

OECD REVIEWS OF REGULATORY REFORM

REGULATORY REFORM IN UK

**REGULATORY REFORM IN THE
TELECOMMUNICATIONS INDUSTRY**



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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AND DEVELOPMENT

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FOREWORD

Regulatory reform has emerged as an important policy area in OECD and non-OECD countries. For regulatory reforms to be beneficial, the regulatory regimes need to be transparent, coherent, and comprehensive, by establishing the appropriate institutional framework, liberalising network industries, advocating and enforcing competition policy and law and opening external and internal markets to trade and investment.

This report on *Regulatory Reform in the Telecommunications Industry* analyses the institutional set-up and use of policy instruments in the United Kingdom. It also includes the country-specific policy recommendations developed by the OECD during the review process.

The report was prepared for *The OECD Review of Regulatory Reform in UK* published in September 2002. The Review is one of a series of country reports carried out under the OECD's Regulatory Reform Programme, in response to the 1997 mandate by OECD Ministers.

Since then, the OECD has assessed regulatory policies in 16 member countries as part of its Regulatory Reform Programme. The programme aims at assisting governments to improve regulatory quality – that is, to reform regulations to foster competition, innovation, economic growth and important social objectives. It assesses country's progress relative to the principles endorsed by member countries in the 1997 *OECD Report on Regulatory Reform*.

The country reviews follow a multi-disciplinary approach and focus on the government's capacity to manage regulatory reform, on competition policy and enforcement, on market openness, on specific sectors such as telecommunications, and on the domestic macroeconomic context.

This report was prepared by Hugh Collins and Maev Sullivan with the participation of Dimitri Ypsilanti of the Directorate for Science, Technology and Industry in the OECD. It benefited from extensive comments provided by colleagues throughout the OECD Secretariat, as well as close consultations with a wide range of government officials, parliamentarians, business and trade union representatives, consumer groups, and academic experts in United Kingdom. The report was peer-reviewed by the 30 member countries of the OECD. It is published under the authority of the OECD Secretary General.

TABLE OF CONTENTS

I. REGULATORY REFORM IN TELECOMMUNICATIONS: UK.....	6
1. THE UK TELECOMMUNICATIONS SECTOR	7
1.1. The national context for telecommunications policies	7
1.2. Progressive competition	9
2. General features of the regulatory regime, the telecommunications market and market structure.....	11
2.1. The 1984 Telecommunications Act.....	11
2.2. The 1991 Duopoly Review.....	12
2.3. Competition in fixed services	13
2.4. Cable networks	14
2.5. Mobile communications	14
2.6. Other mobile radio technologies.....	16
2.7. Telecommunications market and participants	16
2.8. Market structure.....	18
II. REGULATORY STRUCTURES AND THEIR REFORM	20
1. Regulatory institutions and processes	20
1.1. The Telecommunications Regulator – Oftel	20
1.2. General competition authority	22
1.3. Relationship between the regulator and the competition authorities (Office of Fair Trading and Competition Commission).....	22
2. Regulations and related policy instruments in the telecommunications sector.....	24
2.1. Licensing regime	24
2.2. Class licences.....	24
2.3. Self Provision Licence (SPL)	25
2.4. Telecommunications Services Licence (TSL).....	25
2.5. Private Mobile Radio class licence.....	25
2.6. Satellite Services class licence	25
2.7. Cordless class licence	26
2.8. International Simple Voice Resale licence (ISVR)	26
2.9. Conditional Access Class Licence.....	26
3. Procedure for applying for a licence	26
3.1. Individual licences.....	27
3.2. Systems using radio	27
3.3. Services which require a Broadcasting Act licence.....	27
3.4. Public Telecommunications Operator (PTO) licence.....	28
3.5. Code powers	28
4. Rights of way	29
4.1. Rights of way over private land/premises	29
4.2. Rights of way over public highways	29
4.3. Planning permission	30

5. Line-of-business and ownership restrictions	30
6. Access regime	30
6.1. Interconnection	30
6.2. Interconnection with BT's fixed telephone network.....	32
6.3. Fixed to mobile interconnection charges	33
6.4. Unbundling of the local loop	34
7. Pricing regulation	37
8. Tariff rebalancing in the UK	40
9. Universal service regulation.....	41
10. Spectrum allocation.....	42
10.1. Previous methods.....	42
10.2. Licence charges	42
10.3. Licence exemption.....	43
11. Numbering policy	43
11.1. Portability	44
12. Quality of service	44
12.1. Complaint handling	45
12.2. Compliance work.....	45
13. Application of competition principles.....	45
13.1. Competition Act 1998	45
13.2. Fair Trading Condition	45
14. Convergence in communications markets.....	46
III. RECENT DEVELOPMENTS IN MARKETS AND SERVICES	48
IV. PERFORMANCE OF THE TELECOMMUNICATIONS INDUSTRY	52
1. Competition analysis.....	52
2. The telecommunications market	53
2.1. Fixed voice telephony market.....	54
2.2. Fixed to mobile call market.....	55
2.3. Mobile market	56
2.4. Leased lines	57
2.5. Internet.....	58
3. Other performance indicators.....	59
3.1. Network development	59
3.2. Network digitalisation	60
3.3. Quality of service	60
3.4. Employment and productivity	60
V. CONCLUSIONS AND RECOMMENDATIONS	61
1. General assessment of current strengths and weaknesses	61
2. Potential benefits and costs of further regulatory reform.....	63
3. Policy recommendations	63
NOTES	66

I. REGULATORY REFORM IN TELECOMMUNICATIONS: UK

Summary of the chapter

The telecommunication sector in OECD countries has seen significant regulatory reform in the last decade. The success of the liberalisation process depends on the presence of a transparent and effective regulatory regime that enables the development of full competition, while effectively protecting other public interests. With the explosive growth of Internet usage and intense interest in the development of the digital economy, the stakes concerning telecommunications infrastructure development are even higher. In the beginning of 2002, 27 OECD countries had unrestricted market access to all forms of telecommunications, including voice telephony, infrastructure investment and foreign investment in the telecommunications service industry.

Together with the transparent and effective regulatory regime, the regulator's readiness and willingness to apply pro-competitive regulatory measures in favour of promoting competition play a key role in making a smooth transition of the telecommunications sector from monopoly to full competition. In this context, this report analyses the effectiveness of the UK telecommunications regulatory regime and comments on the performance of the regulatory bodies.

The UK commenced its liberalisation process ahead of all OECD countries, except the United States. Although the UK Government decided to liberalise its telecommunications sector in 1980 it did so in a cautious and phased manner. Initially, in 1982, the sole competitor to British Telecommunications (BT) was Mercury Communications Limited and its initial rights were limited to competing with BT on a national (local and long-distance basis). In parallel, from 1983 onwards cable TV operators were granted exclusive franchised rights to deliver cable TV programming (broadcasting) by means of their local networks, which could also be used to provide switched telecommunications services in conjunction with BT or Mercury. Similarly, in 1985 two licences to provide cellular mobile services were granted to Racal and BT's joint venture with Securicor.

The Duopoly policy was abolished in March 1991 and international services began to be liberalised through International Simple Resale licensing of indirect access companies from 1993. However, BT and Mercury retained exclusive rights to run international networks and provide international services over their own facilities until the end of 1996. Throughout the Duopoly period and up until the early 1990s, the United Kingdom Government was free to set its telecommunications network and services policy but gradually, from 1990 onwards, the UK had to take account of and implement an increasing number of European Union (EU) telecommunications Directives. It also had to take account of bilateral agreements reached with various other jurisdictions, such as Japan and the United States of America as well as undertakings assumed under the World Trade Organisation agreements.

So, although the UK's telecommunications policy was initially developed independently of other Governments and institutions, it has recently been adapted to meet these external obligations and in some instances policy decisions taken by Oftel have had to be adjusted in order to implement EU Directives (or reopened in the case of carrier pre-selection or equal access). However, with few exceptions the UK has led rather than followed external liberalisation measures. It even mandated local loop unbundling prior to the EU Directive of December 2000, although it had to advance its original timetable to meet its obligations under the Directive.

Despite, or perhaps because of, its pioneering measures to liberalise the telecommunications sector and promote effective competition, the UK Government, throughout the last 18 years, and more particularly and recently the Director General of Oftel (the Director General) have come under some criticism from one side or other in key controversies along the route to competition.

Initially, the criticism was confined to the Duopoly policy, which many regarded as an inhibitor of competition that slowed down the development of effective competition in the UK. The decision to retain the international duopoly until 1996 was also heavily criticised.

During the mid-to-late 1990s, Oftel's policy of promoting infrastructure competition at the expense of service competition was also criticised. More recently, industry participants and consumer bodies have criticised Oftel for failing to take a more proactive position on the unbundling of the local loop. The price cap policy is criticised by a number of operators on the basis that it does not meet the EU requirements (although these are not statutory) to permit operators to rebalance their tariffs. Operators claim that this inhibits investment in the local loop.

Despite these criticisms the UK scores well against its EU partners when benchmarked on the full implementation of the EU Directives (see the Commission's 7th Implementation Report). At the same time, however, competition in some markets in the UK is still heavily dependent on the detailed intervention by Oftel in disputes between BT and its competitors and consumers are still dependent on protection by Oftel (e.g. retail price cap, universal service obligation and prevention of abuse in charges of calls to mobile networks). With the exception of international calls on the major routes which carry most of the UK's international traffic (but not on all routes), no sector of the UK telecommunications market has been declared fully competitive 19 years after competition was first introduced. Despite extensive research by a number of industry observers and the players themselves it is not clear whether this is due to a failure of regulation, a failure by competitors or a failure of the policy itself. This is one of the critical issues that the UK Government needs to address in formulating its new Communications legislation during 2002 and 2003.

1. THE UK TELECOMMUNICATIONS SECTOR

1.1. The national context for telecommunications policies

The UK commenced its liberalisation process ahead of all OECD countries, except the United States.¹ Although the UK Government decided to liberalise its telecommunications sector in 1980 it did so in a cautious and phased manner. Initially, in 1982, the sole competitor to British Telecommunications (BT) was Mercury Communications Limited (Mercury) (acting as agent for Cable & Wireless plc). Mercury's initial rights were limited to competing with BT on a national (local and long-distance basis). It was only allowed to compete internationally in July 1983 and was only granted the same statutory rights and privileges (such as the right to install its network on public and private land and dig up and install network on and over the public highways) in December 1984. The statutory right to interconnect its network with that of BT was only granted by the

Telecommunications Act 1984 (the T Act). Switched interconnection rights were granted in October 1985, at the direction of the Director General of Telecommunications (OfTel), who took office in August 1984.

The consortium put together by Mercury's shareholders in 1981 was the only applicant for a telecommunications licence under the British Telecommunications Act 1981, the Government decided in November 1983 to grant Mercury and BT duopoly rights to run national and international telecommunications networks and provide such services for a period of seven years ending in November 1990 (the Duopoly). In parallel, from 1983 onwards cable TV operators were granted exclusive franchised rights to deliver cable TV programming (broadcasting) by means of their local networks, which could also be used to provide switched telecommunications services in conjunction with BT or Mercury. Similarly, in 1983 two licences to provide cellular mobile services were granted to Racal and BT's joint venture with Securicor.

The Duopoly policy for the fixed service was abolished in March 1991 although BT and Mercury retained exclusive rights to run international networks and provide international services over their own facilities until the end of 1996. Throughout the Duopoly period and up until the early 1990s, the United Kingdom Government was free to set its telecommunications network and services policy but gradually, from 1990 onwards, the UK had to take account of and implement an increasing number of European Union (EU) telecommunications Directives. It also had to take account of bilateral agreements reached with various other jurisdictions, such as Japan and the United States as well as undertakings assumed under the World Trade Organisation agreements. Although the UK's telecommunications policy was initially developed independently of other Governments and institutions, it has recently been adapted to meet these external obligations and in some instances policy decisions taken by OfTel have had to be adjusted to ensure the implementation of EU Directives (or reversed in the case of carrier pre-selection or equal access). However, with few exceptions the UK has led rather than followed external liberalisation measures. It even mandated local loop unbundling prior to the EU Directive of December 2000, although it had to advance its original timetable to meet its obligations under the Directive.

Despite, or perhaps because of, its pioneering measures to liberalise the telecommunications sector and promote effective competition, the UK Government, in the last 18 years, and more particularly and recently the Director General of OfTel (the Director General) have come under some criticism from one side or the other in key controversies.

Initially, the criticism was confined to the Duopoly policy, which many regarded as an inhibitor of competition that slowed down the development of effective competition in the UK. A number of critics claim that consumers were long denied the full benefits of competition because the Duopoly policy protected BT from the full rigours of a competitive market as well as giving Mercury a false sense of security, which permitted it to be conservative in its network and service development. The decision to retain the international duopoly until 1996 was also criticised. During the mid-to-late 1990s, OfTel's policy of promoting infrastructure competition at the expense of service competition was also criticised. More recently, industry participants and consumer bodies have criticised OfTel for failing to take a more proactive position on the unbundling of the local loop. The price cap policy is criticised by a number of operators on the basis that it does not meet the EU requirements (although these are not statutory) to permit operators to rebalance their tariffs. Operators claim that this inhibits investment in the local loop.

Despite these criticisms the UK scores well against its EU partners when benchmarked on the full implementation of the EU Directives. At the same time, however, competition in some markets in the UK is still heavily dependent on the detailed intervention by OfTel in disputes between BT and its

competitors and consumers are still dependent on protection by Oftel (*e.g.* retail price cap, universal service obligation and prevention of abuse of market power in charging for calls to mobile networks). With the exception of international calls on the major routes that carry most of UK international traffic (but not all routes), no sector of the UK telecommunications market has been declared fully effective 19 years after competition was first introduced.

1.2. Progressive competition

Since the privatisation of BT in 1984, the UK telecommunications market has experienced unprecedented expansion, in terms of both the overall volume of business (GBP 7.5 billion in 1984, over GBP 40 billion per annum in 2000), and the range of services on offer. In 1984 the independent regulator, the Office of Telecommunications (Oftel), was set up. It provided regulatory safeguards, such as the universal service obligation on BT and a retail and wholesale price control regime, many of which have been maintained ever since although their scope has been varied since 1984 to take account of the effectiveness of competition in the market and to reflect the appropriate level of consumer protection and the Directives.

This growth has been encouraged and facilitated by a progressive and sustained opening up to competition. In March 1991, the United Kingdom Government ("the Government") published a White Paper, "Competition and Choice: Telecommunications Policy for the 1990s", which set out measures, designed to encourage growth and expansion of the telecommunications market. This ended the seven-year "duopoly policy", which had limited competition in the national fixed network to BT, the formerly state-owned incumbent operator, and Mercury Communications Limited ("Mercury"), the first and sole national fixed-link competitor, during most of the 1980s. Mercury also had the right of indirect access from BT thus allowing it to provide services before the roll out of a local network. In practice Mercury had concentrated on providing local service to the most remunerative customers. To increase the scope for local infrastructure competition, from 1991, when the seven years expired, licensing of fixed operators for inland service was liberalised and cable operators and other Public Telecommunications Operators were thereafter free to provide infrastructure and service competition to BT; licenses were also made generally available for indirect access operators to compete in call services without local infrastructure of their own using BT's network.

In 1980, customers in the UK were reliant on one state-owned monopoly meeting their entire telecommunications needs. Today, they have a choice at every level of UK telecommunications, from handsets and other customer premises equipment to broadband services accessed through Internet Protocol networks. Liberalisation and competition have been the keys to dramatic reductions in prices and the much greater choice now available to consumers as other countries have followed the UK's lead and opened up their markets. Many features of the UK system, notably the setting up of an independent regulatory body, Oftel, have been imitated elsewhere, and the UK experience has encouraged other countries to liberalise their telecommunications markets. Amongst the notable milestones in this process, since adopted by many regulators and particularly the European Union Member States were winning the incumbent's acceptance in 1995 of accounting separation and interconnection services based on unbundled components. The first established the principle of no cross-subsidies from the incumbent network to its downstream retail operations. The second enshrined the principle of non-discrimination so the competitors only purchase those elements of interconnection they need and pay for their use on exactly the same terms as the incumbent's retail operations. Oftel individually determined all interconnection charges at this point on the basis of fully allocated historic costs transparently available from annually published fully audited regulatory accounts. Two years later, 1997, Oftel carried this revolution two stages further forward: by establishing costs on a current cost and long range incremental cost basis (LRIC) and by introducing baskets for interconnection

services governed by RPI-X% controls on charges in the same way as the incumbent's retail prices. This introduced incentive regulation into the interconnection market. Since the 1990s the fast pace of technological change in this industry has played a part too in facilitating liberalisation and in placing pressure for further change. The explosive growth in the use of high capacity broadband networks facilitating electronic communications; in particular over the Internet, over the past five years is an example. The telecommunications networks, which traditionally carried mainly voice traffic, are now being upgraded into high-speed information networks, such as BT's purpose-built Internet Protocol trunk network.

A significant advance is Digital Subscriber Line (DSL) technology, which has recently started to carry high-bandwidth services over existing copper wires to consumers' homes. Further innovation is now coming with service competition, particularly in broadband services, since BT was obliged to unbundled its local loop from August 2000 to allow other operators to utilise and upgrade BT's exchanges by installing their own (DSL or other) equipment to provide Internet access and other broadband services to consumers.

Further dramatic changes are now occurring as the telecommunications industry becomes more global in nature and as convergence with information technology and broadcasting strengthens. To prepare the UK for the challenges that lie ahead the UK Government published, in December 2000, a White Paper "A New Future for Communications" addressing the convergence of telecommunications and broadcasting by reform of the regulatory frameworks, including a single regulator (to be called OFCOM, which would be a collegiate body rather than a single person) for the whole electronic communications sector.

This single regulator would replace the Office of Telecommunications as well as four other regulatory bodies currently responsible for regulating elements of the broadcasting and communications sectors. These are the Independent Television Commission, the Radio Authority, the Broadcasting Standards Commission, and the Radiocommunications Agency.

In July 2001, the Government published the Office of Communications Bill, which allows the establishment of OFCOM ("the Office of Communications", a new single regulator for the media and communications industries. The Bill received Royal Assent and became law in March 2002. This Act makes it possible to set up a board for the new regulatory body and for OFCOM to carry out the preparatory work necessary for it to regulate the industry in 2003.

The OFCOM Act paves the way for a further Communications Bill which, when passed, will give OFCOM the power to take over from the present regulators **the , regulation** of the industry. The target – late 2003 – depends on Parliamentary time's being available in the 2002-2003 Parliamentary session.

Box 1. How to control the incumbent in a liberalised telecommunications market?

Even after the liberalisation of telecommunication markets, the UK and a large number of OECD countries maintained measures to control the market in some measures by controlling ownership of the incumbent, in addition to applying asymmetric regulation based on telecommunications regulations and general competition rules.

