regulatory regime for the telecommunications industry can be seen to comprise a substantial body of principles, rules, and regulations. At the highest level, the international trade agreements address issues of market access, promoting competition throughout the telecommunications sector. The treaties governing the use of space and the sea determine the obligations of operators, through their respective governments, when utilizing common resources in the provision of telecommunications services.

At the next level down, the ITU continues to represent the primary source of rules and regulations detailing the manner and means by which operators in different jurisdictions cooperate to achieve international telecommunications services. Industry consolidation through global mergers and joint ventures are likely to have minimal impact on the need for such rule making. As such, the ITU is likely to continue to be one of the main international forums for the telecommunications industry.

The process of liberalization has resulted in the demise in importance of the international satellite conventions, which may eventually disappear as instruments of international telecommunications law, though not as operating entities. The rise of

¹⁸⁵ WTO Ministerial Declaration, 14 November 2001 (WT/MIN(01)/DEC/1). See also Chapter 17, at 17.4.1 for a discussion of competition policy within the Doha Round.

¹⁸⁶ TN/S/W/50, 'Communications from Australia, Canada, the European Communities, Japan, Hong Kong China, Korea, Norway, Singapore, the Separate Customs Territory of Taiwan, Penghu, Kinmen, and Matsu and the United States', 1 July 2005.

the WTO as *the* forum for telecommunications law over recent years has been very significant. However, over time its role may diminish, as open competitive markets become the international norm. A similar process can be seen within Europe, where the Commission is currently in the process of overhauling the existing regulatory framework to reflect the end of the phase of liberalization, enabling moves towards a less detailed competition-based regulatory regime.

TELECOMMUNICATIONS REFORM IN DEVELOPING COUNTRIES

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16.1 INTRODUCTION

The past ten years have seen a transformation of the telecommunications sector in the developing world. Governments have established new regulatory regimes and institutions, corporatized and privatized their state-owned telecommunications operations and liberalized markets by issuing licences to new entrants. During the

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same period, global telephone subscribers quadrupled from 1 billion to 4 billion (mostly due to the widespread adoption of mobile services), world teledensity increased from 15 per cent to more than 60 per cent, and world mobile penetration reached almost 50 per cent.³

The economic downturn that began in 2000 had a substantial impact on the developing world, both changing the competitive landscape and influencing the types of transaction that took place. Despite the downturn, sector reform continued unabated, as many governments continued to pursue aggressive liberalization policies. However, traditional strategic investors (both fixed and mobile) from developed countries largely lost interest in the telecommunications sectors of developing countries, focusing instead on core markets, cutting costs, reducing debt, and rehabilitating credit ratings. Consequently, governments in the developing world found the traditional privatization routes of strategic sale to developed country operators and international initial public offerings (IPOs) increasingly difficult. Where strategic sales were successfully held, the strategic investor was more likely to be an operator from the developing world seeking to develop a regional presence. In some cases, governments resorted to alternative approaches such as local listings, management contracts, and trade sales to private equity funds.

With respect to sector liberalization, during the downturn, developing countries had to work harder to attract investors and new entrants, and consequently focused more on the design of competitive processes and on regulatory refinements to enhance the attractiveness of newly liberalized markets to investors. Bidders in auctions for new entrant licences tended to be operators from emerging markets looking to expand beyond their home markets and capitalize on the often exponential growth in the mobile sector, rather than traditional strategic investors from developed countries.

These changes resulted in the emergence of a new breed of large, dynamic regional operators, particularly in Asia and the Middle East. Post-downturn, strategic investors from the developed world have shown renewed interest in developing markets, particularly as opportunities for growth in their home markets slow, but have increasingly found themselves competing against these new powerful regional operators for a shrinking number of investment opportunities.⁴

The retreat of developed country operators during the downturn and the emergence of these new regional players has caused a geographic shift in investment flows in the global telecommunications sector: instead of the traditional uni-directional

³ ITU World Telecommunication/ICT Indicators Database.

⁴ E.g. in December 2007, when a consortium led by Vodafone won the bid for the second mobile licence in Qatar, the six other qualified bidders comprised ACE Consortium (which included Airtel), Argos Consortium (which included Verizon), AT&T Bahrain-based Batelco, UAE-based Etisalat, and Kuwait-based Zain (formerly MTC). See 'Seven Bidders Selected for Qatar's Second Mobile Licence', *Global Insight*, 19 September 2007 and 'Vodafone Consortium Wins Second Qatari Mobile Licence', *Global Insight*, 11 December 2007. Similarly, the three winners of the new fixed-line licences in Saudi Arabia were Bahrain's Batelco, Hong Kong's PCCW, and US firm Verizon Communications ('Saudi Fixed-Line Winners to Receive Licence in July', *Global Insight*, 16 June 2007).

investment flows (primarily from the US and Western Europe to the developing world), investment flows are now regional and multi-directional.

Yet despite the significant changes in global telecommunications markets, the reform agenda in developing countries has remained remarkably constant: establishing a new regulatory authority, enacting a modern regulatory regime, modernizing the incumbent state-owned operators, and attracting new entrants. In addition, those countries that have undertaken reforms have placed increasing emphasis on ensuring that such sector reforms are implemented effectively, and have sought to enhance the effectiveness of national regulatory authorities by investing in capacity-building. Where resources and skills are limited, some countries have sought to achieve efficiencies and higher quality regulation through the creation of multi-sectoral regulators, which pool expertise across multiple industries. Regional initiatives to coordinate regulatory approaches and to share expertise have emerged, which are intended to improve the quality and predictability of decision-making.

Following liberalization and privatization, as the number of market participants grows and the range of services provided multiplies, so too do the number of potential disputes, and their complexity increases. Thus, in the aftermath of liberalization and privatization initiatives, the successful management and resolution of disputes assumes even greater importance.

This chapter will address the following issues:

- characteristics of telecommunications markets pre-reform;
- the impetus for, and objectives in, undertaking sectoral reforms;
- the components of a comprehensive reform package; and
- managing sector disputes in the aftermath of liberalization and privatization.

This chapter deals generally with the impetus for and content of sector reform processes, while the specifics of the design and content of telecommunications regulatory frameworks in developing countries is discussed in Chapter 17.

16.2 CHARACTERISTICS PRE-REFORM

Prior to reform, telecommunications and postal activities in most developing countries are combined and provided by the same parastatal or State-owned entity, operating under a government department or ministry, commonly-known as the PTT ('posts, telegraph, and telecommunications'), usually with no accounting or structural separation between its different activities.⁵ Often a single ministry or administrative agency undertakes the simultaneous and indistinct roles of operator, regulator,

⁵ There were a few exceptions, such as in the Caribbean, where in most of the English-speaking islands Cable & Wireless until the early part of the 21st century enjoyed a private monopoly.

and policy maker, and military and national security agencies often have significant influence.⁶ The military sometimes also control large parts of the radio spectrum, some of which may need to be relinquished as part of the liberalization process.

PTTs, pre-reform, generally enjoy monopoly rights of varying scope and duration, covering, at a minimum, fixed voice telephony services and telecommunications infrastructure, but sometimes including all telecommunications services and even internet services.⁷

State-owned incumbents often operate pursuant to a (politically motivated) five-year plan rather than a licence, and enjoy special property rights (such as the use of public property for no, or minimal, payment), special radio spectrum rights, and special customs duties, and tax exemptions. Employees have civil servant status, making internal restructuring difficult; over-staffing and inefficiencies are commonplace. Management of the state-owned incumbent is often unprepared to face the challenges of a commercially driven, competitive environment.

Regulatory controls are usually exercised either on a *de facto* basis by the PTT itself or by the ministry or department responsible for the PTT. As a result, political imperatives often drive sector policy, such as overstaffing state-owned incumbents to reduce unemployment, or causing the incumbent to build out its network in certain regions for strategic political advantage.

Prior to reform, the state-owned monopoly is generally subject to no, or minimal, service obligations, usually resulting in low fixed-line penetration (historically often below 1 per cent in sub-Saharan African countries), little network investment, poor quality of service, long waiting lists for telephone lines, inaccurate and late billing, and a limited range of services.

The tariff structure of the PTT in developing countries pre-reform is typically unbalanced, with revenues generated from high international and long-distance tariffs typically used to subsidize cheap, below-cost installation, line rental, and local call rates, which are often kept low for political and social reasons. However, this model has become untenable even without sector reforms, as voice over Internet protocol (VoIP) and international call-back services (whether or not authorized) have provided *de facto* competitive alternatives to the incumbent's expensive international services. Still, politically captured and inefficiently run incumbents who are unable to meet the most basic communications demands of the population, typically hinder both sector and general economic development.

Perhaps for this reason, examples of pre-reform countries have become increasingly rare. One example is Azerbaijan, where the Ministry of Communications and

⁶ See, e.g., Smith, Warrick, 'Utility Regulators—Roles and Responsibilities', *Viewpoint Note No 128*, the World Bank (October 1997).

⁷ The scope of Cable & Wireless' private monopolies in the Caribbean was also extremely wide, covering in many cases fixed, mobile, data, value-added, Internet, and satellite services as well as infrastructure. In the case of Dominica, Cable & Wireless's monopoly was effectively 'future-proofed' from technological developments, so that any future telecommunications service would automatically fall within its scope.

Technology currently has a triple role as policy-maker, regulator, and investor (owning both the wholly state-owned incumbent and significant stakes in most of the competing operators). The conflicts of interest that this creates have significantly hampered the development of the sector.

16.3 IMPETUS FOR UNDERTAKING REFORM

Although the impetus for reform in the telecommunications sector has evolved over time and varies from country to country, there are a number of common drivers. The impetus to undertake wholesale sector reform does not always originate with national government. Occasionally, it is the result of collective political and economic will at a regional level. Alternatively, it may derive from international pressure. For example, World Trade Organization (WTO) membership may be conditional upon applicants making commitments to sector reform. Similarly, reforms may be required as a condition to receiving access to credit facilities from international financial institutions. Other institutions may simply promote, encourage, or finance sector reforms. In a post-conflict situation, reforms may be instituted by an external agency with interim authority, or may be necessitated by the need to support reconstruction and stabilization efforts. That said, even where the catalyst for sector reform is external, the process is widely regarded as being in a government's own interest given the role of communications services as an engine of wider economic growth.

16.3.1 The role of the World Trade Organization (WTO)⁸

In the past ten years, the WTO has played a pivotal role in furthering telecommunications liberalization and encouraging regulatory reform in developing countries, as membership of this global trading system has required applicants to make liberalization commitments relating (*inter alia*) to the telecommunications sector, and to adopt a set of best-practice regulatory principles.

Telecommunications was put on the WTO's agenda during the 1990s, when it was recognized that the sector has a special status as an engine for economic growth generally, as well as being a distinct sector of economic activity. The WTO conducted a series of negotiations in relation to the liberalization of trade in the telecommunications sector, under the umbrella of the General Agreement on Trade in Services (GATS).

Prior to the mid 1990s, few governments had offered commitments under the GATS to liberalize 'basic' telecommunications (i.e. fixed voice telephony and other core telecommunications services), and in the vast majority of countries these were

⁸ See further Chapter 15, at 15.4.

subject to long-standing monopolies. In 1998, the Agreement on Basic Telecommunications was annexed to the Fourth Protocol of the GATS to extend previous sector liberalization commitments to 'basic' telecommunications. The Agreement consists of a set of schedules of specific, binding commitments by WTO members to provide market access and national treatment in basic telecommunications. At its inception, 69 countries committed to open their telecommunications markets immediately or by a specified implementation date. Ten years later, more than 100 countries had committed to open some or all telecommunications markets. While in some cases liberalization commitments were made voluntarily (with some existing members offering to improve their existing sector commitments), in some developing countries the nature and scope of commitments was the result of political pressure from developed country WTO Member States, eager to open foreign markets to their own investors and to reduce restrictions on cross-border communications. In some cases, acceding members were given a grace period before being required to open up basic telecommunications services to competition. Cambodia and Nepal, for instance, acceded in 2004 and were each given five years to liberalize basic telecommunication services.⁹ New Eastern European/CIS members, such as Moldova, Georgia, Croatia, and the Kyrgyz Republic, were required to make market access commitments that open up basic telecommunications services to competition within two to four years of WTO entry.¹⁰

In addition to making commitments on market access and national treatment for telecommunications services, Member States were encouraged to adhere to a common set of regulatory principles as part of their telecommunications sector commitments. These principles set out the agreed elements of a telecommunications regulatory framework, covering competition safeguards, interconnection, universal service, licensing, independent regulation, and management of scarce resources, and are set out in the 'Reference Paper' appended to the Agreement on Basic Telecommunications.¹¹ Most WTO members who have made liberalization commitments have also committed to implementing the Reference Paper, usually by incorporating it in their schedules.

Although simply a high-level statement of principle rather than a detailed 'shopping list' of regulatory provisions, the Reference Paper nonetheless provides guidance

⁹ Cambodia's and Nepal's schedule of commitments require them to liberalize fixed voice telephony services by January 2009 (WT/ACC/KHM and WT/ACC/NPL). In addition, Nepal's schedule of commitments required Nepal to license a second mobile operator in 2004 and to remove all limitations on the number of mobile operators by January 2009.

¹⁰ Moldova's schedule of commitments entered on 21 December 2001 required the Moldtelecom monopoly to be removed by 31 December 2003 (WT/ACC/MOL). The Republic of Croatia entered commitments on 22 December 2000, which required HT-Croatian Telecommunication's monopoly to be lifted no later than 1 January 2003 (WT/ACC/HRV). Georgia, whose commitments were also entered in December 2000, was permitted one year longer: until 1 January 2004 (WT/ACC/GEO). The Kyrgyz Republic's commitments entered on 22 April 1999 required the monopoly over international and long distance communications to be lifted from 1 January 2003 (WT/ACC/KGZ).

¹¹ The Reference Paper is available at <http://www.wto.int/english/tratop_e/serv_e/telecom_e/tel23_e.htm>.

to governments around the world (including those who are not currently WTO members) on internationally accepted regulatory practice.

16.3.2 The role of multilateral development institutions

The WTO is not the only multilateral agency that has been involved in shaping the evolution of developing countries' telecommunications sectors. Multilateral development institutions, through their lending and advisory activities, have also played an important role. In this section, we use the term 'multilateral development institution' to cover both international financial institutions (IFIs)¹² and national bilateral aid agencies or programmes providing grant funding for technical assistance and other forms of support. In addition, of course the International Telecommunication Union (ITU), a United Nations specialized agency, has broad responsibility for and impact on telecommunications development.

While each multilateral development institution pursues its own development mandate according to its own constitution or agenda, each can play an important part in providing credibility to a country's reform process. Some institutions (such as the IFC and the EBRD, for example) can play a role in the reform process by making path-breaking investments in a country's telecommunications sector. While the World Bank deals almost exclusively with governments and parastatals, the IFC's activities are almost entirely with private sector entities, or entities in the process of being privatized, mainly in the form of making debt or equity investments in operators (though the IFC also provides transactional advisory services). Some institutions (such as MIGA) can provide comfort to investors by providing guarantee instruments in connection with certain commercial transactions. IFIs may also work alongside each other, such as in Central Asia, where the World Bank, the Asian Development Bank (ADB), the EBRD, and the European Union (through the TACIS programme) are all active.

Apart from making financial investments in and otherwise providing financial support to operators (e.g. through guarantees), multilateral development institutions can also play an important role in sector reform by providing funding for technical assistance in the sector reform process, and increasingly are providing the technical assistance directly to countries on a reimbursable basis. Such assistance can take the form of policy advice, advice on legal and regulatory reform, privatization transactional assistance, engineering services such as frequency monitoring, and capacity building for the newly created regulators in the sector. Multilateral development

¹² These include (i) the members of the World Bank Group (International Bank for Reconstruction and Development (IBRD); International Development Association (IDA); International Finance Corporation (IFC); the Multilateral Investment Guarantee Agency (MIGA); and the International Centre for the Settlement of Investment Disputes (ICSID)); (ii) the European Bank for Reconstruction and Development (EBRD); (iii) the European Investment Bank (EIB); (iv) the African Development Bank (AfDB); (v) the Asian Development Bank (ADB); and (vi) the Inter-American Development Bank (IADB). When referred to in this chapter, the World Bank means the IBRD and the IDA.

institutions can play a catalytic role in sector development, by working with governments to create transparent legal and regulatory environments, and to mobilize private capital and management.

The World Bank and other IFIs may also be involved indirectly in sector reform (i.e. other than through providing funding for advisory services) through so-called 'policy-based' lending (similar to what were once known as structural adjustment operations) that incorporates certain conditions or targets involving reform. In such a case, the disbursement of a non-telecommunications loan or a credit (even though geared to achieving macroeconomic objectives) may be made conditional upon, for example, the recipient government introducing market-liberalizing legislation or offering for sale a strategic stake in the incumbent.

The World Bank also co-finances projects with other IFIs, and, as a Bretton Woods sister institution of the WTO, cooperates with the WTO in its areas of competence. In this sense, the World Bank played an instrumental role in providing encouragement and funding (through *infoDev*)¹³ to some 20 of the nearly 70 countries that submitted offers on the WTO telecommunications agreement in 1997, assisting them in the preparation of their offers. Since that time, the World Bank has assisted countries in implementing their offers into national legislation. Other examples of cooperation among multilateral institutions in the sector include joint products of the World Bank and the ITU, for example, the updated, on-line ICT Regulation Toolkit and the online database of regulators' decisions.¹⁴

Other IFIs include the EBRD which, like the IFC, makes investments in operators, but also provides funds for advisory services in the sector reform process, either as stand-alone legal reform projects, or in conjunction with its investment activities. In addition, several countries have their own national aid agencies which have been active in telecommunications sector reform, including the Canadian International Development Agency (CIDA), the Danish International Development Agency (DANIDA), the Swedish International Development Agency (SIDA), the UK Department for International Development (DfID), the US Agency for International Development (USAID), and others. The European Union, through its PHARE and TACIS programmes, has also provided many of the same kinds of support.

Looking ahead, in recognition of market changes, the focus of IFI assistance is being re-oriented from a narrow focus on the traditionally defined telecommunications sector towards a more comprehensive approach reflecting the convergence in

¹³ *infoDev* is the Information for Development Grant programme, a multi-donor grant programme administered by the World Bank, whose purpose is to promote projects on the use of information and communications technologies for economic and social development, with special emphasis on the needs of the poor in developing countries. More information is available at <<http://www.infodev.org>>.

¹⁴ The ICT Regulation Toolkit, funded by *infoDev*, is available at <<http://icttoolkit.infodev.org/en/index.html>>. The Regulators' decisions database can be accessed at: <<http://www.ictdec.org/>>. It is a multilingual, searchable database of decisions of regulators from around the world. It gives regulators and other decision-makers involved in resolving disputes access to sector 'precedent' from other jurisdictions. Access to such precedent is aimed at facilitating better informed decision-making in resolving disputes and regulatory questions in other jurisdictions.

the telecommunications, broadcasting, and information technology sectors globally, and the challenges posed by the 'digital divide'.

16.3.3 Other multilateral initiatives

The issue of the development of sector regulation (and its impact on wider economic development) has also been the subject of discussions at other global fora, including at the UN's two-phase World Summit on the Information Society (WSIS), which demonstrated a global acknowledgment of the importance of a well-regulated information society to development.

The first phase of WSIS was concluded in December 2003. The second phase was concluded in late 2005, with the issuance of the so-called 'Tunis Commitment' and the 'Tunis Agenda for the Information Society' (Tunis Agenda).¹⁵ Notable among the many statements, declarations, and other provisions of the summit documentation are the following two outcomes: the formation of the Internet Governance Forum (IGF) (under the auspices of the UN Secretary General) and the WSIS Action Line Items that flow from the Tunis Agenda.¹⁶ The IGF—though focusing on the internet—covers many issues traditionally thought of as being in the telecommunications sector. In *de facto* recognition of convergence, issues such as access to communications infrastructure, data security, and the right to receive and impart information—traditionally thought of as telecommunications issues—are now being discussed in the IGF.¹⁷ Similarly, the WSIS Action Line Items, conducted under the auspices of the ITU,¹⁸ include such issues as information infrastructure, access to information, critical infrastructure security, the legal and regulatory enabling framework, and other related issues previously thought of as 'telecommunications' issues.

Certain of the issues addressed in the WSIS context might at first blush appear to be somewhat abstract or theoretical. For example, one of the issues identified at WSIS was the question of access to communications as a constitutional right; a novel argument, yet one which has had real application in the Caribbean for a major global operator (see box below).

Dominica: *Marpin*, telecommunications and constitutional freedoms

In the Organisation of Eastern Caribbean States (OECS), various arguments had been made on whether the Cable & Wireless (C&W) monopolies in the individual countries were unconstitutional.

¹⁵ The Tunis Commitment and Tunis Agenda can be found at: <http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=2266|0>.

¹⁶ The IGF website can be found at: <<http://www.intgovforum.org>>.

¹⁷ The 'right to receive and impart information' is inherent in Art 19 of the Universal Declaration of Human Rights.

¹⁸ <http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=2266|0>.

In Dominica, C&W had a 25-year telecommunications licence expiring in 2020 containing a broad exclusivity (including national and international telecommunications services). Marpin was granted a licence in 1996 to provide cable TV services and associated telecommunications services. Marpin then decided to provide email and Internet services offering international communications. In early 1996 it was told by the government that it could do this using C&W's network. In early 1997 it entered into an agreement with C&W for access to the Internet via C&W leased lines and using C&W terminating equipment, and for an allotment of 1-800 numbers for customers' Internet access. In March 1998, Marpin gave notice that it was terminating the agreement, and it began to use VSAT to bypass the C&W network for international access. C&W responded by withdrawing the numbers.

Marpin brought an action in the Dominican High Court, claiming that C&W's exclusive licence to provide national and international telecommunications services infringed that country's constitutional guarantee of freedom of communications. Both the High Court and the Court of Appeal found for Marpin, and C&W appealed to the Judicial Committee of the Privy Council, the court of final appeal.¹⁹

The Privy Council allowed the appeal, but sent it back to local courts on the basis that, while theoretically a monopoly could contravene the constitutional freedom of communications, the question of whether the monopoly was reasonably required to ensure universal access to telecommunications services should be determined by local conditions. Ultimately the 2001 agreement between the five members of the OECS and C&W settled the dispute. Marpin was licensed to provide voice services within Dominica, but its customers were not permitted access to C&W international circuits. Without such a settlement, C&W's monopoly would have remained vulnerable to constitutional challenge in the Dominican courts, which could then have been used as a precedent for similar suits in other OECS countries.

The role that the efficient provision of communications infrastructure and services plays in this regard is also reflected in the Millennium Development Goals (MDGs), a set of development targets developed during the 1990s and adopted by the Member States of the United Nations in 2000, in the form of the Millennium Declaration.²⁰ Indeed, the MDGs and WSIS put the economic and social imperatives

¹⁹ *Marpin*, privy Council Appeal No 15 of 2000.

²⁰ The MDGs can be found at: <<http://www.developmentgoals.org/>>. In terms of the MDGs, telecommunications most obviously supports MDG 8, target 18 (working with the private sector to make the benefits of Information and Communication Technology (ICT) available to all). Moreover, a recent analysis of how telecommunications and ICT support all of the MDGs which was presented at the first phase of WSIS can be found at: <<http://www.un.org/millenniumgoals/bkgd.shtml>>.

front and centre of the reform debate and arguably give the imprimatur of the international community to these objectives.

16.3.4 Conflict and post-conflict rebuilding

In a post-conflict situation, the impetus for reform may come from an external agency exercising interim authority. Such interim occupying or governing authority is likely to place development and reform of the communications sector high on the post-conflict reconstruction agenda, due to the importance of communications in enabling other rebuilding efforts, restoring order, and supporting humanitarian initiatives. In contrast, in countries where conflict is enduring, entrepreneurs and operators may develop market-based or pragmatic solutions to enable communications infrastructure to be built and telephony services to be deployed in the absence of a functioning government or regulatory framework.

While communications is recognized as a vital platform for the restoration of social and economic order and development, large investments are generally required to rebuild or replace network infrastructure destroyed in the conflict. Yet sovereign governments may not yet have been reinstated, and in any event are likely to be financially weak and dependent on donor aid. Private sector investment is therefore generally required to rebuild the sector. Still, striking the balance between profitability, affordability, and the need to swiftly restore communications services nationwide is usually fraught with difficulty.

In some cases, private investors may flock to post-conflict countries, even where a sovereign government and an enabling regulatory environment have not been established. A country emerging from conflict may be seen as a *tabula rasa*, with the potential to rebuild a sector from scratch and to provide high-margin communications services—particularly a country which is perceived to have great potential given its location and demographic. Some such investors may see the opportunity for quick profit, given the unmet need for communications services and lack of competing alternative providers. Others may see a longer-term advantage from being first to market. Usually such investment has centred on wireless technologies, given the ease and lower cost of rolling out wireless networks and the lower security risks entailed.²¹ By contrast, private investors have shown little interest in rebuilding fixed networks, given the generally dilapidated and damaged state of existing infrastructure, the high costs of fixed network installation and the lack of enforceable property rights to protect wireline installations.

²¹ See, e.g. 'Progress Made in Iraq's Wireline Reconnection, But the Future is Wireless', *Global Insight*, 27 February 2004, and 'Sierra Leone: Opportunity Outweighs Risk in Cellular Market', *Global Insight*, 4 August 2002. See also the post-conflict reconstruction in Lebanon, which in the communications sector centred on the award in 1993 of two build-operate-transfer contracts for GSM mobile networks rather than the rebuilding of the fixed network.

For example, in Iraq, an interim occupying authority, the Coalition Provisional Authority (CPA), was put in place following the defeat of the Baa'thist regime in the 2003 Iraq war. The CPA regarded the resuscitation of the communications sector as a high priority: robust communications services were needed to support reconstruction efforts, underpin economic redevelopment, and promote law and order, as well as to provide a tangible benefit to the general public in an attempt to increase popular support for the occupation. The CPA therefore conducted a mobile licence auction within months of the official end of the war. The regulatory environment was far from satisfactory: not only was no governing regulatory framework put in place, but the CPA's authority to grant licences was also in question. Moreover, the auctioned licences were limited to a term of two years, and the CPA emphasized that successful bidders had no guarantee that issued licences would be recognized or upheld following the transfer of power to a sovereign Iraqi government.²² Despite this fundamental regulatory uncertainty, however, interest in the auction was tremendous, with at least 35 bidder consortia (both regional and international) vying for the three available licences.²³ Their eagerness to participate in the Iraqi telecommunications sector reflected not only the strategic location of Iraq itself (and the perception that there would be foreign interest in the country for years to come), but also the unmet demand among the well-educated and technically literate population. While two years was unlikely to be sufficient time for the successful bidders to recoup their investments, they saw the benefit in being first to market and gambled (correctly) that a future sovereign Iraqi government would recognize and renew their licences on the basis of their performance. Despite tougher than expected operating conditions and extremely high security and other operating costs, being first to market (with an existing subscriber base and network infrastructure) had its rewards, as the Iraqi government duly extended the CPA-issued temporary licences and in 2007 ultimately awarded two of three 15-year nationwide mobile licences to operators that held CPA-issued licences (Zain (formerly MTC-Atheer) and AsiaCell)). The third CPA licensee, Orascom's Iraqna, withdrew from bidding in the 2007 auction, citing the high licence price (US\$1.25 billion), and subsequently agreed to sell its existing operations to Zain.²⁴ Despite the considerable risks, the Iraqi market continues to be regarded as having among the highest growth potential in the Middle East, particularly given the lack of fixed-line infrastructure and the acute need for communications services.

Afghanistan tells a different story. Like Iraq, the existing communications network infrastructure had been largely destroyed, following decades of conflict and under-investment. A mobile licence auction was held by the fledgling new Afghan

²² See, e.g. 'Iraq awards mobile phone licences' 'The CPA Mobile Tender: A Risky Proposition, But One Not to Be Missed', *Global Insight*, 28 October 2003.

²³ 'Regional Bidders Successful in Iraq's Mobile Licence Tender', *Global Insight*, 7 October 2003.

²⁴ 'Three Iraqi Mobile Licences Awarded to MTC-Atheer, Asiacell and Korek', *Global Insight*, 17 August 2007 and 'Orascom's Nine-Month Profit Up 116%, Sells Iraqna for US \$1.2 bil.', *Global Insights*, 3 December 2007.

government less than a year after the ousting of the Taliban, but the auction failed to attract the levels of interest seen in Iraq. Interestingly, the winning bidder consortium was a joint venture between a development aid agency, two foreign operators, and an equipment manufacturer, in an apparent attempt to spread the investment risk.²⁵ Yet even Afghanistan, which has one of the lowest mobile penetration rates in the region and an ongoing conflict, has seen interest in its mobile sector grow, as opportunities to acquire mobile licences become increasingly scarce globally (a testament to the wave of liberalizations in recent years) and regional operators see home markets become increasingly competitive and reach saturation. Two further GSM licences were auctioned in 2005, which were purchased by Lebanese-owned Investcom and UAE-based Etisalat for US\$40 million.²⁶ To rebuild the fixed network infrastructure, however, the Afghan government has had to rely on financial support from donor countries, including India, Iran, and Russia,²⁷ as well as the World Bank and the ITU, and consequently investment in the rebuilding of infrastructure has been low.²⁸

In Somalia, on the other hand, reconstruction occurred organically without any formal or organized sector reform or reconstruction. There, the state-owned PTT administration collapsed in the early 1990s when the country was plunged into civil war. Today, much of the country remains in the control of rival faction leaders and attempts to re-impose central authority have largely failed. Despite the lack of any regulatory framework or government authorization, more than ten small- to medium-sized telecommunications operators offering a variety of fixed-line, mobile, and internet services using various technologies have been established by local entrepreneurs keen to fulfil unmet demand. However, the continuing conflict has hampered the expansion of telecommunications services in volatile areas where the risks of investment are perceived to be too great.²⁹

²⁵ The winning bidder, Roshan (formerly the Telecom Development Company of Afghanistan), was owned by a consortium that includes the Aga Khan Fund for Economic Development, Vivendi (through Monaco Telecom International), MCI and Alcatel. See 'Competition Introduced to Afghan Mobile Market', *Global Insight*, 30 June 2003 and 'Afghans get Second Mobile Phone Network', *Total Tele.com*, 28 July 2003.

²⁶ See 'Etisalat buys Afghan mobile licence—reports UAE-based company signs 15-year US\$40.1m deal for GSM licence', *Total Telecom*, 23 May 2006; 'Investcom, Saudi-US Consortium Win Afghanistan's Two GSM Licences', *Global Insight*, 16 September 2005; and 'Etisalat Awarded Afghan Mobile Licence', *Global Insight*, 24 May 2006.

²⁷ 'India to Help Rebuild Afghan Telecoms Infrastructure', *Global Insight*, 31 March 2003; 'Iran to Aid Afghanistan in Telecoms Development', *Global Insight*, 9 May 2003.

²⁸ 'World Bank lends Afghanistan \$22m for Telecoms', *Total Tele.com*, 8 October 2003 and 'ITU to provide US\$0.5m Funding for Afghanistan', *Total Tele.com*, 6 December 2002. This financial assistance was also intended to cover technical support in designing and implementing a new regulatory framework for the sector.

²⁹ Bray, J, 'International Companies and Post-Conflict Reconstruction Cross-Sectoral Comparisons', p 19, <http://www-wds.worldbank.org/servlet/WDSCContentServer/1W3P/IB/2005/03/30/000012009_20050330161732/Rendered/INDEX/31819.txt>; 'Somalia: Somali Operators Agree to Interconnect Networks', *Global Insight*, 2 November 2005; and 'Telsom Mobile Links Somalia and Somaliland, Awards GSM Contract to Tecore', *Global Insight*, 26 September 2003.

It is perhaps still too early to tell whether the rewards gained by the new operators in each of these countries are sufficient to reflect the levels of investor risk taken. These new players lack the security of market protectionism, and are likely to face significant competition in the short to medium term if retail tariffs are set too high. In stark contrast, in Lebanon, the two mobile operators awarded the build-operate-transfer (BOT) contracts in 1993 following the end of the civil war had a contractual right to an extended mobile duopoly and consequently their initial investment proved highly profitable. See sections 16.7.4 and 16.7.5 below.

Enduring and sustainable development in a post-conflict country is likely to be contingent upon the enactment of a modern regulatory framework to manage the development of competition and to balance the objective of investors to recoup their initial investment with wider economic and social interests. Without such framework, sector development may be sub-optimal and *ad hoc* government intervention may be needed to manage operator interaction. A good example is Somalia, where, in the absence of any formal legal framework, operators have formed self-regulatory bodies to coordinate their operations and manage disputes. For example, in 2005, five operators in the self-declared republic of Somaliland in northern Somalia were able to reach agreement on direct interconnection between their networks for the first time, working together under the aegis of the Somaliland Telecom Operators Association. Prior to this agreement, it was not possible for subscribers of one network to make direct calls to a subscriber on another.³⁰

Bosnia and Herzegovina: role of the OHR

The Dayton Peace Agreement, which marked the end of the military conflict in the former Yugoslavia in 1995, established the Office of the High Representative (OHR) to act as the primary civilian peace implementation agency in Bosnia and Herzegovina. The High Representative was tasked with overseeing the implementation of the civilian aspects of the Peace Agreement on behalf of the international community, and coordinating the activities of the civilian organizations and agencies operating in Bosnia and Herzegovina. The OHR's mission is defined as 'ensuring that Bosnia and Herzegovina is a peaceful, viable state on course to European integration.'

To this end, among its various activities, the OHR promulgated the BiH Telecommunications Law in 1998, which not only provided a regulatory framework for the BiH telecommunications sector, but also established the regulator (the Communications Regulatory Authority, or CRA). In the first few years of its existence, the CRA was staffed with OHR-appointed international staff members, but during 2003 control of the CRA shifted to BiH nationals, as part of the process of disengagement from those areas where they have fulfilled their mandate.

³⁰ 'Somalia: Somali Operators Agree to Interconnect Networks', *Global Insight*, 2 November 2005.

Other recent post-conflict countries include Liberia, East Timor, and the Solomon Islands. These countries are all currently involved in various stages of reform processes, attempting to balance the interests of private incumbents with exclusive rights against the benefits of competition (as a driver of sector reform and as a basis for economic development). As reform efforts in these countries are still in progress, it is too early to tell as of this writing what the outcomes will be.

