Activity Report 2002

of the

Federal Communications Commission (ComCom)

Federal Communications Commission (ComCom)

Marktgasse 9

CH - 3003 Berne

Tel.: 031 323 52 90

Fax: 031 323 52 91

Website: www.fedcomcom.ch

Table of contents

I. Summary and outlook

The advancement of the telecommunications sector is of particular strategic importance for the development of the Swiss economy, which is strongly orientated towards the provision of services. Furthermore, Switzerland can pride itself on an attractive, high-performance telecommunications market as some significant figures show:

At the demographic level, Switzerland ranks only twelfth compared to the 15 EU member countries. However, in terms of absolute figures, its telecommunications market is ranked seventh.[1]

Similarly, Swiss telecommunications users spend much more than other Europeans on their telecommunications (expenditure per person in Switzerland in 2001: € 1,485; European average in 2001: € 820). With the exception of those prices which are still relatively high (for mobile communications, for example), this shows the generally high living standards of Swiss citizens and their propensity to spend more on high-quality service offerings. Moreover, it is essential to include factors such as the use of internet in private households and businesses and the predominant position of the services sector in the Swiss economy, as well as the importance of telecommunication services for the many internationally acting firms.

Despite the unfavourable economic situation in general, the excessive indebtedness of quite many telecommunications companies abroad and the mistrust of the capital market, telecommunications are definitively still a dynamic growth sector.

The European Union (EU) estimates that the total turnover of the telecommunications sector would increase at an annual rate of 5% to 7% in 2002. Though this figure is lower than in previous years the EU finds that "a very healthy outlook in the light of average projected EU GDP growth of 1.0% for 2002".[2] For Switzerland too, the balance sheet is positive, particularly in view of the constant growth in mobile telephony. In addition, the share of the communications sector in the Swiss GDP last year reached a respectable level of 3.5 percent.[3]

To the economic factors must be added the positive development of the market as far as consumers are concerned – and on this point, everyone is agreed. The development over the last five years has shown that liberalisation of the telecommunications market is

---

1 With a market volume of 7.5 billion euros, Switzerland is just behind the 6 largest countries of the EU: Germany (82 million inhabitants), France (60 million inhabitants), Great Britain (59 million inhabitants), Italy (56 million inhabitants), Spain (41 million inhabitants) and the Netherlands (16 million inhabitants). See also the WIK report "Situation of the Swiss Telecommunications Market in an International Comparison", April 2002, Appendix V, p. 187 (www.bakom.ch).

2 8th Report from the EU-Commission on the Implementation of the Telecommunications Regulatory Package ("8th EU Telecom Report"), COM(2002) 695, Brussels, 3 December 2002, p. 3.

3 BAK Konjunkturforschung Basel AG: "Der volkswirtschaftliche Nutzen von mobiler Kommunikation und Datentransfer in der Schweiz", February 2002, a study carried out for Economiesuisse, p. 18.

beneficial for consumers and for Switzerland as a location for business. Consumers benefit from lower prices, a broader diversity of services and the phenomenal upturn in mobile telephony. In addition, the investment made by the new operators and Swisscom has exceeded all expectations made when the market was opened up.

A necessary revision of the general legal framework

At the beginning of 2002, following a decision by the Federal Court, the Commission was obliged to reject an unbundling request because of the absence of an applicable legal basis[4]. In the Commission's opinion, the restrictions placed on its margin of manoeuvre by the Federal Court in relation to interconnection and the prolonged interconnection procedures highlight some weak points of the existing legislation. These shortcomings, which are in contradiction to the objectives of the Law on Telecommunications (LTC), which aims to ensure attractive and varied offerings on the basis of effective competition, should be overcome.

As early as April 2002, the Federal Council had pronounced itself in favour of unbundling the local loop as rapidly as possible. This is why, in July 2002, it launched a consultation process on the introduction of unbundling on the basis of an amendment to the relevant decree, in parallel with the ongoing revision of the Law on Telecommunications (LTC). The public debate on unbundling is in danger of eclipsing some aspects of the package of major revisions for the future, such as improvements in consumer protection via the establishment of a conciliation body (see the chapter on "the secretariat") or the introduction of a fair, efficient regulatory model – the *ex ante* regulation.

Current "*ex post*" regulation unsatisfactory

According to the Commission, the current system of "*ex post*" regulation has proved to be cumbersome in practice and is hard pressed to meet the requirements imposed by dynamic markets. At present, the authorities cannot act on their own initiative on questions linked to interconnection; they can intervene only at the request of a provider. This *ex post* regulation involves very lengthy procedures, which are frequently needlessly prolonged by the parties involved. Valuable time is lost before the Commission is able to take a final decision; this often leads to unilateral distortions of the market to the benefit of providers who occupy a dominant position in the market.