One way this has been done is by maintaining a majority shareholding of the incumbent or by imposing “golden share” regulation. Since privatisation of the incumbent is not included in WTO commitments or in EU directives as a condition of market opening, some governments such as the Netherlands, France and Germany still have a majority shareholding in the incumbent. In particular, the Dutch government also has a “golden share” of KPN. In Spain, in spite of the fact that the government does not hold enough shares to control the incumbent, the government can influence certain activities of the incumbent through a “golden share”. In the UK all restrictions on foreign ownership have now been removed. The government abandoned its special share in BT in 1997 and its golden share in Cable and Wireless (which allowed the government to stop anyone from owning more than 15 percent of the shares that company) in February 2002. Asymmetric regulation has continued in the UK to control the market impact of those with market power, with retail price controls continuing to be applied to the dominant incumbent national fixed service provider.

There is a number of countries, however, such as Japan and France, which have a quite different approach: a special law for supervising the incumbent. In many cases, this special law requires a minimum percentage of government ownership and imposes foreign ownership and/or individual ownership restrictions on the incumbent.

In a liberalised telecommunication service market where there are an increasing number of market players and where services are offered competitively, it is not necessary to maintain special regulations on the incumbent in addition to regulation based on general competition or consumer protection principles. In particular, considering the rapid development of alternative infrastructure such as fibre networks, cable television networks and wireless networks, there is no reason provided this competition is effective, to impose special regulations on the incumbent other than regulations to apply competition law if markets cease to be effectively competitive, or to ensure provision of essential facilities, such as numbering or universal service obligations. All countries have special requirements for national emergencies that they can use to impose requirements on the incumbent.

2. General features of the regulatory regime, the telecommunications market and market structure

2.1. The 1984 Telecommunications Act

The 1984 Telecommunications Act set the framework for a competitive market for telecommunications services by abolishing British Telecommunications’ exclusive right to provide services, and by establishing its successor company in the private sector, British Telecommunications plc. It also set a framework for the general approval of customer premises equipment in the UK. It established the regulator, the Director General of Telecommunications (head of the Office of Telecommunications, Oftel), and set out the duties of the Director and those of the Secretary of State for Trade & Industry in relation to telecommunications. Key duties of both are to promote the interests of consumers and maintain and promote effective competition. Their primary duties, to which all other duties are subjected, are *i*) to secure that telecommunications services are provided throughout the UK to satisfy all reasonable demands (the Universal Service Obligation (USO)) and *ii*) to secure that any

persons obliged to provide such services are able to finance them. In effect, the USO obligation is confined to BT except in the Kingston on Hull area, where it is borne by Kingston Communications. BT has expressed concern in many of its public submissions to Oftel that the duty to promote effective competition takes precedence in Oftel's exercise of its powers.

In the 1980s, only BT and Mercury and Kingston upon Hull City Council (now Kingston Communications) were licensed to run fixed link telecommunications networks providing public switched voice telephony and other telecommunications services. Mercury provided a degree of competition to BT, giving mainly city-based business customers and high values residential consumers a choice and lower prices. Kingston Communications was licensed to continue to run telecommunications networks in the Kingston-upon-Hull area of the UK. Cable TV operators were also licensed to provide entertainment and telecommunications services but until 1991 could only provide public switched voice telephony services in co-operation with BT or Mercury. So far as fixed-link networks are concerned, this Duopoly policy remained in force until 1991. The Duopoly policy has frequently been criticised by industry observers on the grounds that it effectively delayed the onset of effective competition. Other markets that have followed a duopoly policy, such as Australia, have similarly experienced delayed competition. On the other hand, at the time the decision was taken by the UK Government, there were no precedents to guide them and the policy was introduced in order to enable BT to adapt to competition and protect the investment by the shareholders in Mercury in what was then perceived to be a highly risky business. No full analysis has been carried out of any of the fixed network duopoly policies that have been implemented in various countries and without this it is difficult to establish whether or not the UK's Duopoly policy introduced when no other country in the world except the USA had introduced competition into its telecommunications sector was a right or wrong decision. However, the pace of technological development since 1982 together with the emergence of the Internet and international downward pressure on unbalanced prices would appear to support the avoidance of duopoly policies in this millennium.

Furthermore, it has been argued that forcing the cable TV operators to work in conjunction with BT or Mercury when providing switched telecommunications services also impeded the development of competition in the local loop.

Duopoly also applied initially in the mobile market where two analogue cellular network licences were issued in 1985 to Cellnet (then 60% owned by BT) and to Racal-Vodafone. These networks offered cellular service from 1985 on an exclusive basis until two further mobile operators (Orange and One2One, now renamed T-Mobile) were licensed in 1990. This duopoly policy has not been criticised and most countries followed the model when they licensed cellular operators although many allowed the incumbent to have a head start on its competitor. It is interesting to note that Vodafone was the market leader in the UK, not the mobile operator part owned by the fixed incumbent, since shortly after statistics were first collected on market share in the mobile sector. The market share of the UK fixed incumbent's associated mobile operator is the lowest of any in the EU (less than 25%). Notwithstanding its historical advantage, Vodafone has now been overtaken (in terms of numbers of customers) by one of the 1990 new entrants.

2.2. The 1991 Duopoly Review

The underlying rationale for the duopoly policy was an argument that new entrants would compete against each other rather than the incumbent so that a single competitor to the incumbent could build up market share more rapidly and provide more sustained competition. The new entrant, however, focused on the business market and showed little motivation to invest in a national network at the local exchange service level. A recognition that this duopoly policy was not working led to the

White Paper of 1991 entitled “Competition and Choice: Telecommunications Policy for the 1990s” set out a revised policy ending the duopoly in respect of fixed network services other than international services over a company’s own facilities. The White Paper encouraged new telecommunications operators to enter the market and allowed existing operators to offer a wider range of services. In particular the White Paper proposed:

- To allow new operators to run “fixed link” networks in the UK.
- To allow cable television companies to provide telecommunication services in their own right rather than as the agents of BT or Mercury.
- To license international simple resale on routes where the far-end is equivalently liberalised; and
- To extend the scope of class licences to the provision of a number of additional networks and services.

These decisions started unleashing the full potential of competition, which had already been accelerating during the 1980s. International facilities services using the operators’ own infrastructures were opened up to competition in 1996, when this became practical in the light of international developments (see section below).

2.3. Competition in fixed services

A number of new national Public Telecommunications Operators (PTOs) were licensed in the early 1990s, and new operators continue to be licensed, adding further to competition in the market.

Cable television operators, who previously had not generally been licensed to provide voice telephony, expanded their networks throughout the majority of the 1990s, providing infrastructure competition to BT in the local loop, although network build slowed down in the late 1990s

The 1991 White Paper also announced that the UK would allow new competition in international services. Companies were licensed to provide International Simple Resale (ISR) services, over leased circuits connected to the public switched network at both ends, to countries providing equivalent freedoms to provide the same service in the opposite direction. Such companies typically competed primarily on price. Operators now run services under a registrable class licence for International Simple Voice Resale (ISVR), with over 300 registrations so far. With its low barriers to entry, ISVR has provided rapid competition in the provision of international phone calls, with prices dropping at least 50% in real terms since 1991.

In 1996 the Government liberalised the international market further by licensing an initial batch of 44 companies to provide international telecommunications services on any route they choose over their own facilities. These International Facilities Licences (IFLs) were granted over a year ahead of the EU’s deadline for full competition across Europe, confirming the UK’s telecommunications market as the most open in the world. At the same time, the decision was taken to lift the “equivalency” rules, which were limiting International Simple Resale (ISR) services to certain routes. The effect of ISR and international facilities liberalisation has reduced BT’s share of the UK market for international calls to 46.6% in revenue terms and 32.7% in volume in the first quarter of 2001/2. These figures exclude the international traffic of Concert, the (then) joint venture between BT and AT&T. In order to implement the EU’s Licensing Directive in 1999, the IFL licences were combined

with national PTO licences to create a single licence, which is now the standard format for PTO licences.

The UK used the 1991 Duopoly Review to liberalise the resale of data services over leased circuits connected to the public switched network at both ends, well ahead of the progressive world-wide implementation of the WTO Agreement on Trade in Basic Telecommunications.

From the early 1990s, applications have been considered on their merits to provide international satellite services with connection to the public switched network at one end of a call for voice services, and at both ends for data. Thirteen licences have been issued to date. Since 1996 the UK has permitted full international facilities services to be provided by satellite.

All this has ensured the competitiveness of the UK as a prime location for companies for whom telecommunications plays a major role in their business. Users have already benefited from lower prices and increased choice of operators and services.

2.4. Cable networks

Throughout the 1980s and particularly from the early 1990s, when they were allowed to provide public switched voice telephony services in their own right, cable television operators have steadily expanded their activities in the UK. The cable systems used to convey cable television can also be used to carry telecommunications services. Therefore, the cable operators (merging from about one hundred individual companies awarded licences, into two main operators, Telewest and ntl) have been able to become major new providers of the "local loop". The number of cable homes "passed" (*i.e.* where the cable operator has run a cable along the street allowing subsequent connection in the home) as of 1 October 2001 stood at 12.5 million and the number of homes connected (for either TV or telephony, or both) at 4.6 million. 5.5 million telephony lines had been installed — 4.4 million residential and 1.1 million business. Originally, all cable and local delivery operator franchises were offered on an exclusive basis. However, in order to stimulate further competition, from 1 January 2001 operators may compete throughout the country. BT has applied for a licence to enable it to provide such services over its network.

2.5. Mobile communications

The growth in the mobile telecommunications sector over the last decade has been one of the success stories in UK telecommunications; the UK has been among the leaders in developing mobile services. Constraints on the availability of radio spectrum for mobile communications have led the Government to develop a competitive regulatory framework, introducing new services on a competitive basis, with new licences issued by auction to the highest bidder, and giving opportunities to new entrants wishing to bring greater innovation and quality to the consumer.

2.5.1. Cellular telephony

The most visible area of mobile communications is GSM cellular telephony, also known as "2G", which supports both vehicle-mounted mobile phones and hand-portable mobile phones. Four companies are licensed to provide GSM services. Vodafone and mm0₂ (formerly BTCellnet) each have a GSM network operating both in the 900 MHz band and in the 1800 MHz band. One2One and Orange each operate a GSM network in the 1800 MHz band. Growth of the mobile phone industry

was strong in 2000/2001. Most new customers elect to use prepaid payment options. The latest consumer research conducted on behalf of Oftel in November 2001 shows that 75% of UK adults and 64% of Small and Medium businesses (SMEs) claim to have a mobile phone. This compares with 62% of adults and 55% of SMEs in November 2000. At February 2002 there were 46 million mobile subscribers in the United Kingdom, representing a penetration level of 80%. This is not the highest penetration level in Europe (Italy, Finland and Portugal top the list with levels greater than 80%) however; the UK is ahead of the European average (75%) and of other major European countries such as France and Germany. The UK is the sixth largest cellular market in the world. Cellular coverage in the UK now exceeds 99% of the population.

Since 1994, the price of calls made from mobile phones has dropped approximately 50%. Since January 1999 the price of mobile telephony has fallen by around 30%. Allied to this, the cost to the customer of making a phone call to a mobile phone from a fixed line has fallen 25% since Oftel acted in 1999 to require operators to lower their charges for calls to mobiles.

The UK took the lead in Europe to develop the standards for 2nd generation digital GSM mobile phones. This groundbreaking development has allowed Europe to establish GSM as the pre-eminent technology for second-generation mobile telephony - 80% of all mobile phones sold in the world are GSM phones. The UK was at the forefront in establishing these second generation networks, and in introducing PCN digital (GSM-1800) networks, and is now a leading force in developing third generation mobile telecommunications. Enhanced 2G standards such as GPRS (general packet radio service) will increase available data rates, allowing users to download information at faster speeds whilst on the move. These "2.5G" developments will ease users towards 3G.

2.5.2. Universal Mobile Telecommunications Services (3G) - Mobile Multimedia

In May 2000 the UK Government used the opportunity of 3G licences to introduce further competition into the market by making five spectrum licences available, with the largest licence reserved for a new entrant. 13 companies entered the bidding: the successful were one new entrant and the four existing 2G operators:

- Vodafone.
- BT 3G.
- Orange.
- One 2 One.
- TIW (Telesystem International Wireless), now Hutchison 3G UK Ltd.

The UK is taking a leading role in developing the standards involved. 3G is taking personal mobile communications into the 21st century and is central to the Information Age. Third Generation (3G) mobile phones will provide high-speed data access to all forms of information whilst on the move. Customers will be able to access Internet information, shop or bet on-line, download video and audio clips and even, in optimal conditions, conduct videoconferences using 3G devices. Services should be available from 2003.

2.6. Other mobile radio technologies

At the end of 1997, Dolphin Telecommunications Limited were licensed to run a national digital Trans European Trunked Radio (TETRA) network in the UK and thus provide further competition to the aforementioned mobile operators. TETRA technology provides significant improvements in spectrum efficiency for larger public access mobile radio networks, and increases the variety and quality of services including advanced speech and data facilities, wide area coverage and greater immunity from interference and eaves dropping. However, in July 2001, Dolphin went into protective administration: at the time of writing, negotiations are taking place with prospective purchasers.

Four national operators serve the UK paging market: BT, PageOne, Vodafone Paging and Hutchison, all running networks to the Post Office Code Standardisation Group (POCSAG) standard. In addition, Sprintel are running a regional paging network in the London area. The introduction of new services such as two-way paging may drive further growth in paging, although competition from the GSM short message service (SMS) is strong.

2.7. Telecommunications market and participants

At the end of 2000 the UK's telecommunications market size was estimated at USD 58 billion, the fourth largest telecommunication service in the OECD (and second largest among EU Member countries).

The UK's mobile market was the 5th largest in the OECD in terms of revenue (USD 12.3 billion) and the number of subscribers (fourth in the OECD and second in the EU respectively).

Table 1. Distribution of revenues in the UK telecommunications market

	2000
Fixed telephony services	46%
Mobile telephony services	26%
Data services and leased lines	20%
Internet only	8%
Total	100%

Source: 6th European Telecommunications Report.

At the end of 2000, the incumbent operator, BT, was the world's fifth largest fixed telecommunications operator with approximately 31.7 million fixed access lines including ISDN circuits. BT was estimated by Oftel to have 73.8% of fixed line revenues (calls and exchange line revenues) at the end of 1999 and 70.2% at the end of 2000.

As of February 2002, the total number of mobile subscribers in the UK was nearly 46 million. Vodafone had nearly 12 million subscribers, mm0₂ had just over eleven million, One2One had over 10 million and Orange had over 12 million subscribers.²

In UK cable television networks have developed and the two main operators, Telewest and ntl, have become major providers of telephone and data services, as well as Cable television. The number of homes passed at July 2001 was 12.6 million and the number of homes connected for either TV or telephony or both was 4.6 million.

It should be noted that there were also over five million Direct-to-Home satellite service subscribers in the UK at the end of 2000.

Box 2. Brief history of telecommunications market liberalisation in the UK

- 1981: British Telecom Act separates BT from the Post Office.
- 1982: Mercury Communications issued with a licence to build and operate a second fixed link network in competition with BT.
- 1983: First broadband cable franchises issued.
- 1984: 51% of the Government's shares in BT sold: BT became a plc.
The 1984 Telecommunications Act establishes Oftel.
- 1985: First cable television licences issued. Licences issued to Cellnet and Racal-Vodafone to run competing cellular networks.
- 1991: Duopoly review and publication of White Paper *Competition and Choice: Telecommunications Policy for the 1990s*. Cable television operators also allowed to run voice telecommunications systems.
- 1993: First post-duopoly PTO (Public Telecommunications Operator) licence granted.
Cable companies start to be licensed to provide competition to BT in the local loop.
- 1995: BT accepts Accounting Separation of Network and other activities and cost-orientated charges for unbundled standard interconnect services, determined individually by Oftel and to be applied on non-discrimination terms to competitors and BT's own retail operations.
- 1996: Launch of the Government's Information Society Initiative in February, which aims to promote the beneficial use and development of information and communications technologies — multimedia in the UK.
International Facilities liberalised. 44 international service licences issued in December 1996.
- 1997: BT accepts new RPI-X% control for interconnect charges, to be established on a current cost and LRIC basis.
- 1998: European Union Telecommunication Networks fully liberalised from 1 January, following the UK's lead.
- 1999: EU 1999 Review of telecommunications started, with a view to revised Directives bringing European telecommunication regime up to date in line with convergence of telecommunications and broadcasting.
- 1999: Oftel applies charge controls to call termination charges raised by the two mobile operators with market power.
- 2000: Licence conditions requiring BT to unbundle its local loop introduced.
- 2000: UK Government's White Paper, *A New Future for Communications*, published with proposals to bring UK communications regulatory framework up to date with the convergence of telecommunications and broadcasting industries and increasing use of world-wide electronic communications.
- 2001: EU regulation on local loop unbundling in force.
Office of Communications Bill introduced in Parliament (proposed establishment of OFCOM giving it preparatory functions to ease transition from 5 regulatory bodies into one converged regulator).
- 2001: EU adopts new Framework.
- 2002: *Office of Communications Act* passed –“Paving the way” for *Communications Bill* and OFCOM.

In the Internet market, by November 2001, 45% of UK homes (11 million homes) and 63% of UK Small and Medium Enterprises (SMEs) (over 2 million SMEs) had Internet access subscriber numbers have been growing rapidly encouraged by 'free' ISPs.

At the end of February 2002, 60% of UK households were addressable by DSL technology and as at the end of February 2002, 145 000 end-users had ADSL installed. At the end of the same period

approximately 1 010 BT exchanges were DSL enabled and over 200 operators had taken up BT's wholesale ADSL products. At the end of September 2001, cable modems could be used in 4.9 million homes passed by Telewest (95%) and by end January 2002 broadband service was available at 5.9 million of the 8.4 million homes passed by ntl (66%). There were 90 000 end-users of cable modem services as at the end of July 2001.

2.8. Market structure

BT still retains a dominant position in the fixed telecommunications market segment with 69.0% of all fixed revenues at the end of the first quarter of 2001/2 (OfTel).

Over the past decade the number of national long-distance operators rose from two to about 20 and over 100 franchises were awarded to provide cable TV networks and services. The owners of these local cable networks have recently consolidated down to two main operators, ntl and Telewest.

In the mobile market there are four GSM operators who have been licensed since the mid 1990s. Two of them started as analogue cellular operators from 1985: but analogue subscribers had effectively disappeared from the UK market by February 2002.

At the end of year 2001 the position was as follows:

Mobile operator	% of retail revenues for December 2001	% of subscribers at end 2001
Vodafone	34.2%	24.6%
mm0 ₂	21.9%	24.7%
Orange	26.7%	27.4%
One2One	17.2%	23.3%

Source: OfTel: Market Information, Mobile Update, March 2002.