16.3.5 Economic and social pressures

It is widely accepted that an efficient and competitive communications sector is key to enhancing productivity and driving economic growth and development. Moreover, modern communications networks and services are seen as vital to participation in the global economy, to attracting foreign direct investment, and to overcoming the 'digital divide'.³¹ For these reasons, even in the absence of external pressures to undertake reforms, many countries have nonetheless chosen to liberalize markets and introduce modern regulatory frameworks.

Examples include Bahrain, the UAE, and Qatar, each of which has in recent years introduced a new regulatory framework, fully liberalized all telecommunications markets, and established a sector regulatory authority. Yet none of these countries made WTO commitments in the telecommunications sector,³² and none receives credit or financial assistance from IFIs or other multilateral development agencies. Instead, each recognized that sector reforms were required to improve service quality and reliability, to lower communications costs, and to facilitate the growth of the high-tech sector and introduction of new convergent services, in order to maintain a position as a financial hub, and to compete in global markets.

This trend can be compared to the reform effort in the EU in the 1990s: the European Commission similarly recognized that the legal and regulatory environment had a direct impact on sector development, and that the emergence of sophisticated and competitive pan-European services would require community-wide sector reforms.

16.4 GOVERNMENT OBJECTIVES

Whatever the overriding impetus for undertaking a process of sector reform, the reform agenda will reflect the relevant government's own policy objectives, both short- and long-term. Common government objectives are summarized below.

³¹ Also, see, generally, Kessides, I, *Reforming Infrastructure—Privatisation, Regulation and Competition* (The World Bank, 2004).

³² Commentators, however, suggest that the UAE's decision to abolish Etisalat's fixed monopoly in 2004 was prompted, at least in part, by an expected review by the WTO of its exemption from telecom deregulation commitments. Country Report: United Arab Emirates', *Global Insight*.

16.4.1 Attracting foreign investment

Governments usually wish to encourage foreign investment in the domestic communications market, typically as investors in (or managers of) the incumbent state-owned telecommunications operator and new entrants. Foreign investors generally bring with them capital, know-how, and technology, and their presence can be pivotal in management and service improvements.

In the mobile sector, the role of regional foreign investors and the level of mergers and acquisitions activity have increased significantly in recent years, resulting in substantial industry consolidation in the developing world. Examples of active regional investors are Etisalat, Orascom, and Zain (formerly MTC) in the Middle East; MTN in sub-Saharan Africa; Hutchison, SingTel, and Telekom Malaysia in Asia; America Móvil in South America; Mobile TeleSystems in Eastern Europe and Central Asia; and Digicel in the Caribbean. Each of these operators has operations or significant investments in more than five countries. Facing increasing competition and market saturation in home (and neighbouring) markets, operators have looked increasingly further afield to capitalize on remaining mobile markets with high growth potential and access a larger customer base. For example, Zain acquired African mobile telecoms giant Celtel in 2005 for US\$3.4 billion, thereby adding another 14 countries to its global operations. Similarly, in recent years, both Western and Middle Eastern operators have acquired direct and indirect stakes in operators in fast-growing mobile markets in South and South East Asia.³³ Some, like Millicom, have become global players with mobile operations spanning Africa, Latin America, and Asia.

16.4.2 Building local investment institutions and attracting local investors

Privatization initiatives may involve the flotation of shares in the incumbent state-owned operator on a national stock exchange as a means of encouraging citizens and local financial institutions to invest in equity securities, and of expanding and strengthening local securities markets. Governments can also achieve the same objective by requiring new entrants to list on the national stock exchange. For example, in Saudi Arabia the terms of the auctions for the second mobile licence (won by Etisalat) in 2004³⁴ and the third mobile licence (won by Zain) in 2007³⁵ required the newly licensed entity to list a specified percentage of its shares on the national stock

³³ See e.g. 'AT&T Eyes Indian Mobile Market', *Global Insight* 28 September 2007, 'Etisalat Mulling Doubling PTCL Stake in Pakistan', *Global Insight*, 10 September 2007, 'Saudi Telecom Strikes US\$3.01-bil. Deal with Malaysia's Maxis; Gains Foothold in India, Indonesia', *Global Insight*, 27 June 2007, 'India: Vodafone Wins Control of Hutchison Essar with US\$11.1-bil. Bid', *Global Insight*, 12 February 2007.

³⁴ 'Saudi Arabia: European Operators Lose Out Again in Saudi Mobile Licence Competition', *Global Insight*, 15 July 2004.

³⁵ 'Saudi Arabia: MTC Kuwait Wins Third Mobile Licence for US\$6.1 bil.', *Global Insight*, 26 March 2007.

exchange, with certain shares to be reserved to the Saudi Social Security Fund and the Saudi Pension Fund. In Kuwait's 2007 auction of a third mobile licence, participants were required to bid for a 26 per cent stake in the third operator, with a further 24 per cent stake retained by the government and the remaining shares to be floated on the Kuwaiti stock exchange.³⁶

In addition, governments may seek to encourage domestic investors (such as local utilities or entrepreneurs) to invest in new entrants. This was the case in South Africa, where in licensing a second national operator (SNO) in 2005, the government allocated 30 per cent of the shares in the SNO to a consortium of two utility companies, TransTel and Eskom, and required a further 19 per cent stake in the SNO to be issued to a 'Black Empowerment Group' (a consortium of local entrepreneurs) following a tender process.³⁷

16.4.3 Generating revenues

Government coffers usually benefit from privatizations and liberalization. Receipts from the sale of a government stake can amount to billions of dollars, and therefore can be used to cover a budget deficit, retire external debt or finance government projects. Between 1990 and 2006, some US\$83 billion was raised through privatizations of incumbent telecommunications operators in developing countries.³⁸

Licence fees from new licences issued to new entrants by way of auction can also generate substantial revenues, as can radio spectrum fees. In Kuwait, STC (Saudi Telecom) paid US\$900 million in the 2007 auction of a 26 per cent stake in the third mobile operator.³⁹ In the same year, Zain paid over US\$6 billion for the third mobile licence in Saudi Arabia.⁴⁰

Lastly, governments can anticipate increased tax revenues, both from the telecommunications sector and from the rest of the economy (which is likely to grow as the telecommunications sector develops).

16.4.4 Increasing penetration and improving quality of service

Governments typically wish to increase penetration of telephone lines and access to communications services, and to improve service quality. Investors or bidders in a privatization or licence auction are frequently required to make commitments regarding network roll-out, service coverage, increases in subscriber lines, and quality of service. Sometimes new licences may be auctioned for a fixed price, thereby focusing

³⁶ 'Kuwait: Tender Document Released by Third Kuwaiti Mobile Operator', *Global Insight*, 25 September 2007.

³⁷ 'South African Regulator Awards SNO Licence', *Global Insight*, 12 December 2005.

³⁸ 'Trends in Telecommunication Reform 2007: The Road to Next-Generation Networks (NGN)', (ITU, Geneva, 2007).

³⁹ 'STC Wins 26% Stake in Kuwait's Third Mobile Operator', *Global Insight*, 27 November 2007.

⁴⁰ 'MTC Kuwait Wins Third Mobile Licence for US\$6.1 bil.', *Global Insight*, 26 March 2007.

licence 'bids' on commitments to network roll-out, service coverage, and quality of service. In Bahrain, for example, the second mobile licence was offered in 2003 for a fixed sum of BHD100,000 (US\$265,000), and consequently bidders were incentivized to submit aggressive bids in respect of network roll-out timetables and quality of service levels in order to secure the offered licence.⁴¹ However, this is rare in auctions for mobile licences, with the return of high sector valuations and fierce competition for increasingly rare opportunities to acquire rights to scarce radio spectrum.

16.4.5 Bridging the 'digital divide'

Access to knowledge and information systems, particularly through the medium of the internet, is increasingly regarded as a fundamental driver for improved productivity and economic growth. Communications transmission networks and technologies form the core of the information infrastructure needed to obtain such access. Participation by developing countries in the burgeoning global 'information-based' economy may be impeded where the national communications infrastructure is inadequate to secure that access, or where the necessary communications services are inefficient, low-quality, or costly. This disparity in access and in the ability to use information services has given rise to an internet-driven phenomenon known as the 'digital divide' between those economies with advanced information technology infrastructure, and those without. The rapid growth in this 'divide' poses significant developmental challenges and opportunity costs for governments in developing countries. In particular, the lack of information technology infrastructure in those countries hinders the introduction of more efficient internet-based mechanisms for the delivery of educational, health, agricultural, and even governmental services, and the dissemination of market information.⁴² The desire to help 'bridge' this divide has spurred governments to create facilitating regulatory and investment environments, with special emphasis on infrastructure liberalization, in order to diffuse usage and understanding of the internet and information technologies more widely.⁴³

⁴¹ The winning bidder, Zain, committed to provide services as at the date of commercial launch with at least 95% population coverage, and to comply with high quality of service levels in respect of service availability and call completion rates. See the terms of the Mobile Telecommunications Licence granted to MTC-Vodafone Bahrain BSC on 22 April 2003, available at <<http://www.tra.org.bh>>.

⁴² See Wellenius, B, 'Telecommunications Reform - How to Succeed', *Viewpoint Note* No 130, the World Bank (October 1997); Braga, CP, 'Inclusion or Exclusion?', *UNESCO Courier* (1998); *Can Africa Claim the 21st Century* (Washington DC, the World Bank, 2000), at 1-2, 4, 137-9. See also Analysis, 'The Networking Revolution and the Developing World', *infoDev*, the World Bank (2000), Box 1, at vii, 18. Indeed, it has been suggested that '[From a developmental perspective] in the emerging knowledge-based economy of the 21st century, information and communications technology will likely assume an importance that dwarfs other types of infrastructure' (ibid, at 153).

⁴³ See 'Information and Communication Technologies: A World Bank Group Strategy', the World Bank Group (Washington DC, April 2002).

16.4.6 Regional communications hubs

A country with a modern and functioning communications sector in a region still lagging behind can act as a regional hub for transit traffic, resulting in revenues from incoming transit and from directing the traffic onwards to termination points. A healthy communications sector attracts related industries, as well as businesses and industries that rely on communications, including telemedicine, banking, and call centres.

In Sri Lanka, restrictions and the ambiguous exclusivity in international communications services granted to Sri Lanka Telecom Limited arguably denied Sri Lanka the jobs and growth that neighbouring India derived from the business process outsourcing industry in recent years.⁴⁴ Since international facilities and services were liberalized in 2003 with the licensing of new External Gateway Operators (EGOs), VSNL Lanka (a new EGO licensee) has been able to offer high-quality connectivity over the SEA-ME-WE submarine cable, which in turn is thought to be a significant contributor to HSBC Bank plc's decision to establish a 1,500-seat call centre in Sri Lanka in 2005.⁴⁵

One more recent example of this dynamic is the acquisition of Maltacom by Tecom and Dubai Investment group for EUR220 million. The Maltese government stated that one of the reasons for selecting the Tecom consortium was its proposed 'Smart City' project, which accompanied its proposed acquisition of Maltacom. Smart City Malta is modelled on the Dubai Internet and Dubai Media Cities and is intended to create a high-tech hub in the Mediterranean.⁴⁶

16.5 CONTENT OF THE REFORM PROCESS

Reform of the telecommunications sector typically comprises a series of interrelated measures, which together are intended to enhance the attractiveness of the sector for new investors, improve the performance of the state-owned incumbent and promote wider economic and social development.

16.5.1 Sector policy statement

Any reform process should begin with the preparation of a statement of government objectives, preferably in the form of a well-articulated sector policy statement.

⁴⁴ Samarajiva, R, 'Sri Lanka's Telecom Reforms of 2002-2003', *Public Interest Program Unit of the Ministry for Economic Reform, Science and Technology*, Sri Lanka (2004); Dharmawardena, S, 'Sri Lanka's Experience in Interconnection and Liberalisation of International Telecom Segment', *Newsletter Issue 15*, South Asia Forum for Infrastructure Regulation, February 2004.

⁴⁵ 'HSBC Opens 31 Mln USD Call Centre in Sri Lanka', <<http://www.forbes.com>> (12 June 2005).

⁴⁶ See <<http://www.bi-me.com/main.php?c=34&cg=&id=4042&t=1>>; <http://www.telegeography.com/cu/article.php?article_id=12669>; and <<http://www.smartcity.ae/malta/index.html>>.

This document then helps to promote public discussion and consultation on the proposed changes, helps secure government commitment to reform at the highest level, and provides a 'roadmap' for the reform process moving forward.

Sector policy statements typically cover the social, economic, and even political objectives to be achieved, the liberalization agenda and timetable, desired market structure, the incentives to private (and probably foreign) investment, plans to enhance the reliability and utility of communications services, a redefined role for State participation in the sector, regulatory separation and independence, and the core regulatory principles to underpin sector reforms. Publishing a formal policy statement of this nature both increases the transparency and consistency of policy-making, and facilitates public awareness and investor understanding of the proposed reform process. Moreover, addressing these issues upfront ensures that difficult policy decisions (such as the timing of reforms and market liberalization) are taken early on in the reform process, thereby improving the coordination and sequencing of the different components of reform. That said, in practice, sector policy statements are often vague, unclear, and non-committal.

Some countries use their communications law to spell out in detail their sector policy objectives (e.g. to sell a certain percentage of the incumbent operator or to issue a certain number of national mobile licences). Indeed, in some countries this primary legislation is used to impose an obligation on the government to privatize the incumbent operator or to issue certain licences by a certain date.⁴⁷ Many investors welcome this approach because it provides them with greater assurance that the sector policy will in fact be implemented. However, governments rarely like to constrain their discretion, and so it is more common for a country to set out its sector objectives in a legally non-binding government policy statement.

Iraq: limitations of investor reliance on sector policy

An example of a highly uncertain regulatory regime where key investor protections were set out in sector policy statements only is Iraq. In October 2003, prospective bidders in the auction held by the Coalition Provisional Authority (CPA) for three regional mobile licences in Iraq had to factor into their investment decision the fact that the licence would be granted by an interim authority, with no guarantee that the licence would be respected or upheld following the transfer of sovereign power to an Iraqi government. Absolute commitments regarding network roll-out and service quality were required, subject to hefty penalties and forfeiture of a large performance bond if not met, with no exemption where the failure to meet those targets was caused by outbreaks of hostilities,

⁴⁷ See e.g. the statutory timetable for liberalization and licensing in the 2002 Bahraini Telecommunications Law (<http://www.tra.org.bh/en/pdf/Telecom_Law_final.pdf>), and the 1999 Telecom Act in Mozambique, which required the monopoly over basic telephony services to be lifted five years after the privatization of the incumbent.

terrorist attack, or civil war. In return for accepting those risks, bidders were promised a regional monopoly for a period of at least one year in order to recoup their network investment. However, the tender authorities did not include undertakings regarding the sanctity of the monopoly in the licence. Instead, these were presented as sector policy.

Just six months after those licences were awarded, the CPA gave permission to two mobile operators in the northern region of Iraq (SanaTel and Korek) to continue their existing mobile operations in competition with AsiaCell, the holder of the new CPA-issued licence for the northern region.⁴⁸ In the absence of a formal undertaking or commitment not to grant further licences, AsiaCell was left with little or no avenue for legal redress. AsiaCell struggled to fulfil its network coverage obligations under its CPA-issued licence, citing difficulties in accessing areas in the north due to alleged obstructive behaviour from one of these two operators.⁴⁹ AsiaCell was unable to prevent SanaTel and Korek, who held licences issued by Kurdish authorities, from continuing their operations, and Korek was ultimately one of the three successful bidders for the 15-year nationwide mobile licences granted by the Iraqi government in 2007.⁵⁰

Where multiple government ministries or agencies have overlapping spheres of authority, care must be taken to avoid the issuance of inconsistent or conflicting policy statements. This commonly occurs where the policies of the telecommunications ministry differ from the policies of a ministry or government agency promoting information technology and e-commerce.⁵¹

16.5.2 Liberalization

A core component of a sector reform strategy is the liberalization of communications markets, which subjects market participants to the disciplines of product and service competition. In 1999, 73 per cent of basic telecommunications markets remained closed to competition.⁵² Today, more than 100 countries have liberalized basic telecommunications services, partly in response to commitments made under

⁴⁸ 'CPA Awards Second Licence to SanaTel', *Global Insight*, 22 April 2004.

⁴⁹ 'AsiaCell Facing Obstruction From Kurdish Mobile Operator in Northern Iraq', *Global Insight*, 4 April 2005 and 'MTC-Vodafone Operations Under Way in Iraqi Capital', *Global Insight*, 4 April 2005.

⁵⁰ See n 24.

⁵¹ Compare e.g. Bangladesh's 1998 National Telecommunications Policy issued by the Ministry of Post and Telecommunications, with the 2002 National Information and Communication Technology (ICT) Policy issued by the Ministry of Science and Information & Communication Technology. Similarly, in Sri Lanka, the policies of the Telecommunications Regulatory Commission are not always consistent with those espoused by the Information & Communications Technology Agency through its e-lanka initiative.

⁵² 'Trends in Telecommunication Reform 2003: Promoting Universal Access to ICTs' (ITU, Geneva, 2003), at Figure 1.3.

the WTO Agreement on Basic Telecommunications, and many more have liberalized the mobile sector.⁵³

In some cases, all markets are liberalized immediately; usually, however, countries adopt a phased approach, whereby the incumbent operator retains a monopoly over so-called basic telecommunications services or international/long-distance fixed voice services, and the corresponding network infrastructure. In a few developing countries such as Ghana and Uganda, a more radical approach was taken to the liberalization of basic telecommunications services, where licences for a second network operator were awarded prior to, or at the same time as, the sale of a strategic stake in the incumbent operator, leaving the latter with no exclusivity period.

Liberalization has had a dramatic impact on sector growth. For instance, in Latin America, the benefits of full competition were evident, with telephone connections growing twice as quickly in Chile (where the government retained the right to issue competing licences at any time) as in Argentina, Mexico, and Venezuela (where incumbents enjoyed monopoly privileges for six to ten years). Chile also enjoyed higher rates of private investment and rural penetration.⁵⁴

In many cases it is important to grant the incumbent a period of adjustment during which it can gradually eliminate cross-subsidies between its services and rebalance its tariffs so that they reflect true cost—but this period should not be allowed to be excessively long. Although it may be difficult to identify the operator's true costs (and so establish the rebalancing level at which tariffs should be set), international benchmarks from competitive markets may provide some guidance. Once competition is introduced, these tariff levels are bound to fall further. The experiences of the past ten years have shown that, while rebalancing initially increases local call prices, consumers have benefited from a dramatic decrease in the price of international, mobile, and internet tariffs. Even in the absence of formal liberalization, the incumbent's ability to continue to cross-subsidize below-cost local call tariffs with very high long-distance and international call tariffs has been significantly eroded in recent years, with the proliferation of VoIP and international call-back services.⁵⁵ Even in circumstances where VoIP and international call-back are not authorized, the difficulty in policing those services, combined with the relatively low entry costs and ease of deployment (not to mention low cost relative even to cross-subsidized

⁵³ ITU World Telecommunication Regulatory Database.

⁵⁴ See Wellenius, B, 'Telecommunications Reform—How to Succeed', *Viewpoint Note No 130*, the World Bank (October 1997).

⁵⁵ In Argentina, partly thanks to the adoption of a currency board making indexation for inflation illegal, it took the incumbent and the government over six years to resolve the issue of rebalancing. During this period, the price of long-distance calls was up to 50 times the cost, and international calls were four times more expensive than in other countries in Latin America. This stimulated the use of foreign call-back and calling card services, resulting in a fall in Argentina's international telephone revenues of about 25 per cent. See Smith, P and Wellenius, B, 'Mitigating Regulatory Risk in Telecommunications', *Viewpoint Note No 189*, the World Bank (July 1999). Today these pressures on high prices would have been made even worse by the use of VoIP.

services of incumbents), mean that incumbents are experiencing competitive market pressures.

Unlike fixed voice telephony markets, the mobile sector has generally been opened to private sector new entrants immediately, often as a duopoly. In 2006, nearly 90 per cent of countries had competitive cellular markets.⁵⁶ Most other market segments (e.g. terminal equipment, data, internet, and value-added networks and services) have been opened up to competition immediately.

While it is true that many developing countries have now taken significant steps towards market liberalization, adopting new sector legislation providing for the introduction of competition and issuing new entrant licences (predominantly mobile licences), full market liberalization often requires more. Often countries that purport to have fully liberalized their telecommunications markets retain regulatory instruments and licences that contain market restrictions, such as prohibitions on new entrants establishing and operating backbone networks, or tight limits on the types of service or network that may be operated. For instance, VoIP services may be prohibited. Regulatory regimes may have a multiplicity of licences, so that a mobile operator may require separate data and value-added-services licences in order to provide mobile content and data services, or a fixed licence to operate its backbone network. The need for separate licences is administratively burdensome even when such licences are freely available on demand, and tantamount to a restricted unliberalized market when the government limits the number of these licences or seeks to preserve the national incumbent's exclusive rights to operate data or backbone services. See Chapter 17, at 17.5.3, for a more detailed discussion of licensing limitations and moves towards 'unified' technology- and platform-neutral licensing regimes.

16.5.3 A new regulatory framework

An effective legal and regulatory framework is essential in order to regulate the sector once state control (through ownership of a monopolist incumbent) is relinquished, and to attract private investment into the communications sector. Typically this framework is introduced through the enactment of new communications legislation, which generally covers the creation of a new regulatory authority, market liberalization, and core regulatory principles. The design of the new framework will have a material impact on sector development: a regime that permits substantial regulatory discretion, government interference, arbitrary decision-making, unilateral licence modification and revocation, or draconian remedies (such as network asset confiscation) entails substantial regulatory risk—and that risk will be priced into investors' investment decisions.⁵⁷

⁵⁶ 'Trends in Telecommunication Reform 2007: The Road to Next-Generation Networks (NGN)' (ITU, Geneva, 2007), at Figure 1.9.

⁵⁷ For a discussion of the design of regulatory frameworks in developing countries, see further, Chapter 17.

In addition, it may also be desirable to make changes to non-communications legislation and the wider legal framework, in order to provide the necessary regulatory security for investors.⁵⁸ Existing laws on foreign investment, foreign exchange control, tax, company formation, corporate governance, insolvency, investor protection, competition,⁵⁹ intellectual property, broadcasting, data protection, and privacy—or the lack thereof—may have a significant impact on the attractiveness, development, and growth of the communications sector, and in some cases may even conflict with the approach taken in the new communications legislation. Ideally, sector reforms should also be coordinated and undertaken in conjunction with wider economic reforms.

16.5.4 Modernizing the incumbent

A key part of many reform packages will be the modernization of the incumbent state-owned fixed operator. As is discussed further in section 16.7 below, modernization can involve a number of different, sequential reforms. In the (now relatively rare) cases where telecommunications operations still form part of a ministry or government department, the incumbent will need to be restructured as a separate corporate entity. By subjecting the business to company laws of general application, the incumbent operator will have to adopt corporate disciplines and to respect generally applicable accounting principles. By transferring ownership in, or management control of, the incumbent, in whole or in part, to the private sector, the incumbent may experience significant gains in productivity and efficiency, improved access to investment capital, and a marked reduction in political interference in its operations and management strategy.

16.5.5 Attracting new entrants

Liberalization in developing countries is not simply a question of abolishing any existing exclusive rights. New entrants must also be permitted, and sometimes encouraged, to enter the newly liberalized market. However, this process sometimes lags considerably behind the formal ‘abolition’ of the monopoly.

For example, when Oman acceded to the WTO in 2000, it committed to fully liberalizing mobile markets by January 2003 and voice telephony markets by January 2004.⁶⁰ However, a second mobile licence was not awarded until June 2004, and

⁵⁸ Ibid, at 13–16. See also Smith, P and Wellenius, B, ‘Mitigating Regulatory Risk in Telecommunications’, *Viewpoint Note* No 189, the World Bank (July 1999).

⁵⁹ See Ungerer, H, ‘Access Issues under EU Regulation and Anti-trust Law: The Case of Telecommunications and Internet Markets’, Incidental Paper, *The Program on Information Resources Policy*, Harvard University and the Center for Information Policy Research (2000) (available at <<http://www.pirp.harvard.edu>>) for a comprehensive discussion of the increasingly important interplay between sector-specific legislation and general competition legislation in the converging telecommunications and internet markets.

⁶⁰ WT/ACC/OMN.

Omantel's fixed-line monopoly in practice remains in place as no competing fixed-line licence has to date been awarded by the Omani regulator—and probably will not be until after the sale of a strategic stake in Omantel has been successfully concluded. In Saudi Arabia, although STC's monopoly over all telecommunications sectors was legally abolished in 2001, it was April 2007 before three new fixed licences were issued, and therefore STC continued to have a *de facto* monopoly for a further six years.

As examined further in section 16.8 below, governments and regulators typically introduce competition by holding a tender process to issue licences. During the downturn, governments in developing countries sometimes needed to go further and actively to encourage investors and foreign operators to enter a newly liberalized communications market. This was in stark contrast to many developed countries; for example, when all telecommunications monopolies were abolished in the European Union at the height of the telecommunications boom in the late 1990s, there was no shortage of investors and foreign operators eager to establish a presence in what were identified as key strategic markets.

16.6 CREATING A REGULATORY AUTHORITY

Central to almost all sector reform efforts has been the creation of an independent regulatory authority, upon which day-to-day regulatory responsibility for the communications sector is conferred. The number of regulatory authorities for the communications sector worldwide has mushroomed from just 14 in 1990 to 148 in 2007.⁶¹ Interestingly, Africa has the highest percentage of countries with regulatory authorities (91 per cent), followed by the Americas (89 per cent) and Europe (80 per cent).⁶² However, regulatory authorities differ widely in form, jurisdiction, powers, resources, and degree of autonomy.⁶³ Indeed, there is no single model of regulator design, and its composition, powers, scope of authority, and institutional form will need to reflect the legal, political, and institutional backdrop of the country concerned.

In this section, we consider the key principles that underpin the design and creation of a regulatory authority.

16.6.1 Position of regulator within government

The first question to be addressed when designing a regulatory authority is its form and position within the executive branch of government. There is no single 'global

⁶¹ ITU World Telecommunication Regulatory Database.

⁶² 'Trends in Telecommunication Reform 2007: The Road to Next-Generation Networks (NGN)', (ITU, Geneva, 2007).

⁶³ See e.g. the survey of different regulator models in Northfield, D., 'Global Trends in Communications Regulatory Structures', *Global Regulatory Strategies vol 1 Nos 5–6*, the Yankee Group (September–October 2001).

standard' for the design of regulatory authorities; even in the developed world regulatory models vary widely.

In the US, for instance, the Federal Communications Commission (FCC) is essentially a rule-making body, which is fully independent from the government. By contrast, in the UK, the Office of Communications (Ofcom) is a quasi-independent issue-specific advisory, investigative and enforcement body with strong links to the government. In much of continental Europe, the regulator is located within the relevant ministry, separated only by 'Chinese walls'.

Despite this variety in developed markets, investors into developing countries will prefer the regulatory authority to be as independent as possible from the government, as the risk of political interference or capture is generally higher. Therefore, international regulatory best practice in developing countries is to create a regulatory authority which is entirely separate from the ministry responsible for communications, and which is accountable instead to parliament or a ministry responsible for economic development generally. However, this ideal is rarely attained in practice: regulators in developing countries often include strong ministry representation or the government retains broad political powers of appointment.⁶⁴ It is worth noting that the concern with the political independence of regulatory authorities is not, however, limited to developing countries. The European Commission has proposed, as part of its review of the regulatory framework for the sector applicable to the Member States of the European Union, to mandate the political independence of national regulatory authorities (who are currently required only to be independent of regulated industry). In some respects it is surprising that this is not already a requirement in Europe, when it has been considered international best practice in developing countries for many years.

16.6.2 Role of the communications ministry

Typically, regulation of the sector is undertaken by a ministry of communications prior to the creation of the regulatory authority. The legislation creating the new regulatory authority must therefore provide for a transfer of powers and authority from that ministry to the new regulatory authority.

The choice as to which functions should be the responsibility of the minister and which should be the responsibility of the regulator will be a political one, and will vary from one country to the next. Usually, the role of the ministry following the transfer of regulatory powers is limited to the formulation of sector policy, oversight of liberalization and privatization initiatives, and responsibility for any intergovernmental matters arising in relation to the sector. Separating the policy and regulatory functions between the ministry and the regulatory authority allows sector regulation to be implemented in a neutral and impartial manner, whereas government policies

⁶⁴ See e.g. Mustafa, M, 'Benchmarking Regulators: Making Telecom Regulators More Effective in the Middle East', *Viewpoint No 247*, the World Bank (June 2002).

may be perceived to prefer the interests of one constituency over another (whether consumers or industry).

Where the incumbent is wholly or partly state-owned, it is preferable to transfer responsibility for the state-held shares to a different ministry, such as the ministry responsible for the economy or finance. By separating the policy function from ownership of the incumbent, sector policy is more likely to be formulated in the wider national interest, even where this conflicts with the interests of the incumbent in retaining exclusivity or market power.

Once reform processes (including major privatization or licensing initiatives) are concluded, it is questionable whether a separate ministry to oversee the sector is needed at all: general policy formulation may be better left to a department of a general development or economic ministry to ensure coordination of policy objectives and approaches across different industries and sectors. Proponents of a sector-specific ministry argue that this may dilute the understanding of the peculiarities and specificities of the sector; but the counter-argument is that this detailed sector knowledge is needed primarily by the regulatory authority rather than the ministry.

16.6.3 Independence and autonomy

The key benchmark against which regulatory authorities in developing countries are assessed is their actual and perceived independence from both government and industry. The term 'independence' is to some extent a misnomer; no regulatory authority is truly independent and free of any supervision from the executive, legislative and judicial branches of government. Rather, the concept is used to describe the degree of autonomy the regulatory authority enjoys from political influence and control, and the safeguards in place to protect the authority from political and industry capture.

An independent regulator increases investor confidence in the objectivity and stability of regulatory processes, by providing a measure of comfort that regulatory decisions will be impartial and that all market players (whether state-owned, dominant, or new entrant) will be treated fairly. This is widely believed to encourage greater foreign and domestic investment in the communications sector.

Where independence is lacking, investors in new entrants in particular will be worried that a government, as both owner of the incumbent and its regulator, might discriminate against new entrants, or resolve disputes in favour of the incumbent. The regulatory authority might also implement an interconnection policy that favours the incumbent (e.g. through the use of historic rather than incremental cost-based interconnection tariffs), or fail to ensure equivalent access to numbering and spectrum resources. On the other hand, political capture of regulatory decision making could also result in politically motivated decisions that have a detrimental impact on the incumbent, such as a refusal to allow the incumbent to rebalance artificially low local call tariffs.

The main disadvantage of independence (from the point of view of the government) is the loss by the government and the relevant ministry of some influence over the sector and over regulatory decisions that affect voters (e.g., the ability to keep local call prices of the incumbent below cost in order to appease the electorate).

Where a country has a history of 'independent' regulation, there is no difficulty in conceiving of an entity that is independent of the government and the political process, despite being a government institution. However, in the developing world, one should not take for granted the existence of an environment supportive of the creation of a fully independent regulatory institution. Instead, a degree of independence may be secured through institutional design. In particular, provisions on the appointment, removal, conflicts of interest, and remuneration of individual commissioners, and on the financing and accountability of the regulatory authority, should all be developed with a view to maximizing the regulatory authority's freedom from undue political and industry influence.

16.6.4 Multi-sectoral or sector-specific?

The remit of the new regulatory authority must also be set. By far the most widely adopted approach is to create a regulatory body with responsibility solely for the communications sector. That said, a few countries have established a cross- or multi-sectoral regulator, including Latvia, Costa Rica, Gambia, Jamaica, Niger, and Panama.⁶⁵

Multi-sectoral models are more common in smaller countries, particularly where human and financial resources are scarce. The resultant increased size of the regulatory body enables it to take advantage of economies of scale and scope. Indeed, significant cost-savings may be achieved through sharing both a common pool of legal, regulatory, financial, and economic expertise, and administrative overheads. Multi-sectoral models may also be useful in countries where industries are dominated by a single player; the influence of dominant players on regulation in any given industry may be diminished where the responsible regulatory authority has jurisdiction over multiple industries. Moreover, where the sectors regulated fall within the responsibility of different line ministries, the use of a multi-sectoral model may reduce the risk of political capture. However, it is also possible that sectoral line ministries oppose the concept of a cross-sectoral regulator, and the diversity of their interests could hamper the operation of such a regulator through conflicting government policies.

If a multi-sectoral regulatory model is selected, the first question to be addressed will be what industries to cover, and how to allocate regulatory costs across those industries. On the one hand, a multi-sectoral regulator might be responsible for a range of unrelated utility sectors. A good example is the Public Utilities Commission

⁶⁵ Kerf, M, and Smith, W, 'Privatizing Africa's Infrastructure: Promise and Challenge', *World Bank Technical Paper No 337* (Washington DC, the World Bank, 1996).

of Latvia (PUC), which has jurisdiction over the telecommunications, postal, railway transportation, gas, and electricity sectors.⁶⁶ Similarly, the US has had multi-sector public utility commissions at the state level for many years, which often regulate telecommunications, natural gas, and electric power supply. Arguably, such network industries share significant commonalities. For example, the PUC has introduced a unified price-cap mechanism to control the tariffs of major utility providers in regulated industries.⁶⁷ In addition, the spread of jurisdiction across multiple utility sectors could help protect the regulatory authority from capture from large companies within a particular industry. Of course, where there is a determined national industrial policy in favour of a national champion, in whatever the regulated sector, the spreading of jurisdiction across sectors through a multi-sector regulator will have little discernible effect.

Where the industries covered are unrelated, the structural design of the regulatory authority should take into account the need to ensure sufficient technical expertise exists to carry out what are often sophisticated, complex technical functions (such as the resolution of interconnection disputes and radio frequency management). This may be achieved through the establishment of sector-specific departments within the regulatory authority. However, structural separation of individual industry regulators may undermine one of the objectives of having a multi-sectoral approach, namely achieving real cost-savings through pooled resources.

Alternatively, multi-sectoral regulators may have responsibility for related but discrete sectors brought together by the phenomenon of 'convergence'. A leading example is the Malaysian Communications Multimedia Commission (MCMC), created under the Malaysian Communications and Multimedia Commission Act 1998. The MCMC is responsible for regulating the communications, broadcasting, multimedia, e-commerce and postal sectors, and it is also the certification authority for digital signatures. Other examples include Saudi Arabia (where the regulatory authority is responsible for communications and IT) and South Africa (where the regulatory authority is responsible for telecommunications, broadcasting, and postal services).