The revenue shares reflect the strength of the older established two operators in the business market, but in terms of numbers of subscribers one of the newer entrants is now market leader.

2.8.1. UMTS licences

In May 2000 spectrum was auctioned to a number of bidders for third generation services. Five licences were awarded as OfTel saw room for a fifth operator in this market segment. In May 2000 the UK awarded five licences for 3G to the companies that were successful in the Spectrum Auction, Vodafone, BT 3G, Orange, One 2 One, and TIW (Telesystem International Wireless), now Hutchison 3G UK Ltd. The Government's auction process has been widely criticised by a number of industry commentators. Concerns have been expressed that the cost of the licences will divert money into the Government's coffers at the expense of investment in network development, and that the high prices paid by the operators will result in higher market prices to consumers. However, others have noted that auctions, in employing a pricing mechanism, can be used to assign licences more efficiently and that operators cannot take these licence costs into account when setting prices in a competitive market.³ The UK Government considers that the licence costs and increased competition brought by a new entrant will encourage the operators to introduce new and innovative services quickly, at attractive prices to maximise the return on their investment. All the UK 3G operators have financing in place to roll out 3G networks.

Table 2. Overview of the UK telecommunications market

	No. of operators (not including revoked licences)	Market share (as of the end of 2000/1)
Fixed	PTOs with national or international facilities: 213 with Code Powers 73 without Code Powers Non-PTOs with Code Powers* 8	BT (market share in % of revenues): - Local 68.6% of - National: 58.6% - International: 44.6%
Mobile	4	Share of revenues 2000/1: Vodafone 36% mm0 ₂ 23% Orange 23% One2One 17% [ntl] Telewest
CATV	2 major operators	

Source: Oftel.

Note: * See section below on *Code Powers*

II. REGULATORY STRUCTURES AND THEIR REFORM

1. Regulatory institutions and processes

1.1. *The Telecommunications Regulator – Oftel*

Under Section 7 of the Telecommunications Act, the Secretary of State of the DTI is empowered to grant licences for telecommunication systems.

The DTI sets the regulatory framework, mainly through licence conditions, under Section 7 of the Act; Under Section 1 of the Act, the Secretary of State appoints the Director General of Telecommunications.

The Director General of Oftel's responsibility under the basic legislation (the Telecommunications Act 1984 ("the T Act")), and its subsequent modifications, is to ensure that the UK enjoys telecommunications services that meet all reasonable customer demands and that the organisations supplying these services are financially sound (Section 3(1) of the T Act). This is a responsibility shared with the Secretary of State (DTI). This responsibility is further detailed in Section 3(2), which lists a series of duties for both the Director General and the Secretary of State. No priorities are given in this list, which includes duties, amongst others, to promote the interests of consumers, to maintain and promote effective competition; and to promote efficiency and economy in the provision of telecommunications services. The Director General also has duties, not shared with the Secretary of State, under Part III (Sections 47 – 55) of the Act. These include duties to:

- Consider complaints.
- Exercise the functions of the Director General of Fair Trading in the telecommunications area (i.e. act as a Competition Authority).
- Appoint advisory bodies on matters affecting small businesses and the disabled and pensionable (the Secretary of State has a parallel duty to appoint advisory bodies for England, Scotland, Wales and Northern Ireland).
- Provide an Annual Report on his Office's activities for the Secretary of State to lay before Parliament (the Secretary of State has no power over the contents of the Report).
- Review the development of telecommunications in the UK.
- Collect information.
- Provide both solicited and unsolicited advice to the Secretary of State.
- Provide information and assistance to the Competition Commission on cases he has referred to it (typically because his proposed remedies for anti-competitive or abusive behaviour have been rejected by the operator(s) concerned).

The Telecommunications Act provides the Director General with powers to discharge these duties. The key power is that of modifying operators' licences (Section 12): a power unique to the Director General. With one exception, Section 95 of the Telecommunications Act, there is no provision of powers for the Secretary of State to modify licence Conditions, notwithstanding that the Secretary of State issues the operators' licences. The Director General's power to modify licences is backed by the Director General's other key power: to correct and prevent contravention of licences by issuing Orders under Section 16 of the Telecommunications Act. Originally under the Telecommunications Act (Section 50), and now under the Competition Act 1998, the Director General has concurrent powers with the Director General of Fair Trading to take action against anti-competitive behaviour.

The Telecommunications Act also provides (Section 7) for the Director General, with the authorisation of the Secretary of State, to grant licences. However, this authorisation has never been implemented and the issue of licenses remains the prerogative of the Secretary of State, although he is required to consult the Director (Section 7(1)(a)). This policy has come under some criticism but in light of the open licensing policy currently applied in the UK, the point is now more or less academic. However, there is some duplication in the activities of the Department of Trade and Industry and Oftel when considering licence applications and some market players attribute this as one of the causes for what some regard as an excessive time taken to grant licences (up to 4 months in the case of PTO licences). Following the EU *New Frameworks* 'Authorisation' regime and the creation of OFCOM this should change since licensing will be streamlined and OFCOM will take over DTI's licensing/authorisation powers.

Box 3. Oftel's primary regulatory responsibility in the telecommunications sector

- Ensuring UK customers have the best deal in terms of price, choice and value for money and access at any time to a minimum set of services at reasonable cost.
- Encouraging competition in infrastructure and services as the best way to secure the best deal, minimising regulation in step with the competitiveness of markets.
- Carrying out market reviews to assess state of competition and hence appropriate regulation.
- Regulating retail prices (and quality of service) where the market does not sufficiently protect customers.
- Regulating interconnection charges and other conditions where appropriate to safeguard competition.
- Considering claims against operators of exploitative or anti competitive behaviour — and, where appropriate — imposing suitable remedies within its powers, including modifying licences.

At the DTI about 80 staff are dedicated to the telecommunications sector, and 213 to the Communications and Information Industries as a whole, including digital TV technology and IT hardware and software. Oftel has a total staff of approximately 240 as at 1 January 2002.

1.2. General competition authority

The Office of Fair-Trading (OFT) is an independent public body charged with the promotion and protection of consumer interests throughout the UK, while ensuring that businesses are fair and competitive. The powers of the OFT have been granted under consumer and competition legislation. The OFT has three main operational areas, which make up three divisions — competition enforcement, consumer regulation enforcement and markets and policy initiatives.

The Competition Commission is an independent public body established by the Competition Act 1998. It replaced the Monopolies and Mergers Commission (“MMC”) on 1 April 1999. The Commission has two distinct functions. On its reporting side, the Commission has taken on the former MMC role of carrying out inquiries into matters referred to it by the other UK competition authorities concerning monopolies, mergers and the economic regulation of utilities. Secondly, the newly established Appeal Tribunals hears appeals against decisions of the Director General of Fair Trading and the Regulators of the utilities in respect of infringements of the prohibitions contained in the Competition Act 1998 concerning anti-competitive agreements and abuse of a dominant position. The Competition Commission has a staff of about 90.

1.3. Relationship between the regulator and the competition authorities (Office of Fair Trading and Competition Commission)

The Competition Act 1998 came into effect on 1 March 2000. Before that OFT and OfTel had concurrent powers under the Fair Trading Act to refer monopoly situations to the then Monopolies and Mergers Commission. OfTel also included in the licences of telecommunications operators a condition analogous to Articles 81 and 82 of the EC Treaty.

The Competition Act 1998 gives the OFT and OfTel concurrent powers in the telecommunications sector. OfTel usually deals with matters within this sector. The general principle is that a case is dealt with by whichever of OFT or OfTel is better placed to do so. The factors considered in deciding who should deal include the sectoral knowledge of OfTel, previous contacts between OFT or OfTel and the parties concerned, and any recent experience in dealing with any of the undertakings or with similar issues. OFT and OfTel consult each other upon receipt of an application in cases of notification, and in advance of exercising any prescribed functions where it appears that there may be concurrent jurisdiction in a case in cases of complaints.

OFT has exclusive responsibility for vetting proposed mergers and advising the Secretary of State on whether proposed mergers should be referred to the Competition Commission for investigation.

The Competition Act is modelled on Articles 81 and 82 of the EC Treaty and prohibits anti-competitive agreements (the “chapter I prohibition”) and abuses of a dominant position (“chapter II prohibition”). OfTel will normally deal with agreements or conduct that relate to the telecommunications sector. However, OfTel and the OFT are committed to consulting with each other before a decision is made as to who will deal with a case in respect of which there is concurrent jurisdiction.

OfTel has published three decisions under the Competition Act since it came into force in April 2000. One chapter I non-infringement decision on vertical agreements in the telephone equipment market. One non-infringement chapter II — BT’s Surf Together, and one non-infringement of both Chapters I and II in respect of computer telephony integration. As of November 2001, there were six

further cases under investigation. There have been no notifications of Chapter 1 agreements and no request for guidance under the Act.

Where cases could involve a breach of both licence and the Competition Act, Oftel cannot fetter its discretion in advance. There can be no “double jeopardy” — it is not the case that if Oftel cannot get the target under one route it will use the other without abandoning the first route. If it appears during an investigation by a regulator using his sector-specific powers that action under the Act is more appropriate (or, as the case may be, under his sector-specific powers), the parties will be informed. Information gathered using sector-specific powers can be used for the purposes of an investigation under the Act and vice versa. Oftel will use the Competition Act where possible. However, the Competition Act and the telecommunications sector rules in the form of licence conditions are not always direct substitutes. The Director General of Telecommunications' duties under sectoral legislation go wider. Oftel is developing guidelines to identify how best to apply the Competition Act given its wider responsibilities. It is important to recognise that at the time of writing, the Competition Act had only been in force for just short of 2 years and both Oftel and the industry are still learning how to work under the Act.

Nevertheless a number of operators are highly critical of Oftel's use of its Competition Act powers. The nature of the criticism varies. Some operators consider that Oftel officials are insufficiently trained to exercise their Competition Act powers. However, the officials receive the same training as their counterparts in the OFT. Others consider that the Director General is reluctant to exercise his Competition Act powers because he feels more comfortable using his powers under the Telecommunications Act, which they claim gives him far more discretion and that Act does not require him to prove an abuse of market power. Others consider that the Director General uses his Telecommunications Act powers because operators subject to enforcement actions do not have the same right of appeal on the merits of the case as they do under the Competition Act. Thus the outcome under the Competition Act is a lot less certain for the Director General. Others argue that the Director General does not make clear at the outset of an investigation in response to a complaint whether he is using his Competition Act powers or not. However, it would appear that complaints are usually made under both headings, which would indicate that the operators are leaving the choice to the Director General in any event.

One operator complained that there is extensive overlap between specific licence conditions under the Telecommunications Act and the Competition Act and that any licence condition that duplicated the Competition Act should be removed to prevent the Director General from effectively ‘forum shopping’. Although the majority of operators argued when the Competition Act was being drafted that the Director General should have concurrent powers with the OFT under the Competition Act, many now consider that this should no longer be so. However, primary legislation would be needed to effect this change and in any event, operators were not able to demonstrate that the OFT would be any more effective in using the Competition Act powers. In addition, the new ‘licensing’ regime to be put in place to give effect to the latest EU Directives as well as the policy contained in the White Paper on the Communications Bill will remove many of these perceived problems. The Director General will also have the power to fine under both the Competition Act and the new communications legislation.

2. Regulations and related policy instruments in the telecommunications sector

2.1. Licensing regime

The UK has similar market entry conditions to those in the mid-1990s except that there is now a standard Public Telecommunications Operator Licence for both national and International Facilities services. The licensing of International Simple Voice Resale (ISVR) recently changed from individual licences to a registerable class licence, making the process quicker and simpler. These licensing requirements and those described below will change over the next 15 months as a result of the new EU Framework that requires the systems of licensing in member states to be replaced by a common approach of Authorisation. In parallel the organisation of licensing/authorisation within the UK machinery of Government is planned to change with the establishment of OFCOM a converged regulator uniting the licensing responsibilities and powers of DTI, RA and OfTel as detailed below).

Spectrum for mobile services to the public is limited, so no new operators have been licensed to provide public 2nd Generation cellular mobile services other than four operators licensed in the early and mid 1990s. Spectrum was auctioned to bidders in May 2000 for 3rd Generation mobile services providing higher bandwidth services such as Internet access. Five licences were awarded.

The Telecommunications Act 1984 makes it a criminal offence to run a telecommunications system, or to make a connection to another system without a licence. Each licence sets out what services a company can provide and what systems it can run, and attaches conditions with which operators must comply. The Department of Trade and Industry (DTI) is responsible for the granting of licences, the Office of Telecommunications (OfTel) for their enforcement once issued.

A telecommunications licence is required by anyone running (*i.e.* having authority over) a telecommunication system. This means that a licence is required to run virtually any form of modern communications from telephone services to the Internet, radio to TV, videoconferencing to CB radio. Anything that allows communications between separate premises using wires, radio, or light is a system.

However, there are certain exceptions to this rule. A licence is not generally required to run a system for the operator's sole use (*i.e.* a system that is unconnected to other systems). Nor is a licence required where an operator provides telecommunications services but does not run any system itself.

The Telecommunications Act provides for two main categories of licence to be granted:

- **Class licences** or general authorisations, which cover a group or class of users, and cover most of the telecommunication systems run in the UK.
- **Individual licences**, which are issued to individual companies.

2.2. Class licences

Class licences are general authorisations, which permit the operation of a wide range of telecommunications systems from an ordinary telephone handset to an office network. Normally there is no need to register to operate under a class licence and no fee involved. A licensee must however run its system in such a way as to conform to the terms of the relevant licence. In total there are 19 Class Licences in the UK. The main class licences include:

2.3. Self Provision Licence (SPL)

The SPL covers telecommunication systems run for self-use *i.e.* where services are not offered to third parties. There are no restrictions on the extent of telecommunications equipment for self-use, which can be run both on and between premises under the SPL. All call traffic must originate or terminate within the licensee or a member of the licensee's group. The types of systems that are run under the SPL include:

- In-house call centres.
- Private networks of companies such as banks, supermarkets or service stations.

2.4. Telecommunications Services Licence (TSL)

The TSL is a licence, which permits any person to provide third parties with a wide range of telecommunication services. It allows international simple data resale and voice calls that pass over the Public Switched Telephone Network (PSTN) at one end only, but does not allow the licensee to offer International Simple Voice Resale (ISVR) services (see below) or mobile radio services. It allows services to be sold over self-provided links so long as no more than 20 sites are connected by such links, and covers more extensive systems, such as those of Internet Service Providers, so long as a PTO provides the links between the premises of the TSL licensee. To provide services to others over a network of more than 20 premises connected by self-provided lines requires an individual licence.

Types of systems that run under the TSL include:

- Hotels.
- Internet service providers.
- National voice resellers.
- International simple data resellers.
- Companies that provide telecommunication services to other persons on their premises including private payphones.

2.5. Private Mobile Radio class licence

The PMR Class Licence permits a narrow range of mobile services, including the provision of automatic vehicle location systems, running PMR systems from a single base station (*e.g.* taxi firms or CBS users) and small paging systems (*i.e.* the licence permits the running of up to five base stations).

2.6. Satellite Services class licence

The Satellite Services Class Licence allows the running of satellite transmit and/or receive terminals (of any kind, whether fixed, mobile or transportable) for the provision of a wide range of services, provided that the satellite transmitting and receiving terminals are not connected directly or indirectly (*e.g.* through a private leased circuit) to the PSTN. However, if an earth station at the far end

is authorised for connection to the PSTN (*e.g.* through an individual licence which authorises connection to the PSTN), it is possible to run a remote earth station under the Satellite Services Class Licence. Messages from a mobile or transportable (not fixed) earth station which are intended to be received by an overseas downlink connected to the PSTN are also permitted under the Licence.

2.7. Cordless class licence

The Cordless Class Licence is based on the TSL, and enables operators, using digital cordless technology based on the CT2 or DECT European standards, to run cordless systems for their customers, within a 200 metre area, which can also be connected to the PSTN.

2.8. International Simple Voice Resale licence (ISVR)

ISVR services are two-way live speech international telephone calls, where the calls begin on the public telephone network of one country, are carried over an International Private Leased Circuit (IPLC), and break out onto a public switched network overseas. A company proposing to provide ISVR services needs to register with the DTI under the ISVR licence, which was issued on 1 November 2000.

2.9. Conditional Access Class Licence

The Conditional Access Class Licence was re-issued on 1 August 2001 for a period of five years. A company proposing to provide Conditional Access Services needs to register under this licence with Oftel. Conditional Access Services control the access between consumers who use a particular technology gateway to receive services, and suppliers who use the gateway to gain access to consumers. Conditional Access Services include services such as the scrambling of digital television broadcasts, the receipt and processing of ‘pay-per-view’ services, and the origination and encryption of messages authorising end users’ receipt of digital television services.

Relevant markets covered by this licence include:

- Subscription television services.
- Free-to-air television services.
- Other online content services.
- Delivery mechanisms for broadcast transmission.

3. Procedure for applying for a licence

Any company, consortium, partnership or individual who wishes to apply to the DTI for a telecommunications licence may do so. They should first consider whether an individual licence is necessary. Under the Telecommunications Act 1984, it is an offence to run a system or provide a service which is not covered by a licence of some description, but as explained above, many services can be provided within the terms and conditions of existing class licences. All information received in connection with applications is treated in strictest confidence, but a short description of the proposed activity is included on a register of applications published regularly by Oftel. Systems using radio also need a spectrum licence issued by the Radiocommunications Agency under the Wireless Telegraphy

Act 1949. An initial fee, intended to reflect the cost of issue, is payable to the Government when a licence is granted. In addition, an annual renewal fee is paid to Oftel under the terms of the Licensing Directive to cover its work in enforcing licences and regulating the market as appropriate.

3.1. Individual licences

If a company proposes to run a system for the provision of services falling outside the various class licences — for example, rolling out transmission infrastructure (copper wire, fibre or radio) comprising apparatus situated in and linking up to more than 20 separate sets of premises, running a mobile telecommunications network with more than one base station (or five base stations in the case of paging networks), running international facilities, etc., then it will need to apply for an individual Telecommunications Act licence. The main type of individual licence is the Public Telecommunications Operator (PTO) licence.

The licences are designed to a common standard to conform with the Licensing Directive requirements — particularly for non-discrimination except where proportionate and objectively and transparently justified. Particular conditions are applied to those with market power or are latent and triggered by a finding by Oftel that an operator has market power. Licences to operate systems are granted initially by DTI with consultation with Oftel: they are modified, for instance to adjust to changed market conditions, only by Oftel following public consultation.

The present UK regime for the granting of licences is about to undergo fundamental changes. Firstly to meet the shift under the new EU Framework from licences to “authorisations”; secondly with the setting up of Ofcom which will both unite granting of system operating and spectrum usage licences under one authority and transfer granting of licences from DTI to the new Regulator.

3.2. Systems using radio

A telecommunication system, which uses radio, requires both a Telecommunications Act licence and a licence under the Wireless Telegraphy Act 1949. There are severe constraints on the availability of spectrum in some frequency bands.

3.3. Services which require a Broadcasting Act licence

Applicants for a Telecommunications Act licence may also need a licence under the Broadcasting Act 1990 for using a telecommunication system to deliver certain television and sound services. Use of a system capable of delivering entertainment services to more than 1000 dwelling houses will usually require a local delivery licence from the Independent Television Commission (ITC). Applicants interested in providing such services should approach the ITC before applying for a Telecommunications Act licence.

3.4. Public Telecommunications Operator (PTO) licence

PTOs are individual licensees who generally are installing infrastructure to offer two-way voice services to a substantial class of customer and are installing long-distance networks, and whose systems have been designated as public telecommunications systems by the Secretary of State under Section 9 of the Telecommunications Act. Such designation confers additional rights and imposes additional duties on the operator. The decision to designate a licensee as a PTO will be taken on a case-by-case basis. The conditions of all PTO licences are the same (with the exception of BT and Kingston Communications). PTOs operate under the standard fixed PTO licence, with or without code powers (explained below) or the mobile PTO licence.

3.5. Code powers

Section 10 of the Telecommunications Act enables the Secretary of State to grant powers to individual licensees to facilitate the installation and maintenance of telecommunication systems. These "Code powers", which are set out in Schedule 2 of the Act, confer rights to install and maintain apparatus in, over or under land and result in considerably simplified planning procedures, similar to those given to public utilities. The powers can generally only be granted in respect of a licence to which certain obligations apply. These are listed in Section 8.1 of the Telecommunications Act. The Secretary of State will need to be satisfied that any request for Code powers is justified against the criteria in Section 10 of the Act.

An indicative list of the information requested of applicants is set out in the DTI's licensing guidance notes, available from:

http://www.dti.gov.uk/cii/regulatory/telecomms/telecommslicences/general_guidance_notes.shtml#type.

This list is not exhaustive. Applicants may wish to provide more information and may be asked to do so in the course of consideration of the application. The Secretary of State may refuse to issue a licence where the applicant fails to provide any information, which the Secretary of State reasonably requires to satisfy himself that the applicant is able to comply with the conditions in the licence.

DTI will usually deal with applications for non-PTO licences within six weeks of receipt of the application. However, applications for licences that convey PTO status may take up to four months. This reflects the statutory requirement for 28 days public consultation on the terms of the licence. Applications for individual licences that are to be awarded by comparative bidding procedures (*e.g.* spectrum auctions) may take up to a further four months to process.

An initial fee and an annual renewal fee will be payable for individual Telecommunications Act licences to cover the administrative costs incurred in the issue, management, control and enforcement of the applicable individual licence. As different licensing activities result in varying amounts of work, the initial fees vary according to the category of licence:

Category of licence	Initial fees GBP
Major PTO licences (<i>e.g.</i> national operators with Telecommunications Code powers)	40 000
Minor PTO licences (<i>e.g.</i> regional or local operators)	12 500
Major non-PTO licences (<i>e.g.</i> satellite)	6 000
International Simple Voice Resale operators	250
Minor non-PTO licences (<i>e.g.</i> narrowband, regional Band III and SMATV operators)	1 100

These fees are subject to revision on 1 April each year, and others may be determined from time to time reflecting the cost of the licensing award process. Renewal fees to cover the costs of enforcing the applicable individual licence are established by Oftel. Separate fees are also payable for licences under the Wireless Telegraphy Act 1949, should these be required.

Entry into the cable television market is subject to a local delivery licence from the Independent Television Commission (ITC) as well as a PTO licence under the Telecommunications Act 1984.

Internet Service Providers do not require a licence under the Telecommunications Act 1984 unless they provide voice telephony services through an IP network, in which case they must register under the ISVR class licence.

4. Rights of way

When PTOs apply for a Licence from the DTI they may ask for the inclusion of “Code Powers” with the Licence. Details of these powers are contained in Schedule 2 to the Telecommunications Act (1984) and are varied by means of the Licence granted to the operator.

4.1. Rights of way over private land/premises

Where a PTO with Code Powers needs to cross private land/property in order to provide services to a “third party” the owner of that land/property is required to enter into an agreement with the PTO for such access. These agreements are called “Wayleaves”. If the landlord fails to enter into such an agreement then the PTO can enforce such access on the landlords through the courts. The court will judge the “reasonableness” of the proposed Wayleave. In all cases so far considered by the courts the PTOs have succeeded with their action.

There is usually an annual payment made by the PTO for each Wayleave.

4.2. Rights of way over public highways

The New Roads and Street Works Act covers the arrangements. Where a PTO has Code Powers then they have certain rights and obligations when requiring access to public highways. Local councils can require certain conditions and force different utilities to co-ordinate plans for digging and routing. The main thrust is to minimise disruption to traffic.

All Code Power PTOs are required to ensure that sufficient funds are available to meet any liabilities arising should an operator cease to trade or have its licence revoked.

Anyone can seek permission for a streetworks licence to “dig up the streets” but local councils have an absolute right to refuse such applications.

PTOs without Code Powers who would like Code Powers added must have their licence revoked and a new one with Code Powers must be issued.

4.3. Planning permission

In England and Wales, many types of development undertaken by Public Telecommunications Operators do not require full planning permission, instead they must either be notified to the planning authority or prior approval sought by the operator. Significant developments (*e.g.* mobile phone masts higher than 15 metres) or developments in sensitive areas such as National Parks are subject to full planning permission. All mobile phone masts require full planning permission in Scotland.

5. Line-of-business and ownership restrictions

There are no line-of-business or ownership restrictions on licensees. Prior to 10 September 1997 the Government held a Golden Share in BT, the dominant former monopolist telecommunications provider, which limited shareholding to 15% of the company's total capital, and the Chief Executive had to be British. These restrictions no longer apply. There is a remaining Condition in BT's licence that empowers the Secretary of State to revoke the licence on the grounds of a threat to national security from a foreign owner.

6. Access regime

6.1. Interconnection

All Public Telecommunications Operators (PTOs) are required to interconnect with all other PTOs. Where any two Operators fail to agree arrangements for Interconnections they are required to refer matters for resolution to Oftel.

Two fixed PTOs have been designated as having Significant Market Power in the Telecommunications market; BT for the whole of the UK and Kingston Communications for the Kingston upon Hull area of Humberside. These PTOs are required to publish a Reference Interconnection Offer (RIO) showing certain interconnect charges and arrangements for interconnection. The BT RIO can be found at:

<http://www1.btwebworld.com/interconnect>.

BT's interconnect charges were developed by Oftel and BT, in consultation with other operators and other interests (*e.g.* consumers), initially using both "top down" and "bottom up" models to explore BT's Long Run Incremental Costs (LRIC) and adopting current cost accounting valuations. Initial interconnection charges on these principles were agreed in 1997. These set the starting points for a new basis for the control of interconnect charges (until then individually determined by Oftel). The charges were indexed on the basis of an "RPI-X%" formula for different groups ("baskets") of services. The "X%" value being set to bring BT's rate of return on its Network down to its cost of capital over the four year period set for the initial controls. BT was thus free to set its interconnection charges provided these conformed to the requirements of the indexing formula and were neither exploitative or predatory. This approach respects the principle of incentive regulation: in that if the operator can improve on the efficiency required to conform with the formula, he retains the "super-profits" that follow from this enhanced proficiency (until the next period of controls). In the event BT did better than the formula requirements. Hence when Oftel reviewed this market in Summer 2001, the RPI-X formula rates were also reviewed and new values of X were determined for the period to 2005 when a further review will take place.

A Standard Interconnect Agreement (SIA) was produced by BT and discussed with other PTOs. This SIA is signed by all PTOs who wish to interconnect with BT. It consists of a main section containing the basic terms and conditions, several annexes covering billing, technical matters, etc, and more than 100 Schedules each covering a particular service. PTOs “sign up” for those Schedules they require. New Schedules are added for new services and there is a review of the whole contract every two years.

The BT interconnect price list is published on the same web site as the RIO and SIA. It contains transit rates for all situations and PTOs and runs to some 13 000 entries. Some sections are updated on a daily basis. BT must provide 28 days notice of all changes to all PTOs. Any disputes over pricing can be referred to Oftel for determination.

There are no individual negotiations with BT about existing standard interconnect services supplied by BT. New PTOs must have the requisite ‘interconnection status’ which is obtained by registering with Oftel and have to go through a thirteen-stage process before signing the SIA. This process includes some mechanistic tasks, technical details, forecasts, testing requirements and call routing plans. Providing the new PTO is using an existing established switching system the whole process from initial contact to the establishment of the first Point of Interconnection takes about six months.

Telecommunication network operators in the UK believe innovation and new services are a key source of competitive advantage and expect the launch of new services to intensify as competition grows in the UK market. It is recognised that the ability to exploit innovative ideas, and the ability of consumers to benefit from them, often relies upon effective co-operation between network operators. Similarly, timely amendment or withdrawal of existing services is often significant in an innovative and competitive market. Effective co-operation requires a clear understanding of the respective rights and obligations of such parties.

Interconnection carriage prices charged by BT have evolved as follows:

Table 3. Single tandem
(pence per minute: actual charges without adjustment for inflation)

Year	Day	Evening	Weekend
2001-02	0.5566	0.2548	0.2007
2000-01	0.5392	0.3006	0.2521
1999-00	0.5759	0.3208	0.2693
1998-99	0.5928	0.3317	0.2778
1997-98 (6 months to 31.3.98)	0.618	0.345	0.289
1997-98 (6 months to 30.9.97)	0.836	0.452	0.358
1996-97	0.885	0.490	0.393
1995-96	0.980	0.578	0.446
1994-95 (Tandem local)	1.097	0.682	0.515
1993-94 (Tandem local)	1.297	0.765	0.573

Note 1: Cumulatively over the ten years the reduction in interconnect charges as a whole is of the order of 60%.

Note 2: Separate entries are supplied for the two halves of 1997/8. This is to identify the sharp reduction (step function) caused by the introduction on 1 July 1997 of the new Network Charge (Interconnect Charge) Controls with charges based on current cost accounting long run incremental costs (CCA/LRIC) in place of the former historical cost accounting fully allocated costs (HCA/FAC) basis of costs. Most of the reduction comes from the asset revaluation accompanying the switch from HCA to CCA.

Table 4. Double tandem medium distance
(pence per minute: actual charges without adjustment for inflation)

Year	Day	Evening	Weekend
2001-02	0.9199	0.4574	0.3706
2000-01	0.9025	0.5031	0.4220
1999-00	0.9392	0.5233	0.4392
1998-99	0.9561	0.5342	0.4477
1997-98 (6 months to 31.3.98)	0.975	0.544	0.456
1997-98 (6 months to 30.9.97)	1.192	0.645	0.510
1996-97	1.297	0.719	0.576
1995-96	1.467	0.866	0.668
1994-95	NA	NA	NA
1993-94	NA	NA	NA

Notes: Both Note 1 and Note 2 to the previous table also apply to this table.

Interconnection disputes must be resolved in accordance with Article 9(5) of the Interconnection Directive. This has been transposed in accordance with Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997. Disputes must be resolved in a way which represents a fair balance between the interests of the parties and taking into account a number of other criteria such as the interests of users, the public interest, the relative market position of the parties, the promotion of competition, the availability of technically and commercially viable alternatives to the interconnection requested etc.

Box 4. Interconnection obligations imposed on fixed SMP operators by Interconnection Directive 1997 (most were already in BT's licence)

- Interconnection charges should be transparent and cost-oriented.
- Interconnection should be available on the same terms and conditions for competing operators as SMP operators providing for their own services.
- Reference Interconnection Offers need to be published.
- Interconnection should be offered at any technically feasible points.
- SMP operators are required to keep separate accounting for interconnection services and other telecommunications services.

6.2. Interconnection with BT's fixed telephone network

Oftel stopped determining individual interconnect charges with the introduction of the new Network Charge (Interconnection Charge) Controls in July 1997. BT is free to set individual charges subject to meeting the controls set by Oftel. These controls are designed to match the degree of competitiveness of the markets for the interconnect services.

The costing methodologies were also changed with the introduction of these new controls. The Historic Cost Accounting (HCA) convention was replaced by Current Cost Accounting (CCA) and the Fully Allocated Cost (FAC) principle was replaced by forward looking long run incremental costs (LRIC).

The development of the Network Charge Control and the methodologies that underpin it are set out in Oftel's Statement of February 2001 "Proposals for Network Charge and Retail Price Controls from 2001". These proposals came into effect on 1 October 2001.

6.3. Fixed to mobile interconnection charges

Mobile operators who have Annex II status under the Directive 97/33/EC of the European Parliament and Council (the ICD) have rights and obligations to negotiate interconnection with other Annex II operators. Although two mobile operators, Vodafone and mm0₂ (formerly BTCCellnet), have been determined as having SMP in the mobile market, this does not bring with it the full ICD obligations, such as providing cost-orientated interconnection charges that apply to fixed SMP operators. Under the Interconnection Directive, these only apply to operators with SMP in the fixed market or in the national market for interconnection (in the UK no operator has been so determined). Nevertheless, following an investigation into the cost of calls to mobile, Oftel concluded in 1997 that the charges made by BTCCellnet and Vodafone made for call termination were excessive in relation to cost. Since the mobile operators would not accept Oftel's proposals for reduction of charges, Oftel referred the matter to the Monopolies and Mergers Commission (MMC, now the Competition Commission, CC) for a ruling on the public interest.

Following the MMC Report on the issue, Oftel required the mobile operators (BTCCellnet and Vodafone), to reduce their termination charges from 1 April 1999 by 25% and to reduce them in the two years 2000-2001 and 2001-2002 by RPI -9%.

During 2001 Oftel carried out a review into the effectiveness of competition in the mobile market in general and another into competition in the market for call termination on mobile networks. It completed its investigations and published its findings in September 2001. In parallel, it published a number of other studies. These included "The Profitability and Efficiency of the UK Mobile Network Operators"; "The Economic Depreciation in the Long Run Incremental Cost Model"; "The Assessment of Demand Elasticity Estimates of .econ" and "LRIC model of UK Mobile Networks".

Oftel concluded that the termination charges levied by the mobile network operators are excessive and to the detriment of consumers. The Director General of Telecommunications proposed a charge control of RPI-12% for the next four years and to apply the control to the four existing GSM. The control will not be applied to 3G networks when they commence operation. Oftel considers that consumers will save an estimated GBP 800 million over the four years as a result of Oftel's proposals. The estimated reduction in operators' revenue is GBP 600 million. The difference reflects profits forecasted on higher call volumes in response to lower prices. Although Oftel proposed to put the controls in place from March 2002 for four years, there will be a review within that period to coincide with Oftel's next review of the mobile market.

In order to implement these proposed charge controls, Oftel proposed modifications to the licences of the four relevant operators in September 2001. All four of the operators objected to the licence modifications and in January 2002, Oftel referred the issue to the Competition Commission for investigation. The Competition Commission has six months from that date to investigate whether the present mobile call termination charges are against the public interest and to recommend regulation, if they find this an appropriate remedy. They have an option to extend their considerations for a further six months. Meantime Oftel has consulted on its proposal to extend the current call termination charge controls on Vodafone and mm0₂. In March 2002 the Director General issued his Determination that the controls be extended to March 2003, to allow the Competition Commission to finish its enquiry.

In its second Mobile Market Review, Oftel concluded that overall the mobile market was not effectively competitive and that market power continued to exist. It maintained its view that controls on retail prices of calls from mobile networks and cost based terms for indirect access from mobile networks were unnecessary. In a deregulatory measure, Oftel proposed to withdraw the determinations that Vodafone and mm0₂ had “market influence” and thus cease the obligation on those two operators to supply airtime to independent mobile service providers: the Determination was promulgated on 5 April 2002. Oftel has advised the mobile operators that it would like to see reductions in the locking of handsets to SIM cards as this makes it difficult for customers to switch between networks and service providers; improvements in the level of customer information about SIM locking; as well as reductions in the charges for unlocking.

6.4. Unbundling of the local loop

In December 1998, Oftel published the first in a series of consultative documents (“Access to Bandwidth: Bringing higher bandwidth services to the consumer”) on proposals to unbundled BT’s local loop to facilitate the widespread supply of broadband services to meet consumer demand. This consultative document was followed by another in July 1999 (“Access to Bandwidth: Proposals for Action”). Finally, in November 1999, Oftel published its policy statement on unbundling of the local loop (“LLU”) — (“Access to Bandwidth: Delivering Competition for the Information Age”).

This statement of policy indicated that Oftel would require BT to unbundled its local loop with effect from 1 July 2001 and required BT and operators interested in taking advantage of using BT’s unbundled local loop to set up industry groups to commence negotiations on the requisite processes and procedures and commercial agreements to facilitate the smooth introduction of LLU in July 2001.

Oftel considered that opening up of the local loop was necessary to introduce competition into the provision of higher bandwidth services such as high speed always on Internet access and video on demand. The introduction of competition into this area should result in a wider range of services being available to consumers and better value for money. The Statement concluded that local loops should be available at cost based prices to be determined in the main by Oftel. In addition, Oftel undertook to review the position on LLU after four years and then at two yearly intervals.

During 2000, BT announced that it intended to install DSL equipment in its own exchanges for the provision of broadband services to its customers. Oftel welcomed BT’s announcement that it would provide other network operators and service providers wholesale access to its own ADSL services for reselling to end-users. Oftel indicated that it did not intend to regulate the pricing and other terms and conditions of this service, as LLU would be available in 2001.

Subsequently, the EU Commission adopted a Regulation that required all fixed line operators with Significant Market Power to unbundle their local loops with effect from 1 January 2001. The EU Regulation also mandated line sharing for the provision of DSL services to end users and sub-loop unbundling as well as the provision of access to other service providers of the SMP operators’ own ADSL services for the purposes of resale.

Although the EU Regulation was not adopted until end 2000, the first draft of the Directive was published in October 2000 and the EU Commission has warned the industry that it intended to adopt a Regulation mandating broadband access earlier in 2000.

Prior to the adoption of the EU Directive at the end of 2000, Oftel put in place the legal framework for LLU in August 2000 when a new condition (Condition 83), inserted into BT's licence in April 2000, came into effect. Condition 83 sets out the services BT must offer, the conditions which apply to the supply of these services and how prices will be set and how disputes can be resolved. On 2 January 2001 the EC Regulation 2887/2000 on LLU came into force. Its provisions are directly applicable in the UK. The EC Regulation requires all operators having significant market power in the fixed telephony market to grant access to their local loops and, therefore, in the UK its obligations fall on BT and on Kingston Communications for the Hull area. Accordingly, Oftel told BT that it required it to advance its plans to unbundle the local loop in order to comply with the timetable contained in the EU Regulation. Both BT and Kingston have published a Reference Offer, as required by the LLU Regulations. In relation to BT, Condition 83 remains in force and will continue to apply alongside the Regulation. It will provide the details, which may be needed to ensure that the Regulation can be applied effectively on BT. It is currently being considered whether any changes are required to Condition 83 in light of the Regulation.