A 'converged' regulator of this type facilitates the implementation of a truly technology-neutral regulatory framework, avoids any dispute over delineation of regulatory authority in related sectors, and encourages the development of specialist expertise crossing all convergent sectors. Given the quickening pace of convergence, such a regulator may seem better equipped to adapt to the changing regulatory requirements, to regulate the provision of bundled services, and to coordinate regulatory requirements between related sectors.

⁶⁶ Law on Regulators of Public Services 2001, s 2.

⁶⁷ See 'Method for Tariff Setting—Price Cap', <<http://www.sprk.gov.lv/index.php?id=605&sadala=133>>.

16.6.5 Scope of authority and powers

The legislation creating a regulatory authority should detail its primary objectives, and scope of authority and powers. Typical objectives may include encouraging competition and minimizing barriers to entry, improving sector efficiency and quality of service, protecting consumers, and attracting sector investment. Sector-specific powers include: licensing, interconnection, and network access (in particular, approving model or reference offers, setting the terms of interconnection and access in the event of a dispute, and regulating wholesale tariffs), retail tariff controls, numbering and spectrum management, implementation of universal and rural access strategies, and general market monitoring. General powers will include the rights to acquire and dispose of property and to borrow funds (sometimes subject to governmental approval), and general powers of enforcement.

The regulator should in particular have robust information-gathering powers. These, together with sanctions available to it, will give the regulator teeth as a regulatory body. The type of information-gathering powers granted will depend on the institutional and legal framework of the individual country, although they might be 'benchmarked' to the information-gathering powers of another national organization (such as regulators in other sectors, or the High Court).

In many countries, a plethora of existing regulatory bodies may have jurisdiction over aspects of the communications sector. These include governmental agencies responsible for spectrum management, broadcasting, equipment approval, customs, consumer welfare, and (less commonly) competition. If such existing agencies are not included in consultative processes, and if demarcation lines between spheres of authority are not made clear (with guidelines or processes for inter-working and cooperation, where appropriate), reform initiatives can rapidly become mired in a 'turf war' which can paralyse the wider reform effort.

Sri Lanka: supplanting an existing regulatory authority

The Sri Lankan Telecommunications Regulatory Commission (TRC) was established under the Sri Lankan Telecommunication (Amendment) Act 1996. This agency was the successor body to the Office of the Director General of Telecommunications (ODGT), a department of the Ministry of Telecommunications, and assumed the staff, policies and procedures of the ODGT.

Recognizing the pivotal role of the telecommunication sector in economic development and in supporting initiatives to create employment in new outsourced services and IT-enabled service industries in the early years of the 21st century, the Wickremesinghe government proposed a radical overhaul of the telecommunications regulatory framework, and the creation of a new, independent regulatory authority (the Information and Communications Commission) with responsibility for all electronic communications networks and, potentially, postal services, data protection and e-commerce. It was envisaged that this new,

revamped regulatory authority would operate very differently from the existing authority: with regulatory discretion and intervention kept to a minimum, new staff, processes streamlined, and the emphasis on building the capacity needed to meet all regulatory challenges without the assistance of external consultancies.⁶⁸

Clearly, the abolition of an existing regulatory authority, and its replacement with a new authority to which existing staff and practices are not simply transferred, is likely to become highly politicized and difficult to implement. Indeed, although the legislation to create the new regulator and accompanying regulatory framework was drafted in 2003, the proposed legislation was abandoned following a subsequent change in government.

16.6.6 Composition and appointment

The actual and perceived independence of a regulatory authority will be influenced most heavily by its composition and appointment processes.

The trend in regulator design is for regulatory decisions to be made through a regulatory board or commission as opposed to by a single individual. Use of a commission structure reduces the risk of arbitrary and subjective regulatory decisions being made, although it may also slow down the decision-making process. Prior to 1998, 70 per cent of new telecommunications regulators were headed by a single individual,⁶⁹ whereas today most regulatory authorities have a commission structure. In principle, individual commissioners or board members should be appointed on the basis of their professional qualifications rather than political allegiances, by a body other than the line ministry (such as by the country's top executive or by a cross-party Parliamentary committee), and by reference to certain predetermined appointment criteria. In practice, many commissioners or board members are simply political appointees or ministerial representatives, which can greatly reduce the independence and credibility of the regulatory authority. Sometimes government officials will be appointed as commissioners to the regulator as of right on an *ex officio* basis. The risk of resultant political influence can be mitigated, however, by ensuring that such *ex officio* commissioners have reduced voting power, or simply observer status, on the board of the regulator. In addition, *ex officio* commissioners can come from such organizations as the Chamber of Commerce, the Law Society, or a group representing consumer interests.

Where the incumbent has only recently been structurally separated from the ministry, the regulator may in practice be staffed by people who had only recently been employed by the incumbent. This inherent regulatory bias may be to the significant

⁶⁸ See Samarajiva, R, 'Sri Lanka's Telecom Reforms of 2002–2003', *Public Interest Program Unit of the Ministry of Economic Reform, Science and Technology*, 2004.

⁶⁹ 'Trends in Telecommunication Reform 2003: Promoting Universal Access to ICTs' (ITU, Geneva, 2003).

disadvantage of new entrants. The more independent the regulator is from political processes and possible industry capture, the more a prospective new entrant is likely to be attracted to making an investment in the domestic communications market.

As important to the independence of the regulator are the conditions of removal. Again, to enhance the independence of the regulatory process, commissioners should only be removable for cause, with the grounds specified in the enabling legislation and limited to articulated forms of gross misconduct or conflict of interest. Furthermore, the ministry should not have decision-making power over the level of remuneration of individual commissioners, so as to avoid indirect ministerial influence on commission decisions.

Ideally, commissioners' terms should be staggered so as to reduce the influence of any one government over their appointment, and to encourage policy continuity and preserve institutional memory. Full-time members are preferable to part-time members, to ensure that individual commissioners are able to give sufficient time and focus to their regulatory duties. However, staffing difficulties and poor remuneration may render a part-time structure more practicable.

16.6.7 Transparency of decision-making

Investors will be concerned about the transparency of the environment in which they are about to invest. Transparency, predictability, and impartiality of regulatory decision making is enhanced considerably where the regulatory authority adopts an approach of wide public and industry consultation prior to making regulatory decisions, thereby allowing all interested parties to contribute their views and perspectives to the decision-making process, or publishes advance guidelines setting out the regulatory authority's proposed approach.

A good example of a new regulatory authority that has purposefully adopted a culture of transparency and consultation is the Telecommunications Regulatory Authority of Bahrain (TRA).⁷⁰ Prior to making material regulatory decisions, the TRA typically publishes a consultation paper on its website and invites industry comment and submissions. On occasion, it has held public workshops or other discussion fora as a means of canvassing industry opinion and building consensus for regulatory change. All significant rules, licences, orders, and regulations are published on its website.

16.6.8 Conflicts of interest

The independence of the regulatory authority can be enhanced by ensuring that individual commissioners or board members have no actual or perceived conflict of interest. This is generally achieved by including conflict of interest provisions in the

⁷⁰ See <<http://www.tra.org.bh>>.

law (applicable to both commissioners and their direct families), which bar appointment and authorize removal of commissioners with a clear conflict of interest due to political involvement or material investments or involvement in market participants. To help enforce these provisions, it is common for commissioners to be required to file a statement on conflicts of interest on an annual basis. That said, conflict of interest provisions should not be so broad as to prevent skilled and experienced individuals from being selected. This will be a particularly difficult balance to achieve in a country lacking a pool of experts in the field of telecommunications, and indeed in many cases the initial staff of the regulator and possibly some of its board members will have come directly from the incumbent.

Conflicts may also arise on a day-to-day basis, where an individual matter before the regulatory authority raises a potential conflict of interest with a staff member. In these circumstances, the procedures of the regulatory authority should require affected commissioners and staff members to disclose this conflict and to abstain from any related decision-making.

16.6.9 Financing the regulator

An effective regulatory authority requires sufficient financial resources to support its day-to-day operations. A regulatory authority requires adequate and reasonably assured financing resources to be operationally effective and to invest in training and capacity-building. Independence will be enhanced if the regulator is financially autonomous from the communications ministry and from government budget allocations. Therefore, regulatory authorities are most commonly financed through an industry-wide levy, typically imposed on sector participants through an annual licence fee.

At the same time, efficiency and transparency is fostered by requiring the regulator to prepare formal budgets and audited accounts, which may be filed before parliament or another overseeing authority, and by requiring the regulator to limit industry levies and licence fees to no more than the level needed to finance its budgeted running costs.

16.6.10 Capacity-building

The process of establishing a credible and effective regulatory authority does not end with the enactment of enabling legislation. Regulatory decision-making often requires sophisticated multi-disciplinary skills, and the regulatory authority will need to draw heavily on legal, economic, financial, and technical expertise. In addition, leadership skills may need enhancement. As a result, a critical issue for many developing countries is often the need for capacity building within the newly created regulatory authority.

Often regulatory positions are poorly paid, and staff may have little or no experience of dealing with sophisticated regulatory structures or techniques. New regulatory

authorities may in practice be dependent upon external consultants to provide the necessary high-calibre professional expertise.

From the standpoint of investors in the incumbent, a short-staffed and inexperienced regulatory authority may mean that in practice the incumbent will be able to engage in anti-competitive practices unchecked, thereby helping to ensure its continued market dominance. From the perspective of investors in a new entrant, the inability of the regulatory authority effectively to control the incumbent or to enforce sector regulation may significantly undermine the viability and prospects of their fledgling business.

To help minimize this reliance on external expertise, a programme of training and workshops should be put in place immediately following the regulatory authority's creation, to enable the transfer of any necessary skills and to ensure staff have a full understanding of the issues and techniques involved.

Areas where training is often needed include: institutional development, design of regulatory procedures, training and skills (particularly in relation to interconnection and tariffs), analysing financial and market data, and use of financial models. Workshops or one-on-one sessions run by former regulators from other countries that have themselves undergone reform can be particularly helpful or insightful. Preparation of detailed practice manuals and internal guidelines can also assist new or inexperienced regulators in applying regulatory techniques and rules moving forward. Finally, where regulatory controls are based on cost analysis (e.g. retail and interconnection tariffs), assistance may be required initially—particularly in countries where data is difficult to obtain—to undertake a rigorous quantitative financial and economic analysis and to prepare full cost models for all operators, which can be utilized by the regulatory authority moving forward.

Specialist expertise on particular regulatory functions can be obtained by outsourcing regulatory functions (such as market analysis and financial audits) where appropriate. However, outsourcing may be a luxury an under-funded regulatory authority may be ill able to afford. In some cases, foreign nationals who have worked as regulators in other parts of the world, or who have practised in the field of telecommunications regulation, have been appointed as Commissioners, or even as heads of new regulatory authorities, in order to provide the necessary sector expertise. This is the case in Bahrain, where the regulatory authority is currently headed by a British telecoms consultant, whose deputy comes from the Lithuanian regulator and whose predecessor came from the Greek regulator. Similarly, the new Qatari regulatory authority is currently led by a former Legal and Regulatory Officer at Ireland's Chorus Communication Limited, and until recently Samoa's Office of the Regulator was led by an Australian expatriot.

16.6.11 Maximizing regulatory stability

A well-designed regulatory authority, with strong mechanisms to reinforce its autonomy, is widely believed to reduce regulatory risk. However, it is difficult to

build mechanisms into the regulatory regime to prevent the regulator itself from arbitrarily changing its regulatory approach or adopting inconsistent decisions, particularly where an effective appellate body is lacking.

One approach that has been adopted in some countries, which has the effect of reducing the risk of arbitrary regulatory decision-making, is to adopt a supra-national regional structure or regulatory agenda. The key advantage of a regional initiative is that, by de-nationalizing the process, decisions may be made on more rational and less politicized grounds. The most famous example of a regional structure is of course the European Union, which through its directives and regulations sets the parameters within which Member States regulate the electronic communications sector.⁷¹ However, other regional structures have been adopted in the developing world. Regional fora include initiatives undertaken by REGULATEL (Latin America), ECOWAS (West Africa), and the Organisation of Eastern Caribbean States (OECS). Governments and regulators in the Middle East have also proposed a more coordinated regional approach.⁷² Through the MEDA programme, the EU's principal financial instrument for the implementation of the Euro-Mediterranean Partnership between the EU and MEDA beneficiary countries, a selection of Middle Eastern countries⁷³ benefit from technical assistance, including through cooperation with Europe's European Regulators' Group (ERG), the forum of national regulators from the EU Member States.

The OECS: a regional approach to regulatory reform and liberalization

The Eastern Caribbean Telecommunications Authority (ECTEL), the regulator created by the OECS, was one of the first supra-national, regional telecommunications regulatory bodies created. The original objective of the regional grouping in telecommunications in the OECS was to create a collective critical mass in order to increase bargaining power when negotiating with the incumbent, Cable & Wireless (C&W), which had held exclusive operating rights in the English-speaking Caribbean for 130 years. However, ECTEL still serves an important function at the OECS level.

Regional cooperation

ECTEL was established by Treaty on 4 May 2000, and describes itself as a 'regional telecommunications regulatory advisory body for its Member States.'⁷⁴

⁷¹ See further Chapter 5, European Union Communications Law.

⁷² See 'Bahrain and Jordan to Co-Operate in Regulatory Development', *Global Insight*, 10 July 2003; 'Saudis Lead Gulf Regulatory Initiative', *Total Tele.com*, 1 November 2002.

⁷³ Namely, Algeria, Egypt, Jordan, Lebanon, Morocco, Syria, Tunisia, Turkey, and the Palestinian Authority.

⁷⁴ See 'Developing a better, competitive telecommunications environment,' ECTEL (available at <http://www.ectel.int/ectelnew-2/Liberalisation_files/Media.pdf>).

ECTEL is responsible for ensuring a harmonized and coordinated approach to telecommunications regulation in the OECS Member States. It makes recommendations to the individual national regulators on regional telecommunications policy, and monitors its implementation. It also works together with these national regulators in relation to the management and regulation of spectrum use. As stated in the preamble to the Treaty, the Member States recognized that 'a harmonised and co-ordinated approach by the Contracting States is required to achieve a liberalised and competitive telecommunications sector'.⁷⁵ Such a regional approach creates economies of scale, reducing the regulatory burden on individual Member States (both in terms of cost and personnel), and harnessing technical and regulatory expertise for the benefit of all.

Strength in numbers

By the mid 1990s, most countries around the world were beginning the process of liberalizing their telecommunications sectors, but in some countries in the Caribbean C&W was still being issued with licences conferring on it long monopolies. It was recognized by the countries of the OECS that the regulatory framework in each country was woefully inadequate. Governments held minimal regulatory powers, telecommunications regulation (in licences where they existed, and in any legislation or agreements) was vague, ambiguous, and outdated, and the governments were not benefiting from royalties, licence fees, dividend payments from joint venture arrangements, spectrum fees, customs & excise taxes, and the use of government property.⁷⁶ In some cases the lack of regulation meant that C&W was able to charge very high prices for its services, without effective control, and by 1996, the very high cost of access to telecommunications services (including leased lines and bandwidth-intensive data services, as well as international telephony) was found by the OECS to be hindering economic development.

In 1998 the members of the OECS commenced the OECS Telecommunications Reform Project with financial assistance from the World Bank, to introduce competitive reforms in the telecommunications sector (which included the establishment of ECTEL).⁷⁷ The OECS countries had already been in negotiations with C&W with a view to reducing the latter's monopoly and putting in place a regulatory regime that would promote economic development and competition, and be consistent with the WTO regulatory framework (even though only three of the OECS States had made any previous commitments to liberalization⁷⁸).

⁷⁵ The Treaty establishing ECTEL is available at <<http://www.oecs.org/Documents/treaties/ECTEL%20Treaty-2000.pdf>>.

⁷⁶ OECS Telecommunications Reform Project Information Sheet, available on OECS website, <http://www.oecs.org/proj_telecoms.html>.

⁷⁷ See 'UK: Caribbean—Region moves to liberalise telecom sector,' *Global Information Network*, 23 May 2000.

⁷⁸ 'UK: C&W challenges Caribbean reform plans', *Communications Week International*, 17 July 2000.

After very difficult and protracted negotiations, the five OECS countries (acting together) and C&W reached an agreement on 7 April 2001 setting out the timetable for liberalization of the telecommunications sector, and the consequent reduction and eventual removal of C&W's monopoly position in those countries.

The West African countries making up ECOWAS looked at the example of the OECS, but have not yet accomplished true regional regulatory reach. However, ECOWAS members have begun focusing on the policy environment, with a view to eventually achieving region-based regulation.

In Latin America, REGULATEL is the grouping of 19 regulators from the region, which is also examining ways of introducing interoperability and harmonization in regulatory approaches in that region.⁷⁹ REGULATEL has shown particular interest in the European regulatory framework, and has a relationship with Europe's European Regulators' Group (ERG), through which they are able to access regulatory expertise and draw from the experiences of European regulators.

In the South Pacific, the Pacific Islands Telecommunications Association (PITA) of the Pacific Forum provides a structure similar to that of REGULATEL.⁸⁰ PITA is emerging as a regional force as telecommunications markets in the South Pacific become more interdependent (through roaming agreements and potential undersea cable projects linking the islands), and as their markets become more competitive and operators become more sophisticated in their service offerings.

While the field is still quite new, experience is already showing that some features contributing to the success of regional regulation initiatives include the collective political will to formulate regional policy, and the existence of underlying regional institutional structures to implement that policy. In the OECS, for example, the existence of the OECS Secretariat at the political and institutional level allowed the rapid establishment of ECTEL's institutional structure. The governments participating in the telecommunications reform project there also had a clear motivation for pursuing regulation on a regional level: that of building a common negotiating position against C&W. While ECOWAS also enjoys a pre-existing political structure, REGULATEL and PITA, by contrast do not. Moreover, a common motivating force for agreeing a regional approach is less clearly identifiable in both the ECOWAS and REGULATEL examples—and accordingly progress in formalizing true cross-border regulatory harmonization through an international legal mechanism like a treaty is less advanced.

⁷⁹ The members of REGULATEL are Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Chile, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Uruguay, and Venezuela. See <<http://www.regulatel.org>>.

⁸⁰ For information about PITA see, <<http://www.pita.org.fj/>>; and for information about the Pacific Islands Forum, see <<http://www.forumsec.org.fj/pages.cfm/economic-growth/ict/>>.

16.6.12 Role of industry self-regulation

The idea of industry self-regulation is that the market players know best how they should be regulated, and in certain circumstances (particularly where there is no large power disparity between the dominant and other operators) it may be an effective and efficient way for industry to be regulated.

In Malaysia, the Malaysian Communications Multi-Media Commission (MCMC) is expressly required by its enabling legislation to promote and encourage industry self-regulation to the extent possible.⁸¹ Accordingly, it has been promoting self-regulation in the communications and multimedia industry through the establishment of industry self-regulatory bodies. These bodies are made up of industry and consumer representatives, and have the aim of working together to produce voluntary industry codes to guide industry conduct. There are currently four designated industry self-regulatory bodies in Malaysia: the Access Forum, Consumer Forum, Content Forum, and Technical Forum.

An example of the work of one of these bodies is the General Consumer Code of Practice (GCC) for service providers in the communications and multimedia industry, which was drafted by the Communications and Multimedia Consumer Forum of Malaysia after its designation as an industry self-regulatory body. The aim of the GCC is to provide model procedures for reasonably meeting consumer requirements, handling consumer complaints and disputes, creating an inexpensive mediation or alternative dispute resolution process other than the court and procedures for compensation of the consumer in case of a breach of the code, protection of consumer information, and benchmarks for the communications and multimedia service providers for the benefit of consumers. The MCMC registered the Code on 17 October 2003.⁸²

Another example where industry self-regulation came to the fore is New Zealand. Prior to the introduction of a sector-specific regulatory regime in 2001, the telecommunications sector in New Zealand was regulated only through generic competition law and the courts. As a result, industry self-regulatory bodies took a more prominent role in an attempt to reach industry-wide agreement on regulatory issues such as number portability and interconnection, thereby increasing sector efficiency and reducing the risk of expensive and time-consuming litigation. Industry bodies included the Telecommunication Numbering Advisory Group, the New Zealand Telecommunications Industry Association, and the Telecommunications Users Association of New Zealand. Experiments with industry self-regulation in New Zealand suggest that four elements are required for an industry body to be effective in resolving sector issues: namely, a majority-based decision-making process (to avoid the incumbent exercising a veto power), full industry membership, focused

⁸¹ The MCMC is required 'to encourage and promote self-regulation in the communications and multimedia industry', s 16(g) of the Malaysian Communications and Multimedia Commission Act 1998.

⁸² Mohamed, Harme, 'Regulating for Convergence: Malaysia's Perspective', Malaysian Communications and Multimedia Commission, 6 October 2003. See also <<http://www.mcmc.gov.my/mcmc/consumer/consumer.asp>>.

agenda of issues to be targeted, and a transparent process.⁸³ In New Zealand, competition authorities were wary of the possibility of anti-competitive collusion occurring within industry groups. Ultimately, the self-regulatory tools failed, and reliance on a generic competition law regime proved insufficient, resulting in the belated establishment of a sector-specific regulatory framework.

16.7 MODERNIZING THE INCUMBENT

In many developing countries, the state-owned incumbent suffers from a history of inefficiency, poor management and under-investment, and is not well placed to meet the challenges of a competitive market. Therefore, a comprehensive strategy for sector reform must include steps to modernize both the management and operations of the incumbent operator.

16.7.1 Regularizing the incumbent's legal status

Pre-reform, state-owned incumbents are typically authorized to provide telecommunications services on the basis of existing communications legislation, concession arrangements, or often simply the state prerogatives related to public administration. Telecommunications licences or authorizations are considered unnecessary. Once communications markets are liberalized, it is vital that the incumbent is not afforded special treatment and permitted to continue to provide services outside the ambit of the general licensing and regulatory framework. Therefore, the new regulatory framework will generally require the incumbent to hold communications licences like any other operator. In practice, the incumbent may be resistant to the new communications licence, particularly where it operated freely without administrative restriction prior to the reforms.

In some countries, the incumbent has been required to pay an initial licence fee upon grant of the new licence. In other countries, the fee has been waived on the basis that the new licence simply formalizes its existing implied or statutory authorization to operate its network and provide telecommunications services. In contrast, where a new mobile licence has been reserved for or allocated to the incumbent, it is more usual (and usually equitable) to charge the incumbent a fee equivalent to that paid by other new entrant mobile operators.

Finally, where there are other existing operators, the incumbent may lack formal interconnection agreements governing its interconnection arrangements. These will need to be put in place in conformity with the interconnection rules in the new regulatory framework.

⁸³ See, 'Telco Forum Hopes to Cut Costs, Delays', *Computerworld*, 20 October 1997.

16.7.2 Corporatization

Where the incumbent is part of a government ministry or department, a critical initial step in the reform process is the 'corporatization' of the incumbent; that is, the transformation of the entity owning and operating the fixed telecommunications network from a government body to a corporate entity, usually incorporated under local company laws.

Corporatization of the incumbent subjects it to corporate disciplines, as the new corporate entity will need to comply with company accounting and reporting requirements. Corporatization also has the effect of separating ownership and management functions, thereby promoting the appointment of professional managers instead of political appointees. This encourages decision making based on the interests of the business, rather than a politically motivated agenda focused on wider social or economic goals. Corporatization may also free the business from public sector borrowing and procurement constraints.

The trend in most developing countries has been to separate the postal and telecommunications commercial activities of the relevant government body. The telecommunications assets and business are then transferred either to a newly formed joint-stock company governed by ordinary company laws, or alternatively to a statutory corporation established under special legislation which can serve as the legal basis for reserving to the state certain rights which may not be available under ordinary company law, and also confer special privileges on the statutory corporation (e.g. exemptions from taxation and from legal liability for deficient performance). The postal activities are generally transferred to a statutory corporation.

In some countries, the legal aspects of separating the telecommunications, postal, and regulatory activities of the operator (including the transfer of assets, and the establishment of new corporate entities and the new regulator) are addressed in the general communications law. However, a number of countries have preferred to address these aspects of the separation in discrete legislation, on the basis that these issues are 'one-off' (i.e. with little continued relevance once the separation has taken place).

The corporatization process can be complex: assets of the telecommunications business will need to be identified and separated from government assets, and the new entity's legal ownership or right to those assets will need to be formalized or verified. Staff will need to be allocated between the new corporate entity and the remaining ministerial or departmental function. This due diligence and verification process then enables an initial balance sheet for the new corporate entity to be prepared.

Where the government plans to privatize the incumbent shortly following its corporatization, the government may also engage in some balance sheet strengthening and organizational changes such as divesting non-core operations, closures, or workforce reductions, in order to make the incumbent more attractive to investors.

Today, most incumbent fixed operators have undergone the corporatization process. An example where this process is yet to be undertaken is Bangladesh, where a

tender was recently issued for consultants to advise on the restructuring of the Bangladesh Telegraph & Telephone Board.

16.7.3 Privatization

The term 'privatization' is generally used to refer to the divestiture of state-owned shares in the incumbent operator to private parties, either through a bilateral share sale or a flotation of shares on a domestic or international stock exchange. Often privatization of the incumbent will occur in staged phases, with tranches of shares sold sequentially by way of strategic or trade sale or IPO—or by a combination of through multiple iterations of the three. In 1991, less than 20 per cent of countries had fully or partly privatized their incumbent telecommunications operator. By 2007, this had risen to more than 60 per cent, with 123 countries having a private or privatized national fixed-line incumbent. While this might sound impressive, this figure includes countries where the government retains a significant or even majority equity stake in the incumbent, and this still leaves about 70 countries with fully state-owned incumbents.⁸⁴ Africa, South East Asia, and the Middle East are the regions where full State ownership is most likely to have been retained.⁸⁵ Fully private or privatized incumbents tend to be limited to the Americas, with very few exceptions.

Governments may wish to privatize the incumbent for a number of reasons. Most obviously, a privatization will, in the short-term, generate revenue for the government through the sale of its shares in the incumbent to private investors, which may in turn be applied to reduce fiscal deficits and retire external debt. Privatization may also provide much needed budget relief and access to the necessary investment where major network upgrading or development is overdue. Privatization involving sales to foreign investors is also a method of attracting foreign direct investment.

Where revenue generation is at the forefront of the government's objectives, policy makers may be tempted to limit post-privatization competition and protect the privatized company's future revenues (e.g. by conferring a monopoly over core telecommunications services) with a view to maximizing revenues from the sale. However, numerous studies have been undertaken showing that, while the grant of a monopoly may significantly increase the sale price in a privatization, it is likely to substantially decrease investment in network infrastructure and to be economically harmful to consumers.⁸⁶

In the longer term, some forms of privatization may improve the performance and efficiency of the incumbent: the sale of a strategic shareholding to a foreign operator

⁸⁴ 'Trends in Telecommunication Reform 2007: The Road to Next-Generation Networks (NGN)', (ITU, Geneva, 2007), p 8.

⁸⁵ ITU World Telecommunication Regulatory Database. 'Trends in Telecommunication Reform 2003: Promoting Universal Access to ICTs', (ITU, Geneva, 2003).

⁸⁶ See e.g. Wallsten, S, 'Telecommunications Privatization in Developing Countries: The Real Effects of Exclusivity Periods', AEI-Brookings Joint Center for Regulatory Studies (2000).

allows the transfer of management expertise and provides access to the capital needed to expand and upgrade network facilities. Corporate governance may be improved by subjecting the company to the monitoring and discipline of profit-oriented investors, and reducing political interference in business planning and management strategies. A foreign listing allows the company to tap international capital markets (and subjects it to capital market disciplines), and enables management compensation to be linked to company performance. Governments may also wish to develop and expand market capitalization of local securities markets, and promote wider investment participation by local citizens and financial institutions, through a listing on the national stock exchange. Indeed, in both developed and developing countries, privatized firms account for a sizeable fraction of total capitalization of national stock markets. However, a lack of liquidity and transparency in the national stock market may limit the attractiveness of a local listing. Finally, governments may wish to reward employees of the incumbent or the wider citizenry through a form of voucher programme (though this technique, widely used in the 1990s by former Soviet-bloc countries, is now widely discredited).

The 1990s were the hey-day of privatizations, with many State-owned incumbents partially or fully privatized, typically through a strategic sale to Western operators.

In a strategic sale, the government sells a minority or majority shareholding in the incumbent operator to a 'strategic investor'. The government typically transfers to the strategic investor a degree of 'management control', such as shareholder voting rights, the right to appoint a majority of the directors on the Board, and the right to control the day-to-day operations of the company in exchange for the technical expertise and experience of the strategic investor. The government may nevertheless wish to retain a right of veto over specified corporate actions, for example through the retention of a government-owned 'golden share' with special veto or voting rights.⁸⁷

Between 2002 and 2004, privatization attempts were more likely than not to be unsuccessful.⁸⁸ This was in part due to the global economic downturn, but also to a sharp reduction in appetite for investment in the sector following the collapse in the valuations of telecommunications operators in the developed world, a refocusing of Western operators on home markets rather than risky investments in developing countries, and the perceived over-exposure of financial institutions to telecommunications sector debt. Indeed, of the privatizations that took place between 2005 and 2007, only three involved strategic investors from developed countries (Telefónica of

⁸⁷ Strategic sale privatizations are usually run as a form of competitive tender. Bidding is typically restricted to investor consortia that meet specified pre-qualification criteria, such as a minimum level of operating experience (or minimum subscriber numbers) and financial worth. Investor consortia may also be required to include domestic investors, and total foreign equity participation may be subject to a cap.

⁸⁸ Privatization tenders for strategic investors held during this period were cancelled in Nigeria, Ethiopia, Kenya, Malawi, and Albania due to insufficient interest, failure to meet the reserve price, or inability to pay the bid amount. Similarly, the proposed privatization of Ukrtelecom in the Ukraine was postponed due to unfavourable market conditions. See further, 'Trends in Telecommunication Reform 2003: Promoting Universal Access to ICTs' (ITU, Geneva, 2003).

Spain in Colombia, the US's Terracom in Rwanda, and Telecom Italia in Turkey—albeit in a consortium with Saudi Oger). Instead, where a strategic sale was successfully completed, the strategic investor was more likely to be a developing country operator seeking to establish a regional presence. For example, Maroc Telecom acquired majority stakes in Mauritania's Mauritel in 2001, in Burkina Faso's ONATEL in December 2006, and in Gabon Telecom in February 2007.

The retreat of traditional operator-investors from developed countries during the downturn opened the way for increasing involvement by private equity houses in privatizations in the developing world, which were more likely to assume sector and country risks with a view to acquiring undervalued assets during a downturn. In some cases, but by no means all, the government will insist that these private funds enter into a consortium with an operator in order to ensure the operational experience necessary to provide appropriate quality of service and compliance with build-out and customer service obligations in the licence of the target operator. In addition, these funds on occasion bring in an operator to acquire operations that are not required or desired by the financial investor.

In Israel, the privatization process for the incumbent operator, Bezeq, began in 2001 and was originally intended to be in the form of a strategic sale of a majority stake to a foreign operator. When this proved impossible, due in part to the downturn in the global telecommunications sector and the commencement of the *intifada*, proposals were made to sell the company to domestic investors and banks or through an initial public offering, but these were blocked partly due to security concerns regarding the risk of hostile interests potentially acquiring control of Bezeq in the after-market. Eventually, a 30 per cent stake in Bezeq was sold to a private equity syndicate for almost US\$1 billion in 2005.⁸⁹

Bahamas: disadvantages of sales to purely financial investors

The case of the Bahamas provides an interesting example of the importance of technical expertise, even when governments are open to financial investors. There, JP Morgan and Citigroup Venture Capital led a consortium of foreign and local financial investors (known as BahamaTel), which initially won the tender for a 49 per cent stake in BTC (formerly BaTelCo), the national incumbent operator. A few months later, however, the Tenders Commission determined that its business plan was deficient.⁹⁰ Notably, BahamaTel was the only bidder consortium that consisted solely of financial investors, on the face of it lacking the necessary technical expertise.

⁸⁹ 'Bezeq Ownership Transferred to Saban-Apax Consortium', *Global Insight*, 12 October 2005.

⁹⁰ 'Govt. drops Bahamatel as BTC bidder', *Business News Americas*, 31 October 2003.

More recently, high commodity prices and trade surpluses have resulted in the emergence of large sovereign wealth funds in the Middle East and East Asia, who have shown increasing interest in the telecommunications sector in the developing world as a means of diversifying and generating high investor returns. Two recent examples of sovereign wealth funds' activities are the 2007 acquisition of the fifth Nigerian mobile licence by Abu Dhabi-based fund Mubadala (in which UAE's Etisalat subsequently acquired a 40 per cent stake) and the 2006 acquisition of Ceske Radiokomunikace by a consortium comprising Al Bateen (another sovereign wealth fund based in Abu Dhabi), Mid-Europa, and Lehman Brothers.⁹¹

Instead of, or in addition to, a sale to a strategic or financial investor, a government may elect to divest shares in the incumbent through an IPO on either an international or a local stock exchange, sometimes in multiple, staged tranches. These IPOs almost always comprise a secondary offering of the government's own shareholding rather than the issue of new shares (i.e. the sale receipts flow to the government rather than to the company), and include domestic retail offerings and foreign and domestic offerings to institutional investors. The ability of the public to participate in an offering can be an important factor in reducing public opposition to a privatization process.

Between 2000 and 2004, with foreign and institutional investor interest in the communications sector in decline and with telecommunications securities commanding low values on international capital markets, governments increasingly turned to local listings to part-privatize the incumbent. Successful examples include the IPOs of 10 per cent of Jordan Telecommunications Company (in 2002) and 30 per cent of Saudi Telecommunications Company (in 2003), which raised US\$90 million and US\$4 billion respectively. China Mobile's IPO on the New York Stock Exchange in 2002 raised US\$1.4 billion.

Even after the downturn, some countries have preferred a domestic IPO over other forms of privatization, as a means of raising capital and strengthening local securities markets without ceding operational control. For example, in 2005, the Sultanate of Oman sold 30 per cent of the share capital of OmanTel in an offering limited to domestic investors and pension funds on the local Muscat bourse, whereas plans to sell a strategic stake in the company have been repeatedly shelved since 2000.⁹²

Speculation on the secondary markets can inflate share prices of a privatized telecommunications operator after an IPO, making a subsequent strategic sale more costly and therefore less likely.⁹³ In those circumstances, an IPO is more likely to

⁹¹ See <http://www.telegeography.com/cu/article.php?article_id=15546>; and <<http://www.altassets.com/news/arc/2006/nz9845.php>>.