During 2000, a number of operators participated in the work of the industry groups set up to facilitate the negotiation and introduction of LLU. A significant number of interested operators joined the process between March 2000, when BT invited bids for places in its proposed trials for LLU and September 2000, when operators were invited to place their first round of LLU orders with BT. At least 31 operators placed orders for collocation spaces in BT's exchanges. In order to prioritise the significant demand, BT agreed with the industry a system for the processing of orders. The purpose of this prioritisation system ("the Bow Wave Process") was to ensure that BT could meet the industry demand for the building of collocation facilities in an even-handed manner.

As the industry was unable to agree the precise details of the allocation procedure for space within the collocation facilities, Oftel determined the method to select the first 381 sites for which BT could be asked to prepare initial site surveys. In December 2000, a further 360 sites were selected under the Bow Wave process.

In January 2001, the first firm orders were due from operators to build co-location facilities at the first 25 sites from the first round of the Bow Wave on the basis of BT's detailed designs and **costings**. However, orders were received for only 14 out of the 25 sites and at these sites only one or two operators wanted to proceed to build. As the co-location facilities were designed to accommodate all who had previously expressed interest, some of whom had already said that they were withdrawing from LLU, the designs and costing for individual sites were no longer appropriate. Oftel and the industry therefore agreed to bring forward the sites from the second round of the Bow Wave, which represented operators' top priorities, in advance of the first Bow Wave sites.

At the same time it was agreed that changes to the process should be made so that designs and costing could be tailored to those operators firmly committed to ordering co-location. BT has since offered operators the option of placing firm orders before a detailed design is available. This will ensure that build of such facilities proceeds immediately after detailed design is completed, provided that the cost per operator does not exceed GBP 33 000. BT received such commitments from operators at a number of exchanges. In February 2001, the Bow Wave process was suspended as BT had sufficient capacity to deal with 100 co-location and 100 distant locations each month. From April 2001 operators have been able to place orders on a 'business as usual' basis with BT. This means that operators can place orders for co-location at any of BT's exchanges and can submit orders at any time they wish.

LLU trials commenced in February 2001 after four trial sites were established during January 2001. At the end of 2001 the trial was being wound down and operators are switching most of their trial lines over to commercial services. By March 2002 BT had provided physical co-location facilities at 34 sites (with a further 51 under construction) and distant co-location at 45 sites (with a further five under construction). There are now only 2 LLU operators in the UK. Competitive operators are now concentrating on wholesale DSL products to deliver broadband.

Once the co-location facilities are handed over, unbundled loops should be provided within three to five days from receipt of order. Service Level Agreements apply to these timescales. Oftel set the prices for connection and rental of fully unbundled loops in December 2000 and determined the prices for shared loops in October 2001. Oftel publishes a fact-sheet on its web site (<http://www.oftel.gov.uk>) on the local loop unbundling process on a monthly basis. This fact sheet outlines the background to local loop unbundling and gives an update on current progress. At the end of February 2002, just over 200 unbundled local loops had been connected.

Progress in local loop unbundling has been very slow. As a result the UK has also been lagging considerably in the diffusion of broadband access to residential customers.

At the request of the operators, Oftel has conducted a series of investigations into LLU and made a series of determinations or issued guidelines or consultative documents. These include:

Subject	Decision	In hand
Guidelines on BT's Condition 83	September 2000	
Indicative prices for loops and pricing principles	August 2000	
Frequency Plan (ANFP) for BT's Metallic Network Access	October 2000	
Statement and Determination on the Bow Wave Process	November 2000	
Shared access to the local loop	December 2000	
Charges for Metallic Path Facilities and internal tie cables	December 2000	
Further Statement and Determination on the Bow Wave process	February 2001	
Determination of the terms of BT's Access Network Facilities Agreement (LLU agreement)	February 2001	
Guidelines on the availability of co-location facilities and use of space at BT MDF sites	June 2001	
Determination of pricing for shared access	June 2001	
Decision on the 'discrimination' complaint against BT	July 2001	
Statement and draft direction – access to BT's exchanges for third parties	October 2001	
Statement and direction on co-location in the form of co-mingling	October 2001	
Statement and draft direction on BT's charges for LLU distant and physical co-location	October 2001	
Direction on BT's charges for site clearance as part of LLU	October 2001	
Determination of final charges for shared access	October 2001	
Determination of service level commitments and compensation	November 2001	
Statement and Direction on access to BT's exchanges I	December 2001	
Publication of consultative document on LLU backhaul services	December 2001	
Statement and Direction on BT's charges for physical and distant location	January 2002	
Direction on process of MPFs and internal tie cables	March 2002	

The slow implementation of LLU in the UK came under extensive industry and consumer criticism throughout 2001. BT considers that the delays have been largely caused by a retrenchment in the investment plans of its competitors and unforeseeable technical problems. Many of BT's competitors consider that BT has deliberately frustrated the process but are more concerned that the Director General did not take a more proactive role in the LLU process at the outset. Instead, they consider that he relied too heavily on co-regulation and self-regulation by the industry. Despite industry misgivings and criticisms that Oftel should intervene as soon as LLU became a contentious issue between BT and other suppliers, Oftel believed that the UK industry should be mature enough to solve the technical and operational challenges of LLU industrial co-operation in the manner now established for standard interconnection. This was consistent with Oftel's strategy (announced February 2000) that, where market development permitted, Oftel should seek to rely on co-regulation and self-regulation in order to avoid the risk of market distortion from regulatory intervention. In the case of LLU this aspiration was defeated and Oftel consequently had to intervene with a level of detailed regulation (see below) that is unprecedented since the mid-90s establishment in the UK of the interconnection regime and which has in turn been criticised (as Oftel fully anticipated) as over-intrusive. It is a matter of judgement (for all NRAs) when to conclude that that attempts to establish self regulation in any particular market should be abandoned BT's competitors believed that the Director General should have laid down far more detailed LLU rules at the outset in order to circumvent the extensive reliance on protracted dispute resolution processes commencing in August 2000. Some of the disputes referred to the Director General have taken up to 10 months to resolve, and final prices for the further element (shared local loops) were only set in October 2001 more than a year after BT first accepted orders for LLU. On the other hand, operators failed to make any official complaints to Oftel until August 2000, although they claim that they would have done so sooner if the Director General had brought the BT LLU licence obligation into force sooner. There is no doubt since Oftel took over the chairmanship of the LLU operators' group, considerable progress has been made in resolving points of difference between BT and the industry. The decisions forced on Oftel over the past year or so seem to demonstrate that LLU can only be implemented with intensive regulatory intervention in the day-to-day business of the incumbent, which calls into question the sustainability of the LLU model as a whole.

Box 5. Scope of LLU provisions in the UK

- Access to raw copper.
- Co-location capacity.

7. Pricing regulation

Only BT is currently subject to controls on its retail prices. Oftel sets the controls. The maximum increase in BT's retail prices is currently limited to RPI-4.5%. The control currently applies to a basket of BT's retail services comprising connection charges, line rental, local, national and international calls (excluding calls from public call boxes) and operator-controlled calls. The price cap controls the average price for the services, with the average being weighted by reference to the expenditure on these services by the lowest spending 80% of BT's residential customers. This ensures that price reductions are delivered to lower spending customers rather than being focussed on high spending residential and business customers for whose custom competitive pressures are greater.

Until 31 July 1997 (start of the current controls), the weights used to assess compliance with the retail price cap reflected the expenditure of all users including high-spending residential and business customers. The only major change in the method of regulation since privatisation in 1984 has been the

shift of focus towards lower-spending customers described above. Other significant changes were the addition to the basket of international calls in 1991 and of connection charges in 1993.

In March 2001, BT accepted Oftel's proposal to extend retail price controls, set at RPI-4.5%, for one further year to 31 July 2002. Oftel decided it needed to reassess the competitive impact of, for instance, carrier pre-selection and local loop unbundling, before deciding whether retail price controls on BT would continue to be required beyond 2002. Oftel commenced this further review into competition in the fixed telephony market with the publication of "Competition in the Provision of Fixed Telephony Service" in July 2001. In the light of the responses, Oftel issued its further proposals for consultation in its document "Protecting consumers by promoting competition – Consultation on Oftel's review of the fixed telephony market", on 31 January. The consultation period ends on 30 April.

In 1998, following inconclusive discussion with BT and mobile operators on the high cost of BT fixed service calls to mobiles, Oftel referred its proposals to the then MMC (Monopolies and Mergers Commission, now the Competition Commission). Following MMC's report in December 1998, controls were placed on the amount BT retains from revenues for fixed-line phone calls from its network to mobile phones connected to mm0₂ and Vodafone's networks. Under these controls, BT's weighted average retention for calls to subscribers on mm0₂ and Vodafone's networks was set at 3.40ppm for the financial year 1999/2000 (a drop of 34%), and had to be reduced by RPI-7% in the following two financial years. These controls are set to expire at the end of March 2002. In order to align the timetables for the retail price controls and the controls on BT's retention for calls to mobiles, the controls on BT's retention will be extended for the period 1 April 2002 to 31 July 2002. The need for controls after this date will be considered as part of the 2001/2002 market review.

Safeguard caps set at RPI+0% also apply to baskets of analogue and low capacity digital private circuits at 64kbt/s and below. After reviewing the market, Oftel has decided to remove the digital safeguard cap, but to extend the analogue safeguard cap until the end of July 2005.

Table 5. Changes in call prices (fixed to fixed) and fixed rentals

(Data for last ten years, inflation-adjusted)

	Day	Evening	Weekend
Calls			
Local	-29%	-26%	-39%
Regional	-34%	-28%	-57%
National	-52%/-41%	-62%/-51%	-77%/-71%
International			
Calls to Europe	-52%	-44%	-51%
Calls to USA	-78%	-73%	-75%
Rentals			
Residential	102%		
Business	93%		

Table 6. Nominal terms

(No inflation adjustment)

	Day	Evening	Weekend
Calls			
Local	-3%	1%	-18%
Regional	-11%	-3%	-42%
National	-35%/-20%	-49%/-34%	-69%/-61%
International			
Calls to Europe	-35%	-24%	-33%
Calls to USA	-70%	-63%	-66%
Rentals			
Residential	49%		
Business	42%		

Table 7. Changes in call prices: fixed to mobile

(Data set starts December 1998. Inflation-adjusted rates)

BT to mobile	Day	Evening	Weekend
Vodafone	-36%	-31%	-33%
mm0 ₂	-38%	-13%	-73%
Orange	-18%	-11%	-17%
One-2-One	-20%	-19%	-52%

Table 8. Nominal rates

(No inflation adjustment)

BT to mobile	Day	Evening	Weekend
Vodafone	-33%	-28%	-30%
mm0 ₂	-36%	-9%	-71%
Orange	-15%	-7%	-13%
One-2-One	-17%	-15%	-50%

Table 9. Mobile retail price index movements

(Data for January 1999 and December 2000: Nominal prices, without inflation adjustment)

Overall market level Indices	Jan-99	Dec-00	% Change
All operators	100	72.8	-27.2%
By tariff package type			
Advance Contract	100	89.0	-11.0%
Monthly Contract	100	78.7	-21.3%
Prepay	100	48.4	-51.6%

Notes:

1. These indices are derived from pricing a series of baskets based on customer profiles. Once **costed**, the baskets are combined to give weighted average indices. The indices started in 1999.
2. Advance contract: Line rental and some level of calls are paid for, in advance, on a monthly basis. Calls in excess of the limit are paid in arrears with the next monthly bill.
3. Monthly contract: Line rental in advance and call charges in arrears are paid on a monthly basis.
4. Prepay: Access to the network is purchased outright: no rental fees are charged. Consumer pays in advance to establish a credit store. Each chargeable call reduces the credit, which has to be renewed, or no more calls can be made. There are no monthly bills.

8. Tariff rebalancing in the UK

Tariff rebalancing usually refers to the process of increasing line rentals relative to call prices until the former are sufficient to cover the costs of providing the subscriber line, appropriately measured and including the cost of capital. Tariffs are said to be “unbalanced” if the line rental (or more generally access charges) is insufficient to cover these costs, which are instead met partly out of profits on calls. BT's 1999/2000 Financial Statements provide some indication of the extent to which line rentals are rebalanced. BT's rate of return on capital employed in its (regulatory) Access Business in 1999/2000 was 0.2%. The figures suggest that BT has made some, though slow, progress towards a rebalanced rental over time but that rental income is still insufficient to cover fully allocated costs (mainly due to losses incurred on residential lines).

However, these accounts are prepared on a fully-allocated cost basis: costs include a "standard" allocation of overheads, whereas a service would normally be regarded as being in receipt of a cross-subsidy only if it were priced below incremental cost. It is likely that BT's line rental is sufficient to cover the long-run average incremental cost (LRIC) of access, although it makes only a modest contribution to the recovery of costs which are common to access and calls. The majority of common costs are therefore recovered through call prices.

BT's line rental increases were formerly specifically subject to an RPI+2% constraint: but this was removed in February 1996. BT's decision to increase the residential line rental by only relatively small amounts in the current price control period is therefore a matter of BT's choice within the constraints of the existing residential price cap under which rental increases would need to be offset by significant reductions in call prices because of the high weight attached to rentals in the basket of services subject to control. Oftel believes that without price controls the domestic consumer is vulnerable to exploitation until effective competition is established. Oftel believes that BT's current rental covers its incremental cost in providing service. Some are concerned, as is BT, that the continued application of the retail price cap, particularly the effective control on the pricing of line rentals has impeded investment in telecommunications infrastructure, particularly the local loop and the introduction of innovative services.

A number of other European countries have set target dates to achieve rebalanced prices after which no retail price controls would be applied. Such a strategy avoids continuing the use of protracted price controls. Oftel has, however, proposed that price caps will be removed once call prices have reduced significantly. These reductions are likely to be offset by increases in the line rental, which might mean that the rental would make a greater contribution to the recovery of common costs.⁴

9. Universal service regulation

Box 6. Coverage of universal service

- PSTN services (including fax and data transmissions via modem at minimum speed of 2400 b/s).
- Free access to emergency services.
- Uniform tariffs across the national territory.
- Operator assistance.
- Directory services.
- Subscriber information (including free itemised billing service).
- Public pay phone services.
- Special tariffs for disabled people and low income users.
- Special connections and services for general interest.

In the UK the universal service obligation is placed upon BT and Kingston Communications to provide at geographically averaged prices:

- A connection to the fixed network able to support voice telephony and low speed data and fax transmission on reasonable request.
- The option of a more restricted service package at low cost to help those with special social needs and on low incomes.
- Proportionate and non-discriminatory disconnection procedures which are made publicly available; and
- Reasonable geographic access to public call boxes across the UK.

Oftel reviewed the scope of USO in the period 1995-1997. This review led to the introduction of new Schemes to address the needs of those without access to a fixed line phone and of an “outgoing calls barred” service, together with a repayment plan, as an alternative to disconnection for non-payment. In August 2001 Oftel confirmed that BT and, in Hull, Kingston Communications would continue to have an obligation to provide the above services on reasonable demand. Oftel undertook to keep under review the possible extension of the USO to include mobile and broadband services, within the context of the European legislative framework.

The “costs” of USO are borne by the USO providers — BT and Kingston Communications. Oftel has estimated the annual costs at between GBP 53 million – GBP 73 million, compared with estimated benefits of GBP 61 million per year.⁵ There is no USO Fund in the UK. Oftel have stated that a Fund would be established if USO represented an unfair burden on providers. Oftel’s current policy on funding is criticised by some as being disproportionate and placing the bearers of the USO at a significant competitive disadvantage. They are concerned that Oftel has not set a transparent process for valuing the benefits as well as the burdens of the USO and that it is reluctant to do so as the establishment of a USO fund would be a complex undertaking. Oftel is currently reviewing whether the USO represents an unfair burden on BT and Kingston. The review will be completed by July 2002. Oftel's current view -subject to consultation - is that the cost of USO measures, offset against the

benefits that accrue to the BT and Kingston brands from their position as USO providers, can continue to be borne by them at this time out of profits made from higher spending customers.

10. Spectrum allocation

The Radiocommunications Agency is responsible for managing the non-military use of radio spectrum in the United Kingdom. It exercises powers on behalf of the Secretary of State for Trade and Industry. Spectrum allocations are made in compliance with decisions of the ITU world radio conferences and also take account of CEPT decisions.

The Agency has issued over 230 000 licences for use of radio spectrum, mostly for private systems and use. New legislation was enacted in 1998, which enables licences to be awarded by auction where spectrum is limited and also provided for pricing licences to reflect spectrum management factors rather than administrative cost. The new legislation was made on the basis of improving spectrum management, not as a fund raising mechanism. Full details of the two auctions undertaken so far (for Third Generation Mobile Telephony and Broadband services at 28 GHz) and also publications concerning spectrum pricing may also be found on the Agency's web site. The Agency is currently examining how to implement Spectrum Trading and other incentives (such as the use of spectrum efficiency funds) that may be necessary for better future spectrum management. As most spectrum below 40 GHz is fully utilised and there is a requirement for new services, spectrum re-farming will become an important new feature of spectrum management. The new EU directives on a framework for Electronic Communications are pertinent to these areas. The Agency has been undertaking scenario planning to understand the impact of convergence on future spectrum management. Details of this work may be seen on the Agency's web site www.radio.gov.uk.

"Use it or lose it" provisions have been included in some existing telecommunication service licences such as Wireless Local Loop (known in the UK as Radio Fixed Access), National Public Paging and National Public Data networks. It is a difficult provision to enforce and is less essential now for services which are auctioned, as market forces and future incentives such as spectrum trading should encourage better spectrum use. A report undertaken on behalf of the government, *The Review of Radio Spectrum Management*⁶, proposes radical reform of the use of broadcast and telecommunication spectrum and advocates third party auction of under-utilised assets.

10.1. Previous methods

Prior to the 1998 legislation a few awards were made by comparative selection conducted in conjunction with DTI, although the numbers of such awards for public services was small with only limited competition (*e.g.* for GSM and Wireless local loop services). All other services were awarded on a first-come, first-served basis where there is adequate spectrum, and most continue to be so.

10.2. Licence charges

For all licences awarded (other than by auction), there is a published set of regulations for licence charges. These are published on the Agency's web site. The Agency is currently implementing the spectrum pricing changes in annual steps, which follow a detailed consultation mechanism. The Secretary of State determines fees, which are laid before Parliament, but these can only be determined after consultation and may only take spectrum management factors into account if they exceed

administrative cost. The introduction of spectrum pricing has enabled many fees to be reduced if spectrum is shared, and only users of congested or exclusive spectrum are paying higher charges.

10.3. Licence exemption

The UK has also exempted many services from licensing where there is low risk of interference, and no fees are payable for licence exempt services. Licence exemption currently covers most low power devices, subscriber terminals for 2G and 3G mobile telephony, paging and mobile satellite systems, PMR 446 (a European Exempt standard for PMR handsets without bases) and many other services which are unlikely to cause interference to licensed services. The Agency issued a consultation paper in the Autumn 2001 concerning proposals to significantly extend exemptions to new bands and to possibly include some public as well as private services (details shown on web site referenced above).

11. Numbering policy

Oftel has the prime responsibility for managing the UK's numbering resources. Within blocks of numbers, this responsibility is delegated by Oftel to telecommunications operators to whom particular number blocks or codes have been allocated by Oftel.

Numbers and codes allocated by Oftel are managed through the UK's Numbering Conventions (the 'Conventions'), in accordance with the UK's Specified Numbering Scheme ('SNS'). The Conventions are a set of rules and principles that govern the use, management and allocation of numbers from the Scheme published by Oftel. The SNS is a list of number ranges that are allocated, available, reserved, etc for particular purposes or operators, and which is published, and updated weekly. Both documents can be found on the Oftel web site.

Public Telecommunications Operators ('PTOs') to whom numbers have been allocated have a responsibility, set out in a condition of their Telecommunications Act Licence, to have a Numbering Plan that accords with the Conventions and the SNS. Failure to have a Numbering Plan, or having one that does not accord with the Conventions, is a breach of the Licence and subject to enforcement action set out in the Telecommunications Act 198

Call selection, the UK introduced call-by-call selection – also known as indirect access (IA) – for BT's fixed service customers from 1986 onwards. There are now hundreds of operators offering IA based telephone services.

For **mobile** services, Oftel has required the two mobile operators designated as having significant market power under the Interconnection Directive (Vodafone and mm0₂) to offer IA-based service from 2000, but not at the cost-plus terms that apply to call origination interconnect charges for indirect access on BT's network. The charges for mobile call origination are at "retail minus" – that is the mobile operators are required to deduct from their retail tariffs the cost of those elements of the service that are not required because the indirect access operator will supply them (marketing, billing, conveyance beyond the mobile system etc).

Carrier pre-selection (CPS) has been introduced for BT and Kingston fixed service customers. The UK's obligations for CPS were deferred until 1 April 2000. From 1 April 2000, CPS was available via "interim CPS", using auto diallers installed on the customers' premises. From 12 December 2000, Phase 1 of "switch-based" CPS was available, enabling CPS on national and

international calls. From December 2001, Phase 2 of switch-based CPS will be available, enabling CPS on national, international and local calls, as well as calls to mobile and non-geographic numbers. With the launch of Phase 2 of switch-based CPS, interim CPS has been withdrawn. The UK has fully met EU requirements for CPS. Nevertheless, there has been significant criticism of the difficulty processes being put into place to transfer customers from the incumbent to new entrants and there is concern that customers will still be receiving two bills.

11.1. Portability

Current UK policies meet European requirements with regard to the provision of number portability to customers wishing to keep their telephone number when changing the supplier of their fixed telecommunications services. This covers geographic numbers (where the customer remains at the same address) and non-geographic numbers (including services such as freefone, local and national rate number translation services, premium rate services and personal number services). Numbers for mobile services have been portable between mobile operators in the UK since January 1999 under UK licence obligations, as with fixed service portability, well in advance of EU commitments

The UK technical solution for portability may be described as 'onward routing'. Charges levied for the porting of numbers are restricted by regulation to the recovery of costs incurred in the porting of individual customer numbers (administration) and, in terms of calls, transit costs (the conveyance costs incurred by a donor network, effectively acting as a transit network, for calls originating off-net). These costs are recoverable from the recipient network. The recipient operator may also be liable to pay for the costs of transiting ported calls if no direct interconnect exist between the donor and recipient. In mobile number portability the recovery of donor transit costs are shared between the donor and recipient networks.

Some costs may be passed onto to customers by way of portability charges although these are the exception rather than the rule. In the case of fixed portability some recipient operators levy a charge on importing customers and in the case of mobile portability a few mobile airtime service providers (less than 10% of the market) levy an administrative charge directly to customers who are leaving them. In both cases it is unlikely that customers would pay more than GBP 30.

In October 2001 the four mobile operators introduced an automated system, which was designed to cut the time it takes to transfer numbers dramatically from 25 days to as little as seven days. Consumers can also now choose on which date to transfer their numbers. The lengthy time taken to provide number portability has been strongly criticised by a number of service providers as well as consumers. Even seven days appears long compared to some other countries that have introduced number portability (one day in at least one case).

12. Quality of service

Oftel has implemented requirements for the publication of quality of service data through co-regulation rather than using its formal powers under the Revised Voice Telephony Directive (RVTD). In 1995, Oftel encouraged the fixed telecommunications industry to establish the Comparable Performance Indicators (CPIs) initiative. This takes the form of a six monthly publication on the quality of service offered by the fixed service operators. The web site for this fixed service CPI initiative is www.cpi.org.uk. In addition, Oftel has encouraged mobile operators to carry out call success rate surveys on their networks. These results are also published (separately) every six months

on Oftel's web site. The aim of these initiatives is to empower consumers to make choices between operators based on reliable comparable quality of service information.

12.1. Complaint handling

Oftel has to consider any complaints or enquiries relating to telecommunications services supplied in the UK, provided they are not frivolous. Complaints by consumers in England Scotland and Wales are handled by Oftel's Consumer Representation Section (CRS). Complaints by consumers in Northern Ireland are handled on the Director General's behalf by the Northern Ireland Advisory Committee on Telecommunications (NIACT), a statutory advisory committee. Oftel's consumer representation section plays a "good offices" role. However, consumers are required to pursue their complaints through the companies' own procedures before seeking the involvement of CRS. If consumers are unable to resolve the dispute they may decide to refer it to an arbitration or mediation scheme, provided the company has one, or to the small claims court. Oftel is working with the industry to establish a voluntary independent industry funded Ombudsman scheme to resolve disputes between consumers and operators/service providers. This is scheduled to be operational in April 2002.

12.2. Compliance work

Oftel commits substantial resources to investigating and, where appropriate, remedying, conduct which may be anti-competitive or breach an operator's obligations under a Telecommunications Act licence. Some of these investigations are undertaken on Oftel's own initiative but the majority come about as a result of complaints received from, amongst others, telecom operators and service providers.

Under the Telecommunications Act, the Director General will investigate possible breaches of licence conditions. Oftel has powers to tackle anti-competitive behaviour under licences granted to operators under the Telecommunications Act 1984 as well as powers under the Competition Act 1998.

The two main ways of making information requests are: in accordance with a condition in the operator's licence (this could be the standard Condition 33 which is in all PTO licences; or a special Condition, as in Condition 78 of BT's licence requiring accounting and financial information); or under Section 53 of the Telecommunications Act 1984.

13. Application of competition principles

13.1. Competition Act 1998

Oftel has used its investigative powers in several cases but has not yet made an interim measure direction or infringement decision.

13.2. Fair Trading Condition

The Fair Trading Conditions in licences ceased to have effect from 1 March 2000 following the coming into effect of the provisions of the Competition Act. Two initial determinations were made against BT using this condition. The two cases related to an abuse in the charge-card market and, the market for enhanced directory enquiry and advertising services

There have been no cases for OFT involving anti-competitive behaviour in telecommunications services, because Oftel deal with these. There have been merger cases, but very few in recent years; increasingly, also, as the structure of the industry has evolved, cases fall to be dealt with by the European Commission. Details of merger cases are in the Director General's Annual Reports; those from 1996 onwards can be found on the OFT web site at www.oft.gov.uk under "About the OFT".

Table 10. Outcomes of recent competition cases in the telecommunication sector

Year	Formal action	Informal action	Outcomes		
			Co-regulatory	Self-regulatory	No case to answer
1999	8	1	14	5	33
2000	2	3	26	7	38

Source: Analysis of Oftel's Competition bulletins — concluded cases.

14. Convergence in communications markets

It has been recognised for some time that the telecommunications, broadcasting and IT industries are converging.

Digital media are revolutionising the telecommunications, broadcasting and IT sectors and bringing them together, so that services, which used to belong clearly to the one sector are now being delivered by another and vice versa. Thus people now use their TV sets to email, shop from home, access the Internet and devise their own personal viewing schedules. And they are using fixed telephone lines and mobile phones as well as computers to access the Internet. Telecommunications companies want to become broadcasters, while broadcasters increasingly are moving into e-commerce, and Internet Service Providers are offering television channels. The type and range of content available to consumers depends on the competitive environment in this converging sector. At the same time, the type of content that broadcasters carry in turn affects the market itself. This means that economic regulation of the market and regulation of content need to go hand in hand and the regulatory framework needs to consider both the content and the way it is carried to people.

In 2000 the Government announced its intention to legislate to bring together the regulatory framework for broadcasting, radiocommunications and telecommunications regulation through the creation of a single regulator for communications. The regulator will cover both content and economic regulation. A white paper was produced at the end of 2000 setting out the proposed framework for regulation and legislation. In July 2001, the Government published the Office of Communications Bill, which establishes a streamlined communications regulator with effect from 2003. This is a 'paving' bill for the purpose of formalising the relationships set up between the existing regulators and the Government to prepare for OFCOM and "paving the way" for the definitive legislation of the proposed "Communications Bill" (due to be published in Spring/Summer 2002). The OFCOM Bill became law in March 2002. OFCOM will only begin to regulate when the Communications Bill itself becomes law. This is unlikely to be before 2003 and will depend on Parliamentary time being available in the 2002-2003 session.

Under this legislation the single regulator – OFCOM – will take on the responsibilities of the five existing regulators in the sector:

- Oftel.
- The Independent Television Commission.

- The Radio Authority.
- The Broadcasting Standards Commission.
- The Radiocommunications Agency.

The OFCOM Act allows the formal establishment of OFCOM; allows OFCOM to prepare for regulatory powers; and ensures that OFCOM and the existing regulators co-operate on preparations for the new regulatory regime. Prior to the establishment of OFCOM the relevant regulators have produced a memorandum of understanding, which addresses areas of existing regulatory overlap and ensures that there is joint work on areas of common interest. This has already been instigated with the ITC and Oftel over the regulation of Electronic Programme Guides. In addition Oftel has produced a document outlining how it will deal with problems of access across all delivery networks through a common generic framework.⁷

III. RECENT DEVELOPMENTS IN MARKETS AND SERVICES

There are now some 177 licensed Public Telecommunications Operators (PTOs), most of who are providing domestic and international telecommunication services. There now exists extensive alternative infrastructure to BT, providing many consumers with a choice of telecommunication services. In recent years there has been some consolidation within the industry, a number of operators have ceased operating altogether and some have gone into liquidation, particularly during 2001.

Applications cover all types of services, from mobile operators who wish to include fixed links into their systems to proposals to provide network competition to BT. The proposals have applied many different and novel technologies, including advanced digital-fibre networks, new radio-based systems, satellite systems and intelligent networks. Brief details of applications made and of licences granted are available in the Register of Licence Applications from Oftel's Research and Intelligence Unit, where copies of issued licences can also be obtained.⁸

Internet access has become one of the major generators of traffic carried over telephone networks. Consumers sought and seek low cost access to the Internet, and the UK was the first country to provide for its consumers the benefit of subscription-free Internet access, through operators offering dial-up access for the price of a local call. Following a request for a determination made in late 1999 by MCI WorldCom, Oftel issued at the end of May 2000 a Direction requiring BT to make available from its local exchanges an unmetered wholesale Internet access product (called Flat Rate Internet Access Call Origination (FRIACO)) This was to allow ISPs to offer unmetered products using a more viable business model and enabled BT's competitors to provide unmetered Internet access to consumers in competition with BT's own unmetered internet access package, SurfTime.

Following the initial determination and further industry discussion, Oftel issued in February 2001 a second Direction requiring BT to make FRIACO available from tandem switches, subject to certain limitations which are designed to protect the integrity of the network. This gave more of BT's competitors access to FRIACO, and allowed even more flexibility in the use of this wholesale product. A number of ISPs, including AOL, Freeserve and BT Internet have launched FRIACO-based services. Oftel's implementation of FRIACO provided an important model for other countries where time-based Internet interconnection charges (and usage charges) have slowed Internet usage and the development of electronic commerce. Nevertheless, the time taken by Oftel to develop its FRIACO policy and introduce wholesale pricing for operators seeking to provide unmetered access from both BT's local and, more particularly, its single tandem exchanges, has been extensively criticised by many operators. Operators are particularly concerned that BT is not obliged to offer other network competitors the same interconnect or wholesale rights that it offers itself when it introduces a new retail product. They consider that BT should include in its Reference Interconnection Offer the wholesale services that it effectively provides to itself as and when its wholesale business agrees to do so with its retail business. This would enable BT's competitors to take advantage of the same wholesale services for their development of their retail products. They are not seeking that BT should be obliged to publish details of the supported retail service at the same time as they acknowledge that this would deprive BT of its innovative competitive advantage. However, BT's competitors consider that the lack of this wholesale information places them at a significant competitive disadvantage. Oftel consider that it would be

difficult for BT to publish details of its self-provided wholesale services in its Reference Interconnection Offer as BT's retail business is so closely integrated with its network business, particularly in respect of access to provisioning systems (OSS).

Oftel's work in this area continues through 2002 with:

- Consultation (January 2002) on refinements to the FRIACO Directions (Statement and Direction planned for end April/early May).
- Preparation for Stage 2 of FRIACO, due to start in February 2003, when the limitations referenced earlier will be removed. By that time, BT will be expected to have installed new tandem network capacity where it is required; and
- Facilitation of industry discussions on IP interconnect, a solution which has potential advantages in terms of efficiency and cost, and removes unmetered internet traffic from the voice network.

Oftel has also conducted a major review (published January 2002) of access to the Internet to assess the level of competition and hence appropriate regulation.

Restrictions on BT and other PTOs from providing broadcast services to homes have been progressively removed since 1998. From 1 January 2001 they have been able to compete in broadcast TV services throughout the country. PTOs and other independent service providers can now plan future services with certainty, while cable companies can continue to finance investment in broadband networks, providing strong competition to BT. BT has applied to the Independent Television Commission for a 'broadcasting' licence, which would enable it to carry and distribute programming, such as video-on-demand, over its network.

BT has now rolled out Asymmetric Digital Subscriber Line (ADSL) technology to over 1000 local exchanges, covering around 60% of the population. As a result, a number of wholesale ADSL products are available from BT to operators and service providers to make services such as high-speed Internet and video-on-demand available to end users. The UK Government recognises that this represents a significant investment by BT and welcomes BT's commitment to the provision of broadband access technology. The UK Government also wants to encourage other operators to provide further competition in higher bandwidth services and Oftel has put in place the regulatory framework that will enable operators to take advantage of local loop unbundling LLU. Significant progress has resulted in competitors now being able to request unbundled loops at any BT exchange.

BT's own wholesale ADSL products are available to all service providers on the same terms and conditions as for BT's own retail operations. The first such "bitstream" products have been available since the summer of 2000 in all exchanges where BT has installed its own DSL equipment. All of Kingston Communications exchanges in the Hull area are enabled to deliver ADSL. By the end of February 2002, the number of end users receiving ADSL services from service providers using BT's wholesale products had reached 146 000 and Kingston Communications ADSL service has been taken up by 11 000 customers. In December 2001, BT began to trial a number of self-install variants of its ADSL (IPStream) products. IPStream Home and Office will remove the need for an engineering visit to a customer's premises, thereby reducing the costs to both BT and the customer. In January 2002, BT announced the full launch of its wholesale self-install products

BT has approximately 200 customers (including operators, service providers and corporate customers) for its wholesale ADSL products. In parallel Telewest and ntl have made available cable modem services to their customers and 56% of the ntl customers can take advantage of this service and 95% of Telewest's. As of end December 2001, there were approximately 196 000 end-users of cable modem services. Take up of broadband in the UK is still low, and well behind most major OECD countries.

The UK remains well behind its target of being the most connected G7 country by 2005. The uptake of broadband has been slow partly because of high prices in the UK relative to most OECD countries (although cable service prices in the UK are among the cheapest in the OECD area) and partly because of the slow installation resulting from BT using until recently engineering visits to the home as with 'self-install' in many other countries.

Although BT's decision to roll-out its ADSL services was a commercial one, Oftel has been involved in monitoring the roll-out to ensure that BT complies with its legal obligations under its Licence and the Competition Act 1998. Oftel has carried out a number of investigations into complaints about BT's provision of ADSL services to other operators and service providers.

Closed cases include complaints about the alleged passing of confidential information from BT to BT Openworld (BT's own Internet Service Provider); BT's ADSL installations and BT Openworld's marketing activities.

As of February 2002, Oftel was investigating or had recently investigated:

- An industry complaint regarding BT's contract terms for its wholesale DSL products, which lack a Service Level Agreement. BT introduced Service Level Agreements (SLAs) into its terms and conditions in September 2001 and Service Level Guarantees (SLGs) in December 2001.
- Whether or not BT's ADSL pricing for its retail and wholesale products constitutes a margin squeeze. Although Oftel did not find any evidence of a margin squeeze in January 2001, Oftel decided to monitor the position to see whether the anticipated revenues from e-commerce and advertising contained in BT's business plan were realised. Oftel concluded in March 2002 that there was no evidence of abuse.
- ADSL interconnection. Oftel was asked by two operators to undertake a market review and to determine the prices, terms and conditions for ADSL Interconnection, including service level agreements (SLAs). Oftel published a draft Direction proposing that BT be required to provide two new interconnection products in December 2001 which should stimulate competition at the wholesale level and increase the range of broadband access services available. Subject to the consultation, the Direction is expected to be made in April 2002.
- BT's DataStream pricing. An Oftel-initiated investigation into whether or not BT's retail pricing for its DataStream Home and Office are too low. Oftel concluded in March 2002 that there were no grounds for concern that these prices were designed to reduce or eliminate competition from LLU operators.
- Rate Adaption. Oftel also conducted an own-initiative investigation into BT's new rate adaption technology, which extends the reach of ADSL from approximately 3.5 km from an enabled exchange to approximately 5.5 km. BT provided a wholesale product to match its retail product in December 2001 – thus removing the grounds for Oftel's concern.

- BT's Wholesale prices. Oftel investigated whether BT's wholesale products in addition to DataStream are priced anti-competitively and concluded, with the exception of one service still under investigation, they were not.

The Government welcomes these developments as an important step towards increasing competition in the area of network provision and increasing the spread of broadband services across the UK. In February 2001 the E-Minister Patricia Hewitt announced a GBP 30 million fund to assist the devolved Scottish, Welsh and Northern Ireland administrations, and Regional Development Agencies, to develop innovative schemes to meet local requirements for extending broadband networks. This should help spread high-speed Internet access to more rural communities over the next three years.