⁹² 'Omantel IPO Closes, Nearly 2.5 Times Oversubscribed', *Global Insight*, 12 July 2005. The government has announced renewed plans to sell a strategic stake in Omantel in late 2008.

⁹³ See e.g. the experience in Poland: the Polish national operator, Telekomunikacja Polska (TPSA), was first privatized through a public offering of 15% of the shares of TPSA in 1998. Subsequently, the government launched a tender for a strategic investor. Eventually only one bidder emerged, a consortium

occur *after* a strategic sale (allowing the strategic investor first to bring capital and technical/management expertise to improve the company's performance and hence its share price upon flotation).⁹⁴ For example, in 2007, a consortium led by France Télécom acquired 51 per cent of Telkom Kenya for US\$390 million. Under the terms of the privatization, the consortium is required to subsequently launch an IPO for the sale to the public of 30 per cent of the company (11 per cent deriving from the consortium's shareholding, and 19 per cent from the government's shareholding), which will result in 40 per cent of the company being owned by the strategic investor, 30 per cent by the Kenyan government, and 30 per cent by public shareholders.⁹⁵

In the current environment, strategic sales again hold promise, both for operators from developed countries and for regional operators with healthy balance sheets looking for opportunities for expansion in faster growing markets. In 2007, strategic sale privatizations were successfully completed in Kenya, Rwanda, and Nigeria, with privatizations in Algeria, Ghana, Botswana, and Vietnam continuing or anticipated in 2008. Notably, some of these privatizations are 'repeat' privatizations, where the government had re-nationalized or re-acquired previously privatized stakes, often due to a souring of relations with the strategic investor.

Foreign investor interest appears to remain strong, particularly where the privatization opportunity includes mobile operations. Both Kuwait's Zain and UAE's Etisalat have expressed interest in the Algerian government's proposals to partially privatize Algérie Télécom (which has both fixed and mobile operations) in 2008 for US\$2–3 billion,⁹⁶ and SingTel, Japan's NTT DoCoMo, Vodafone, France Télécom, and Telenor all anticipated to be bidders in the proposed privatization of Vietnam's second largest mobile operator in 2008.⁹⁷

However, the attractiveness of privatizations of fixed wireline incumbents without a mobile arm is questionable, as fixed wireline businesses are typically seen as being a far less attractive investment opportunity than mobile businesses. This is in part

led by France Télécom, which purchased 35% of TPSA's shares for US\$4.3 billion, plus an option for an additional 16% of TPSA's shares.

⁹⁴ At this stage, the company will be worth more than it was when the strategic investor initially came in, and the government may decide to make an IPO of its shares (or part of its shares) to realize this increase in value. In the privatization of Teléfonos de México (TELMEX), for instance, the Mexican government first sold only 20% of its interest to a strategic investor in 1990, for the price of US\$1.8 billion. In 1991 and 1992, it sold another 31% through two IPOs, for the price of US\$4.5 billion, representing an appreciation of 70% per share. However, the recent experience in Poland stands in stark contrast to that generally accepted convention of transaction structure and sequencing. The Polish national operator, Telekomunikacja Polska (TPSA), was first privatized through a public offering of 15% of the shares of TPSA in 1998. Subsequently, the government launched a tender for a strategic investor. Eventually only one bidder emerged, a consortium led by France Télécom, which purchased 35% of TPSA's shares for US\$4.3 billion, plus an option for an additional 16% of TPSA's shares.

⁹⁵ 'Kenya: France Télécom Consortium Wins 51% Stake in Telkom Kenya', *Global Insight*, 16 November 2007.

⁹⁶ 'Algérie Télécom to Be Privatised by H1 2008', *Global Insight*, 6 March 2008.

⁹⁷ 'No Let Up for Growth in South-East Asian Mobile Markets', *Global Insight*, 26 February 2008.

due to increasing effective substitution of mobile for fixed telephony services,⁹⁸ and the erosion of formerly high-profit markets such as long-distance and international telephony due to competition from cheaper VoIP and call-back services. Moreover, in many cases, the incumbent fixed wireline network requires considerable capital investment due to a legacy of under-investment. In contrast, mobile networks are relatively cheap and quick to install, pose fewer security concerns, and have typically experienced far greater growth and profitability. Therefore, increasingly private sector investment has focused on acquiring a mobile licence or existing mobile business rather than investing in fixed incumbents. In some cases, governments have sought to address this bias by permitting the fixed-line incumbent to acquire a mobile licence or mobile division prior to privatization. In Botswana, for example, the Botswana Telecommunications Authority unveiled a new service-neutral licensing regime in the lead-up to the privatization of Botswana Telecommunications Corporation, and granted BTC the first service-neutral licence in 2007, thereby allowing it to provide any service wirelessly.⁹⁹ In Kenya, meanwhile, before the privatization of Telkom Kenya in 2007, the government bought back the company's 60 per cent stake in Safaricom, Kenya's mobile operator, thereby allowing Telkom Kenya to undertake needed restructuring and to establish its own (wholly owned) mobile division to compete directly in the mobile sector.¹⁰⁰

16.7.4 Management contracts

Instead of divesting state assets, governments may engage foreign operators to take over the management of a state-owned operator for a specified period by way of a management contract.

Management contracts were, until recently, relatively rare. The mechanism was used primarily where there was political opposition to divestment: it allowed the government to retain full ownership of the incumbent, while importing management expertise. Management contracts with major capital expenditure obligations (but without an equity investment) had been awarded in the 1990s in Thailand, Indonesia, the Lao People's Democratic Republic, Yemen, and the Ukraine.

⁹⁸ According to the ITU, in 1993 global telecommunications traffic consisted predominantly of calls between fixed networks (fixed-to-fixed traffic). According to ITU statistics, 87.9% of global calls were fixed-to-fixed, with only 10.3% of calls involving mobile networks, and approximately half of those involving calls between fixed and mobile networks. In other words, approximately 95% of global telecommunications traffic either originated or terminated on a fixed network in 1993. By 2003, over 75% of global traffic involved mobile networks, and less than 75% originates and/or terminates on a fixed network. See <<http://www.itu.int/interconnect>>. Developing countries around the world have felt the impact of this trend, with fixed-rate penetration stagnating or even falling, and mobile penetration rising dramatically. In India, for example, the number of mobile subscribers is expected to exceed the number of fixed subscribers in 2004.

⁹⁹ 'Botswana: BTC Awarded New Operating Licence', *Global Insight*, 26 March 2007.

¹⁰⁰ 'Kenya: France Télécom Consortium Wins 51% Stake in Telkom Kenya', *Global Insight*, 16 November 2007.

Management contracts without investment commitments were even more uncommon; examples include Kiribati and Mongolia.¹⁰¹

Management contracts, however, have recently become more prominent, and are now viewed as useful alternative tools where privatization is not a feasible option (e.g. due to lack of investor interest or poor market conditions), enabling the incumbent to reap the benefits of foreign management expertise and international facilities.¹⁰² Moreover, a management contract can be combined with an IPO to obtain the benefits of a strategic sale (access to capital and management expertise) without the permanent loss of management control.¹⁰³

Nigeria: combined management contract and local IPO

In Nigeria, the government attempted to privatize the incumbent, Nigerian Telecommunications Limited (NITEL) in 2001, through the sale of a 51 per cent stake for US\$1.317 billion to a consortium (Investors International Limited, or IIL) that included Portugal Telecom and KPN. When IIL failed to pay the agreed purchase price by the March 2002 deadline, and the reserve bidder withdrew, the government cancelled the strategic sale privatization. Instead, it elected to adopt a combined management contract/IPO strategy.

The government duly launched a management tender, and in March 2003 awarded Pentascope International (a Dutch consultancy) a three-year management contract intended to enhance the value of NITEL. The contract required Pentascope to oversee the modernization of NITEL, and included stringent network roll-out and performance targets.

The government finally privatized NITEL in its fourth attempt in 2006 through the sale of a 51 per cent stake to a local consortium, Transcorp, which partnered with British Telecommunications to provide technical services¹⁰⁴ However, at the time of writing, the government and Transcorp had announced their intention to conduct a bidding process for the joint sale of a 51 per cent

¹⁰¹ Izaguirre, Ada Karina 'Private Participation in Telecommunications—Recent Trends', *Viewpoint Note* No 204, the World Bank (December 1999).

¹⁰² A good example is the management contract awarded to France Télécom in 2003 for the management of Teleyemen: the management contract will enable Teleyemen to access France Télécom's capacity on the SEA-WE-ME3 submarine cable system and to France Télécom's international satellite connectivity services.

¹⁰³ Management contracts are also increasingly appearing as purely private sector transactions. A telecommunications operator (whether an incumbent or a new entrant) may contract with an international operator with greater operating expertise to provide temporary management services. This may be in order to secure international expertise and the right to use an internationally recognized brand, without requiring the international operator to assume the risk or capital requirements of an equity stake in the venture. In the case of prospective new entrants, a management contract may be needed to meet the pre-qualification criteria where these include a substantial level of operating expertise (for example, measured in relation to the number of operating licences held or total subscriber numbers).

¹⁰⁴ 'Nigeria: Transcorp Takes Formal Ownership of NITEL', *Global Insight*, 15 November 2006.

stake in the company in an effort to secure a new core strategic investor, leaving each with a holding of approximately 25 per cent. The government indicated it intended to subsequently sell its remaining shares in a listing on the Nigerian Stock Exchange.¹⁰⁵

As managers under a management contract do not take any investment risk, management contracts need to be carefully designed in order to ensure that public policy objectives are respected and realized and that the manager is given incentives for good performance and is subject to penalties for sub-standard performance. Moreover, the balance of decision-making power between the government and the manager, and the power of the government to terminate the management arrangements, need to be carefully worked out.

Lebanon: management contracts as interim 'bridge'

In Lebanon, management contracts have been used as a 'stop gap' measure pending full privatization. The two GSM mobile networks in Lebanon were built and operated under BOT contracts (see below, section 16.7.5). When these contracts were terminated, the mobile assets vested in the Republic of Lebanon. Interim management contracts were put in place with the BOT operators to provide for the continued management of the networks pending their 're-privatization'.

In 2001, the government engaged an investment bank to conduct an auction for the sale of the two networks and associated mobile licences. Following political resistance to an outright sale and concerns about relinquishing the mobile sector completely to private sector control, the Council of Ministers in 2002 decreed that a second tender for two three-year management contracts should be grafted on to the auction process, as an alternative bidder 'option'. In the end, after considerable delays and rule changes, when the first round of the auction and tender was held in January 2004, only two bidders submitted qualifying bids. These bidders coincidentally happened to be the investors in the former BOT operators, and were linked to members of the government. Amid claims of political interference in the outcome and a general public outcry, the auction and tender process was aborted; instead, in February 2004, the government ran a new international tender (excluding the two previous bidders) to manage the two networks.¹⁰⁶ Management contracts were duly awarded to Detecon and the Mobile Telecommunications Company of Kuwait in April 2004,

¹⁰⁵ 'Nigeria: Government and Transcorp Plan to Sell Stake in NITEL', *Global Insight*, 13 February 2008.

¹⁰⁶ 'Qordahi Gets Green Light to Re-Start Mobile Tender', *The Daily Star* (Beirut, 4 February 2004).

in an attempt to introduce impartial, foreign management expertise for an interim period, following which the government would hold a new, fairer auction of the two mobile businesses. In 2007, the Lebanese government announced its intention to auction both mobile networks in 2008, with bidders eligible to buy up to two-thirds of the new mobile operators, with the remaining third to remain with the government for a subsequent listing on the Beirut Stock Exchange.¹⁰⁷ However, the proposed auction was subsequently shelved due to political tensions in the country, and instead the two mobile networks continue to be operated pursuant to these management contracts.

16.7.5 BOTs, BOOs, and BTOs

A 'build-operate-transfer' (BOT) contract is a form of concession or commercial agreement between private investors and a state. Under a BOT contract, an investor (or a consortium of investors) will be granted the rights to build a telecommunications network and to operate it pursuant to the terms of the concession, usually sharing a portion of the revenues with the state. At the end of the concession term, network assets are transferred back to the state. This arrangement allows private sector participation where a state wishes or is required by law to retain infrastructure ownership, and has been used in India, Lebanon, and, in a slightly different form, in Indonesia.¹⁰⁸ Rare examples of an ongoing BOT-type arrangement are the two mobile networks in Syria (MTN and SyriaTel), which commenced operations in 2001 and operate under 15-year BOT concessions from the incumbent state-owned fixed-line operator, Syrian Telecommunications Establishment, and the concession granted to Timor Telecom (owned by Portugal Telecom) in East Timor.¹⁰⁹ Under the Syrian concessions, STE is entitled to a share of billed gross revenues.¹¹⁰

It was thought that a BOT-type arrangement encouraged investment by reducing investor risk: the investor's 'exit strategy' is guaranteed at the date of expiry or termination of the BOT. However, in practice, BOTs used in the communications sector can be much more problematic than BOTs used in other infrastructure projects (such as toll roads and power plants), and the investor's exit can be exceedingly complex, acrimonious, and protracted.

¹⁰⁷ <<http://www.lebanonmobileauction.com>>; 'Etisalat To Bid In \$6.8B Lebanon Tel Sale Amid Election Doubt', *Dow Jones Newswires*, 24 December 2007 and 'Qtel To Bid In \$6.8B Lebanon Tel License Sale', *Dow Jones Newswires*, 26 December 2007.

¹⁰⁸ 'Trends in Telecommunications Reform: Convergence and Regulation 1999' (Geneva, ITU, 1999), at p 45.

¹⁰⁹ Bray, J, 'International Companies and Post-Conflict Reconstruction Cross-Sectoral Comparisons', p19, <http://www-wds.worldbank.org/servlet/WDSContentServer/1W3P/IB/2005/03/30/000012009_20050330161732/Rendered/INDEX/31819.txt>.

¹¹⁰ 'Zain Considers Acquisition of MTN Syria', *Global Insight*, 16 December 2007 and 'Syria: Two New GSM Networks Activated', *Global Insight*, 26 April 2001.

This is because, at the end of the BOT contract, it is not just the physical network infrastructure that needs to vest in the state: without complex system IT systems and software to manage and monitor the network, the system will be inoperable. Whereas title to physical equipment and sites can be transferred readily, the assignment of contracts covering equipment supply, rental and maintenance, site rentals, rights of way, software licensing, employees, distributors, resellers, and customers may each require individual third party consents. Network, frequency, and planning permissions and authorizations will need to be transferred. Even the task of creating an 'asset inventory' is impossible given the difficulties of defining what is in fact included in the 'network' to be transferred and what should be retained by the BOT operator,¹¹¹ and reflecting the continual changes to the network. Intellectual property rights associated with the network service, or contained in critical network or billing software systems, may well belong to the BOT operator or its parent company, who may be unwilling to allow their use by the State or a new successor operator. Some of these issues may be alleviated by the enactment of a law vesting contractual and other rights in the state, although such action could be perceived as amounting to a form of expropriation and may have limited or no legal effect on contracts governed by foreign law.

The state will also need to incorporate a vehicle to which assets can be transferred in order to avoid subjecting the business to government procurement and civil service restrictions. The state and the BOT operator will need to agree on a valuation of the transferred assets, as valuation procedures in the BOT contract are likely to be capable of differing interpretation. On a practical level, the termination or expiry of BOT-type arrangements may cause significant industrial relations issues, as existing employees seek guarantees of employment security or simply resign following the ending of the BOT arrangement. As a result, the state may have to provide substantial employment indemnities to retain key employees to operate and manage the network. Procedural matters may in practice prove time-consuming and difficult.¹¹² The vesting of assets may also need to be coordinated with tax authorities in order to avoid the levying of stamp or transaction duty on the asset transfer. To complicate matters further, network performance is likely to have deteriorated in the years preceding BOT expiry, as the BOT operator has little incentive to continue to invest in network maintenance and upgrades as the expiry date approaches. In the (highly likely) event that the transfer results in systems failures or network outages, the consequent public outcry may have political repercussions for the government concerned.

¹¹¹ For example, standard office facilities, computer terminals, servers, and company vehicles may not be thought of as part of a 'telecommunications system' as such, but these items will still be necessary for the continued and uninterrupted running of the system. The BOT operator and the government are also likely to disagree as to who should own items on the periphery of the network.

¹¹² For example, re-assigning network codes and transferring GSM Association memberships, or changing SIM card information.

Countries considering establishing a BOT-type arrangement would do well to recall the three ICC and UNCITRAL arbitrations commenced by the BOT mobile operators following the termination of their BOT contracts by the Lebanese government in 2001,¹¹³ and the difficulties subsequently suffered by the Lebanese government in its attempts to auction to third-party bidders the 'network assets' it acquired following the termination of the BOT arrangements.

Less common but also in existence are 'build-transfer-operate' (BTO) and 'build-operate-own' (BOO) contracts. Under BTO contracts the investors build the network and transfer title to the government, but continue to operate the network and share revenues from its operation with the state. This allows the state to retain ownership and control over the network, typically reflecting a reluctance of the state to relinquish control of key infrastructure, but is detrimental to the investors, who bear most of the costs without the benefit of ownership. In Thailand, BTO concessions were introduced in the 1980s to ensure the build-out and operation of networks for fixed, cellular, and value-added services. Although since 2000 the Thai government has proposed the conversion of the BTO arrangements into licences as part of wider sector reforms and in order to facilitate the proposed privatization of the state-owned incumbents, to date the resolution of the existing concessions has not been resolved.

A BOO contract is, essentially, the contractual equivalent of a licence, in that it simply authorizes an entity to build and operate its own network. However, unlike many licences,¹¹⁴ it typically includes a revenue sharing obligation similar to those found in BOTs and BTOs. An example is the grant in 2001 of a BOO contract in Egypt for the construction of a major wireless local loop network, which required the winning consortium to share operating revenues with state-owned Telecom Egypt.¹¹⁵

16.8 ATTRACTING NEW ENTRANTS

Liberalization is not simply a matter of abolishing any existing exclusivities enjoyed by the incumbent. In addition, governments must ensure that investors and operators are willing to enter the sector and compete. In part, the attractiveness of a newly liberalized sector to new entrants will turn on the design of the regulatory framework regulating the transition from monopoly to competition.

While certain forms of licence (such as ISP licences or value-added services licences) may be available 'off-the-shelf' on request from the licensing authority,

¹¹³ 'Libancell Banned from Arbitration', *Global Insight*, 19 July 2001.

¹¹⁴ Although licences may also contain revenue sharing obligations: see, for example, the 20% revenue share obligation in the mobile licence won by a consortium led by Turkcell in Iran. See 'Turkcell Enters Iranian Mobile Market', *Telecom Worldwide*, 19 February 2001.

¹¹⁵ 'Wireless Local Loop Project to Reduce Fixed-Line Bottleneck', *Global Insight*, 15 March 2001.

typically governments use a more structured (and often competitive) licensing process where licence numbers are limited (for example, due to scarcity of radio spectrum) or where the government wishes to license a core market (such as fixed or mobile) or to encourage new entrants to make binding commitments, such as to build out networks in certain areas or to deploy high-speed data services. Where licences are awarded through competitive tender, entry decisions may be determined by the form and conditions of the tender process itself. Governments will need to balance any revenue-raising objective against the need to ensure the winning bidders are able to enter the market on a sustainable basis and retain sufficient funds to devote to network deployment and service delivery.

16.8.1 Types of competitive selection process

The two principal competitive selection processes are beauty contests and auctions. The term 'beauty contest' refers to a method of comparative selection whereby the relative merits of bids are assessed based on a subjective evaluation of specified qualitative and quantitative criteria. The government sets the appropriate criteria on the basis of which the winning bid is selected (for example, commitments for network deployment and coverage, network service quality, the introduction of high-speed and multimedia services, or investment commitments). Beauty contests can be a useful licensing method where a government wishes to allocate licences to the bidders whose business plans most closely align with government objectives for sector development, and is prepared to forego competition on licence price. However, the use of qualitative and subjective evaluation criteria in the selection process can significantly diminish transparency and can open the government to accusations of bias or political interference.

In contrast, in an auction, the selection process is based on financial bids. Compared to beauty contests, auctions offer three key advantages: the ability to allocate licences efficiently, and consequently maximize revenue (in that licences are awarded to the bidders that value them most, and who therefore offer the highest purchase price), and greater transparency of process. However, auctions need to be carefully designed to ensure that the licensing process itself does not cause inefficient or undesired outcomes.

Auctions vary significantly in structure and design. The main auction types are: (i) ascending (or 'English') auction, (ii) descending (or 'Dutch') auction, (iii) sealed bid auction, and (iv) hybrid (or 'Anglo-Dutch') auction, although there are many other variants.¹¹⁶ Auctions can also be split into two broad categories; continuous auctions, such as ascending and descending auctions, where bidders may alter their bids according to the action or inaction of other bidders, or sealed bid auctions,

¹¹⁶ The hybrid Anglo-Dutch model was first proposed in Klemperer, PD, 'Auctions With Almost Common Values' (1998) 42 *European Economic Review* 757–69.

where the bidder has one chance to bid and does not know how much other bidders are offering.

16.8.1.1 *English auctions*

In an English auction, the auction begins with a financial bid, sometimes set as a 'reserve' price by the auctioning authority, and continues with each higher bid that is made, concluding when no further bids are forthcoming. The item is then sold to the highest bidder at the final price bid. It is also possible to sell several items at the same time using an English auction, in which case the price rises on each item (e.g. each licence) independently, and none of the objects is finally sold until all bidding on all objects is completed.

English auctions are vulnerable to collusion, where participants agree to avoid excessively raising the bidding price. Bidders can use the early stages when prices are still low to signal who should win which items, and then tacitly agree to stop driving prices up. Operators can also group together into bidding coalitions, thereby reducing competition in the auction, and then split up the licences between them after the auction closes. For this reason, English auctions are typically accompanied by stringent anti-collusion rules for the duration of the auction.

English auctions can encourage predatory and entry-detering behaviour. For example, if only a small number of licences is available, incumbent operators may try to intimidate new entrants into not bidding by indicating that they will top all bids. English auctions can, in this way, allow strong or dominant bidders to deter the entry of rival bidders altogether, who may not participate at all if they do not anticipate standing a good chance of obtaining a licence. This may result in the auction being unprofitable or failing to attract the desired variety of bidders.

English auctions can also be affected by the 'winner's curse'. This refers to the situation when two bidders make similar bids in an auction but have different information about the value of the item, and the winner is the bidder who has most overestimated the value. As bidders are keen to ensure they do not overestimate the value of an object in this way, this can cause them to bid overly cautiously. Moreover, because weak firms will fear this outcome more than other, stronger bidders, the stronger, more dominant bidder wins most of the time—and it also generally pays a relatively low price because its rivals will have bid extremely carefully.¹¹⁷

¹¹⁷ For example, in 1995, in the bidding for the Los Angeles mobile-phone broadband licences, the value of the licence was hard to estimate, but it was probably worth similar amounts to several bidders. However, Pacific Telephone, which already controlled the local fixed-line telephone business, had clear advantages from its database on potential local customers, its familiar brand-name, and its experience with doing business in California. The auction was an ascending auction and the result was that the bidding stopped at a very low price, yielding only US\$26 per capita. In Chicago, by contrast, the main local fixed-line provider did not participate and it was therefore not obvious who would win, so the auction yielded US\$31 per capita even though Chicago was thought less valuable than Los Angeles (See Klemperer (1998) and Bulow, JI and Klemperer, PD, *Prices and the Winner's Curse*, Discussion paper, Nuffield College, Oxford University (2000), available at <<http://www.nuff.ox.ac.uk/economics/people/klemperer.htm>>).

16.8.1.2 *Dutch auctions*

In a true Dutch auction (so called because of its historical antecedents in the Dutch flower industry), the bid price is set high by the auctioning authority, and progressively lowered until accepted by a bidder. While this is the historically correct use of the term, current financial trade literature is more likely to define the Dutch auction as the competitive or uniform price (sealed bid) auction described below.

16.8.1.3 *Sealed bid auctions*

Auctions can also take the form of simultaneous sealed bids, where each bidder simultaneously makes a single 'best and final' offer and each object is sold to the highest bidder at the price it bid for that object. These can be run either as first price or second price auctions. In a first price auction the highest bidder receives the goods for the amount it offered, whereas in a second price auction the highest bidder receives the goods for the price tendered by the second highest bidder.

16.8.1.4 *Anglo-Dutch auctions*

The disadvantages of English auctions, including collusion and predatory behaviour, can be mitigated by including a sealed bid stage in an otherwise ascending auction. This type of hybrid auction is termed an Anglo-Dutch auction.¹¹⁸ The participants bid in an open ascending auction until there is one more bidder than there are units for offer and the remaining bidders then make a final sealed bid that is not lower than the current asking price. This model was used successfully in the auction of British 3G spectrum licences.

The Anglo-Dutch auction design is particularly valuable if one bidder (for example, an incumbent operator) is considered to be significantly stronger than other potential bidders, as it helps to level the playing field. The sealed bid at the final stage introduces some ambiguity over which of the final bidders will win, and operators, especially weaker ones, may therefore be attracted to the auction by the knowledge that they have a chance to make it to this final stage and the overall outcome is not a foregone conclusion. However, by providing weaker bidders with a greater chance of victory, sealed bid auctions may not be appropriate when the government's foremost objective is to maximize revenues. Notwithstanding this risk, the overall bids may actually be higher by the end of the first, ascending, stage of an Anglo-Dutch auction, than if a pure English auction were used, because participants may perceive their chances of winning as being greater.

The Anglo-Dutch auction also incorporates the advantages of sealed bid auctions. Collusion is discouraged because the final sealed bid round allows bidders to exit any collusive agreements without fear of reprisal. Tacit collusion is also reduced since firms are unable to use the sealed bidding round to signal bidding strategy to

¹¹⁸ First proposed by Paul Klemperer (ibid). Note the use by Klemperer of the contemporary meaning of the term 'Dutch' auction in his description of this hybrid as an Anglo-Dutch auction. The reference to 'Dutch' is to a sealed bid auction as opposed to the traditional 'descending' Dutch auction.

each other and any consortium formed between two strong bidders will always be vulnerable to being challenged by other (weaker) bidders at the final sealed bid stage.

A form of Anglo-Dutch auction was used in Nigeria in 2001 when the government issued three GSM mobile licences. Initially, an attempt had been made to award the licences by way of beauty contest, but this process had failed due to allegations of corruption, and therefore the greater transparency afforded by an auction was considered preferable and more likely to have credibility in the eyes of international investors. Ultimately, a type of Anglo-Dutch auction (a hybrid of an ascending clock auction¹¹⁹ and a sealed bid auction) was chosen to ensure, *inter alia*, that collusion was deterred and also to ensure that, if the number of bidders fell, the auction could be tailored appropriately and ended quickly by moving to the sealed bid phase.

16.8.2 Design of competitive selection processes

A successful competitive selection process must always be designed to take into account the context in which it operates, for example, the number of licences on offer compared to the number of expected bidders.¹²⁰

The choice of process will also depend on the aims of the government in the licensing process. An auction designed to raise as much revenue as possible will inevitably differ in form from one in which the government has other social aims. For example, if the key motivation is to attract a variety of competitors or to achieve strategic licence commitments (such as aggressive network roll-out or modernization targets, substantial investment in the infrastructure, network deployment in remote or rural areas, or even job creation), then the choice and design of the process will need to reflect these requirements and should dilute price competition accordingly.

Attention must also be paid to the quality of the design of an auction, as poorly designed auctions can leave wide loopholes for bidders to game the auction process and consequently distort the auction outcome. For example, in 2000, the Turkish government auctioned two mobile licences in succession, stating that the reserve price for the second licence would be equal to the selling price of the first. One bidder bid far more for the first licence than it was realistically worth, assuming that no rival would be willing to bid that high for the second licence. The second licence remained unsold, and the winning bidder of the first licence was left without a rival operating the second licence.¹²¹

¹¹⁹ Where the *auctioning authority* announces prices to the bidders that increase over time and bidders choose whether to accept or reject the announced prices.

¹²⁰ In the Netherlands' auction for the 3G mobile-phone licences, the Government simply followed the auction design which was used for 3G mobile-phone licences in the UK. This caused severe problems, as the Netherlands had an equal number of bidders who were incumbent operators and licences on offer. This meant that very few new entrants turned up, and those who did made deals with the incumbent operators, resulting in just one new entrant being left to compete with five incumbents for the five licences, producing a poor financial result for the government.

¹²¹ 'Turkey: GSM 1800 Licence Victor Pays High Price', *Global Insight*, 13 April 2000. Indeed, it was suggested that the winning bidder, a consortium of Telecom Italia and Isbank, deliberately attempted to price its competitors out of the race for the second GSM licence to be auctioned to the losing bidders.

The credibility of auction process and rules is also important. Although in some circumstances it may not make sense for a government to punish a bidder violating the auction rules (for example, when excluding the offending bidder would end the auction immediately), or it might be difficult to impose fines large enough to have a serious deterrent effect on strong bidders, a failure to enforce the rules can aggrieve other bidders, who may decide to quit the auction as a result.¹²²

Government coffers inevitably benefit from the sale of assets, such as licences, through competitive selection processes. Indeed, receipts can amount to hundreds of millions of dollars. However, if the price paid by an investor for a stake in the incumbent or for a new licence is too high, then, although government coffers benefit, ultimately consumers may not. High prices may result in less money being available for investment to build out or improve networks and increase penetration, and in higher tariffs to be paid by users. Perhaps a good example is Nigeria, where mobile subscribers suffered from high call tariffs following the initial auction of mobile licences, as the newly licensed mobile operators sought to recoup investment costs quickly. Another example is India, where second fixed operator licences were sold for what were perceived to be exorbitant prices in 1996. This meant that projected revenues were modest, and the licence holders had great difficulty in obtaining debt financing for necessary capital expenditures.¹²³

Investors will also need to determine whether the regulatory environment places any restrictions on their ability to participate in the sector. Some countries, such as Saudi Arabia, prohibit foreign investment in the communications sector, and special exemptions to this prohibition are required to permit foreign participation in newly liberalized markets. Sweeping exemptions have generally been granted to increase the range and quality of potential bidders in licensing processes.¹²⁴ In other countries, foreign investment may be permitted only if local investors or the government hold an equity stake in the licensed entity. For example, in April 2004 the monopoly of state-owned Etisalat in the UAE was abolished, but the Supreme Committee responsible for the communications sector has indicated that a government

¹²² In the Netherlands, for example, six bidders competed for five 3G mobile-phone licences in an ascending auction in which bidders were permitted to win just one licence each. When the government failed to take any action to punish one bidder who threatened another by demanding that it cease bidding, the threatened bidder quit the auction. The sale raised less than 30% of what the Dutch government had forecast based on the results of the UK's similar auction just three months earlier.

¹²³ Wellenius, B, 'Telecommunications Reform—How to Succeed', *Viewpoint Note* No 130, the World Bank (October 1997).

¹²⁴ The Saudi foreign direct investment legislation requires amendment to allow foreign ownership in the telecommunications sector, as this has been included in a list of 'sensitive' sectors in which foreign investment is barred. In February 2003, the bar on foreign investment in internet access and some data transmission services was lifted; the bar on foreign investment in the mobile sector is expected to be lifted as part of the mobile auction process in 2004. However, the mobile auction rules require bidders to team up with at least five Saudi companies in a bidding consortium, and foreign ownership will be restricted to 49%. See 'Announcement of Saudi Mobile Licence Bidder Shortlist Postponed', *Global Insight*, 29 March 2004.

shareholding will be required in any new entrant.¹²⁵ Similarly, in Azerbaijan, the Ministry of Communications and Information Technology until recently held major shareholdings in all fixed and mobile operators.¹²⁶

Governments also need to consider the right balance between competing policy objectives. Proposals to grant sweeteners to some operators or investors (e.g. reserving a mobile licence for the incumbent operator, as was done in Nigeria) must be weighed against overall policy objectives of attracting (and retaining) investment in the sector generally and the risks of creating unfair competitive advantages. In developing countries whose markets are in transition, issuing multiple licences in high-margin segments of the market (such as the mobile segment) that can be effective substitutes for other, more costly segments (such as the fixed-line segment), may preclude or pre-empt investment in those costlier segments, thereby distorting market development.

16.8.3 Selection processes for fixed-line licences

Given the often exponential returns witnessed in the mobile sector, attracting bidders to a competitive bidding process for the award of mobile licences is usually not difficult. By contrast, fixed licences are often considered significantly less desirable. Investment costs in a fixed network are high, margins low, and new entrants typically face fierce competition from mobile operators for basic voice services (as a result of fixed-mobile substitution) and increasingly, with the roll-out of wireless broadband and 3G networks, for broadband services. Thus, even though a fixed market may have been liberalized (in that legal barriers to competition have been removed), a lack of interest in any fixed licences on offer may result in a *de facto* continued monopoly in the fixed-line market. Therefore, to successfully attract new entrants in the fixed-line market, governments may need to develop strategies to encourage investor interest or to offer prospective licensees 'sweeteners,' such as encouraging the deployment of cheaper fixed wireless technology, offering a 'unified' licence that is technology-neutral and permits full or limited mobility services, opting for service-based competition rather than requiring duplication of expensive fixed network infrastructure or giving winners certain priority rights (e.g. in future spectrum auctions). Governments may also opt to offer fixed licences in a 'beauty contest' for a nominal fee rather than through an auction process, in order to reduce entry barriers and to reflect the lower value investors may place on a fixed licence.

In Morocco, an attempt to license a second national fixed operator through a competitive auction process failed in 2002, after none of the 12 groups who had

¹²⁵ See 'United Arab Emirates Opens Telecoms to Competition', *Total Telecom*, 12 April 2004, and 'Government to Take Stakes in New UAE Telecoms Entrants', *Global Insight*, 19 April 2004.

¹²⁶ Aztelecom, the incumbent fixed operator, is wholly state-owned; its fixed competitors are all at least 50% owned by the state. In the mobile market, the government owns 37% of Azercell and in January 2004 sold its 51% stake in Bakcell to Motorola GTIB.

requested bidder documentation submitted a bid. Among the reasons suggested for the lack of interest was the falling demand for fixed services in Morocco: the fixed incumbent was suffering from negative growth while mobile telephony established itself as the primary voice platform (with the mobile market growing five times faster, in terms of subscribers, than the fixed market).¹²⁷ The regulatory authority re-launched an auction for fixed licences in 2005, but this time in a bid to increase interest from smaller niche players, offered a total of six local loop, two national/long-distance and two international gateway licences (with bidders bidding for all three given more favourable weighting), accompanied by a more favourable regulatory framework (including a more detailed interconnection regime and a substantial reduction in required universal service fund contributions and roll-out obligations). Licences were 'technology-neutral,' allowing operators to adopt more cost-effective wireless technologies to deploy networks and, on request, to offer 'limited mobility' services. In addition, winners of the new fixed licences would, along with the existing GSM operators, receive priority in the upcoming 3G auction. Two companies ultimately took up local, long-distance, and international licences, with one also obtaining permission to offer limited mobility services in a 35-kilometre radius.¹²⁸ Notably, both companies also hold mobile licences in Morocco.

Prospective investors in fixed licences might also be discouraged from participating in a tender process if the reserve price is too high and does not reasonably reflect the value of the relevant market segment. In South Africa, for example, the government began the process of licensing a second national (fixed) operator (SNO) in 2002, by holding a competitive bidding process to select the strategic investor for the SNO. It took three failed attempts to select a winner for the strategic stake in the SNO before a bidder was finally selected in 2005; prior bidders had been rejected for submitting 'financially deficient' bids, possibly reflecting the disjuncture between their evaluation of the future value of the fixed market and the government's own revenue objectives.

Meanwhile, recognizing the fact that fixed licences are significantly less attractive than mobile licences and offer much less opportunity for financial reward or growth, the regulatory authority in each of Bahrain and Jordan successfully introduced fixed-line competition in 2005, not by conducting an auction or other competitive tender process, but by simply making fixed licences available 'off-the-shelf' for a fixed fee. In Bahrain, fixed licences are available on demand, with no restrictions placed on the number of licences that can be granted, for an initial fee of less than US\$100,000 and an annual licence fee of one per cent of the licensee's annual turnover attributable to the licensed activity.¹²⁹ In Jordan, a prospective fixed operator not wanting to use radio frequencies or access public rights of way can acquire a class licence on demand for less than US\$50,000 that authorizes the operation of a

¹²⁷ 'Morocco: Government Re-evaluates Morocco's Fixed Liberalisation,' *Global Insight*, 27 March 2003.

¹²⁸ 'Morocco: MediTel Wins Fixed-Line Licence,' *Global Insight*, 11 July 2005.

¹²⁹ See <<http://www.tra.org.bh/en/licensingTypes.asp>>.

public telecommunications network and provision of public telecommunications services.¹³⁰

By contrast, larger markets with perceived greater growth potential may have greater success in auctioning fixed licences. In Saudi Arabia, the tender for new fixed licences to end the *de facto* monopoly of the incumbent, STC, attracted substantial interest (even though the new fixed-line licences carried obligations to cover at least 3 per cent of the country with fibre-optic networks or 15 per cent with wireless local loop or wireless broadband networks within seven years), and in 2007 the regulatory authority successfully awarded three fixed-line licences to consortia led by Bahrain-based Batelco, US-based Verizon Communications, and Hong Kong-based PCCW, respectively.¹³¹ Winning bidders separately applied for spectrum rights to deploy wireless local loop access. Successful bidders such as PCCW are expected to deploy high-quality value-added and broadband services such as IP TV (successfully deployed by PCCW in its home market).

A similar outcome appears likely in Egypt, where, at the time of writing, at least seven operators were vying for the second national fixed licence. This licence would permit the holder to offer a range of services, including triple play, international gateway, WiMax, data and internet, local, international fixed voice, and other value-added services.¹³² The government also invited interested parties to explore infrastructure options with the state electricity and railways authorities. Licence contenders included both developed and developing world heavyweights such as France Télécom, UAE's Etisalat, and Orascom.¹³³

16.9 MANAGING DISPUTES IN THE AFTERMATH OF PRIVATIZATION AND LIBERALIZATION

Once the state-owned incumbent has been separated from government and new entrants have established operations, mechanisms will need to be in place to resolve any disputes that may arise between operators or with the government. Disputes have existed in the communications sector for decades. Historically, disputes in the sector have revolved around the nature and duration of exclusive rights granted to incumbents, licensing of new entrants, the technical, operational, and pricing aspects of interconnection arrangements, spectrum matters including harmful interference and licensing, and disputes between service providers and customers.¹³⁴ However, as the number of service providers grows (particularly following the introduction

¹³⁰ See <<http://www.trc.gov.jo>>.

¹³¹ 'Saudi Arabia: Saudi Fixed-Line Winners to Receive Licence in July', *Global Insight*, 16 June 2007.

¹³² See <<http://www.tra.gov.eg>>.

¹³³ See 'Egypt to auction 2nd fixed-line license June 19', *Reuters*, 24 February 2008.

¹³⁴ For a more thorough discussion of innovations in telecommunication dispute resolution, on which this section is based, see, e.g., *Dispute Resolution in the Telecommunications Sector: Current Practices and Future Directions*, World Bank/ITU, 2005, currently available at: <<http://www.itu.int/md/D02-RGQ18.1-C-0020/en>> (ADR Study).

of competition), and as the range of services provided (and technologies used to provide them) multiplies, so too do the number of potential disputes, and their potential complexity increases. Successful dispute resolution is crucial for liberalization and reform efforts to succeed.

16.9.1 Local dispute resolution mechanisms

Like any other part of the regulatory process, the manner in which, and speed with which, disputes in the sector are resolved, and the finality of, or ability to appeal, those decisions, is a key factor that needs to be taken into account in regulatory design. Disputes can cause delays in sector liberalization, distort costs by diverting both regulator and operator resources, create uncertainty, and limit the effectiveness of competition.¹³⁵ Indeed, regulatory policy, including dispute resolution and enforcement, can shape markets through the incentive structures it creates. Where the incentives are for operators and service providers to seek resolution of disputes, rather than seeking to create disputes or prolong them, stakeholders in the sector should benefit from the resulting efficiencies. In particular, sector development will benefit from a regulatory environment that encourages prevention, early identification, and resolution of disputes. Where the local judicial system is perceived to be inadequate (e.g. due to a lack of competency over technical issues, or concerns regarding impartiality, or delays inherent in court processes), investors may prefer to have access to alternative dispute resolution fora, or a specialist sector appellate body (see box below).

India: a specialist appellate tribunal

India has a bifurcated institutional structure, with both a 'regulator', the Telecommunications Regulatory Authority of India (TRAI), and a separate institution for settling disputes, the Telecommunications Dispute Settlement and Arbitration Tribunal (TDSAT). The TDSAT was originally established as a separate institution in part due to concerns that granting dispute resolution, or quasi-judicial, competencies to the same body that issues and controls licences would create a conflict of interest.

In 2003, a decision of TDSAT over so-called 'limited mobility' of fixed wireless local loop (WLL) operators had the effect of reshaping the entire Indian mobile market, and resulted in an explosion of subscriber growth. The dispute concerned the practice of WLL operators of allowing their customers limited mobility at tariffs far lower than mobile tariffs, to which the licensed mobile operators objected on the grounds, *inter alia*, that the WLL operators had not paid the equivalent to mobile licence fees, resulting in unfair competition to the

¹³⁵ Ibid.

mobile operators. TDSAT found in favour of the WLL operators, permitting them to offer limited mobility services.¹³⁶ The decision was upheld on appeal, and ultimately resulted in the TRAI's decision in November 2003 to adopt a unified licensing regime covering both basic (fixed local) and mobile services. This enabled the WLL operators to migrate to the new regime and provide full mobility services over their CDMA WLL networks in direct competition with the existing GSM mobile operators. However, disputes continue over the distinctions between limited and full mobility. For example, in 2005, Tata brought an appeal to the TDSAT challenging a decision by the TRAI ordering the CDMA WLL operators to withdraw advertising campaigns that portrayed limited mobility services as mobile services with a landline tariff.¹³⁷

Notably, the creation of a specialist dispute resolution tribunal has not prevented decisions being routinely appealed to the local courts. A recent example is the attempt by India's GSM mobile operators to prevent the TRAI from issuing dual-technology (CDMA and GSM) spectrum licences. Having failed to win their case through the TDSAT, they simply moved their case on appeal to the high court.¹³⁸ It should be noted that the Indian approach is criticized for inconsistent verdicts by regulators and courts (explicitly including the TDSAT).¹³⁹

Indeed, although disputes have traditionally been resolved through the courts, regulatory frameworks are increasingly providing for disputes to be referred to alternative dispute resolution mechanisms (ADR), ranging from industry self-regulation to mediation and arbitration.¹⁴⁰ The design and operation of such dispute resolution mechanisms varies, but in all cases a key area of concern for regulators and policy makers is to balance the need for speedy resolution of disputes with the need to develop a reliable body of precedent to ensure consistency and predictability of regulatory decision making.

¹³⁶ *Cellular Operators Association of India v Union of India*, Petition No 1 of 2001 (TDSAT, 8 August 2003).

¹³⁷ 'Fixed Wireless Operators Accused of Marketing Services as Mobile in India', *Global Insight*, 13 January 2005.

¹³⁸ 'GSM Operators File to Block New Spectrum Awards in India', *Global Insight*, 24 December 2007.

¹³⁹ See 'India: The GOM Tackles Reform', Global Technology Forum, Economist Intelligence Unit, 22 October 2003 (<http://www.ebusinessforum.com/index.asp?layout=rich_story&doc_id=6772&categoryid=&channelid=&search=tdsat>).

¹⁴⁰ Although a full discussion of ADR is beyond the scope of this chapter, it is worth noting some distinguishing features of different dispute resolution techniques for the purposes of the discussion in this chapter. At one end of the continuum, litigation is of course the most formal and adversarial. At the other end is negotiation, which is the most consensual. Regulatory adjudication and arbitration can also have elements of formal, adversarial processes. Mediation (and conciliation) as well as arbitration also have consensual aspects. Negotiation, mediation/conciliation, and arbitration can all be conducted confidentially, which limits the ability of decisions to act as precedents in future disputes. Mediation/conciliation, arbitration, and regulatory adjudication all may have the possibility of appeal, and are 'facilitated' by third parties. Regardless of the form of dispute resolution, each takes time and resources, although the conventional wisdom is that, as a process becomes more adversarial, it also consumes more time and resources.

16.9.2 International dispute resolution mechanisms

Investing and operating in the developing world typically carries a higher degree of political, economic, and security risk, which may not be adequately addressed by local avenues for dispute resolution. For example, if there is a change in government policy, such as the abolition of existing rights or a nationalization of core communications infrastructure, the affected foreign investor may find local courts or regulatory bodies unsympathetic. Accordingly foreign investors may seek to protect their investments in high-risk markets by requiring disputes relating to their investments to be resolved through international arbitration in a neutral venue (e.g. through the World Bank's International Centre for Settlement of Investment Disputes (ICSID),¹⁴¹ the International Chamber of Commerce,¹⁴² or according to the United Nations Commission on International Trade Law (UNCITRAL)¹⁴³) or by relying on a bilateral investment treaty (see further, section 16.9.3 below). These solutions may have an adverse effect on the local regulatory framework, by hampering the development of local jurisprudence or causing inconsistent regulatory outcomes that do not reflect local norms. However, launching an international arbitration can also be extremely costly, and may be of limited effect if the relevant government refuses to recognize the arbitration and the plaintiff investor is unable to enforce an arbitral award. For example, when France Télécom brought an international arbitration claim against the Lebanese government following the government's termination of its BOT contract in 2001, the Lebanese government was able to secure a judgment from a sympathetic local court that the arbitration provisions in the BOT contract were unlawful and of no legal effect, and used this as a basis to ignore the arbitration proceedings.

Bolivia: limitations of international arbitration

In 2006, following the re-nationalization of former state-owned companies in the oil and gas industry, Bolivia's new government announced plans to re-nationalize the incumbent fixed-line operator, Entel. The 47 per cent of the shares in Entel held by Bolivian citizens reverted to state ownership, and the government threatened that, if Telecom Italia (which had acquired a 50 per cent stake in Entel for US\$600 million in the 1995 privatization) did not agree to sell its shares, the government would use executive powers to regain control of the company.

In October 2007, Telecom Italia sought international arbitration to block Bolivia's efforts to take over Entel. The suit was filed at the World Bank's International Centre for Settlement of Investment Disputes (ICSID).¹⁴⁴ However, the Bolivian government has refused to recognize ICSID's jurisdiction, claiming

¹⁴¹ For further information see <<http://icsid.worldbank.org/ICSID/Index.jsp>>.

¹⁴² For further information cf <<http://www.iccwbo.org/policy/arbitration/id2882/index.html>>.

¹⁴³ For further information re see <http://www.uncitral.org/uncitral/en/about_us.html>.

¹⁴⁴ Case no ARB/07/28. For further information such as the present status of the case see <<http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&reqFrom=Main&actionVal=ViewAllCases>>.

that Bolivia had withdrawn from the organization in May 2007. It appears that, amid speculation that Telecom Italia would pursue redress under ICSID and against the backdrop of another conflict with a Dutch water supplier, Bolivia had sent a formal notice to the organization declaring its withdrawal from the ICSID convention.¹⁴⁵ At the time of writing, the Telecom Italia case was currently pending before the ICSID but a panel had not yet been constituted.

This followed the Venezuelan government's successful re-nationalization of privately owned incumbent CANTV and its mobile unit, Movilnet, in May 2007 through a tender offer and the acquisition of the strategic stake held by US-based Verizon, which had acquired a 40 per cent shareholding in CANTV in its 1991 privatization. In this instance, Verizon preferred to take the cash offered in exchange for a swift exit from the country, rather than attempting to halt the proposed re-nationalization.¹⁴⁶

16.9.3 Bilateral investment treaties

Bilateral investment treaties (BITs) codify the reciprocal agreement of two countries to encourage, promote, and in particular protect investments in each other's territory. Most BITs provide for the jurisdiction of the dispute to be either at the investor's principal place of business or subject to international arbitration.¹⁴⁷ Currently there are approximately 2,265 BITs between developing and industrial countries. Particular centres for these agreements are Eastern Europe, the Americas, and Asia.¹⁴⁸

One of the most recent cases in the telecoms sector involving a BIT was *France Télécom v Lebanon*. France Télécom's Lebanese subsidiary had provided GSM mobile services in Lebanon pursuant to a BOT contract since 1994. In 2002, France Télécom filed a suit with the International Chamber of Commerce, as well as according to the UNCITRAL rules (the first suit was ultimately abandoned), claiming that its subsidiary had been expropriated, not treated equally and that the BOT had been prematurely terminated. France Télécom's claim amounted to US\$771,000,000. Lebanon countersued for US\$840,000,000. In February 2005 the arbitration panel returned a verdict, awarding US\$266,000,000 to France Télécom. Lebanon countered by asking the Federal Supreme Court of Switzerland to withdraw

¹⁴⁵ See 'Bolivia: Entel to be nationalised', *Financial Times*, 31 January 2007; 'Bolivia Telecoms: Nationalisation Moves Ahead', *The Economist Intelligence Unit*, 13 April 2007; and 'Bolivia: Entel Nationalization', *Business News Americas*, 3 March 2008.

¹⁴⁶ 'Nationalisation sweeps Venezuela', *BBC News*, 15 May 2007; See: <<http://www.cantv.com.ve/Portales/Cantv%5Cdata%5CPR%20-%2020070409%20-%20Tender%20offers%20launched.pdf>>; and 'Venezuela: Government buys control of CANTV', *International Herald Tribune*, 10 May 2007.

¹⁴⁷ For more detailed information concerning bilateral investment treaties as well as digital versions of more than 1800 BITs, see <http://www.unctadxi.org/templates/Startpage_718.aspx> and <http://www.iisd.org/pdf/2004/trade_bits.pdf>.

¹⁴⁸ See <http://www.unctadxi.org/templates/Page_1007.aspx>.

the panel's decision and to annul the amount awarded to France Télécom. The Swiss Federal Supreme Court rejected Lebanon's motion and upheld the judgment of the arbitration panel.¹⁴⁹

Telekom Malaysia v the Government of Ghana

Another recent BIT dispute which went to international arbitration was that between the government of Ghana and Telekom Malaysia. In 1997, the G-Com consortium, in which Telekom Malaysia (TM) holds an 85 per cent stake, bought a 30 per cent stake in Ghana Telecom (GT) for US\$38 million. TM was given a five-year management contract to run the company for the duration of GT's fixed-line duopoly with new entrant Westel. But by the end of this five-year term, TM had provided only 275,000 of the 400,000 fixed lines it had been mandated to bring into service, as a result of which the government chose not to renew its contract. TM tried to sell back its stake to the government, recover its deposit, and claim damages for 'unfair treatment,' beginning arbitration proceedings under the UNCITRAL Rules before the Permanent Court of Arbitration at The Hague, Netherlands under the Malaysia-Ghana bilateral investment treaty. In May 2005, the parties reached an amicable settlement, with the government paying TM the sum of US\$50 million over two years, after which TM's stake in GT would revert to the government.

16.9.4 WTO dispute resolution

USA v Mexico, a dispute over the interconnection rates between Mexico and the US charged by Telmex, is the first (and so far only) case of WTO dispute resolution regarding telecommunications services under the GATS.¹⁵⁰ The dispute was lodged by the US in 2000 and a decision was issued in 2004, pursuant to which the parties agreed to remedial steps recommended by the WTO's dispute resolution panel. This case established that the international interconnection services in question were cross-border services covered by the GATS. While the WTO dispute resolution process can be complex, this case showed that the new dispute resolution mechanisms provided in the GATS were effective. The panel's decision confirmed the principles set out in the Reference Paper as relevant in international telecommunications, particularly the pro-competition protections. It also made clear that the fact that a

¹⁴⁹ For the Swiss judgment in full text (French), see <http://jumpcgi.bger.ch/cgi-bin/JumpCGI?id=10.11.2005_4P98/2005> (case reference no: 4P98/2005).

¹⁵⁰ See 'Mexico—Measures affecting Telecommunication Services', Report of the Panel, WT/DS204/R, 2 April 2004 (available at <http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds204_e.htm>). See further Chapter 15, at 15.4.5.1. See also, Wellenius, Galarza, and Guermazi, 'Telecommunications and the WTO: The Case of Mexico', World Bank Policy Research Working Paper 3759, November 2005, The World Bank (Wellenius).

country that had submitted its schedule of commitments was not excused from performance of those commitments merely because it had not yet adopted the necessary implementing regulations. Following the decision, Mexico agreed to promulgate the necessary regulations to give effect to its commitments.

16.10 CONCLUSION

Reform of the communications sector can lay the foundations for the reform of other sectors of the economy, attracting new (foreign and domestic) investment, facilitating transactions and reducing transaction costs, and fostering the dissemination of information. As such, it can be one of the most important factors in the economic development of developing countries.

A comprehensive reform agenda will cover the formulation of a clear sector policy statement, managed liberalization of all communications markets, the enactment of a modern regulatory framework, the creation of an autonomous regulatory authority, modernization and privatization of the state-owned incumbent, and the holding of transparent competitive selection processes to ensure new licences (where licence numbers are limited) are allocated to the most appropriate candidates. Successful design and implementation of such reforms, however, will ultimately depend on there being the requisite political support at the highest levels of government.

In many respects, the recent global downturn in the telecommunications sector created a 'new world order'. During the downturn, the appetite for investment in developing countries diminished dramatically, as major operators from developed countries refocused on strengthening balance sheets, reducing debt, and rehabilitating credit ratings. These market changes had a significant downstream effect on sector reforms in the developing world. No longer could governments rely on traditional approaches to privatization (such as a strategic sale to a developed country operator or an international listing), and attracting new entrants to newly liberalized markets proved more difficult, thereby denying reforming countries the benefits of competition. Nonetheless, the core building blocks of the reform agenda have remained relatively constant. That said, the increased difficulties in attracting foreign investment have led governments to focus their energies more on establishing investor-friendly regulatory environments, and on finding regional or local solutions to attain reform objectives.

At the same time, technological advances, witnessed by what is generically referred to as 'convergence', effected changes on the telecommunications landscape by eroding technology-specific barriers among telecommunications, broadcasting, and computing infrastructure and among different types of service. The new emphasis on 'digital bits' is also slowly changing the way in which the sector is regulated, as discussed in Chapter 17.

Today, most developing countries have made considerable progress in completing sector reforms: most have enacted modern sector legislation, created an industry

regulator, and both corporatized and at least partially privatized the state-owned incumbent operator. Consequently, the reform agenda in the developing world has begun to move from instituting the basic programme of reforms discussed in this chapter towards new generation of reforms aimed at strengthening existing frameworks, attracting new investment, and building capability and capacity in regulatory institutions.

DESIGNING REGULATORY FRAMEWORKS FOR DEVELOPING COUNTRIES

Ann Buckingham and Mark Williams

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17.1 INTRODUCTION

For much of the latter half of the twentieth century, the provision of telecommunications services in developing countries was the responsibility of the state. Penetration rates were low, service quality was poor, and the incumbent operator was often in financial difficulties. Government attempts at improvement focused on securing investment, technical assistance, and financial support. However, in the late 1990s, three factors dramatically changed attitudes to communications markets in developing countries.

The first was the widespread reform of communications markets in Europe, driven by a series of EU directives requiring liberalization and regulatory harmonization in all Member States. The experience of regulatory reform in some southern European markets was particularly relevant, because it showed that competition

could be successfully introduced into markets with less-developed networks, a legacy of state ownership and structural imbalances—characteristics often shared by developing countries.

The second factor was the licensing of mobile operators in developing countries, and the ensuing explosion in the number of mobile subscribers. This dramatically increased teledensity,¹ thereby indicating the extent of unmet demand for telecommunications services, and forced governments to establish regulatory frameworks to manage the development of competition.

Finally, the requirements of membership of the World Trade Organization (WTO) have prompted many developing countries to commit to liberalizing the telecommunications sector, providing access to foreign operators and instituting basic regulatory reforms.

These events shifted the sector agenda in developing countries from one of securing investment to one of liberalization and regulatory reform. It also prompted developing countries—and those working with them—to look for a regulatory model that was at the same time robust and appropriate to developing countries. Unsurprisingly, most have looked to developed countries for models to emulate, in the hope that replica regulatory structures will act as a catalyst or spur to the same sector development and growth seen in the developed world. Of the various models applied around the world, the wholesale reform of electronic communications regulation in the EU has emerged as the *de facto* global standard, and has successfully provided the basis for reforms around the world.

There are many aspects of the EU model that can be applied in other countries, and it provides a sound platform on which to build a comprehensive package of sector reforms. Consequently, the temptation in reform efforts has sometimes been to seek to transplant EU regulatory models directly into developing countries. However, developing countries are typically very different from those in Europe, both in the way in which markets have developed and in the nature of government institutions. It is unlikely that a simple transposition of models from developed countries will be either feasible or successful, and this is reflected in the experience of reform in developing countries.

The key to successful implementation of a new regulatory framework in developing countries is to combine the lessons learned from international experience, of which the EU is an essential part, with a deep understanding of local circumstances and priorities. A bespoke approach should be adopted for each developing country, reflecting its specific market environment, legal system, institutional capacity, and political realities.

¹ Developing countries achieved nearly 34% mobile penetration by 2007, with mobile penetration growing at a compound annual growth rate of 53% (and over 90% in the 50 least developed countries) during the period from 1996 to 2006. By the end of 2006, there were nearly 4 billion mobile and fixed line subscribers, of which only 1.3 billion were fixed telephone lines—a number that has barely increased since 1996, and over 60% of world mobile subscribers were located in developing countries. See 'Trends in Telecommunication Reform 2007: The Road to Next-Generation Networks (NGN)', (ITU, Geneva, 2007).

This chapter will discuss the building blocks of a robust regulatory structure for developing countries, illustrating the way in which regulatory detail can be adjusted or changed to reflect the individual circumstances of a country undergoing reform and some of the issues that may arise during regulatory design and implementation.

At the outset, we acknowledge that all countries are different and it is difficult to make general statements about developing countries which apply to all of them in the same way. However, we have concentrated this discussion on features of regulatory systems that are common in many developing countries and can be considered to be broadly representative of the issues faced by governments, regulators, and operators in these countries.

17.2 MODELS FOR REGULATORY REFORM: LOOKING TO THE DEVELOPED WORLD

The WTO has had a pivotal role in securing the liberalization of telecommunications markets around the world, primarily through countries' commitments under the Agreement on Basic Telecommunications.² The WTO, recognizing the need for liberalization to be accompanied by regulatory reform in order to manage the transition from monopoly to competition, also appended to this Agreement a regulatory 'Reference Paper' that sets out the core requirements of a telecommunications regulatory framework, which countries 'adopt' as part of their sector commitments.

However, the text of the Reference Paper is brief and abstract: it is limited to six high-level core principles (covering competitive safeguards, interconnection, universal service, licensing, allocation and use of scarce resources, and the creation of an independent regulator), most of which can be interpreted and applied in a variety of ways. Very little guidance is given on the design or content of regulatory structures, or on how to implement the required reforms in an individual country. This reflects both its status as a document agreed by consensus, and its purpose, which is simply to spur countries to undertake a process of regulatory reform meeting minimum standards of international good practice. Consequently governments embarking on reforms have had to look elsewhere for assistance.

Liberalization, competition, and regulatory reform have been at the heart of the success of the communications industry in Europe, North America, and elsewhere in the developed world. It is therefore unsurprising that many developing countries have looked to this success story as a model for their own development.

In this section, we compare four different regulatory models that have been applied in the developed world, and explain why the EU regulatory framework has been the most commonly used model for reforms in developing countries over the past decade.

² This Agreement is annexed to the GATS Fourth Protocol, and came into force on 1 January 1998. The Agreement contains schedules of commitments to market access and national treatment with respect to basic telecommunications services. See further Chapter 15, at 15.4.

17.2.1 The EU regulatory model³

As a preliminary point, it is perhaps worth noting that there is no specific EU 'regulatory text' which can simply be reproduced in a given country. The EU regulatory models discussed below comprise a series of directives, which comprise directions to individual EU Member States to enact compliant national legislation by a specified implementation date. Individual Member States and national regulatory authorities are in many instances given considerable latitude as to how they implement the specific requirements of the EU directives under the rubric of 'subsidiarity': the directives simply set out the parameters within which Member States must operate. Indeed, Member States have often interpreted and applied the provisions of the EU directives described below in divergent ways.

EU regulation of the electronic communications sector can usefully be divided into two discrete phases: transitional market regulation and mature market regulation. The first phase covers the period 1987 to 2001, during which a series of directives and regulations were adopted to regulate the shift from monopoly to full competition; this regulatory framework is known as the '1998 package' (referring to the date of full market liberalization). The second phase began in 2002, when the EU issued a new package of directives designed to regulate now fully liberalized and increasingly mature electronic communications markets, known as the '2002 package'.⁴

17.2.1.1 *The 1998 package*

Historically, European telecommunications markets were generally regarded as natural monopolies, best operated by government departments or state-owned companies in the public interest. In the late 1980s, the European Commission launched an investigation as to whether telecommunications monopolies were in breach of the EC Treaty (as they restricted the freedom to provide services in Member States), and advocated widespread sector reform. These reforms were of two types: 'liberalization' initiatives designed to open up telecommunications markets to full competition; and 'harmonization' initiatives designed to introduce a common approach to telecommunications regulation across the European Union. Central to these reforms was the establishment of a national regulatory authority, independent of market participants.

The liberalization directives adopted a phased approach to market liberalization, abolishing exclusive rights progressively across all market segments.⁵ In parallel with these liberalizing measures, the harmonization directives required Member

³ See further Chapter 5.

⁴ In this chapter, we do not address the European Commission's November 2007 proposals for regulatory review, which are expected to result in a new regulatory package in 2010, as these assume a level of market maturity and competition rarely found in the developing world. That said, discrete regulatory tools, such as the proposals to allow a regulator to require 'functional separation' between wholesale and retail divisions of the incumbent, may have application in specific cases.

⁵ Liberalization began with the market for terminal equipment, and was followed sequentially by markets for data and value-added services, satellite services, service provision over cable TV network infrastructure, mobile services, and finally fixed voice telephony and network provision.

States to adopt a common approach to telecommunications regulation, on the basis that the establishment of pan-European networks and services would best be promoted by the rapid introduction of consistent regulatory frameworks across the EU. The regulatory principles in the harmonization directives were designed to control anti-competitive conduct by the incumbent, and to manage the transition from monopoly to full competition. The core concept of these directives was 'open network provision', which emphasized that access to and use of public telecommunications networks and services should be unrestricted, except where limited by non-economic reasons in the general interest such as network integrity and security.⁶ The harmonization directives also laid out abstract concepts that are required to underpin Member State regulatory frameworks, namely: objectivity, proportionality, transparency, non-discrimination, and regulatory independence.

17.2.1.2 *The 2002 package*

By 2001, all telecommunications markets in the EU had been opened to competition,⁷ and therefore the liberalization process was complete. Recognizing that in many Member States telecommunications markets were now competitive and maturing (with the notable exception of local fixed voice telephony), the EU adopted a new regulatory package in 2002 designed to reinforce competition by increasing market freedom. In particular, the new package created a regulatory 'exit strategy' by authorizing national regulatory authorities to 'roll back' many of the detailed regulatory controls in the 1998 package once a market is perceived to have effective competition. Greater emphasis is therefore given to generic competition law as a means to control anti-competitive market behaviour. The 2002 package also takes into account convergence by regulating all types of electronic communications transmission network consistently.

17.2.2 The US Regulatory Model⁸

Telecommunications regulation in the US has evolved very differently. The US model, while often reaching the same regulatory outcome as the EU model, uses very different tools and approaches.

In part, this is due to the complexities caused by the federal nature of the US system and a tradition of deference to state utility regulators. The powers of federal government are limited by the US Constitution, and, as a result, a complex system has evolved which allocates regulatory responsibility for inter-state and international

⁶ Specific requirements were laid out in a series of directives relating to interconnection, leased line availability, ISDN, and voice telephony (covering universal service, tariff controls, and the availability of public payphones).

⁷ Most Member States were required to liberalize by 1 January 1998, but Member States with less developed networks were granted derogations to enable them to make necessary structural adjustments. The last country to liberalize (Greece) introduced full competition on 1 January 2001.

⁸ See further Chapter 6.

communications to a federal agency (the Federal Communications Commission, or FCC), and local communications to State public utility commissions. This has led to diverging and sometimes inconsistent regulatory approaches, and a multiplicity of regulatory requirements across different states. Disputes over the boundaries of federal and state jurisdiction have also hampered the FCC's ability to coordinate nationwide reforms in the manner that was achieved by the European Commission across all EU Member States. Jurisdictional difficulties are compounded by the overlapping antitrust enforcement powers of the Department of Justice, and the power of federal courts to impose binding interpretations of law and to dictate structural remedies in response to antitrust litigation. Indeed, regulatory reforms in the sector have at times been achieved only through forced structural industry changes and been influenced more by judicial rather than administrative decision-making.⁹

While the local monopolies of the incumbent local exchange carriers (ILECs) were declared invalid by the federal Telecommunications Act of 1996,¹⁰ the US model has had only marginal success in promoting the emergence of facilities-based local exchange competition. Today, the ILECs still dominate local access and service markets¹¹ and the original seven Regional Bell Operating Companies (RBOCs) and GTE have now been consolidated to just three major operators.

The development of a modern and sophisticated technology-neutral approach in the US has also been hampered by legacy statutory distinctions between 'telecommunications services', 'information services', and 'cable television services', whose definitions are ill suited to the categorization of new, convergent services such as voice over Internet protocol (VoIP) and broadband.¹²

Moreover, the US had no legacy of state ownership in the sector. This means that US regulatory structures have not had to contend with many of the issues and complications associated with separation of government ownership and regulatory functions, which typically must be addressed in developing countries.

That said, the general principle of 'forbearance' in the 1996 Telecommunications Act (and its predecessors) is one that has been emulated in some regulatory frameworks in developing countries. In essence, this principle directs the FCC to forbear from applying any provision of the Act where analysis of the relevant market leads the FCC to conclude that forbearance does not harm the consumers and is generally

⁹ Judicial regulation occurred most famously through the forced divestiture of AT&T following an antitrust complaint filed by the Department of Justice, which resulted in structural separation of local and long-distance markets, but see also the relatively frequent judicial overturning of FCC regulatory decisions on appeal.

¹⁰ Codified at 47 USC §§171 *et seq.* This Act permitted local operators to access long-distance markets and vice versa, but only on a highly regulated and state-by-state basis.

¹¹ As of 31 December 2007, the ILECs controlled 82% of all end-user fixed switched access lines, <<http://www.fcc.gov/wcb/iatd/comp.html>>.

¹² See further, Marcus, J Scott, 'The Potential Relevance to the United States of the European Union's Newly Adopted Regulatory Framework for Telecommunications', *Federal Communications Commission, OPP Working Paper No 36*, July 2002, and FCC decisions on distinctions between PSTN and VoIP services.

in the public interest. However, the discretion implicit in such a general concept is often ill suited for use in developing countries, where the existence of such discretion can be a cause of arbitrary and uneven decision making, corruption, or a lack of transparency.

Thus, although the pro-competition aspirations of the US model are relevant to all, the model itself is *sui generis*, and arguably not suitable for adoption elsewhere.

17.2.3 Australasian regulatory models

Two very different regulatory models were adopted by Australia and (until 2001) New Zealand.

In Australia, regulation of the telecommunications sector is split between the generic competition regulator (the Australian Competition and Consumer Commission, the ACCC) and a sector-specific regulator (the Australian Communications Authority, the ACA). For example, the ACCC has jurisdiction over interconnection regulation, whereas the ACA has responsibility for licensing, technical regulation, spectrum allocation, and consumer protection. This approach is not suited to developing countries: not only do they usually lack a generic competition regulator, but a split regulatory approach requires a level of coordination and coherency in regulatory policy generally lacking between different government agencies and regulatory authorities in developing countries. Moreover, duplication of regulatory bodies is likely to raise regulatory costs, thereby exacerbating the already acute problem of securing adequate regulatory funding.