The Government is also committed to other new broadband technologies, which can substitute for or compete with DSL, especially in areas where ADSL is not available. This is why the Government has auctioned spectrum at 28 GHz for Broadband Fixed Wireless Access – licences have already been issued for areas covering 60% of the population. Further spectrum is also to be made available at 40 GHz, 3.4 GHz and 10 GHz.

Mobile wireless access is likely to be a further means of spreading broadband services. Network enhancements such as GPRS (General Packet Radio System) support higher data rates, and 3rd Generation mobile or UMTS, due to be launched in late 2002, is planned to support data rates up to 2Mb/s (typical data rates will be around 384kb/s).

A number of providers offer high-speed Internet access via satellite to consumers. Some services use a traditional dial-up ISP to request information, which is then delivered over the satellite network at high speed (typically offering data rates up to 2Mbit/s). Other services offer access solely using the satellite system.

IV. PERFORMANCE OF THE TELECOMMUNICATIONS INDUSTRY

1. Competition analysis

Effective competition is the single most important means of securing Oftel's goal of achieving the best possible deal for the consumer. Effective competition means competition which brings tangible benefits to consumers, *e.g.* lower prices, higher quality and greater choice of services, and which enables consumers to exercise choice effectively. A market, which is effectively competitive, does not require sector-specific regulation to promote competition. The Oftel strategy statement: "Achieving the best deal for telecom consumers", published in January 2000, discusses the concept of effective competition in more detail.

Effective competition in communications markets has been hard to achieve internationally for a number of different reasons. First, former monopolists, with extensive networks, have retained market power in a number of markets. Second, the number of communications networks is limited because of the costs of construction involved. Third, the shortage of spectrum means there can only be a limited number of network operators in some markets, *e.g.* mobile telephony.

These barriers to effective competition are being broken down by developments in technology. In particular, the convergence of the telecommunications, broadcasting and information technology industries means that the scope for competition is increasing. For the consumer, convergence means that existing services can be delivered in new ways, *e.g.* telephony can be provided through the Internet. New services can also be provided on existing networks. Video-on-demand, for instance, is being supplied through upgraded telephone lines. And new networks allow new services to be made available, *e.g.* high-speed Internet access will be able to be offered through third-generation mobile phones.

Effective competition is not yet in place in all communications markets, however, so regulation to promote it may be necessary. But Oftel and the UK Government consider that sector-specific regulation should only be used where it is likely to bring benefit to consumers. Also, the extent of regulation should be kept to the minimum necessary to obtain appropriate outcomes. Oftel policy, where the market reviews demonstrate that markets are not open to effective competition, is to regulate to safeguard the customer until such time as measures to encourage competition succeed and reduce or remove the need for regulator intervention. These principles are also set out in the Oftel strategy statement. The aim of keeping regulation to the minimum necessary is central to securing Oftel's goal of achieving the best possible deal for the consumer. Regulation where none is justified can distort or undermine competition. For example, it can encourage inefficient suppliers to enter the market, thereby raising costs to consumers. It can also reduce the incentive for innovation and development of services. At a time when technology is making revolutionary new services possible, a slowdown in innovation, or an increase in costs, caused by the burden of regulation would be damaging to consumers.

One way of promoting effective competition is through regulation to require open access to communications infrastructure. An open access obligation is a requirement, which makes facilities and/or services available to another undertaking, on regulated terms, for the purpose of providing communications services.

Examples of open access obligations in the communications sector include:

- Obligations on operators of telephone networks to interconnect with other network operators.
- Obligations on telecommunications operators to offer access to their networks to third party service providers who wish to provide telephony to consumers.
- Obligations on digital TV platforms to offer access to their encryption systems to third party broadcasters, thereby allowing those broadcasters to supply their TV channels to consumers.

Open access obligations allow consumers to obtain communications services from a number of different suppliers over the same communications infrastructure. Such obligations can play an important role in promoting effective competition for communications services. Open access may not always be appropriate, however, and can, in certain circumstances, undermine incentives to invest in network provision.

2. The telecommunications market

The UK telecommunications market has increased from GBP 30.5 billion in 1998 to GBP 41.1 billion by 2000. The most dynamic market segments were the interconnection market and the Internet market (Table 11). The incumbent's share of the total market was 49% overall. BT's share in the fixed telephony market was 71% in 2000. Its strongest position in this market was for exchange lines where it had an 85% market share. Growth in the telephony market was driven mainly by dial-up Internet calls resulting especially from the introduction of unmetered Internet tariffs. Compared to most OECD countries the UK has a high percentage of residential customers (18%) using cable operators for telephony.

Table 11. Turnover of the UK telecommunications market

Turnover (GBP billion)	1998/99	1999/00	2000/01	BT's share of revenues in 2000 (%)
Fixed telephony	12.4	12.6	13.1	71%
Cellular telephony	4.5	5.8	6.9	23%
Leased lines	1.9	1.8	1.8	66%
Interconnection	3.5	4.8	6.5	23%
Other (incl. cable TV, Internet)	8.2	11.8	13.2	32%
TOTAL	30.5	36.8	41.4	49%

Source : Oftel.

2.1. Fixed voice telephony market

At the end of 2000 total call revenues were still increasing; though over the year revenue growth remained below that of call volumes indicating a decrease in the cost of making calls. Calls to mobiles continued to show the strongest growth in volumes over the year.

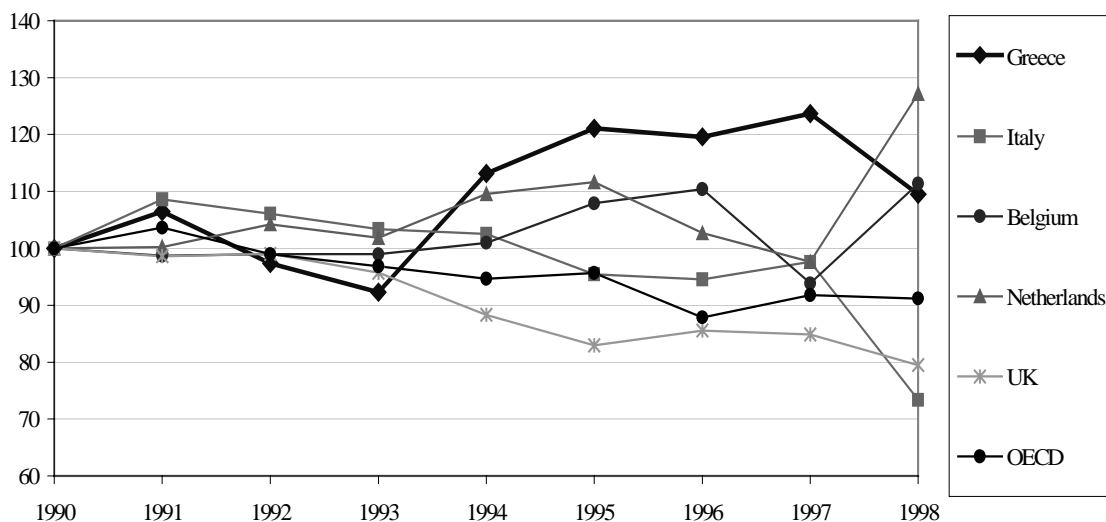
The total number of lines increased during the last quarter of 2000, all of this growth being accounted for by the business market. The number of residential lines fell slightly.

BT has an estimated 65% share of fixed revenues at the end of 2000. BT is estimated to have call revenue market shares of 73.5% in the residential market and 51.7% in the business market. BT's share of business call minutes is now estimated to be 49.4% at the end of 2000.⁹

ntl and Telewest accounted for 19.9% of the residential market call volumes and other operators excluding Kingston Communications and C&W Communications accounted for 5.7%. In the business market, C&W Communications accounted for 12.6% of the call minutes, WorldCom for 7.7%, ntl and Telewest for 6.1% and others, including Concert for 24.3% at the end of 2000/01.

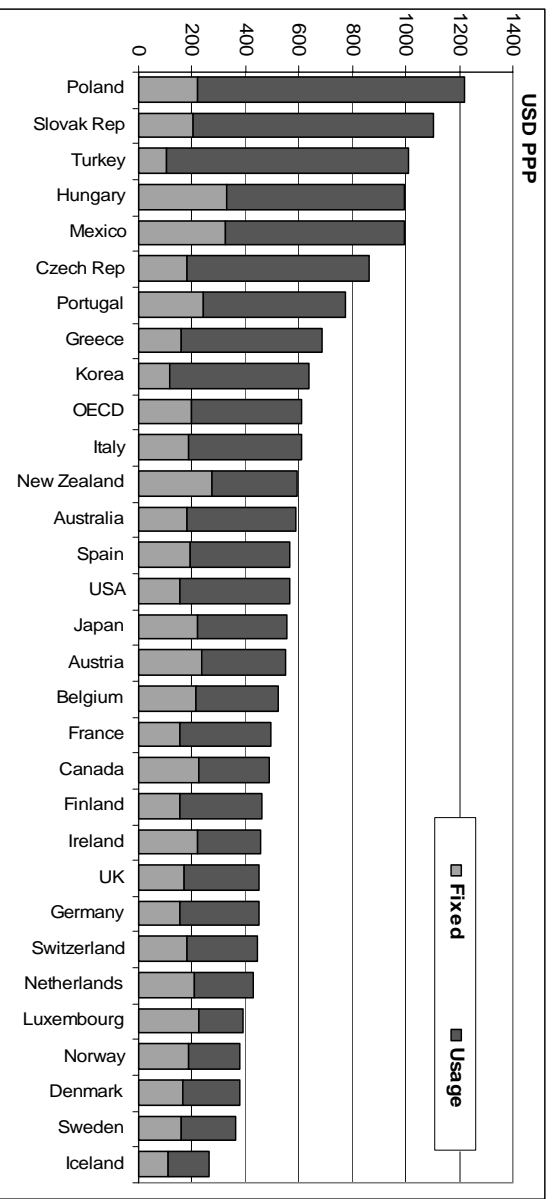
The UK, in that it started the process of liberalisation earlier than most OECD countries, had an early start in tariff rebalancing as can be seen in Figure 1. Nevertheless, in some cases the relatively lead of the UK diminished as other countries decided to open their markets to competition. The early start also meant that the UK has performed well relatively in terms of price performance for residential consumer prices (Figure 2) where the UK is well below the OECD average. In terms of the business price comparison (Figure 3) the UK has performed less well with regard to standard published prices. However, evidence from the range of price packages available, from price discounts available to large users of telecommunication services, and the relatively healthy market share of new entrants are indicative of strong competitive pressure in the business market.

Figure 1. OECD national business tariff basket, 1991-98
(Index 1990 = 100)



Source: OECD, TELIGEN.

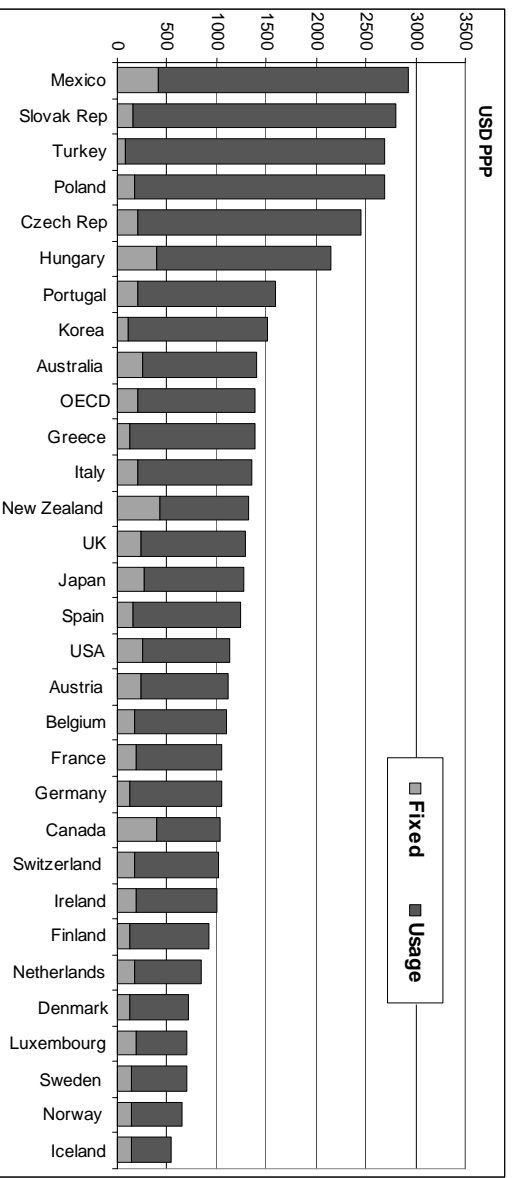
Figure 2. OECD composite residential basket, November 2001
USD PPP



Source: OECD.

Note: Excludes calls to mobiles.

Figure 3. OECD composite business basket, November 2001
USD PPP



2.2. Fixed to mobile call market

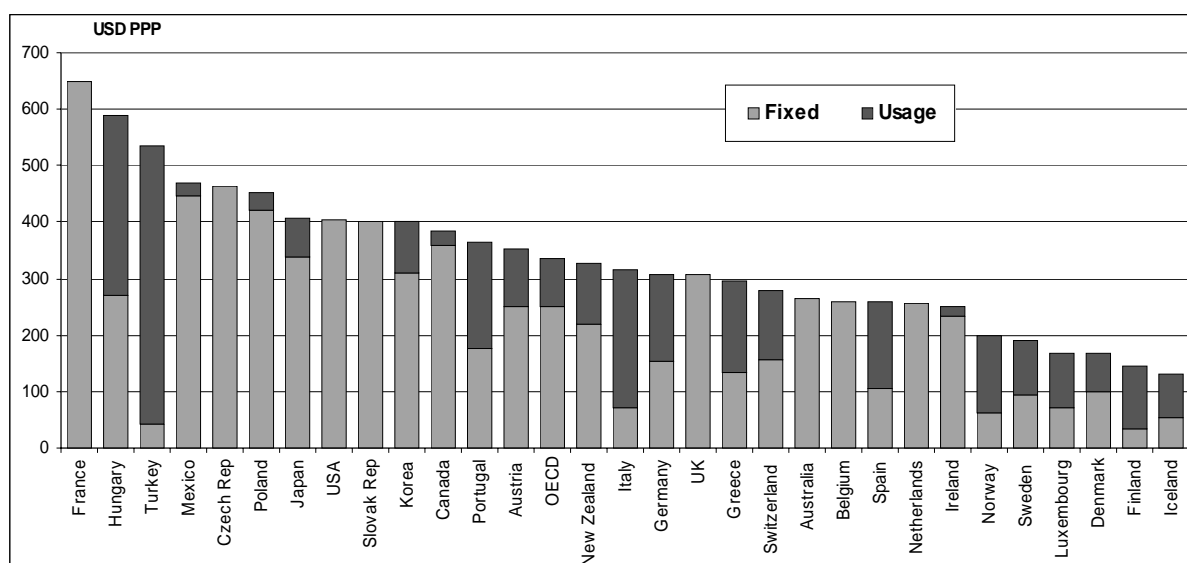
In the UK calls from fixed lines to mobiles continued to show growth in volumes over the year 2000.

2.3. Mobile market

There are four mobile operators in the UK: Vodafone, mm0₂, One 2 One and Orange. At the end of September 2001 there were 44 million mobile subscribers in the UK. This represents an increase of 27% over a one-year period. There are a growing number of pre-pay subscribers whose usage tends to be lower than contract subscribers and this had initially led to a fall in average outgoing minutes per subscriber as has occurred in many other OECD countries. The growth in text messaging services, where revenues more than doubled (Table 12), has helped stabilise ARPU according to mm0₂ and Vodafone.

Figure 4. Mobile consumer basket, November 2001

VAT included, USD PPP



Source: OECD and Teligen.

Note: The basket includes 50 minutes per month and excludes international calls. VAT is excluded.

Table 12. Cellular services: summary of all operators' revenues

Revenues (GBP millions)	2001/02 Q2	2000/01 Q2	Growth rate %p.a.
Retail			
Calls & fixed charges	1 777	1 571	13.1
Connections	18	13	37.9
SMS messaging	248	105	136.2
Total retail	2 043	1 689	20.9
Interconnection	659	535	23.1

Source: Oftel.

2.4. Leased lines

In August 2000 Oftel reviewed the market for leased lines (known as Private Circuits (PCs) in the UK) and prospect for competition in the market. Oftel identified a wholesale market for “trunk segments”¹⁰, which it found to be prospectively competitive and not in need of regulation; and, on the other hand, a wholesale market for “terminating segments (*i.e.* leased circuits linking local exchanges with customers’ premises) which was not competitive, or prospectively competitive.

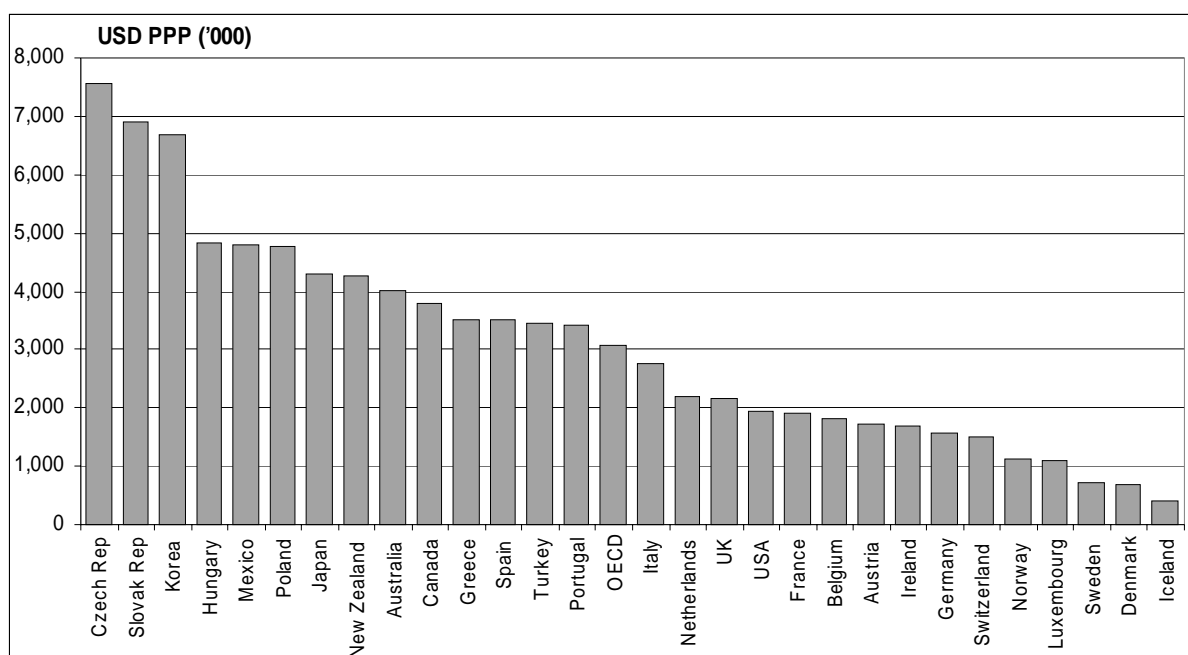
This market analysis coincided with a request from one operator for Oftel to set time limits within which BT should negotiate the provision of wholesale Partial Private Circuits (PPCs or terminating segments). Oftel issued a Direction in December 2000 requiring BT to enter into negotiations with ten named operators and set a time limit of eight weeks for agreement on the products that make up PPCs and a further six weeks thereafter as the time limit for implementation – delivery of circuits. Oftel stated that, should no agreement be reached by the end of the first eight weeks, any of the parties would be entitled to bring a dispute to Oftel for resolution. In the event, BT and the operators continued to negotiate until PPCs were launched on 1 August 2001.