New Zealand initially adopted a unique strategy of eschewing sector-specific regulation and relying instead on generic competition law and the courts to regulate the sector. This approach is widely regarded as having been unsuccessful, and consequently in 2001 a new sector-specific regulator was created within the existing competition regulatory authority. That said, despite the oft-cited shortcomings of the pre-2001 approach,¹³ the level of competition achieved in New Zealand communications markets in 2000 (some ten years after liberalization) was not dissimilar to that achieved in countries with sector-specific regulation—at a far lower regulatory cost to the government.¹⁴ However, the lack of generic competition laws and the inadequacy of judicial institutions in most developing countries clearly preclude imitation of this regulatory model elsewhere.

¹³ Such as the length, cost, and lack of clarity of dispute resolution through the court system, and the lack of an effective remedy following a judicial ruling that the incumbent has abused its dominant market position (a declaratory ruling of that nature simply sent the parties 'back to the drawing board', causing yet further delays in agreeing on the terms of a fair and reasonable interconnection contract).

¹⁴ Although the lack of regulation may have in practice imposed higher transactional costs on market participants.

17.3 DIFFERING CHARACTERISTICS IN THE DEVELOPING WORLD

Although the EU model is typically touted as the best regulatory model to emulate in the developing world, it is in practice not suitable for direct transposition in developing countries. This is because communications markets in developing countries differ in a number of important ways from those found in developed countries. In particular, both the market composition and the wider institutional framework found in developing countries will significantly affect the way in which the sector should be regulated. Consequently, the principles underpinning the EU regulatory framework are the most relevant to the design of regulatory structures in the developing world, rather than the detailed regulatory requirements themselves.

17.3.1 Differences in market composition and development

One of the most important differences between communications markets in developed and developing countries is the relative importance of mobile networks. In developed countries, the rapid growth of mobile network subscriptions reflects user preference for mobile technologies due to the added functionality of mobility. However, mobile services continue to coexist with fixed telephony services. In contrast, in many developing countries, the lack of capacity, low penetration, and poor quality of service of fixed networks means that mobile networks have tended to become the primary means of access to communications services.

This dominance of the mobile networks in developing countries has implications for many aspects of the regulatory framework. Because of the historical legacy of 'national champion' incumbent fixed operators dominating European telecommunications markets, EU telecommunications regulation from its inception has had an inherent focus on controlling this dominance. This focus can be seen in the EU regulatory approach to interconnection, tariffs, quality of service, local loop unbundling, and liberalization.¹⁵ As mobile operators typically play a much more significant and dominant role in developing countries, certain regulatory provisions usually reserved for dominant fixed incumbents in Europe may need to be extended or applied to mobile operators in developing countries if such mobile operators are, in practice, more likely to be able to exert anti-competitive pressure. Similarly, regulations specific to fixed networks such as local loop unbundling, while an important

¹⁵ E.g. the 1997 Interconnection Directive (Directive 97/33/EC) set out a series of requirements for interconnection, with more onerous obligations attaching to operators determined to have 'significant market power'. Although the Directive placed rights and corresponding obligations on both fixed and mobile operators, the full weight of a determination of significant market power fell only on fixed operators. For example, only *fixed* operators were required to publish reference interconnection offers, to offer transparent and cost-oriented charges, and to make available unbundled interconnection services. These requirements were carried through to the 2002 package in Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities. See further Chapter 8.

part of EU and US regulatory models, may serve no useful purpose in developing countries where the primary means of access is through wireless technology. Instead, the major challenges faced by regulatory authorities in the developing world are more likely to relate to the interconnection of mobile networks and service quality.

A second important difference lies in the application of the concepts of universal service and rural access. Teledensity in developing countries is typically much lower than in Europe and North America.¹⁶ Large segments of the population often do not have ready access to a fixed telephone line due to the lack of network coverage in the areas in which they live or because they simply cannot afford the cost of available services. Governments traditionally attempted to improve network coverage through public ownership of the incumbent operator and cross-subsidies between urban and rural parts of the business. However, this approach was unsuccessful in most developing countries and network coverage and service penetration rates remained very low. By contrast, liberalization of mobile markets has resulted in rapid network roll-out, and coverage has extended into small towns and, in many countries, into rural areas. Mobile networks have also made it easier for the poor to get access to services through call centres and the resale of services on a call-by-call basis. However, despite these dramatic improvements in the availability of telecommunications services, some segments of the population, particularly in remoter rural areas, remain underserved. Universal access policy is therefore increasingly focusing on these peripheral areas where population density is low and costs are high.

Policy makers are also increasingly turning their attention to other ICT services. Broadband penetration in the developing world remains very low with limited availability and very high tariffs. Increasing the availability of broadband at affordable prices is therefore emerging as a major challenge facing governments and regulators across the developing world. The approach taken in the developed world, which has focused on liberalization through access to the incumbent's fixed network infrastructure, is not relevant in many developing countries where the incumbents are often weak with only limited network infrastructure.

A third difference lies in the degree of market liberalization in developed and developing countries. In many developing countries, despite the wave of liberalization efforts over the past five years, elements of monopoly still remain in parts of the fixed network. Core backbone infrastructure often remains a monopoly controlled by the incumbent operator and, in some cases, this is also true of international gateways. Competing operators may require access to these facilities if they are to function, but even if the incumbent is willing to provide access, it may lack the technical capacity on its network to provide a reasonable quality of service. Regulatory issues such as unfair discrimination also arise when the incumbent monopoly provider of essential services such as international connectivity also has a mobile business that may

¹⁶ Within the Euro-zone, the total number of fixed and mobile subscriptions in 2006 was 173 per 100 inhabitants. This compared to just 17 per 100 inhabitants in low-income countries (source: World Bank, World Development Indicators, 2008).

be given priority access and preferential treatment. Greater regulatory intervention may therefore be required in developing countries to attempt to achieve a more level playing field.

Finally, foreign exchange controls are an institutional feature of some developing countries that may have a direct impact on market development. In such countries, it can be difficult for operators to purchase the equipment needed to upgrade and expand network infrastructure. This raises particular issues for the regulatory authority, which must take such constraints into account when calculating costs, assessing claims that operators have been unwilling to provide interconnection capacity, and monitoring quality of service.

17.3.2 Institutional differences

Regulatory reforms in developing countries must also be sensitive to the wider legal, political, and institutional environment. In many developing countries, the basic framework of a functioning legal and judicial system may be lacking or dysfunctional and consequently there may be no effective check on arbitrary decision making. Even where the courts do function adequately, it is unlikely that there will be a judiciary that is sufficiently skilled or experienced in technical regulatory matters to be able to effectively apply the regulatory framework or resolve technical disputes. Moreover, reliance on the courts to challenge or appeal regulatory decision making may create inconsistencies in regulatory approach in countries whose legal systems lack the concept of binding judicial precedent.

Developing countries often lack a clear and coordinated strategy for reforming the sector. This means that the sequencing of reforms may not always be coherent. In contrast, the regulatory reforms in the EU were introduced in a systematic and coordinated way. An example of this difference is the implementation of tariff rebalancing. An important accompaniment to sector liberalization, it ensures that market entry is both possible and efficient without threatening the financial viability of the incumbent operator. Tariff rebalancing in the EU therefore occurred in parallel with market liberalization. In contrast, the political will for similar rebalancing in developing countries is often absent, because it is likely to increase significantly the price of line rentals and local calls and therefore engender public opposition. The result is that, in some developing countries, markets have been liberalized but the incumbent has been prevented from aligning its tariffs to cost. This can threaten the financial viability of the incumbent.

Although by mid 2007, 123 International Telecommunications Union (ITU) member countries had privatized their incumbent fixed operator,¹⁷ many governments in developing countries still retain (often significant) stakes in the incumbent fixed

¹⁷ 'Trends in Telecommunication Reform 2007: The Road to Next-Generation Networks (NGN)' (ITU, Geneva, 2007).

operator, and sometimes in one or more mobile operators. While this is also true in many developed countries, the institutional separation between government and operational functions is usually less clear in developing countries, and political involvement in operational decision making is often more pervasive. The independence of the regulatory authority from political interference may also be in doubt. This political interference in both the operation and the regulation of the sector raises many issues for the application of the EU model. The power of the regulator to make decisions that may adversely affect a (wholly or partially) state-owned operator may be limited by political constraints; where a state-owned operator is directly contributing to government finances, it may be even more difficult to make decisions that either reduce revenues or increase costs. Privately owned operators may find themselves at a severe disadvantage *vis-à-vis* operators that are politically well-connected or still owned in whole or in part by the state. In practice, taking legal action against an operator with powerful political support may be impossible. One approach to address these difficulties is to make legislation more prescriptive, leaving less room for discretion by the regulator. This may help to reduce political interference in regulatory decision making. However, there is a limit to how far this can be taken without adversely limiting the freedom of the regulator to make necessary or appropriate decisions.

Implementation of the EU framework also requires a level of sophistication and expertise in the regulatory authority that may be lacking in developing countries, particularly given legal and institutional limitations and lack of resources. Similarly, a lack of available and reliable market and cost data may preclude the use of sophisticated regulatory techniques commonly used in the developed world. EU regulatory authorities have developed considerable experience and expertise in the application of regulatory frameworks, which have been developed over the course of over 20 years. A pan-European market in professional legal, economic, and technical regulatory advice has also developed, providing resources to regulatory authorities where required and encouraging the harmonization of approaches and standards across the continent. No such equivalent pool of local skilled resources exists in most developing countries, and regulatory authorities are often understaffed, under-skilled, and under-resourced. Consequently, an overriding principle governing regulatory design in developing countries should be simplicity: the more straightforward a regulatory procedure or control, the more likely it will be implemented and enforced.

A related problem is that, in developing countries, sector reforms have often been undertaken on an *ad hoc* piecemeal basis, resulting in conflicting regulatory approaches and inconsistent operating licences. This legacy of partial and incomplete reform initiatives can significantly hinder future sector development and reform, and constrain the regulator's freedom to act. As a result, regulatory compromises may need to be brokered with existing operators in order to overcome legal and structural barriers to reform. This contrasts with most developed countries, where regulatory change is typically highly planned and coordinated, and transitions between evolving and changing regulatory structures are relatively smooth.

The EU model also assumes an underlay of general competition law, which can be utilized to regulate competitive markets once sector-specific regulatory controls are lifted or reduced. Generic competition rules and regulators typically do not exist in most developing countries. Therefore, regulatory regimes in such countries must be adapted to compensate for this absence.

Corruption among government authorities, the judicial system, and the private sector is a fact of life in many developing countries. This can affect both the substance of regulatory decisions and the way in which they are perceived by the market and the general public. The framework for establishing regulatory authorities, the powers given to the authority, and the modalities by which regulatory decisions are made should all take this into consideration. It may therefore be preferable in developing countries to have a more transparent directive regulatory framework, even if this is at the cost of reduced flexibility. For example, if corruption is of serious concern in a country, the regulatory regime could 'automate' decisions and regulatory consequences in order to reduce the possibility for corrupt decision making. Moreover, where approval or a decision of the regulatory authority is required, the regulatory regime could deem a decision to have been adopted if no contrary decision is taken within a specified period of time. In contrast, the EU model gives the regulator considerable latitude to make decisions on the scope of its own regulatory powers and to exercise broad discretion in regulatory decision making. The considerable flexibility, latitude, and discretion built into the EU and other developed country regulatory models can be detrimental if transported to countries suffering from endemic corruption.

17.4 ROLE OF COMPETITION LAW

A second important source of regulation in the electronic communications sector in the developed world is competition law: telecommunications regulation is in fact a combination of sector-specific and generic competition regulation. Competition rules covering anti-competitive market concentrations and behaviour both supplement and complement sector-specific regulatory frameworks, and should not be overlooked as a critical component of the regulatory environment in developed countries.¹⁸ Indeed, it is this detailed and highly complex underlay of competition law that allows both the European Commission and EU national regulatory authorities to 'roll back' regulatory controls, and the FCC to exercise regulatory forbearance.

Developing countries, in contrast, typically lack any history of antitrust jurisprudence and regulation, and therefore caution must be exercised when both designing appropriate regulatory frameworks and advocating a more 'light-handed' regulatory approach.

¹⁸ See further Chapter 9.

To overcome this lacuna, regulatory 'work-arounds' have emerged in developing countries that build competition law concepts and constructs into telecommunications regulatory regimes. This solution has had limited success, given the lack of capacity of most sectoral regulators in developing countries. Regulators typically have insufficient resources to investigate complex competition complaints, and both regulators and courts may lack the jurisprudence and expertise to handle competition disputes effectively.

17.4.1 The WTO and the 'Singapore Issues'

The lack of adequate competition regulation in the majority of developing countries became the subject of discussion at the First Ministerial Conference¹⁹ of the WTO, which took place in Singapore in December 1996. An EU initiative at this Ministerial Conference introduced four new policy areas for discussion, relating to investment, competition policy, transparency in government procurement and trade facilitation, which areas subsequently became known as the 'Singapore Issues'.

In relation to competition policy, proponents of the proposal (most notably, the EU, US, Canada, and Korea) argued that a multilateral framework would enhance the contribution of competition policy to international trade and development, and that developing countries need enhanced technical assistance and support in capacity-building in this area. Core principles could form the basis of a multilateral agreement (not dissimilar to the telecommunications regulatory Reference Paper included as part of the WTO Agreement on Basic Telecommunications), which would require Member States to establish competition policies and rules conforming to the stated principles. Although the proponents did not agree on the principles for inclusion, suggested items included: transparency; non-discrimination and procedural fairness; provisions on 'hard-core cartels';²⁰ modalities for voluntary cooperation; and support for progressive reinforcement of competition institutions in developing countries through capacity building.²¹

Detractors (led by Brazil, India, China, Malaysia, and Indonesia) argued that multilateral competition rules favour developed countries and were of dubious value to themselves. Some argued that their development needs differed from developed countries, and that 'national champions' may need protection through national industrial

¹⁹ Under the governance structure established by the WTO Agreement, the WTO's highest decision-making body is the 'Ministerial Conference'. This body is, in essence, a meeting of all WTO members that must take place at least every two years. The Ministerial Conference has the power to take decisions by consensus on all matters relating to multilateral trade agreements.

²⁰ Defined by the OECD as anti-competitive agreements, anti-competitive concerted practices, or anti-competitive arrangements by competitors 'to fix prices, make rigged bids (collusive tenders), establish output restrictions or quotas, share or divide markets by allocating customers, suppliers, territories or lines of commerce' (see *OECD Recommendation of the Council Concerning Effective Action Against Hard Core Cartels*, 25 March 1998).

²¹ See the Doha Ministerial Declaration, 14 November 2001 (WT/MIN(01)/DEC/1), para 25.

or competition policy in order to build up the capacity needed to compete successfully with foreign firms. Domestic firms, they claimed, should be treated differently from multinationals. If, however, the core WTO principles of non-discrimination and national treatment were applied to a multilateral competition policy, foreign firms would be entitled to equal treatment with domestic firms, and would have access to a free competitive environment in the host country. Others objected to the failure to include on the agenda issues such as anti-dumping measures or the obligations of foreign firms to host countries, which arguably would benefit developing countries at the expense of developed countries. Some countries have argued that restrictive business practices are better dealt with under the auspices of other international agencies, such as the United Nations Conference on Trade and Development. Finally, concerns were expressed about the lack of common understanding about the procedural and substantive content of the Singapore Issues, and the capacity of developing countries meaningfully to negotiate the issues involved with stronger negotiating counterparts.

The Ministerial Declaration issued at the conclusion of the First Ministerial Conference in Singapore agreed simply to establish working groups to study further the issues in these four policy areas in order to identify areas that merit further consideration in the WTO framework.²² By the time of the Fourth Ministerial Conference in Doha, Qatar, held in November 2001, the Singapore Issues had become increasingly prominent. The majority of developing countries had made public their opposition to the commencement of formal negotiations on the Singapore Issues, stating that they should continue to be studied by working groups only. The compromise reached in the Doha Ministerial Declaration was that, in relation to each of the Singapore Issues, 'negotiations will take place after the Fifth Session of the Ministerial Conference on the basis of a decision to be taken, by explicit consensus, at that Session on modalities [i.e., scope and timeframe] of negotiations'.²³ No default option was proffered should consensus not be reached in that Session of the Ministerial Conference. Meanwhile, over 100 developing countries (including 68 WTO members) had made it clear they did not want the Singapore Issues on the agenda at the Fifth Ministerial Conference,²⁴ and many countries made it clear that any concessions on Singapore Issues would be contingent upon making tangible and significant progress on negotiations for the removal of agricultural subsidies in the US and EU.

Against this acrimonious backdrop, the Fifth Ministerial Conference was held in Cancún, Mexico in September 2003. Few were surprised when the Ministerial

²² Singapore Ministerial Declaration, 13 December 1996 (WT/MIN(96)/DEC).

²³ Doha Ministerial Declaration, 14 November 2001 (WT/MIN(01)/DEC/1).

²⁴ See e.g. the ACP Declaration on the Fifth Ministerial Conference of the WTO, Brussels, 1 August 2003 (77 members of the Asia, Caribbean, and Pacific group of countries); the Declaration of Second LDC Trade Minister's Meeting, Dhaka, May–June 2003 (49 least-developed countries); Africa Trade Ministers' Meeting, Mauritius, June 2003 (53 African countries); and the WTO Submission by Group of Developing Countries, 4 July 2003.

Conference collapsed in apparent disarray, with WTO members failing to agree on either the future agenda of negotiations on agriculture and services (the Doha Development Agenda), or the basis and timing for negotiating the Singapore Issues. In July 2004, the General Council of the WTO agreed to proceed with negotiations on only one of the Singapore Issues, trade facilitation, and the remaining three (including competition policy) were dropped from the Doha agenda as part of attempts to salvage the Doha round of negotiations.

The failure to make progress on the Singapore Issues at the Cancún Ministerial Conference was no doubt inevitable, but still disappointing: a basic agreement on core competition principles and a commitment to capacity building in developing countries would, if implemented, provide a valuable counter-point to sector-specific regulatory reforms.

17.4.2 Regulatory solutions in the absence of generic competition rules

If a country lacks a framework of generic competition law, the architect of an electronic communications regulatory regime will need to consider strategies to incorporate core competition law principles into the sector-specific regulatory framework. This has become particularly important in developing countries with the increase in private market participation and the emergence of competition. We describe some strategies commonly deployed below.

17.4.2.1 Two-tier regulation

Regulatory frameworks in developing countries frequently incorporate a 'two-tier' structure, whereby greater regulatory controls are placed on an operator who is determined to have dominance or significant market power in a particular market. This mechanism can be used to constrain anti-competitive market behaviour by dominant players, while minimizing the regulatory burden on both new entrants and regulators, and is based on the EU concept of 'significant market power' and the US concept of 'dominant carrier'.

The first question to address in developing two-tier regulatory structures is market definition. In the EU, the European Commission consults both with market participants and national regulatory authorities, and then adopts a recommendation on product and service markets within the electronic communications sector whose characteristics justify the imposition of regulatory obligations under the various directives. This market definition exercise is undertaken in accordance with principles of EU competition law, and is reviewed regularly. National regulatory authorities, taking account of this recommendation, then define relevant markets appropriate to national circumstances.²⁵

²⁵ Directive 2002/21/EC on a common regulatory framework for electronic communications and services, Art 17.

This approach is arguably not suitable for transposition into most developing countries: the EU system assumes that regulators are familiar with and well versed in complex competition law concepts. It is not realistic to expect a nascent regulatory authority in a country with no history of generic competition regulation to apply sophisticated competition law theories to determine market definitions and parameters. An alternative could be for developing country regulators simply to adopt the markets defined in the European Commission's recommendations. However, EU markets are defined narrowly. For example, the Framework Directive specifies six different interconnection markets for different call origination, transit, and termination services.²⁶ This is likely to be needlessly complex for developing countries that simply wish to impose heightened controls on interconnection on major operators. Instead, it may be preferable to develop straightforward and appropriate market definitions in conjunction with the design of the new regulatory regime. Ideally, the regulatory experts responsible for its design should prepare initial market definitions, which can then be adopted and reviewed by the new regulatory authority moving forward.

The second issue is how the concept of 'dominance' should be defined. In the EU, 'significant market power' is now defined by reference to the ability to act independently of competitors, suppliers, and customers.²⁷ This concept is derived from the competition law concept of 'market dominance', and requires a sophisticated analysis of market characteristics such as market share, relative turnover, the nature and extent of barriers to market entry, availability of reasonably substitutable services, control over essential facilities, and the power to raise and sustain prices above competitive levels. In addition, the 2002 EU regulatory package permits a finding of 'joint dominance', again through an assessment of detailed and complex market characteristics.²⁸ Competition authorities in the EU are well versed in those concepts, and the considerable jurisprudence in competition case law guides the required market analyses.

In contrast, imposing a complex definition of 'dominance' on a newly created regulatory authority in developing countries with no competition law experience and limited resources can be impractical. It may also encourage reliance on retained external consultants to apply the required analytical techniques. It may instead be appropriate to incorporate a more 'rough and ready' approach, such as benchmarking 'dominance' to a specified market share: while not perfect, at least this may enable a regulatory authority readily to apply the concept and provides some guidance as to which entities will be determined to have dominance. This approach is similar to that adopted in the EU 1997 Interconnection Directive, which created a

²⁶ Ibid, at Annex I.

²⁷ Ibid, at Article 14.

²⁸ Ibid, at Annex II states that 'joint dominance' is likely to occur where the market exhibits a number of characteristics: mature market, stagnant or moderate growth on the demand side, low elasticity of demand, homogenous product, similar cost structures and market share, lack of technical innovation, absence of excess capacity, high barriers to entry, lack of countervailing buying power, lack of potential competition, informal links between operators, retaliatory mechanisms, and reduced scope for price competition—which list is also stated to be non-exhaustive.

rebuttable presumption that an operator had significant market power when it had more than 25 per cent of a particular telecommunications market.²⁹

Thirdly, the regime must specify what obligations flow from a determination of dominance in a particular market. These may include retail and interconnection tariff regulation, more extensive interconnection and access obligations, and stricter regulatory scrutiny generally. Although based on the EU concept of 'significant market power', more detailed and comprehensive obligations and restrictions may flow from such a determination in developing countries in order to compensate for the lack of a general competition law prohibition against abuse of a dominant position and other anti-competitive behaviour. Typically, these obligations are outlined in the primary legislation with the detail specified in regulations or licences.

17.4.2.2 *Incorporating generic competition rules in primary legislation*

The emergence of competitive mobile markets in developing countries means that competition regulation, rather than monopoly control, is the priority for regulators. Indeed, it is becoming increasingly common to include provisions for competition regulation in new electronic communications legislation, sometimes in the form of an additional chapter on competition law.³⁰ This can be a helpful tool where a country lacks a general competition law regime. However, the usefulness of including a sector-specific competition law regime should not be overstated: jurisdiction over such competition matters is usually given to the new communications regulatory authority. This authority typically lacks the time, resources, and experience in complex competition cases to enforce these general competition rules. Moreover, usually no systems or processes are put in place to detect or investigate possible anti-competitive behaviour, and therefore such legislative provisions tend to be ignored rather than applied.

Moreover, in the absence of a generic competition framework, there is unlikely to be any institutional experience of defining or regulating anti-competitive practices. To strengthen the effectiveness of a new sector-specific competition law regime of this nature, it is generally advisable to prepare or incorporate a list of market action that is deemed to be anti-competitive or that raises a presumption of anti-competitive behaviour. This list should be prioritized to indicate the types of activity that are considered to be the most damaging to the market, and should indicate the types of evidence (e.g. predatory pricing, refusal to serve, and discrimination) that the regulatory authority might take into account in assessing whether the competition rules have been breached. Definitions or guidelines of key types of anti-competitive behaviour, and an indication of how the regulator would enforce the prohibitions and demonstrate that such behaviour has taken place, could be contained in regulations or guidelines issued by the regulatory authority.

²⁹ Directive 97/33/EC on interconnection in telecommunications, Art 4.3.

³⁰ See e.g. the Nigerian Communications Act 2003, Chapter VI, Part I. See also, the Public Utilities Commission of Sri Lanka Act and Sri Lankan Electronic Communications Networks and Services Bill.

17.4.2.3 Including 'fair trading' conditions in licences

Licences often include specific provisions designed to control anti-competitive behaviour. These may take the form of generic prohibitions of anti-competitive agreements and abuses of a dominant position, and restrictions on mergers and market concentrations, similar to those discussed above.

More specific controls may also include prohibitions on unfair cross-subsidization or undue discrimination. Other controls include dividing services provided by an incumbent into two or more separate and independent companies or business streams, and requiring transparency and non-discrimination in dealings between the two businesses. In some countries, the government has also limited the lines of business into which the incumbent might enter (e.g. by precluding the incumbent from holding a mobile licence), although this is unusual where the government stands to gain from the incumbent's profitability.

17.4.2.4 Greater *ex ante* regulatory control and intervention

A fourth method of seeking to control anti-competitive behaviour in the absence of a generic competition law regime is to increase regulatory intervention. For example, the regulatory regime might require approval of all tariffs or interconnection agreements before they can take effect. This approach is particularly common in countries with a history of state control or collusive market behaviour, which may have little confidence in the ability of other regulatory techniques to prevent or control anti-competitive market behaviour. However, this approach should be avoided wherever practicable: it greatly increases regulatory uncertainty for market participants, increases the bureaucratic burden and delay, and may hamper market development.

17.5 BUILDING BLOCKS FOR REGULATORY FRAMEWORKS IN DEVELOPING COUNTRIES

In communications regulation in developing countries, there is no such thing as a 'one-size-fits-all' approach. Rather, each individual country must be analysed carefully in order to assess its specific market characteristics, legal foundations, regulatory and institutional capacity, and any political realities or tensions that may influence or shape a particular regulatory approach.

In this section, we do not propose or espouse any particular model or regulatory construct. Rather, our aim is simply to consider in more detail the different aspects of communications regulation when applied to developing countries,³¹ highlighting

³¹ Central to any reform initiative is usually the creation of an independent or autonomous regulatory authority to regulate and oversee the development of the communications sector. The key theories and principles underpinning the creation of this regulatory authority, and the various forms that such authority may take (whether regional or national, sector-specific, or multi-sectoral) are discussed in Chapter 16, at 16.6.

particular issues, challenges, and pitfalls that may arise in different circumstances and exploring the possible options or regulatory solutions in response.

17.5.1 'Consensus-building' pre-reform

A critical initial step when undertaking reforms is to engage in a process of 'consensus building' to secure broad support for the proposed reforms. Undertaking sector reforms is frequently a politically charged issue. Maximizing ground support for the reform process is likely to facilitate its introduction and implementation.

Clearly, meetings with all key players (including interested ministries, regulatory authorities, operators, and consumer agencies (if any)) are desirable: they provide an opportunity to explain the rationale behind the proposed reforms and the overall benefits that regulatory reform would deliver. Regulatory reforms typically have considerable impact on existing operators' businesses and revenues. Some reforms, taken individually, may be beneficial to an individual operator, others prejudicial. As a result, one often encounters considerable resistance to reform, as individual operators and existing regulatory agencies will contest any individual regulatory change likely to have a significant adverse impact on their sphere of operation or revenues. Industry-wide workshops and consultations are best complemented by bilateral meetings with key players, which provide interested parties with an opportunity to express freely, on a confidential basis, their views on what they perceive to be the most difficult or challenging issues that must be addressed.

In addition, when designing the regulatory framework, it is preferable to ensure that all interested parties derive some visible or tangible benefit from the reform. If the impact of a reform is seen as being purely negative (e.g. all powers of the existing regulatory agency are removed, or an operator receiving preferential treatment under the existing regime simply loses its special status while deriving no benefit), one can expect to encounter greater resistance or lobbying against the reform process. This negative perception, however, may be due to a lack of understanding of the wider benefits of reform or a lack of confidence in the way in which reforms would be implemented: if so, these concerns may be alleviated through effective consultation and consensus-building.

17.5.2 Regulatory architecture

An important initial question in designing a regulatory framework will be the respective roles and importance of primary legislation, regulations, orders, guidelines, and licences. In particular, decisions will need to be taken as to which document will contain which regulatory principles and controls.

17.5.2.1 *Legislation v regulations*

In preparing new primary legislation to govern the communications sector, one must determine what to include in the legislation, and what to consign to

supporting regulations. The preferred approach is to enshrine the core principles and basic framework of the regime in the primary legislation, leaving the detail to secondary legislation, which can then be readily adapted and evolve as markets develop. For example, in relation to interconnection, one would expect to see in the legislation: the basic right and obligation to interconnect on fair, reasonable, and non-discriminatory terms, an outline of the consequences flowing from a determination of dominance, basic procedural requirements (such as an obligation to file or publish agreements), and the regulator's right to intervene in the event of a dispute. However, details on the calculation of the cost of interconnection, accounting and settlement principles, approval processes, technical specifications, and procedures are best relegated to a supporting regulation of general applicability. Policy cornerstones, such as a liberalization timetable or reform agenda could be included in the legislation to give market participants confidence in the future shape of reforms, although governments typically prefer to document such matters in sector policy statements that can be more readily changed.

17.5.2.2 *The role of licences*

Investors in developing countries where the regulatory environment is uncertain often attempt to protect their interests by seeking detailed, self-contained licences that purport to cover all key regulatory controls, and to secure limitations on the regulatory authority's freedom to amend those licence terms. This approach has been adopted extensively in privatizations and licence auctions in the developing world and is thought to provide investors and lenders with the regulatory comfort needed to undertake major investments in the sector, and to give all stakeholders clarity as to the licensed entity's rights and obligations.

There are three problems with this approach. First, the protection granted to investors is not watertight. Unless the licence is in the form of a concession or franchise agreement giving the investor enforceable contractual rights of redress, a licence in most countries is simply an administrative instrument and its terms can usually be amended by any legislative and regulatory instrument having primacy under local law. Even a contractual arrangement confers only limited protection if it lacks an adequate dispute resolution mechanism. In addition, an investor who wishes to continue its presence in a given country may prefer not to institute a direct challenge to government.

In reality, the investor's main protection against adverse regulatory change lies in a regulatory authority or government's desire to appear credible and investor-friendly. This desire exists whether regulatory controls are contained in licences, regulations, or legislation. That said, arbitrary intervention in an individual entity's licence may well attract greater adverse international attention than an amendment of a subsidiary regulation. However, in a high-risk country, arbitrary licence change and revocation may well occur notwithstanding any licence constraints on such action.

Niger: arbitrary revocation of 'codified' licences

A good example of the limited protection afforded by an 'unchangeable' comprehensive licence is the repeated and politically motivated revocation of Telecel's mobile licences in Niger in the late 1990s—the government of the time was determined to revoke Telecel's licences irrespective of any restriction contained in its licences.

In June 1996, the Minister of Communications, Culture, Youth and Sport issued Telecel-Niger SA a *Convention de Concession d'Exploitation du Réseau Cellulaire du Niger*: a 25-year mobile licence terminable only for breach. In February 1997, the Prime Minister ordered the Minister to treat Telecel-Niger's licence as null and void. Subsequently, Telecel-Niger sought a new mobile licence, which was granted in October 1998. Just as Telecel-Niger was preparing to launch commercial service, this licence was again unilaterally cancelled by the government without apparent cause.

Secondly, this approach may hamper the development of a modern regulatory framework. International good practice dictates that licences should be standardized and harmonized to the extent possible. This means that subsequent licences³² should, in theory, adopt the same regulatory approach and format as the highly tailored lengthy licences issued previously in order to avoid creating unjustified asymmetric and discriminatory regulation. Yet, detailed licences granted as part of a privatization or auction tend to be heavily negotiated with bidders. The result may be that the applicable sector rules are skewed in favour of the entity that negotiated the licence terms, to the detriment of later, often smaller, market entrants.

Moreover, in an attempt to promote certainty for the initial investor, highly tailored licences of this nature are likely to specify in great detail the requirements and procedures the regulatory authority must apply in relation to interconnection, tariff, and other key decisions. As these controls are difficult to change due to the restrictions on licence modification, this may pose a major stumbling block to any future attempts at regulatory reform. Furthermore, the licence may result in a misallocation of scarce regulatory resources if the licence terms do not reflect appropriate regulatory priorities in the interests of the sector as a whole. Such licences typically allow licence modification in the public interest, within which category the regulatory authority could argue such regulatory reforms fall. However, this term is by nature amorphous and capable of multiple interpretations; any licensee opposing such

³² This applies both to licences issued in tranches (e.g. where there is an initial licence auction, with additional licences issued later) and to different forms of licence with significant areas of commonality (such as national infrastructure and international gateway licences, or fixed, data, and mobile licences).

change may be able to delay or derail reform by threatening legal action to challenge the legality of the proposed licence modification, or (in the case of major investors) by threatening to withdraw its investment in the country. This has happened in many developing countries, particularly in the Caribbean and the Pacific where operators have engaged governments in protracted legal disputes over changes to licences. This has created a burden on government resources and delayed implementation of sector reforms.

Thirdly, the use of such all-encompassing licences also encourages investors to look no further than the terms of the licence in assessing a regulatory environment, in the mistaken assumption that this forms an exhaustive regulatory code. This may cause the unwary investor to overlook key issues arising in sector-specific and generic legislation, regulations, decrees, and other regulatory instruments.

In theory, it is preferable to limit licence terms to fundamental, investor-specific requirements (e.g. the scope and duration of the authorization, commitments related to network roll-out and quality of service, rights to radio frequencies), with generally applicable regulatory controls relegated to primary legislation and regulations.³³ To provide investor confidence and certainty, the core concepts and principles underlying key aspects of the regulatory regime should be enshrined in legislation, with detailed regulatory mechanics set out in regulations, orders, and sector guidelines. Greater use of secondary legislation allows regulatory approaches to evolve, as the market requires. Comprehensive, detailed licences should instead be limited to those countries where licences are issued in advance of regulatory reform, and where no reasonable sector-specific regulatory framework is in place. However, in practice, stakeholders commonly prefer the use of detailed licences, despite the limitations and pitfalls described above.

17.5.2.3 *Convergence and technological neutrality*

The regulatory scheme should be technology-neutral in order to ensure that the development of new, 'converging' services is not impeded by regulatory constraints on the form of service delivery. Recognizing the agility and complexity of the telecommunications sector, the EU 2002 package moved away from distinctions based on technology or network type. Instead, the starting point under this regulatory package was that all electronic communications transmission networks (whether fixed, mobile, satellite, Internet, or broadcasting transmission) should be regulated consistently. The theory underpinning this approach is that, in a 'converged' world, distinctions between technologies and transmission structures are artificial and distort incentives for investment. This approach also avoids confusion as to which regulatory framework (telecommunications, broadcasting, or information services) and which regulatory institution would apply to new 'hybrid' services such as video

³³ This approach is not dissimilar to the approach taken in the US, where traditionally regulatory terms and conditions were imposed through decisions, orders, and regulations rather than through telecommunications licences.

conferencing, cable television, video-on-demand, or internet services. Many developing countries, in contrast, have continued to license and regulate technologies, networks, and services in differing and sometimes conflicting ways and to have multiple regulatory institutions with overlapping or poorly defined jurisdictions.

The most obvious regulatory response to the challenge of convergence is to draft primary legislation that is technology-neutral and covers all electronic communications transmission networks. Examples include Malaysia's 1998 Multimedia Act, and the communications convergence legislation recently proposed in Sri Lanka and India (the 2003 Sri Lankan Electronic Communications Networks and Services Bill and the 2001 Indian Communication Convergence Bill), although neither were ultimately enacted.

However, in a true technology-neutral regulatory system, operators should be free to use the most appropriate technology for the conveyance of traffic and service delivery. This requires more than technology-neutral enabling legislation; in addition, the licences and service authorizations themselves must not constrain the method of service provision (see below, section 17.5.3.2). Too often, regulatory regimes in developing countries have generated multiple regulatory agencies, with sometimes overlapping jurisdictions and inconsistent approaches to regulation, and a myriad of different licences, which define in narrow detail the technologies permitted and the scope of networks and services authorized. Therefore, in practice, the introduction of a 'convergent' regulatory regime will require an overhaul of the existing regulatory architecture and the licensing system to ensure that the development of the markets are not constrained. However, this may be possible only if markets are fully opened to competition: the continued existence of monopoly rights in discrete market segments may dictate the issuance of narrowly drawn licences reflecting that monopoly.

17.5.3 Licensing

Regulatory frameworks typically require operators of communications networks and/or providers of communications services to obtain some form of licence or authorization, or alternatively to register with or notify the regulatory authority, prior to commercial service launch (which, for simplicity, we collectively refer to as 'licences' in this section). These documents or procedures provide the necessary authorization for an operator to participate in telecommunications markets, often set out an operator's rights and obligations, and are a means of enabling regulatory authorities to keep track of market participants.³⁴

³⁴ See further Chapter 7.

17.5.3.1 *Licensing processes*

As licences control market entry, good regulatory practice dictates that both the licensing procedures and licence documents be straightforward, clear, and streamlined. The EU 2002 package seeks to minimize barriers to market entry by simplifying licensing procedures, and keeping licensing documents as straightforward and short as possible with no limit on licence numbers unless required by radio spectrum constraints. In particular, all electronic communications networks and services are to be licensed using a mechanism that requires no explicit decision or administrative act by the national regulatory authority; that is, new entrants must *at most* be required only to notify the regulatory authority of their intention to operate a network or provide services.³⁵ This notification is simply intended to allow the regulatory authority to maintain a list of network and service providers. Regulatory authorities may grant 'individual rights of use' where the right to use radio frequencies or numbering ranges is conferred, but only where a departure from the ordinary notification procedures is warranted in the circumstances (e.g. due to a material risk of harmful interference).

In contrast, developing countries often suffer from confusing, long-winded, and arbitrary licensing procedures, or complicated and overly narrow or prescriptive licences may deter new entrants, hamper sector development, or increase the risk premium attached to investment in a country's communications sector.

Bangladesh: licensing pitfalls

The history of licensing in Bangladesh has left operators with a legacy of highly uneven and inconsistent licences. For example, some operators are prevented from engaging in direct interconnection, while others are prevented from carrying other operators' long-distance traffic. Similarly, some GSM operators are entitled to construct their own network backbone infrastructure, whereas others are required to use that of the State-owned fixed operator. These differences may stem both from a piecemeal and uncoordinated approach to licensing, and from the differing bargaining power of licensees when negotiating licence terms.

Separate licences are also required for network operation and frequency usage. While operating licences tend to be of long duration, frequency licences must be renewed annually. In the case of mobile networks, delays in frequency licence renewals have forced some mobile operators to operate their networks without a valid frequency licence. Uncertainty over the continued renewal of frequency licences may disincentivize operators from engaging in long-term planning and investment.

³⁵ Directive 2002/20/EC on the authorization of electronic communications networks and services.

While the licensing obligation under the 2001 Telecommunications Act in Bangladesh is extraordinarily broad (requiring, for example, equipment maintenance, construction work, and using any form of radio apparatus to be licensed, with no apparent authority to grant exemptions from licensing requirements), the scope of the individual licences on offer has tended to be narrowly drawn. For example, an Internet service provider may require as many as six different telecommunications licences to provide Internet service. The requirement to hold multiple licences raises the barriers for market entry and increases the regulatory burden. The regulator is also permitted to charge licensees a multiplicity of different fees and to introduce new fees at any time, which creates significant regulatory uncertainty and cost.

However, despite the urgent need for licensing reform, implementing such reform can be difficult in the absence of clear authority to amend existing licences, particularly in a litigious environment like Bangladesh.

Ideally, licensing should be as simple and streamlined as possible, with published and objective licensing criteria. While investors in and lenders to major operators in the developing world have generally required some form of formal 'licence' with a defined scope and duration, regulatory bottlenecks can be reduced by limiting formal licences to key public networks (e.g. fixed and mobile network infrastructure licences, international gateways, and frequency usage). Entities wishing to provide value-added, Internet, or data services or to operate private networks could be under an obligation simply to register with the regulatory authority of their activities, or even be exempted from licensing requirements altogether.

Licensing processes should be designed to reflect government liberalization policy. As a general principle, licence numbers should be unlimited and available upon request, except where there are real constraints, such as availability of radio frequency spectrum. Temporary bottlenecks due to numbering or spectrum issues should be resolved by a revision of the relevant numbering or spectrum plans, rather than by curtailing market entry.

Regulatory authorities in developing countries may also prefer a more structured licensing process than the EU notification regime in order to impose more rigorous licensing criteria due to concerns regarding fraud, consumer protection, or national security. As a general principle, however, the lower the barriers to market entry, the more likely that competition will take root and flourish. This principle holds true in both developed and developing countries, although typically there is a greater diversity of market barrier in developing countries (e.g. in the form of restrictions on foreign ownership and the movement of capital). That said, a pure EU-style notification regime may assume a degree of market liberalization and maturity, and confidence in the regulatory environment, which may not yet exist.

Regulatory discretion in licence allocation, however, should be kept to a minimum, with licensing occurring automatically upon filing the required information. This helps protect the licensing system from the possibility of corruption, and also minimizes delays in awarding licences where regulatory resources are limited.

17.5.3.2 *Licence categories and unified licences*

To ease regulatory burdens associated with market entry, and to encourage the introduction of new converging services, licences should be kept technology-neutral to the extent possible. An encouraging trend is the emergence of 'unified licensing' regimes in India and in a number of African countries. The idea behind a unified licensing regime is that licences authorize the provision of services and/or operation of network infrastructure, but do not constrain the type of services or infrastructure that may be provided or operated. As adoption of IP-based next-generation networks increases, a unified licensing regime is arguably the best way to overcome the difficulty of delineating and categorizing types of networks and services and to allow operators and customers to benefit from greater choice in means of service delivery and use. For example, should the operator of a wireless local loop network be permitted to offer limited or full mobility services? Should a mobile operator be allowed to operate 'femto' cells which enable mobile subscribers to use their mobile phone as a landline phone in their home? A licensing regime which seeks to distinguish fixed from mobile services may need to draw artificial distinctions to preserve the boundaries between the two types of service, thereby preventing a fixed operator from providing any form of mobility or a mobile operator from allowing mobile handsets to be used as a fixed line within the home area. Thus, the regulator may set geographic limits on the amount of mobility a wireless local loop subscriber may enjoy, or may ban the use of technologies which allow a mobile handset to replace a landline service. These arbitrary distinctions often give rise to operator disputes and ultimately diminish competition and customer choice.

In practice, some countries who purport to have adopted a 'unified' licensing regime still restrict the types of networks or services operated and provided. Although the governing legislation or regulations may give the impression that licensing is technology and service neutral, the actual licences themselves may place limitations on the licensee's field of use, commonly in the form of licence annexes which define the types of service that may be provided or networks or technology that may be deployed. For example, in 2005, Jordan introduced a 'unified' or 'integrated' licensing regime that introduced a single form of 'public telecommunications individual licence' authorizing the operation of public telecommunications networks and provision of public telecommunications services. The existing fixed and mobile operators were transitioned to this new form of licence, thereby removing historical anomalies between licences issued at different times and for different services. At first blush, this 'integrated' licence appears to allow a licensee to operate any network and provide any service. However, the licence attaches detailed schedules which specify the types of service covered and specifically prohibit the provision of

certain services (e.g. mobile wireless services) unless this is authorized in a separate licence agreement.

A true 'unified' licensing regime should not seek to draw distinctions between types of network and service (with spectrum rights granted through a separate frequency licence, authorizing use of a frequency for a general use consistent with ITU allocations, but not seeking to delineate technologies used). Categories of licence, if used, should be kept to a minimum to avoid unnecessary licence duplication. The scope of licence authorization also should be clearly drawn, preferably as broadly and technologically-neutral as possible in order to support the emergence of new convergent service types.

India: unified licensing regime

In November 2003 the Indian Department of Telecommunications introduced a 'Unified Access Services Licensing Regime', whereby fixed and mobile operators would hold a 'unified access service licence' authorizing licensees to provide all telecommunications services using any technology. This meant that both mobile and local fixed operators were free to implement GSM, CDMA, and other wireless technologies to provide any voice, data, or internet service, whether on a full or limited mobility or a fixed basis. This move followed a challenge by GSM mobile operators to the legality of the provision by local fixed operators of limited mobility services across their CDMA wireless local loop systems, and resulted in an explosion in mobile subscriptions as the existing wireless local loop operators deployed full and limited mobility services across their CDMA networks, making low-cost mobility services to large, previously underserved segments of the population.

17.5.3.3 Issuing authority

In some legal systems, it may be that only a minister has constitutional authority to issue a licence—or some form of ministerial control may be sought for political reasons. Ministerial discretion over licensing is highly undesirable, and creating another layer in the licensing process is likely to delay further the granting of licences. Where this additional layer is unavoidable, the scope of the ministerial power to veto licence grant should be specified explicitly and be limited to matters of genuine governmental concern (e.g. where matters of national security are involved), and time limits for ministerial intervention should be set.

17.5.3.4 Licence fees

Licence fees are typically imposed for the initial licence grant, and on an annual basis thereafter. The fees for most categories of licence should be kept to a minimum in order to avoid creating unnecessary barriers to market entry. Ideally, the initial fees for the grant of such licences should simply reflect the administrative cost of

processing the application. However, licenses that give an operator the right to use a scarce resource (such as radio spectrum) are often very valuable. Governments typically charge substantial fees for the award of such licences. In some cases, these are paid upon licence award while, in others, they are spread out over a several years. These licences (together with the accompanying right to use the associated radio spectrum) have sometimes proved to be so valuable that governments have attempted to raise licence fees retrospectively. This happened, for example, in Benin in 2007 when the regulator unilaterally imposed an additional licence fee of over US\$50 million on Benin's three mobile operators (tantamount to a 500 per cent increase to the initial licence fee paid). Only the state-owned mobile operator 'paid' the fee, causing the regulator to suspend the licences of the two privately owned mobile operators and shut down their networks. This prompted the intervention of the President of South Africa to negotiate a deal with the President of Benin, under which the operators were permitted to resume service upon payment of the increased fee, in exchange for certain concessions.³⁶

Annual licence fees typically form the main source of funding for the regulatory authority and help to ensure its freedom from undue political interference. The amounts of these annual fees are typically specified in the licence, usually as a percentage of the business's total revenues. However, ideally this should be specified as a cap and the regulatory authority should adjust the fees according to the costs incurred in regulating the sector. The level and method for calculating annual fees should in this case be set out in a regulation or order of general application.

The scope of the regulator's responsibilities may extend beyond the major network operators and include small market participants such as Internet Service Providers (ISPs). The imposition of significant licence fees on these providers is likely to act as a disincentive to market entry and therefore may have the effect of stifling competition. Therefore, regulators often include turnover thresholds in licence fee structures, below which small companies are either exempted from fees or charged only a nominal amount.

In some jurisdictions, governments have established multi-sectoral regulatory authorities that have responsibility for regulating more than one industry. This has the advantage of economies of scope (since much of the required expertise is common across industries), particularly in countries where the supply of skilled staff is limited. It also has the advantage of increasing the institutional independence of the regulatory authority from both line ministries responsible for individual sectors and from the market participants in each sector.

Where a regulatory authority is multi-sectoral with jurisdiction over more than one industry, regulatory costs may need to be allocated between the regulated industries. This can be done by allocating the regulatory budget between participants in all regulated industries on the basis of their total relevant revenues. This approach

³⁶ 'World Dialogue on Regulation for Networked Economies', 18 September 2007.

has the advantage of simplicity and transparency. However, it may also create imbalances, since both profit margins and the cost of regulation may vary significantly between industries. An alternative approach is to separate the regulatory cost attributable to each industry; licence fees for each industry are then set accordingly. However, this process may become complex where the majority of regulatory costs are common across industries. On the other hand, if there are few common regulatory costs, this raises the question of whether there are any cost-savings from having a multi-sectoral regulator.

Where a regulator also has responsibility for information services, data protection, and e-commerce, these areas of regulation may in practice also be financed by the licensees in the communications sector because of the difficulties in identifying and taxing all the beneficiaries of such regulation.

17.5.4 Retail tariffs

In the absence of effective competition in the market, a dominant operator has little commercial incentive to keep tariffs low, and therefore regulatory controls are required to keep tariffs in check. Where the incumbent operator is owned by the state and the operator pays a dividend to the government, controls on tariffs may also affect public sector revenue. In addition, tariff controls directly affect operator revenue streams, and consequently their ability to finance new investment in infrastructure, switching, and interconnection capacity. Control of retail tariffs has therefore traditionally been seen as one of the most important functions of the regulatory authority.³⁷ This is frequently reflected in the sector legislation, which often spells out the responsibilities of the regulatory authority with regards to tariff control in some detail.

17.5.4.1 *Application of tariff controls*

The first issue which needs to be addressed is to whom tariff controls will apply. The regulatory systems of developing countries regulate retail tariffs of operators in different ways. It is not uncommon for the fixed incumbent operator to be required to obtain regulatory approval of any changes to its retail tariffs. This is often a legacy from the time when the fixed operator was a monopoly and regulatory controls on its retail tariffs were essential for protecting customers. Mobile operators and ISPs, on the other hand, usually face no regulatory controls of their retail tariffs. This differential treatment of retail tariffs increasingly looks anachronistic for two reasons. First, as the market share of the fixed operators dwindles, a system of focusing regulatory retail tariff controls on fixed operators becomes increasingly irrelevant as a way of protecting customers. Secondly, where incumbent fixed operators have been privatized and are in genuine competition with other operators and ISPs, retail tariff controls limit their ability to compete with other operators.

³⁷ See further Chapter 3.

Regulatory frameworks in developing countries are beginning to recognize this inconsistency of approach, and as a result a two-tier system of regulation based on the concept of market dominance is increasingly being applied in developing countries. This provides a more systematic way for regulators to decide which licensees will be subject to retail tariff controls. This approach was adopted in Bahrain, where licensed operators with significant power are subject to tariff controls in relation to any telecommunications service for which the regulatory authority determines that insufficient competition exists.³⁸ However, in the majority of developing countries, this mechanism is rarely applied in a rigorous and systematic way.

In practice, therefore, the retail tariffs for the majority of telecommunications services in developing countries are unregulated because they are provided by mobile operators. This has not been regarded as a major problem to date, since the retail tariffs of mobile operators have fallen over time as competition has intensified. However, as mobile operators are becoming the dominant players in many developing countries, regulators will increasingly need to consider the implications of market structure and the effectiveness of competition on their decisions about whether or not to regulate their retail tariffs.

Finally, the framework should also ensure that the regulator is encouraged to withdraw regulatory tariff controls when this is appropriate. This is provided for under the EU 2002 package through regular market reviews and determinations of significant market power. However, in developing countries, such reviews are likely to represent an undue burden on the regulatory authority. Instead, one option could be to allow operators to apply for a removal of their designation as a dominant operator if they believe this is warranted due to a change in market conditions. Alternatively, regulators could be required to review tariff controls where there is *prima facie* evidence that an operator is no longer in a dominant position.

17.5.4.2 *Forms of tariff control*

Once the regulator has determined which operators and which services are to be regulated, it must also determine the form of the tariff control. There are a number of options for this.

It is common in developing countries to see a requirement that all regulated tariffs be pre-approved. This system was designed when the sector was dominated by a monopoly provider and there were typically only a limited number of different services. However, with the introduction of new technologies, new operators, and a proliferation of new tariffs, these arrangements have become increasingly unworkable.

Not only does it impose an impossible burden on the regulatory authority, but it also creates unnecessary delays for operators seeking to introduce new tariffs plans and to respond to competitive threats. It also hampers the ability of operators to make medium-term strategic plans due to uncertainty as to regulatory approval of

³⁸ Section 58 of the 2002 Telecommunications Law, <<http://www.tra.org.bh>>.

future tariff changes and future revenue streams. Indeed, the governing legislation may not give any guidance on the basis upon which tariffs will be approved or rejected, which exacerbates this uncertainty. Even where regulatory frameworks do identify costs as the basis of tariff approval, there is usually no guidance on the form of costs or how they should be calculated. Also, this system leaves operators vulnerable to short-term political influences on tariffs, particularly during an election year. The overall effect may be to stifle the development and beneficial effects of competition.

There are also disadvantages to this system from an economic efficiency point of view. The basis for tariff approval is usually cost. Where regulators are required to approve all new tariffs, tariffs are continually being revised to match costs. As a consequence, operators do not receive any of the benefits arising from an improvement in efficiency and a reduction in costs, and they therefore do not have any incentive to increase the efficiency of their operations.

In order to counter both the administrative and economic problems associated with a tariff approval system, regulators in Europe across all sectors have introduced price-cap formulae as an alternative tariff control system. This system sets price trends over a period of three to five years, allowing regulated companies to retain the benefits of any efficiency improvements that they may make, and therefore gives them an incentive to invest in cost-saving technologies and more efficient working practices.

In the telecommunications industry, price caps usually apply to a basket of services. This means that the average price of a selection of telecommunications services must decline over time. However, operators are free to set the price of specific services in order to respond to competition as it emerges. Another advantage of a price-cap system is that of administrative simplicity. There is no need for prior approval of tariffs since tariff changes must comply with a pre-defined formula and this compliance can be verified *ex-post* at the end of the year.

This approach has a number of advantages for developing countries. The simplicity and transparency of a formula-based system makes the process of price regulation much clearer and more predictable for market participants. In addition, as price-control formulae are set only periodically, the whole process of cost modelling becomes less onerous. Indeed, regulatory authorities may hire external expertise to assist in setting the formula, allowing higher-quality decisions to be made. The disadvantage of price-control formulae is that the modelling required can be complex. However, this can be simplified through the use of international benchmarks for some of the parameters.

In some developing countries, as competition has emerged in segments of the market, regulators have faced a new challenge in regulating retail tariffs: preventing operators from under-pricing (also known as 'predatory pricing') in an attempt to stifle the growth of competition. An increasingly important priority for regulators, this market behaviour can be difficult to control in the absence of effective generic competition law controls.

17.5.4.3 *Calculating the cost of provision*

Most forms of tariff control require some form of cost-orientation. Regulatory frameworks in developing countries vary in the degree to which they specify exactly which tariffs are to be based on costs and the cost concepts to be used. However, whether the system being used is a tariff approval system or a price cap, an estimate of costs will have to be carried out, either by the regulatory authority or the operator. In doing so, regulators in developing countries will face a number of difficult issues.

Operators in developing countries are generally unlikely to collect data on the cost of service for commercial reasons. When submitting tariff applications, they must therefore carry out an explicit cost-of-service estimate. The simplest way of doing this requires the allocation of high-level costs across the different services. This requires costs to be broken down by asset categories and allocated using information from the network on traffic routing. To do this correctly is a major undertaking and operators often lack the required expertise.

In order to ensure that operators can earn a 'reasonable' rate of return on their business, it is necessary for them to include this in their calculations of costs. The estimate of what constitutes 'reasonable' is very difficult because it reflects a number of factors including interest rates, country risk, and the commercial risk associated with the business. In developed countries, data from financial markets is used to make a quantitative estimate of these parameters. However, in the majority of developing countries, these markets simply do not exist and, even where they do, there is insufficient data to make robust estimates of the parameter values.

A major issue in the cost-calculations used in tariff approval is the efficiency with which the operators' costs were incurred. If the regulator deems that the operators have been inefficient and therefore require higher tariffs than would otherwise be the case, they may reject a tariff application or reduce the tariffs in a more or less arbitrary way. In developing countries that have only limited competition and a long history of state ownership of the incumbent, objective benchmarking of operator efficiency is very difficult.

Regulators in developing countries will be required to address all of these issues if they are to make robust decisions on the cost-orientation of tariffs. They can take a number of steps to ensure that these decisions are made in the most objective way possible. Central to these is the development of a cost model which both the regulator and the regulated operators are agreed on. This usually takes a significant period of time and will typically require external support. The basic principles for modelling the cost of service in telecommunications networks are well established and the key issue in developing countries is the data that is used. The use of international benchmarks for some of the cost-calculation parameters can be useful and provides an effective solution where data is not available locally. The use of industry consultation can also be an effective way to ensure that models are developed in a clear and transparent way, and provides a check on some of the key parameters used in the model.

17.5.4.4 *Tariff rebalancing*

In developing countries, the incumbent's tariffs are typically highly unbalanced—charges for line rental and local calls have historically been set well below cost, with charges for national and international calls set well above cost. Incumbents have often retained monopolies over international gateway services, which has allowed them to continue to cross subsidize the losses made the other services. However, innovations such as VoIP and call-back have (lawfully or otherwise) reduced the incumbents' market shares in these profitable markets and this system of cross-subsidy is becoming increasingly unsustainable, forcing governments and regulators to review their policies on rebalancing.

Rises in rental or local call charges disproportionately affect low-income or low-volume users. Tariff control is therefore usually very politically sensitive and, in practice, regulators have often found it very difficult to raise and rebalance the incumbent's tariffs, even where they have the statutory power to do so. However, as fixed operators lose market share to the mobile operators, this is becoming less politically sensitive.

17.5.5 Interconnection

New operators will not be able to enter the market unless their subscribers are able to call subscribers on other existing networks. The terms and conditions of interconnection between networks therefore have an important role in promoting competition in the sector.³⁹

Nigeria: the importance of interconnection regulation

Econet, MTN, and the state-owned incumbent NITEL were each awarded a GSM mobile licence in Nigeria in 2001, prior to the enactment of regulatory reforms in the sector. As Econet and MTN were both new entrants, almost all calls made by their subscribers had to be terminated on NITEL's fixed network. However, Econet and MTN were initially permitted to access only a fraction of the capacity they needed to interconnect to NITEL's fixed network, thereby constraining the ability of Econet and MTN subscribers to make 'off-net' calls (i.e. calls from one network to another).⁴⁰ In August 2003, when a fourth mobile licence was issued to Globalcom, MTN and Econet adopted similar tactics. The lack of effective interconnection had a significant effect on the ability of operators to develop their business and provide effective competition, and eroded the 'head start' Econet and MTN hoped to secure over slower-moving NITEL through the earlier launch of their mobile networks.

³⁹ See further Chapter 8.

⁴⁰ 'Interconnection Bedevils Mobile Operators', *Global Insight*, 12 October 2001.

This situation did not improve until after the enactment of the 2003 Nigerian Communications Act, which set out mandatory principles for interconnection and empowered the regulator to intervene and issue regulations controlling the negotiation and terms of interconnection, including the timeframe and procedures for negotiations, service levels, rate methodologies, and provisioning of facilities.⁴¹ By threatening operators with enforcement action under the Act (and, ultimately, the sanction of licence revocation), the regulator was able to secure operator agreement to improved and more equitable interconnection arrangements.⁴² This illustrates the importance of interconnection regulation to a regulatory regime and of undertaking regulatory reforms in parallel with market liberalization.

17.5.5.1 Which operators should be regulated?

Direct regulation of interconnection in the EU has traditionally focused on the fixed incumbent, as high termination charges were seen as a potential barrier to entry at the outset of market liberalization. In 1998, however, the UK began regulating mobile interconnection charges, and this approach has subsequently been followed by other EU countries. The primary concern in mobile termination charge regulation in the EU has been to prevent operators from setting excessively high retail prices through collectively raising termination charges (which costs are carried through to the retail price), rather than the creation of barriers to entry for new competitors.

The same issue applies in developing countries where mobile termination charges, when not subject to regulatory controls, have been set at high levels and these have fed through into high retail prices. In these countries, controlling mobile termination charges is therefore seen as a key consumer protection issue since the mobile operators usually provide the majority of telecommunications services in the country. Where individual operators have achieved very large market shares, this also raises the issue of their ability to use their termination charges to create barriers to entry and to constrain the development of effective competition. Although the underlying issues facing regulators in approaching regulation of interconnection charges may be similar in both developing countries and the EU, the EU approach to selecting the operators to which regulatory controls of interconnection charges apply (through the EU definition of the market for mobile termination, which by definition means that every mobile network operator is deemed to have 'significant market power' and therefore subject to regulation) may not be appropriate. This EU system of regulating all mobile termination charges may be too great a burden for regulators in developing countries and may create undue risks for investors entering risky

⁴¹ The Nigerian Communications Act 2003, Chapter VI, Part II.

⁴² 'Pressure Mounts to Conclude GSM Interconnection in Nigeria by December 2003', *Global Insight*, 11 November 2003.

markets. Instead, it may be preferable to adopt a simpler framework of market definition, which limits these more extensive regulatory controls to the dominant fixed and mobile operators.

17.5.5.2 *How should interconnection be regulated?*

The mechanisms for regulating interconnection are established through all four elements of the general regulatory framework—the law governing the sector, subsidiary regulations, operator licences, and the interconnection agreements themselves.

The law typically sets out the basic obligations to interconnect, the ‘two-tier’ regulatory structure (if used) that distinguishes dominant from non-dominant operators, the powers of the regulator with regard to interconnection regulation, and the basic principles for setting interconnection charges. Licences may contain similar provisions but often include greater detail. However, care should be taken to avoid unnecessary regulatory duplication.

The regulator may also issue interconnection regulations that apply to all operators, typically with more onerous provisions attaching to those that are dominant. These regulations may include detailed provisions for the calculation of the cost of interconnection, where physical interconnection should be available, rules and principles for interconnection product development and specification, rules for ordering and provisioning, rules and principles for interconnection pricing, regulatory accounting and costing, interconnection accounting and settlement principles, and dispute resolution mechanisms. Regulations may be a better tool than licences for this purpose because of the need to ensure that all operators are subject to the same regulatory controls, and to allow the detail to be updated as markets develop.

However, most of the detailed implementation of interconnection arrangements is done through interconnection agreements, which contain the specific commercial, technical and operational terms between two interconnecting operators. Dominant operators may be required to publish a reference interconnection offer (RIO), which is typically approved by the regulatory authority and forms the basis of interconnection arrangements with other operators. Historically these ‘reference’ interconnection offers were required only of dominant fixed operators, but the current market dominance of mobile operators may require them to be subject to the same obligation.

An alternative approach adopted in some jurisdictions is for the regulatory authority to encourage the use of a model interconnection agreement by all operators, which assists in standardizing the interconnection environment in a country and in ensuring that interconnection is undertaken in accordance with international norms. In small countries in particular, the use of model agreements or a shorter, streamlined form of RIO, with greater emphasis on interconnection regulations and guidelines for detailed regulation, may be more appropriate: by including more detail in interconnection regulations or guidelines and less in the RIO or model interconnection agreement itself, this should reduce the time required to negotiate or approve interconnection agreements and reduce the scope for operator disagreement on the terms of interconnection.

Where interconnection agreements or RIOs require regulatory approval, procedures should be designed to minimize regulatory discretion and delay. For example, the regulatory regime could specify that, in the absence of a contrary decision of the regulator within a specified time period, an agreement is deemed to have been approved. The grounds upon which a regulator can reject an agreement or RIO should be clearly specified, and be limited to objective and proportionate criteria.

17.5.5.3 *Interconnection payments*

Interconnection payment arrangements vary around the world. In some countries, operators make no payments to each other for interconnection, while in others they do. This difference is primarily based on two factors: the retail tariff structure in the relevant country and the pattern of inter-network traffic flows. If a country has a Receiving Party Pays (RPP) retail tariff system (where customers pay to receive calls), then there is no need for an interconnection payment to be made for an inter-network call since the cost of terminating a call is covered by the person receiving the call. The alternative system, known as Calling Party Pays (CPP), requires the person that initiates the call to pay the full cost of the call and the person receiving the call pays nothing. Under this system, the network that terminates the call incurs a cost but receives no revenue from its customer. In this case, the terminating network would typically expect to receive an interconnection payment from the originating network to cover the cost of carrying the call from the point of interconnection to the receiving party. However, if the traffic flows between networks are approximately symmetrical, the network operators may decide to waive the charges on the basis that the net payments would be too insignificant to justify the administrative cost of an interconnection payment system. Where no interconnection payments are paid (either because of an RPP retail tariff system or because the operators waive payments due to the expected symmetry of inter-network traffic flows), this is known as a 'bill and keep' system.

The RPP system is in force in only a few countries around the world, most notably the US. Instead, a large majority of countries, including nearly all developing countries, have adopted the European CPP model. In developing countries, where markets are developing rapidly, it is rare for traffic flows to be sufficiently stable and symmetrical to justify a 'bill and keep' system, and therefore, in practice, systems of interconnection payment are generally in operation. This necessitates an active role for the regulator in controlling charges, adjudicating disputes, and monitoring quality of service.

In some countries, however, interconnection payment arrangements between operators may be inconsistent. For example, in Bangladesh, payment arrangements among operators range from revenue sharing, 'bill and keep', and straight payments for services provided. These different payment structures cause inequity between operators, as different operators pay different charges for the identical interconnection service. Moreover, these bilateral arrangements provide little or no incentive for operators to invest in increased interconnection capacity, as they confer 'free'

interconnection on some operators while charging high tariffs to others. In such circumstances, the commercial payment arrangements would need to be regularized in order to create the right incentives for network investment and to ease bottlenecks in interconnection facilities created by market distortions.

There are a few countries which have attempted to switch from RPP to CPP systems. Where this takes place, regulators face a number of important economic and financial issues. Termination charges will have to be introduced into interconnection arrangements. Retail tariffs for outgoing calls will have to rise to compensate the introduction of these charges, and the impact of this increase is often difficult to manage. Where retail tariffs are also regulated, these controls will have to take into account this change. This may have significant implications for regulators, particularly where retail tariffs are set for a period through a price cap.

Sri Lanka: implementing interconnection payments reform

Historically, in Sri Lanka, the industry used a system of RPP. However, it was believed that this was constraining the development of the mobile market as it encouraged subscribers to switch their phones off to avoid incoming calls. As a result, mobile operators lobbied for a switch to CPP. The regulator (the TRC) decided to implement this change and to introduce new interconnection charges (fixed and mobile) based on cost. However, a lack of consensus between operators on the structure of costs had delayed implementation for a number of years. To resolve this issue, the TRC commissioned a modelling exercise to facilitate operator agreement on cost-based interconnection charges.

The key issues that arose during this exercise included agreement on a methodology for cost allocation for operators, the value of the cost of capital to be used in the modelling, and de-averaging of tariffs by the time of day and for different products.

The introduction of termination charges and the CPP system required a revision of retail call prices. The introduction of the new interconnection tariffs, which included an increase in the price of fixed-to-mobile calls, and the CPP system were scheduled by the TRC to take place in 2004. However, these changes were put on hold upon a change in government and have not been subsequently implemented.

17.5.5.4 Calculating the cost of interconnection

It is now generally accepted by regulatory authorities around the world that, where networks charge for the provision of interconnection services, the applicable tariffs should be based on cost. This ensures that the provider of interconnection receives some compensation for the costs that it incurs and is given an incentive to invest in interconnection capacity. A number of different ways of calculating the cost of

interconnection have emerged, the two most common methods being fully allocated costs and Long-Run Incremental Cost (LRIC).⁴³

LRIC has emerged as the global regulatory standard. However, its calculation can be complex. Even in developed countries, it is rarely carried out in-house by regulators. Indeed, its implementation in developing countries is particularly difficult for a number of reasons.

First, considerable network engineering and financial data is required for a 'bottom-up' model and detailed management accounting information is required for a 'top-down' model. This data may simply not be available over a reasonable timescale for operators in developing countries. Secondly, the LRIC methodology calculates the efficient cost of providing the specified services and therefore termination charges based on LRIC are intended to encourage providers to be as efficient as possible. However, in developing countries, the incumbent is frequently owned by the state and has a legacy of publicly determined investments and overstaffing. As a result, it may be difficult to improve efficiency in the short term and this limits the degree to which the regulator is justified in setting interconnection charges based on efficient costs. Finally, LRIC cost estimates should be forward-looking and are therefore based on traffic forecasts. These may be particularly unreliable in the volatile markets typical of developing countries.

The complexity of calculating the cost of interconnection means that regulatory authorities have sometimes used benchmarking to set interconnection tariffs instead. The experience of regulating interconnection in the EU has provided a substantial body of evidence on the cost of interconnection, and this has been used to set interconnection rates in developing countries for both mobile and fixed operators.

Botswana: use of international benchmarking to set mobile termination charges

In February 2003 and September 2003, the regulator in Botswana (the BTA) issued two determinations on interconnection disputes that covered the setting of termination charges. Although the BTA expressly recognized LRIC as the best methodology for setting interconnection charges, benchmarking was used due to the lack of available cost data.

In the first decision, the charge for termination on the fixed network was calculated as the average of the equivalent charges across the 15 EU Member States. However, in the second decision, the BTA stated that it was 'not confident that most of the EU countries have reached or are in the process of reaching efficient cost-oriented termination charges'⁴⁴ and therefore set the termination charge for fixed-to-mobile calls on the basis of the average of the current best practice range set by the EU.

⁴³ See further Chapter 3, at 3.13.1.

⁴⁴ 'Ruling on Interconnection Charges Dispute between Botswana Telecommunications Corporation and Mascom Wireless (Pty) Limited', BTA Ruling No 1 of 2003, 26 February 2003.