Shortly after the launch, Oftel received requests for determination of a number of issues concerning PPCs. These covered “missing” products required to provide PPCs, issues of costing and pricing, concerns over migration arrangements from existing to new arrangements, and requests for infrastructure sharing. To expedite the processing of these requests, Oftel has divided the issues into two groups. Those in Phase 1 are covered in a draft determination put out for consultation on 1 December 2001. A draft determination on the issues in Phase 2 is in preparation. Oftel will include assessment of the impact and potential impact on competition in the Leased Lines market of these Determinations in preparing its final Statement on its Market Review of Leased Lines.

Since 1 August 2001, approximately two thirds of operators’ eligible retail private circuits (40 000 out of 60 000) have been migrated to wholesale PCCs – some operators reporting savings of around 30%. The relative performance of the UK compared to other OECD countries for 2 Megabit leased lines is shown in Figure 5. In terms of Digital PCs, Oftel concluded that there were adequate competitive pressures on BT for long distance PCs. However, the provision of the so-called “last mile” was still largely under BT domination. As a consequence Oftel forced BT to offer a range of digital “Partial PCs” using existing In-Span Points of Interconnection. The detailed arrangements and prices were agreed through tripartite discussions involving Oftel, BT and representatives of the PTOs. Oftel recently reviewed the process for PCs used for interconnection and made reductions in the tariffs charged. The relative performance of the UK compared to other OECD countries for 2 Megabit leased lines is shown in Figure 5.

Figure 5. National OECD leased lines basket, November 2001

VAT excluded, USD PPP, 2 Mbits



Source: OECD.

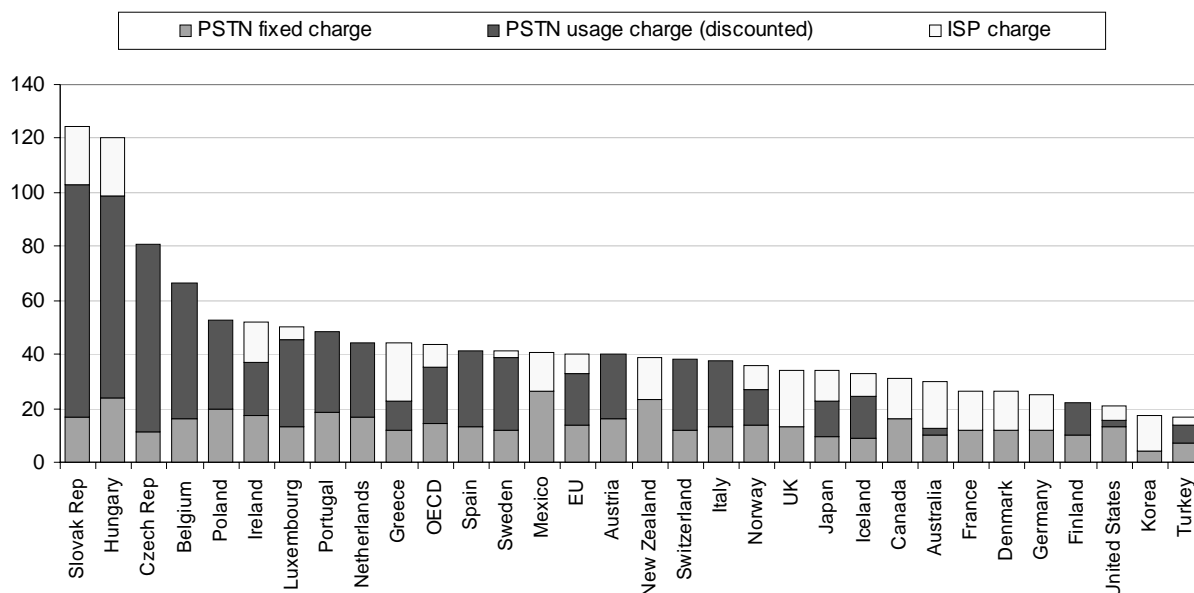
2.5. Internet

In November 2001, OfTel calculated that 45% of homes were connected to the Internet compared to 30% by the end of 2000. This makes the UK a higher user than most of Europe, but behind the USA. By November 2001 the means of connection used in the residential market were: 83% of homes dial-up via PSTN; 9% via ISDN; 4% via digital TV; 3% using a mobile phone/device; and 7% via ADSL. In the business market 76% of businesses with internet access use PSTN/dial up; 23% ISDN; 3% leased lines, and 6% broadband (cable/ADSL).

According to OfTel's benchmarking study of Internet access in 2001 the UK has the best or nearly best deal on dial up access for residential customers (the countries compared in the study were UK, France, Germany, Sweden, Ohio and California). Forty hours residential dial up Internet access is the cheapest of the European countries studied at peak and off peak. Unmetered access is similar to the USA. Figure 6 indicates the relatively good performance for the UK for 20 hours of Internet access.

Figure 6. OECD Internet access basket for 20 hours at peak times using discounted PSTN rates, August 2001

Including VAT



3. Other performance indicators

3.1. Network development

In the UK, there has been steady growth in the number of subscriber fixed lines and faster growth in cellular networks. The statistics of the networks to support these are summarised in Table 13 below. Although the number of fixed lines have been growing (Table 14) this may slow as customers take-up ADSL removing a need for a second line dedicated to Internet usage.

Table 13. UK Network Information

Item	Amount	At Date
Fibre optic cable in the UK	5 million kms	December 2000
SDH nodes	1 980	December 2000
BT Network		
Main Distribution Frames (MDFs)	6 941	June 2001
Primary Connection Points (PCPs) (mainly roadside cabinets)	80 000	June 2001
Distribution Points	2.0m	June 2001
Poles	1.5m	June 2001

Table 14. BT's fixed lines

	1996	1997	1999	2000
Subscriber fixed lines (millions)			28.4	28.9
Subscriber fixed line growth (%)			1.8	1.5
ISDN equivalent lines (thousand)			2.2	2.8

Source: OfTel.

3.2. Network digitalisation

Full digitalisation of fixed networks was achieved in the UK by the end of 1997.

3.3. Quality of service

The level of payphones per inhabitant in the UK has been relatively low compared to the OECD average (Table 15). In September 2001 the UK had 2.6 payphones per 1 000 inhabitants, a slight increase over previous years. The UK had over 140 000 payphones, many of which take payment cards and an increasing number have web and e-mail access. 95.2% are working at any one time.

Table 15. Number of payphones per 1000 inhabitants

	1995	1996	1997	2000
UK	2.4	2.5	2.5	2.6
OECD average	4.1	4.6	4.9	4.9

Source: OECD.

In September 2001, figures for BT show that 82.8% of business line faults were repaired within five working hours or by successful appointment, and 72.6% of residential line faults were cleared within nine working hours or by successful appointment. This represents a significant improvement since the 1980s. Over 80% of all customers expressed satisfaction with the service.

3.4. Employment and productivity

At the end of 2000, the total number of employees working for BT was 132 000, an increase over the previous two years of 12 000 due mostly to the increase in the mobile sector.

The incumbent's productivity, measured by subscriber lines per employee, has increased gradually, but is below the average of the OECD countries.

V. CONCLUSIONS AND RECOMMENDATIONS

1. General assessment of current strengths and weaknesses

The UK has led the way in Europe in telecommunications market liberalisation from the early 1980s onwards. UK policy innovations have formed the basis for the majority of EU policy development and Directives. The UK has a fairly comprehensive regulatory regime enabling it to promote effective competition in the telecommunications sector.

With hindsight, however, UK policy has not been as successful as could have been achieved. During the duopoly period (1984-1991) Mercury Communications had several significant changes of strategic direction — it would have been better if there had been more fixed network competitors licensed at that time. Similarly, the earlier licensing of a third or fourth cellular operator around 1990 to force the pace of GSM cellular development and increase competitive pressures would have been beneficial, as can be seen from the rapid fall in prices of mobile telephony following the launch of One2One's services in 1993. In short, the duopoly and slow licensing in the cellular market stalled much of the momentum for reform.

More recently the policy of unbundling the local loop has failed, as yet, to generate the benefits expected. Local loop unbundling required constant successive interventions to maintain momentum as BT found practical ways to resist the policy. Many potential entrants to the segment have decided to drop out. LLU interest has diminished from 40 companies interested in presence in 2000 BT exchanges to less than 7 carriers interested in establishing a presence in 200 BT exchanges. As of February 2002 just over 200 lines had been unbundled nation-wide.

The delay in the rollout of broadband is also disquieting. BT has been extremely slow compared to many other countries in using self-installation for DSL and prices, and both installation and fixed charges, have been high. As a result total broadband penetration was 0.28 per 100 inhabitants in June 2001 compared to the OECD average of 1.96 per 100. In contrast the dial-up Internet access market has performed well mainly because of flat-rate pricing options.

There is no limitation in the UK to market access except the case of limited spectrum resources. Equal access is ensured through interconnection and numbering policies with full Carrier Pre-Selection ("CPS") being introduced by BT starting in December 2000 with national and international calls and following up with all other major call types in December 2001. Kingston Communications has already introduced full CPS within its network in the Hull area. In order to encourage facilities based competition, the UK has implemented equal access or carrier pre-selection fully in accordance with its European obligations, starting in April 2000 with interim CPS using autodiallers, and then following up with switch-based CPS as outlined above.

Box 7. Strengths of UK policy and regulatory system

- Advanced structure of regulatory body, which enables technologically neutral and consistent regulatory rulings over the whole communications sector.
- Early implementation of pro-competitive regulatory measures.
- Rapid development of the both the fixed and mobile sectors.
- Relatively low prices for consumers.
- Low access charges for narrowband Internet services and a well-developed interconnection or wholesale services regime.

As the nature of mobile service changes, from a complementary service to a substitute for fixed voice telephony services through the decrease in charges and the introduction of pre-paid cards, the growth of the UK mobile sector could bring real competition to the UK personal telecommunications market.

It is noteworthy that, in the UK, the level of PSTN charges for narrowband Internet access charges, including flat rate options, is among the lowest in the OECD region. This low Internet access charge allows customers to access data services using the PSTN. At the same time, the low narrowband Internet access charges help Internet content providers to benefit from economies of scale, which is very important for an industry which is dependent on mass marketing techniques and at least in part on advertising revenues.

Box 8. Weaknesses

- Delays in introducing LLU, and full CPS.
- Lack of alternative fixed infrastructures in the local loop for a relatively large part of the country and about 45% of the population.
- Relatively high retail prices for short leased lines (in the absence, until recently, of a wholesale product tariffed at cost-based charges).
- Poor performance in the rollout of broadband services.
- Lack of fining powers by Oftel.

The local loop sector is still dominated by BT in the UK. For this reason, it is important to ensure that the implementation of local loop unbundling is effective and at prices which allow for effective entry. Adoption of Wireless Local Loop (WLL) technologies would enhance local competition and choice. Further auctions of spectrum suitable for various types of Wireless Local Loop are planned by the Radiocommunications Authority.

However, the history of using WLL as a basis to compete with BT in the UK has not been good. Two Wireless Local Loop Operators (Ionica and Atlantic) operating in the 3.4GHz band have gone into liquidation before making large inroads into the market. The applications for broadband WLL licences in a recent auction were less than the licences available. It is arguable that WLL is still not a cost-effective nor a technically fit medium for providing effective competition in the local loop. It might be suited as an access methodology in countries where teledensity is relatively low but in a country with such a high fixed line penetration as the UK, competition by means of WLL against BT's copper local loop seems to be far from effective in 2001.

2. Potential benefits and costs of further regulatory reform

Market liberalisation and competition have brought significant benefits through:

- Lowering of national and international call prices.
- Introduction of bundled packages including ‘free’ local call services.
- The introduction of “Flat Rate” Internet access without ISP subscriptions.
- Broad range of choice of fixed and mobile network carriers and re-sellers.
- Expansion and modernisation of telecommunication networks.

The immediate task is to ensure increased local competition, noting in particular the need for alternate infrastructures.

3. Policy recommendations

The following recommendations are based on the above analysis, taking into account the “Policy Recommendations for Regulatory Reform” set out in the OECD Report on Regulatory Reform (OECD, June 1997).

1. Ensure that regulations and regulatory processes are transparent, non-discriminatory, and applied effectively

- *Oftel should further enhance its consultative processes by establishing as a standard rule its general policy of indicating (when it publishes its final decision following a consultation) which elements of its original proposals were amended in light of the consultation.*

2. Reform regulations to stimulate competition and consumer benefits and eliminate them except where clear evidence demonstrates that they are the best way to serve the public interest.

As competition develops, the regulation of the telecommunications market should rely on competition law, and sector specific regulation should be reviewed periodically in order to streamline regulations. This requires Oftel to develop its policy established in its Statement on its Strategy (published January 2000) and to use its established policy of biannual reviews to attain its objective to minimise the extent of regulation necessary for effective competition.

Although streamlining has taken place e.g. in the price cap regime, there is scope for further streamlining. For example, some regulators have lifted price caps from the incumbent before the market is deemed to be effectively competitive but maintain oversight over the market to ensure that there is no abuse of market power.¹¹ Oftel’s regulatory powers have been strengthened, as the regulator has similar powers as the competition authority to apply the stronger Competition Act of 1998 so that it is well placed to ensure that there is no abuse.¹²

Oftel should maintain its policy not to regulate areas or activities where sufficient competition has emerged and is sustainable. Excessive regulation may hamper development of the full benefits of competition.

It is recommended Oftel maintain its policy that all market players should be able to request streamlining review and that, where it is no longer required because reliance can be placed on ex post regulation under the Competition Act existing sector specific regulation should be removed by Oftel.

The retail price cap should be reviewed more frequently than every four years; and the current review of the underlying costing methodology and funding of the Universal Service Obligation (USO) should be completed promptly to ensure that it is not placing a disproportionate burden on any operator.

As required by the new EU Communications Framework legislation and the implementation of its Directives the current complex and in some cases arcane licence rules should be fully reviewed and streamlined. Equally, the new UK communications legislation should provide OFCOM with sufficiently strong powers to penalise breaches of the rules in such a way as to provide a clear deterrent to the offenders and provide consumers and operators alike with the confidence that the rules will be swiftly and fairly enforced.

3. Review, and strengthen, where necessary, the scope, effectiveness and enforcement of competition policy

- *WLL services should be introduced to provide more competition in the local access market and stimulate broadband services.*

Considering the lack of nation-wide competition in the local access market, and the slow introduction of competitive broadband services based on ADSL, WLL services could stimulate both competition and the introduction of broadband services. Oftel and the Radiocommunications Agency should continue to have regard to competitive positioning of WLL alternatives and, where possible, design future awards of spectrum for WLL services to maximise their commercial viability and economic contribution.

Oftel needs to continue to take and reinforce pro-competitive regulatory measures to ensure fair access to end customers and should review whether the new fining powers under the Competition Act are adequate when the incumbent is not providing adequate levels of access or service to new entrants.

Since there is insufficient competition in the local loop, Oftel's role is critical to ensure fair access to end customers. To this end, the introduction of the unbundling of the local loop is commendable. Nevertheless, there have been numerous disputes between BT and its competitors over a wide range of aspects of LLU services. It is unfortunate, the BT's Condition 83, which requires it to unbundle its local loop was not brought into force before August 2001 by Oftel as operators had to wait its implementation before they were able to make requests for determinations to Oftel in respect of LLU disputes. Since September 2000, Oftel has put higher priority on this issue so new entrants can obtain direct access to subscribers and compete with the incumbent on a level playing field. However, BT's implementation of LLU continues to require close monitoring and rapid intervention by Oftel in the event that BT fails to meet its obligations. There may be a case for including more specificity in Condition 83 of BT's Licence to enable Oftel to resolve disputes more expeditiously than has been the case to date. The ability to rapidly impose fines would allow Oftel to ensure that the incumbent meets its requirements to provide adequate services and access to new entrants. Such powers could help speed up the process of unbundling, and local competition.

Oftel should not rely on co-regulation or self-regulation except in instances where there is no disproportionate asymmetry between the different market players, particularly between any player with market power and others. For instance, LLU should not have been left to a co-regulatory process.

Oftel should bring into early operation the system of cost/benefit assessments it is currently developing in respect of its proposals for continued or additional regulation.

In addition, Oftel should further develop and make public its system for assessment of the effectiveness of regulatory measures taken in the past when it reviews them.

Oftel's resources and skills should be strengthened to enable it to carry out Competition Act investigations more swiftly than has been the case to date.

NOTES

¹ In the United States long distance and international markets were theoretically liberalised ahead of the UK, but in practice competition was difficult prior to the agreement reached between the US Department of Justice and AT&T in 1982 (the Modified Final Judgement) under which AT&T was broken up into 7 Regional Bell Operating Companies (RBOCs) and a long-distance and international company (AT&T). Rules were put in place to regulate the inter-play between the RBOCs and AT&T and its other long-distance competitors but there was no competition at the local level. This was only fully introduced in 1996.

² Source: *Mobile Communications*.

³ Investment costs are considered as sunk costs.

⁴ In January 2002, OfTel published its consultation document on proposals for price controls from August 2002. The RPIU-X model would be replaced by “caps” on prices related to RPI but with the proposal that these caps would be removed once calls prices were significantly reduced

⁵ Review of Universal Telecommunications Services, OFTEL September 2000.

⁶ Professor Martin Cave, An Independent Review for the Department of Trade and Industry and HM Treasury, March 2002

⁷ For a general introduction to OFTEL’s policies and documentation in the areas of convergence see OFTEL’s web site (http://www.ftel.gov.uk/ind_info/broadasting/index.htm).

⁸ A full list of licensed operators is also available on the OFTEL web site (<http://www.oftel.gov.uk>).

⁹ OFTEL data.

¹⁰ Circuits between main switches, not including local switches.

¹¹ Regulation can itself interfere with the creation of effective competition.

¹² Concurrent power was not a new development. The sector regulators have long had concurrent powers to apply the then-existing competition law, such as it was. Concurrent power only became interesting after 1998 because the revised competition law finally was strengthened and the agency applying it could demand a fine for violations.