17.5.5.5 Indirect access and access deficit charges

Indirect access allows customers to receive communications services, most commonly long-distance and international calls, from a provider other than the operator that provides the access line. Under these arrangements, subscribers are able to choose to route calls via their preferred provider by dialling prefix codes on a call-by-call ('carrier selection') or on an ongoing basis ('carrier pre-selection'). Typically, regulatory intervention is required to oblige the incumbent operator to provide competitors with indirect access. These arrangements are not common in developing countries. That said, they potentially offer a viable means of introducing limited competition and may therefore be useful in smaller markets, provided this benefit is not outweighed by implementation costs.

Where indirect access is mandated, the alternative operator purchases origination services from the access provider. The charge for this service is usually set by the regulatory authority on the basis of cost. Where the incumbent's tariffs are unbalanced, this may cause a problem because the incumbent is required to maintain its call charges above cost in order to compensate for the losses that it makes on line rental. However, an alternative provider has no such constraints and can therefore undercut the incumbent. This potentially results in inefficient entry and could threaten the financial viability of the incumbent operator. In order to minimize the risk of this happening, regulators have set up systems of charges called Access Deficit Contributions (ADCs). These are mark-ups on interconnection which the alternative operator pays to the incumbent as compensation for the profits it forgoes when entry in the long-distance/international markets occurs.

This system is only appropriate while the incumbent's tariffs are unbalanced. Once rebalancing is complete, the system should be withdrawn. If a universal service fund is also established, it is important to avoid double-counting of costs between access deficits and universal service costs. This is a difficult exercise and a regulatory authority in a developing country would typically require external advice on the design and implementation of such a scheme.

The Bahamas: access deficits and universal service⁴⁵

The tariffs of the incumbent operator in the Bahamas (BTC) are unbalanced and, in particular, local calls are provided free of charge. The legal framework in the Bahamas provides for the establishment of both Access Deficit Contributions and Universal Service Fund payments but does not specify how these should interact with each other.

Indirect access is not mandated in the Bahamas, so any alternative provider has to supply a means of access as well as long-distance/international calls to its customers. Entrants are free to set their own tariffs (unless they are deemed to be dominant) and therefore do not face an access deficit as a result of regulatory

⁴⁵ The USO consultation document containing a discussion of these issues is available at <<http://www.pucbahamas.gov.bs/consultations.php>>.

controls on tariffs. However, the incumbent offers access and local calls below cost and therefore entrants must also offer similar tariff structures if they are to be successful.

BTC clearly makes a loss on providing services to some of its customers. However, it continues to do so because of its Universal Service Obligation. The law provides for the establishment of a Universal Service Fund which would provide some compensation to BTC for the cost it incurs in meeting this obligation.

In the absence of regulatory mandated indirect access and given the presence of a Universal Service Fund, there is no economic justification for a system of Access Deficit Contributions. However, the regulator faces considerable pressure from stakeholders who will be affected by its decision on these issues and faces the possibility of legal action if any of the operators feel their point of view is supported by the law.

17.5.6 Facility sharing and co-location

Under the EU model, national regulatory authorities are entitled to encourage co-location and facility sharing between operators, but the clear regulatory preference is to leave these to normal commercial agreement. In contrast, local loop unbundling of the copper local access network is mandatory.

In developing countries, local loop unbundling may have little or no relevance, particularly where fixed network infrastructure is inadequate and the primary form of communications access is via mobile networks. On the other hand, a more active approach may be appropriate toward tower and mast sharing between wireless operators of all descriptions, as this should lower the cost of network roll-out (thereby lessening the costs passed on to consumers) and may alleviate environmental concerns where a country lacks an adequate generic environmental law regime. The telecommunications laws in many developing countries contain a requirement for operators to share infrastructure for these reasons. However, in practice, these requirements are rarely enforced, particularly in rapidly developing markets. On the other hand, where network roll-out has achieved nationwide coverage, operators have more of an incentive to share tower facilities and agreements are made on tower-sharing for commercial reasons.

A key emerging issue in developing countries in this area is the sharing of facilities and co-location related to landing points for submarine cables. As telecommunications markets develop and broadband services become more widespread in developing countries, the demand for international bandwidth is increasing rapidly. Traditionally, in developing countries, this has been provided primarily by satellite links but the cost of this is high and the technical capacity of the satellite infrastructure is not sufficient to support the high demand for bandwidth. Access to the international submarine cable infrastructure is therefore becoming increasingly important in developing countries.

There are many such cables but the landing points in each country are often controlled by the incumbent operator. Obtaining access to these facilities at reasonable terms is therefore a key issue for the development of the telecommunications market. Regulators have historically found it very difficult to enforce effective cost-based access to these facilities and this is particularly difficult in developing countries where the capacity of the regulatory authority is often low. The best long-term solution to this problem is to ensure that there is more than one cable landing point in a country and that they are owned by different operators. However, in the meantime, regulators should engage in consultation with concerned parties to ensure that sound regulations are established and that they are effectively enforced.

17.5.7 National roaming

Where mobile operators are licensed on a sequential or regional basis, it is not uncommon for an incumbent mobile operator to be required to provide roaming services to the newcomer on its existing mobile network. Except in large or sparsely populated countries where network roll-out would be particularly expensive or onerous, or in countries (such as Iraq) where roaming occurs in regions where the new entrant is not licensed to install its own network infrastructure, national roaming may in practice be of limited value.

In the early stages of commercial launch, new entrants are typically keen to build a strong brand and market reputation as quickly as possible. While national roaming may be seen as a relatively easy method of introducing competition or attaining rapid network roll-out, the ability of the incumbent 'host' network to affect adversely the newcomer's performance and quality of service and thereby damage a fledgling brand, combined with the lack of recourse to effective commercial courts should a dispute under roaming agreements arise, may render roaming too risky a proposition. Rather than expending its energies in putting in place the necessary legal, commercial, and technical roaming arrangements, the newcomer is more likely to prefer instead to concentrate on building out its own network infrastructure.

For example, in Bahrain, the Mobile Telecommunications Licence granted in 2003 to the new entrant mobile operator (Zain, formerly MTC Vodafone Bahrain) included a right to roam on the incumbent Batelco's mobile network while it completed its network roll-out. Zain's licence also contained stringent roll-out requirements: with 95 per cent population service coverage required from the date of commercial launch. However, Zain did not exercise its option to implement national roaming, preferring simply to expedite its roll-out programme.

17.5.8 Universal service and rural/peri-urban access

Most developing countries do not have the luxury of imposing EU-style universal service obligations (USOs), which require every person to have access to a fixed telephone line and basic (fixed) telecommunications services at affordable prices

regardless of geographic location. Instead, they seek to attain the objective of giving all inhabitants some form of access to telecommunications facilities and services. In rural areas, this may take the form of telecentres or community phones, or special subsidized 'rural access' network licensing schemes. In peri-urban areas, the focus may be more on ensuring affordability of basic services or some form of communications access for households falling below the poverty line.

Low fixed penetration rates, the uneconomic cost of fixed network roll-out, lack of access to necessary capital for network investment, years of under-investment in existing fixed network infrastructure, and the need to rebalance local and line rental tariffs may all pose substantial obstacles to basing a universal access strategy on the fixed network. Regulators in developing countries have therefore often looked beyond the incumbent fixed operator to address universal access issues.

17.5.8.1 *Defining universal access*

The first issues that must be addressed in designing a universal access strategy are the definition of the access objective and which body will be responsible for its formulation. Typically, the government will be responsible for sector policy and the regulatory authority for its implementation. The definition of the universal access objectives often falls somewhere in between these two remits. Access to telecommunications services in rural areas is often a politically sensitive issue and governments therefore usually want to be in charge of defining universal service objectives. However, this may result in unrealistic or poorly defined requirements, which the regulator is then responsible for implementing. This is particularly so in developing countries where rural poverty is a major issue and regulators often do not have sufficient influence to ensure that government decisions are practical. An alternative approach is leave the regulatory authority or universal access implementing agency to define the specific objectives.

Universal access strategies typically focus on improved teledensity, access to communications services, telecentres and initiatives to improve rural connectivity, and increased Internet usage.⁴⁶ It is important to ensure that sufficient flexibility is built into the definition to allow it to be changed when conditions warrant. A good example of this is the requirement to provide public payphones, which was appropriate before the widespread adoption of mobile phones but which has become increasingly irrelevant in many countries.

Finally, it is important to avoid specifying technologies for the provision of universal access. What is of interest to customers in these areas is the provision of services and they are likely to be indifferent as to how those services are delivered (i.e. whether voice telephony services are provided over mobile or fixed networks).

⁴⁶ See e.g. Wellenius, B, 'Sustainable Telecenters: a Guide for Government Policy', *Viewpoint Note No 251* (the World Bank Group, January 2003), and the extensive discussion in 'Trends in Telecommunication Reform 2003: Promoting Universal Access to ICTs' (ITU, Geneva, 2003).

17.5.8.2 *Designing universal access programmes*

Once objectives have been determined, a strategy or programme for their attainment must be developed. There is substantial international experience of designing universal access programmes in developing countries. These often revolve around establishing funds to finance roll-out programmes and may sometimes include innovative auction-based systems to select providers. However, simply licensing new entrants to provide rural access will be insufficient: without effective, cost-oriented, and non-discriminatory interconnection, timely and non-discriminatory access to radio frequencies, numbering ranges and rights of way, and confidence in the fair enforcement of regulatory controls, such initiatives are unlikely to succeed.⁴⁷

Network roll-out and coverage obligations in mobile licences, while traditionally not regarded as a universal access obligation, may in practice have the same effect. Since they are contained in licences as obligations, these coverage requirements are not explicitly funded. However, since operators take them into account during the licence award process, they are implicitly financed by both the government and subscribers through higher retail tariffs, and initial licence fees that are lower than might otherwise have been the case.

However, the rapid roll-out of mobile networks in developing countries, which often exceeds licence requirements, show that competitive forces by themselves will ensure that wide areas of the country are served. Indeed, the success of the mobile networks in even very low-income developing countries has raised questions about whether the distortionary effects on the market and the administrative burden on the regulatory authority caused by the introduction of a formal universal access programme in fact outweigh the benefits of the scheme.

Bangladesh: market-based initiatives

There has historically been no formal universal service/access obligation in Bangladesh. However, mobile operators have rolled out their networks throughout the country and some are providing services to the poor for essentially commercial reasons. For example, Grameen Phone provides credit to women in rural areas through a related company, allowing them to buy a handset, connect to the network, and resell calls.⁴⁸ The initial loan is approximately US\$500 and a pilot study showed that the women could earn, on average, US\$2 per day after all costs. This annual income is approximately twice the country's GDP per capita. Grameen selects candidates for loans on the basis of their credit history, location, and their ability in English, and provides a one-day training session.

⁴⁷ See Prof Rohan Samarajiva, 'Sri Lanka's Telecom Reforms of 2002-2003', *Public Interest Program Unit of the Ministry for Economic Reform, Science and Technology*, 2004, at p 5.

⁴⁸ 'Trends in Telecommunication Reform 2003: Promoting Universal Access to ICTs' (ITU, Geneva, 2003) at p 43, and 'Bringing Cellular Phone Service to Rural Areas'. Lawson, C and Meyenn, N, *Viewpoint Note No 205* (The World Bank Group, March 2000).

The rapid roll-out of the mobile networks in Bangladesh and the penetration of services into rural areas through commercial initiatives in the mobile sector contrasted with the low number of lines rolled out by the specialist rural operators (Sheba Telecom and the Bangladesh Rural Telephone Authority). This suggests that market-based initiatives may sometimes be more effective than a formalized rural access programme, and that universal service funds may not always be necessary. However, the Grameen Phone initiative in Bangladesh was aided considerably by its connection to Grameen Bank, a financial institution that provides micro-credit facilities in rural areas.

17.5.8.3 *Funding universal access*

Funding of universal access programmes is a very significant issue for regulators. The traditional approach is to create a 'Universal Service' or 'Rural Access' fund, to which licensed operators contribute on a regular basis. This operates as a tax on the sector and, in some countries, this may have an adverse impact on operators and potential investment in the sector.

The size of the funds and the political sensitivity of the way in which they are used do raise significant issues for the regulatory authority. They require careful design, efficient and transparent management, auditing, and rational fund allocations. Corruption can be an issue in some countries, so the rules and operating procedures for the funds should be designed to minimize the risk of this occurring. One method of improving transparency is to engage in consultation on the allocation of resources and the operation of the fund. Beneficiaries of the fund will have a clear incentive to ensure that resources are not misused and that they are allocated in a sensible and equitable way. They therefore have an interest in participating in any such consultation exercise. Regular publication of auditors' reports is also a useful way of enhancing transparency.

In practice, the track record of Universal Service Funds in developing countries is poor. In most cases, funds have not been fully disbursed or, where they have, they have not been effective at increasing widespread coverage of the networks. In some countries, funds contributed to Universal Service Funds by private operators have been used to support loss-making state-owned enterprises. It is possible that, in future, they will be used to support backbone networks funded by governments but which are not financially viable.

17.5.8.4 *Broadband access*

Governments in developing countries are increasingly focusing on securing widespread access to broadband technologies at affordable prices. From a regulatory perspective, improving broadband access will require full market liberalization (with operators able to obtain the necessary licences as needed to roll out broadband wireless access technologies, backbone infrastructure, and international gateways), robust

access regulation (enabling operators to access and share domestic, cross-border and undersea backbone infrastructure on fair and reasonable terms), access to spectrum to support wireless access technologies, and minimal barriers to entry (with any necessary licences or other approvals available on demand and at minimal cost).

Some countries have also attempted to improve the availability of core broadband infrastructure through licensing operators in that segment of the market. Nigeria and Kenya are both examples of such an approach. The regulator may also have a role to play in the establishment of Internet exchange points (IXPs) which allow traffic originating in developing countries to remain within the region, rather than transiting through hubs in Europe or North America.

In addition to these regulatory measures, governments seeking better broadband network services have also begun to intervene directly in the provision of core network infrastructure. Mobile operators in developing countries have traditionally found it cheaper and more reliable to build out their own backbone transmission networks using wireless and satellite technologies rather than rely on securing access from the incumbent fixed operator. However, governments are now becoming involved in network development through investing in fibre-optic cable infrastructure, either directly or through state-owned incumbent operators.

The stated objective of these investments is to provide widespread access to wholesale capacity at reasonable prices which, it is expected, will reduce the price and increase the coverage of broadband services. In practice, much of this activity has been promoted by equipment manufacturers and financed through supplier credit. In Africa, for example, contracts totalling over US\$1 billion for more than 30,000 kilometres of fibre-optic transmission networks were awarded to governments or State-owned enterprises in the 18 months leading up to January 2008.⁴⁹ Contracts for such networks have been commissioned by governments in the Democratic Republic of Congo,⁵⁰ Ghana,⁵¹ Kenya,⁵² and Uganda,⁵³ and by state-owned incumbent fixed operators in Botswana, Ethiopia, Malawi, Togo, and Zambia. A related approach is the one taken by the government of South Africa which, in 2006, combined the telecommunications assets of electricity provider Eskom and transport parastatal Transet to create a new broadband infrastructure company to provide national backbone transmission capacity on a cost-plus basis.⁵⁴

This development has interesting policy implications since these networks are being developed by governments in a post-privatization, post-liberalization market.

⁴⁹ 'Sub-Saharan Africa: Broadband, Regulation and International Bandwidth Pricing Drive National Backbone Roll-Out', *Global Insight*, 29 January 2008.

⁵⁰ 'China Telecom Construction Corporation Wins National Fibre-Optic Backbone Contract in DRCongo', *Global Insight*, 10 January 2008.

⁵¹ 'Ghana Launches National Fibre Backbone Project' *Global Insight*, 18 May 2007.

⁵² 'Kenya: Huawei, ZTE and Sagem Win National Fibre Backbone Project in Kenya', *Global Insight*, 16 October 2007.

⁵³ 'Uganda: Chinese Government Gives Uganda Loan for Fibre Backbone', *Global Insight*, 31 May 2007.

⁵⁴ 'South Africa: Infraco Plans New Submarine Cable', *Global Insight*, 3 August 2007.

In some ways, this is turning the clock back ten years with governments again investing in network deployment where previously they had divested all of their activities in the telecommunications sector. A second implication is whether governments will be able to utilize these networks effectively without distorting the market through preferential treatment of this network. Operators may, for example, find themselves under increasing political pressure to purchase backbone transmission capacity from the new government-owned backbone networks in order to provide financial support to the State-owned entity.

Where government-owned backbone networks exist and are offering adequate quality of service at the right price, operators may be willing to use these networks to increase the capacity of their networks. Access to such backbone services may significantly increase the ability to roll out 3G and other high-speed technologies on a more widespread basis. However, to secure real benefits from the substantial investments in fibre-optic backbone infrastructure, these initiatives should be accompanied by complementary steps to liberalize the market, ensure that access networks are developed (through, for example, making available spectrum and licences to provide broadband wireless access), and that access to international connectivity is also available. These interventions also come at a cost to the public sector—both in potential distortion of the market and the fiscal costs of repaying loans made to finance network construction.

17.5.9 Radio spectrum allocation

The regulatory framework will need to contain the principles and procedures governing the allocation of radio spectrum to ensure that resources are allocated between operators in a fair, non-discriminatory, and efficient manner. Usually, the communications regulatory authority is given the power to maintain a national frequency plan and to assign frequency ranges to operators of electronic communications networks.

There are three models of spectrum regulation: a 'command and control' model, where the licensee is given strict operating parameters and rules defining spectrum rights; an 'exclusive rights' model, where the licensee is given rights that are generally transferable and flexible to use specified spectrum within a defined area during a fixed period of time (with spectrum use rules largely technical in order to manage interference issues); and a 'commons' model, where spectrum is unlicensed and users share a frequency block subject only to limited technical requirements, e.g. with respect to power emissions (a well-known example of the latter being the use of Wi-Fi technologies in WLANs).⁵⁵ The 'command and control' model is the model most commonly used for most spectrum blocks in the developing world, but creates administrative burden and restrictions through the need to acquire specific radio

⁵⁵ 'Trends in Telecommunication Reform 2006: Regulating in the Broadband World' (ITU, Geneva, 2006).

frequency licences for specific uses governed by bureaucratic defined spectrum allocations, thereby discouraging innovation and technological evolution. An 'exclusive use' model provides more flexibility, but may encourage spectrum 'hoarding' as operators may seek to acquire large blocks of spectrum for unspecified uses in order to deny spectrum opportunities to competitors. On the other hand, a 'commons' model for most spectrum uses does not sufficiently manage over-crowding and interference issues, particularly where the spectrum use is not highly localized.

Arguably, a variant of the 'exclusive use' model is generally the most effective way to regulate spectrum while conferring the flexibility to allow the rapid deployment of new radio technologies, while safeguarding the interests of other spectrum users and minimizing the regulatory burden on spectrum regulators, provided that prospective spectrum licensees are required to demonstrate a genuine need for the spectrum licensed and are subject to appropriate usage restrictions to ensure efficient and non-interfering spectrum use.

17.5.9.1 *Allocation between different industries*

Radio spectrum is used by multiple government agencies and industries, including telecommunications, broadcasting, civil aviation, shipping, emergency services, national security and law enforcement agencies, and the military. Allocation of spectrum between different uses is, at a high level, governed by the ITU.⁵⁶ However, specific allocations between different uses and spectrum coordination with neighbouring countries will need to be undertaken at a national level.

In practice, spectrum usage allocation may be negotiated informally between the relevant responsible ministries; alternatively, a formal inter-ministerial body may be established for this purpose. In Nigeria, for example, a National Frequency Management Council was established, containing representatives of all interested ministries and the security agencies, to determine spectrum allocation issues and to publish a national frequency allocation table.⁵⁷ Spectrum that has been allocated for use by electronic communications networks is then assigned to operators and end-users by the Nigerian Communications Commission.

17.5.9.2 *Allocation within communications sector*

Radio spectrum is a scarce resource and needs to be allocated carefully to ensure spectrum is available for future needs. In practice, spectrum grants have tended to be *ad hoc*, with first-comers often granted large blocks of spectrum, often in an attempt to maximize interest and licence value. Today, many developing countries are looking to deploy broadband access, typically using wireless technologies such as broadband fixed wireless access and WiMax. If prior spectrum grants were inefficient or over-extensive, regulators may find new broadband wireless technologies require

⁵⁶ See further Chapter 15, at 15.3.

⁵⁷ The Nigerian Communications Act 2003, Chapter III, Part 2.

relocation of existing spectrum users. Additionally, balancing the use of licensed and unlicensed spectrum remains a challenge.

17.5.9.3 *Interrelationship with operating licences*

Licences to use frequencies for electronic communications may be separate from or incorporated in a network operating licences and authorizations. Rights to use frequencies that are an essential adjunct to the operating licence (such as the uplink and downlink frequencies for satellite and mobile networks) should ideally be incorporated in the operational licence. In practice, they can simply be attached to the operational licence, thereby allowing the use of a consistent, standardized format for frequency licences. If a separate frequency licence is granted for such 'essential' frequencies, then the frequency licence should not contain duration or revocation provisions separate to or different from those contained in the accompanying operating licence: if a frequency licence for essential frequencies is revoked or expires, this will obviously render the accompanying operational licence worthless. In contrast, where the licensed frequency range is non-essential (e.g. frequencies for microwave transmission links), the frequency licence should always be separate from the operating licence. This helps ensure efficient frequency use, as operators incur additional fees for the right to use such frequencies and are therefore encouraged to apply for frequency ranges only when needed. Frequency licences for non-essential frequencies may also be for a term shorter than the operator's operating licence.

17.5.9.4 *Frequency fees*

Frequency fees should encourage efficient frequency use, to reflect the fact that radio spectrum is a valuable, limited public resource. Thus, fees should be high enough to prevent operators from 'hoarding' unused spectrum, but low enough so as not to discourage smaller operators from entering the market or using wireless transmission media. There are various market-based mechanisms for ensuring that spectrum fees are appropriately set, and the approach taken should reflect the availability of the particular frequency range, current and likely future demand, and the need to promote efficient use.

For example, where efficient use of spectrum is not a priority (e.g. frequencies for amateur radio and other private, non-commercial use), frequency fees should simply cover the cost to the regulatory authority of managing the spectrum and should not reflect the value of usage. In contrast, if the relevant frequency range is for commercial use, becoming congested, or in high demand, a market-based pricing mechanism such as marginal value pricing or spectrum auctions may be appropriate. In spectrum auctions, spectrum fees are set according to the value ascribed to the frequencies by bidders. This method is commonly used to allocate licences for frequencies integral to mobile networks.

Under marginal value pricing, the spectrum fee reflects the marginal value to the user of such frequencies. This approach is most suitable frequencies used for non-essential commercial purposes such as microwave or satellite transmission links.

Where spectrum is auctioned, the price is set by the market. However, for other types of spectrum in which the regulator sets the price, care should be taken to ensure that frequency charges are not inappropriately high. If they are, this will act as a barrier to entry to new investors and these higher costs may get passed through to customers. In the case of spectrum for services that are new and innovative in developing countries such as broadband wireless, regulators should set spectrum fees simply to cover administrative costs so that investment and innovation is encouraged.

17.5.9.5 *Frequency monitoring*

Monitoring the use of radio spectrum is an increasingly important function of regulatory authorities in developing countries. Wireless technologies are taking a central role in the provision of services in developing countries because of their natural advantages (e.g. lower cost and relative ease of network roll-out). However, wireless networks rely on the availability of clear spectrum and operators therefore depend on the regulator to enforce regulatory controls on harmful interference and frequency usage. Developing countries may also face a legacy of unauthorized use of transmitting equipment and frequency interference.

Regulators in developing countries typically lack the resources to purchase expensive monitoring equipment and the skills necessary for its operation. Moreover, the regulation of spectrum usage depends on the regulator being able to take effective enforcement action against those who use spectrum unlawfully.

There are no simple solutions to these issues. The cost of spectrum monitoring equipment can be minimized by ensuring that the optimum equipment configuration is used and that contracts with suppliers are reasonable. There is significant scope for sharing of international experience in this area and potentially the use of procurement advisors. As pressure on spectrum increases, operators may also see it as being in their interests to ensure that spectrum is monitored effectively and may therefore be prepared to contribute to the costs of monitoring, thereby easing the financial burden on the regulator.

17.5.9.6 *Spectrum trading*

Spectrum trading allows holders of frequency licences to sell their rights to use radio frequencies, thereby promoting efficient spectrum use. Market-based approaches have a general advantage in developing countries because they minimize the opportunities for poor decision-making, political influence, and corruption. However, in the case of spectrum trading, they require a sophisticated structure of administration, regulation, property rights, and enforcement. This often does not exist in developing countries and therefore spectrum trading is unlikely to be a realistic proposition.

17.5.10 *Numbering*

Historically, numbering plans were usually 'owned' by the incumbent fixed operator. As part of a new regulatory framework, 'ownership' and management of the numbering

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17.5.10 Numbering

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plan is generally transferred to the new regulatory authority, and all operators are afforded non-discriminatory and timely access to numbering blocks.

Numbering is sometimes classified in telecommunications legislation as a scarce resource. As this may have the effect of limiting the number of licences available for voice telephony services, this approach is not advocated. Instead, regulatory authorities should be mandated and encouraged to make managed changes to the existing numbering plan to free up sufficient numbering ranges to meet demand.

17.5.10.1 Asymmetric rights to numbering blocks

Mere transfer of management of the numbering plan to the regulatory authority may be insufficient to level the playing field. Frequently, the incumbent may have secured large numbering blocks for its own use prior to the transfer. Not only does this encourage inefficient use of numbers, but this puts the incumbent at a competitive advantage, as the incumbent will have access to many more so-called 'golden' or premium numbers than new entrants. Ideally, limited numbering blocks should be allocated to each operator on the basis of forecast need, with the rest reclaimed by the regulatory authority. This approach helps ensure that numbering resources remain sufficient without the need for repeated and frequent changes to the numbering plan (which are disruptive and costly to implement), and ensures that new operators requiring numbering capacity are treated fairly and equivalently.

17.5.10.2 Charging for number usage

Efficient use of numbering resources is fostered by charging for number use. These charges can be levied on operators per number block. The power to impose such charges should be expressly conferred on the regulatory authority in its enabling legislation.

17.5.10.3 Number portability and carrier pre-selection

Number portability refers to the ability of subscribers to retain their number when they change service provider. Carrier pre-selection refers to the ability to route calls, on an ongoing basis, using a provider other than the operator supplying the access line. Both are intended to reduce the cost to customers of switching between providers and therefore promote competition. However, both require software and hardware upgrades and therefore impose a significant cost on operators.

Regulators in developing countries should consider whether the benefits of such measures are likely to outweigh the cost of implementation. In particular, it may be better for regulators in developing countries to prioritize reducing barriers to entry and encouraging the establishment of viable alternative providers. Imposing additional costs on these operators may not further this. Indeed, it is worth noting that end-users in developing countries are likely to be more price-sensitive than those in developed countries. This means that the cost to consumers of switching provider are likely to have a less detrimental effect on competition than in developed countries. Therefore, the incremental benefit of introducing number portability and carrier pre-selection may be more limited in developing countries.

17.5.11 Equipment testing and certification

Network development in developing countries can be hindered by slow and expensive local equipment testing and certification processes. Developing countries commonly have their own equipment testing and approval centres, which may significantly burden the introduction of new technologies and import of network equipment through added bureaucratic 'red tape', costs, delays, and the possibility for abuse and corruption. Coordination and consistency of approach may also be lacking between communications regulatory authorities and customs officials in the interpretation and application of equipment import rules. Given the concentration of network equipment manufacture among a relatively small group of companies with international or regional presence, such a degree of regulatory interference is unlikely to be warranted.

It is often desirable to make radical changes to existing equipment type approval procedures in order to minimize these effects. Ideally, local equipment and testing and certification programmes should be limited only to those types of equipment that may have a special detrimental effect in the local environment (e.g. because of interference with sensitive radio frequency usages), with equipment requiring certification identified through means of a 'negative list'. In all other cases, it would be preferable for the regulatory framework simply to recognize equipment approvals from designated international and foreign testing centres. However, the loss of jobs in existing test centres may encounter political resistance.

Sri Lanka: removing cumbersome local type approval processes

The existing Sri Lankan 'type approval' regime is set out in the 1991 Telecommunications Act. This Act requires all terminal equipment to be approved by the Telecommunications Regulatory Commission, and the manufacture, trade, sale, import, and repair of equipment to be separately licensed.

Under the reforms proposed in the 2003 Electronic Communications Networks and Services Bill (which was ultimately not enacted following a change in government), this cumbersome type approval regime was to be replaced with a streamlined 'apparatus compliance' regime. Under the new provisions, apparatus placed on the market or put into service in Sri Lanka need only comply with a recognized standard, being a specification or standard published by a standards body recognized by the new regulator or published by the regulator itself. No additional restrictions would be placed on radio apparatus, unless such radio apparatus fell within the ambit of a published negative list of restricted apparatus.

The intent behind the proposed significant deregulation of equipment approvals was to remove the cumbersome and time-consuming process of local approvals, to facilitate the import of telecommunications equipment into Sri Lanka, and to limit the role of customs officials in controlling such imports.

17.5.12 Property rights

New entrants to a liberalized telecommunications sector in developing countries will require certain property rights in order to construct, maintain and operate their networks. They will need reassurance that they will enjoy real property rights which are adequate—both substantively and procedurally—to meet their build-out and service obligations under their licences, and which are no less favourable than those granted to the incumbent. Necessary property rights in respect of both public and private land may include: rights of way to install and maintain infrastructure, fast-track zoning procedures, compulsory purchase powers to obtain key sites needed for network roll-out (e.g. to erect microwave transmission towers or base stations), and rights to access and share ‘bottleneck’ facilities (which are generally included in the network access regime). Operators may also require rights to cut trees, fly lines, or erect network infrastructure in state-owned land or environmentally sensitive areas. In some cases it may be necessary to coordinate the property rights exercised by different utilities, particularly in respect of network construction, so as to minimize disruption.

Clearly, the importance of property rights to any particular new entrant will depend to a large extent upon the property rights it previously enjoyed and the technology proposed. Thus, new entrants deploying wireless technology will generally have less need for rights of way and compulsory purchase powers than operators of wireline networks. Similarly, existing utility companies entering telecommunications markets may already enjoy sufficient rights of way.

The design of appropriate property rights will depend heavily on the property law system and land ownership structures in the relevant country. Moreover, the availability of and procedural constraints on compulsory purchase orders will need to be considered carefully in weighing operator needs against the interests of land owners. In addition, the ease with which an operator can access public and private land and install infrastructure will have a material impact on new entrants’ decisions to roll out duplicating network infrastructure (which may be both economically inefficient and environmentally disruptive) or simply to lease the necessary infrastructure from existing market players (which may hinder market development).

Bahrain: facility duplication v leases

During development of the new telecommunications regulatory framework in Bahrain, the issue of property rights and the rights of licensees to install new infrastructure was debated at length.

The incumbent, Batelco has significant amounts of surplus fibre and duct capacity. It was therefore argued that it was unnecessary to give new entrants the right to install their own network infrastructure with all the disruption that this would entail. Instead, Batelco would be obliged to lease capacity to entrants. The alternative view was that this would make entrants dependent on both Batelco’s cooperation and the ability of the regulatory authority to set fair and equitable

terms for access. In practice, providing access to Batelco's duct and fibre infrastructure on regulated terms was a failure and these entrants instead developed their own wireless-based infrastructure. Five years after the initial liberalization of the market, the regulator is revisiting the legal and regulatory framework that provides competitors with access to Batelco's wireline infrastructure.

17.5.13 Consumer protection

It may be necessary to ensure that the electronic communications regulatory framework contains appropriate mechanisms to protect consumers, particularly where a country lacks generic consumer protection rules and organizations. Consumer protection mechanisms may include requiring approval of operators' standard customer contract, although the relevance of this measure is diminishing with the growth in mobile pre-paid subscriptions in developing countries. Instead, it may be more useful to require operators to publish a (binding) customer charter and to establish consumer complaints procedures meeting minimum regulatory standards. The latter, if effectively implemented, can help relieve the burden on the regulatory authority by promoting industry resolution of consumer complaints wherever possible. Other consumer measures may include provisions for directory and operator assistance and requirements for per second and itemized billing.

17.5.14 Offences

Telecommunications legislation often includes numerous criminal offences, including the unlicensed operation of telecommunications networks, unauthorized interference with communications, unauthorized use of radio spectrum, and the connection of unapproved terminal equipment, to name but a few. Applicable penalties usually include a term of imprisonment. The practical relevance of such criminal sanctions is questionable.

For example, the 1991 Sri Lankan Telecommunications Act contains an 'Offences and Penalties' section listing numerous criminal offences, ranging from operating a telecommunications system without a licence to the commission of an act of drunkenness by a telecommunication officer, climbing up a telecommunication post, and the tendering for transmission at a telecommunication office of a 'scurrilous' message. Yet no single instance of a criminal prosecution of these offences has occurred since the Act's enactment. In Bangladesh, criminal penalties are harsh: the mere act of operating or constructing a network or providing any service without a licence (a state of affairs which may not be uncommon given bottlenecks in licence renewal processes) could result in ten years' imprisonment.⁵⁸

⁵⁸ The Bangladesh Telecommunication Act 2001, s 35(2).

In relation to most regulatory obligations, administrative sanctions are likely to be a more useful or practicable enforcement tool than criminal prosecution. Accordingly, the emphasis in new sector legislation should be placed on regulatory rather than criminal sanctions.

17.6 CONCLUSION

Markets in developing countries have changed dramatically over the last ten years. The explosion in the demand for and supply of mobile services has increased tel-density throughout the developing world. The emergence of new technologies such as fixed wireless access, limited mobility services, and VoIP has changed the economics of the industry, allowing competition to flourish in what was previously considered a natural monopoly. Developing countries have recognized this and many have undertaken reform of their regulatory frameworks to match these developments and take advantage of the potential for private sector involvement.

The emerging global standard for regulatory reform is the EU regulatory framework. However, the market and institutional characteristics in developing countries are very different from the EU and other developed countries, which in turn prevent a direct transposition of models from the developing world. Thus, while many of the guiding principles underlying the EU framework remain relevant, the actual components of a new regulatory framework must be tailored to the circumstances of the individual country undertaking reforms.

In this chapter, we have discussed the various building blocks that together comprise a regulatory framework, and explored some of the issues that may arise in developing countries during its design and implementation.

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