For small businesses which are financially fragile, an *ex post* procedure presents a considerable financial risk, which they are frequently unable to assume. Moreover, the prices fixed by the regulator apply to the applicant only from the time at which the request was submitted. All the other players on the market benefit from the prices laid down only much later – from the time the decision enters into force. According to the Commission, it is essential to apply a flexible regulatory model to markets which include a dominant provider, in order to guarantee every provider legal security as soon as possible and in order to ensure general stimulation of those markets where competition is lacking.

[4] Explained in greater detail in the 2001 annual report.

Various European countries already have good experience of such a regulatory model; likewise, this form of *ex ante* regulation has become a key element in the new regulatory framework of the EU. If the current lack of compatibility with the EU were to continue, on the one hand serious problems might arise during the second round of bilateral negotiations. On the other hand, this regulatory divide might also send out a negative signal to investors.

Ex ante regulation, a more effective instrument for promoting competition

In general, the importance of every intervention in the market should be examined carefully beforehand and should subsequently be evaluated regularly. Throughout the initial phase of such an *ex ante* procedure, the Competition Commission (Comco)[5] must determine if a provider occupies a dominant position in a specific market or if competition is already effective in the market in question – *ex ante* regulation therefore assigns a key role to Comco. When there is market dominance, an extensive consultation procedure involving all the market players and interested parties is carried out before the regulator decides on possible regulatory measures. Contrary to *ex post* regulation, all the parties involved are included here, rather than just two parties.

When intervention in the market proves opportune in order to promote competition, the provider with a dominant position in the market would be obliged to draw up a reference offer in the market concerned. This reference offer is submitted to the regulator for approval and it is then valid for all providers from the commencement. Subsequently, these regulatory measures are evaluated periodically to verify whether they are still needed.

It is true that *ex ante* regulation allows the regulator to be directly active in certain market sectors – but only when a provider occupies a dominant position in a specific market. This regulatory instrument does not increase the decision-making powers of the regulator, nor does it effect a complete change in the system, but it does allow speedier intervention, shorter procedures and greater flexibility in imposing measures. Right from the start, *ex ante* regulation involves price equality for all players in the market and this stimulates competition. The possibility of intervening at an opportune moment also increases the legal security of the players and confidence in the market. The clear framework thus established also implies greater security at the level of investment and therefore provides an incentive to invest – which is clearly of benefit to the Swiss economy.

It should be borne in mind that the purpose of regulation is for it to become superfluous: it must encourage effective competition and finally lead to a situation in which regulatory measures in favour of the general right to competition can be lifted (deregulation). Within this perspective, *ex ante* regulation is more appropriate for achieving the goals efficiently.

One of the primary aims of the Law on Telecommunications is to promote effective competition in order to achieve in the interest of consumers a variety of good services at inexpensive prices. In 2002, the Federal Council made major efforts to improve the

[5] Comco itself has expressly welcomed the introduction of ex ante regulation within the framework of the consultation procedure on the revision of the LTC, describing it as an important new feature.

corresponding legal basis. The Commission noted with satisfaction the decision of the Federal Council on 26 February 2003 to introduce unbundling as quickly as possible, by way of an amendment to the relevant decree. Leased lines will also be subject to the interconnection regime – a change which should bring medium-term benefits to SMEs in particular, as well as to the other telecommunication services providers who use such lines.

On the other hand it is regrettable that the Federal Council decided to drop the proposal to introduce *ex ante* regulation, despite largely positive feedback from the consultation process, in particular from Comco.

The market for broadband services and the importance of unbundling

Switzerland, as a prosperous country, enjoys a high level of fixed connections, mobile telephones, IT equipment and internet access in both private households and businesses. Switzerland is thus fertile ground for the development of broadband services. This situation is confirmed by the explosion in sales, above all of broadband ADSL connections which have hitherto been used only by dedicated surfers. The demand for broadband services will increase considerably in the medium term with the introduction of new applications.

Thus the success of telecommunication services providers who do not limit themselves to offering niche solutions will in the very near future depend on their ability to transmit more than telephone calls and data. At present, the distinction between telecommunications via fixed and mobile networks and the new information and communication technologies is becoming increasingly blurred, a phenomenon which is often referred to as "convergence". This development provides telecommunications businesses with new and lucrative areas of activity such as content in the fields of entertainment and the media (TV, radio, video on demand, online games, etc.) or new forms of communication (e.g. video conferencing). Such applications require ever higher data transfer rates. In the course of its study trip, the Commission had an opportunity to see how the new VDSL technology makes it possible to transmit higher bandwidth broadband services along the ‘last mile’ of traditional copper cable. Using just one telephone connection, a family will be able simultaneously to make phone calls, surf the internet, watch television and download a film chosen by the family. This technological progress is expected to obviate the need for private households to replace copper cable with expensive optical fibre technology.

The key factor in the unrestricted longer-term development of broadband services is the evolution of competition over the last mile. Unlike mobile telephony, the connection to the fixed network – the "last mile" – is characterised by a single infrastructure which covers all of Switzerland and which it would be uneconomic to duplicate. In this area, incumbent enjoys a monopolistic position at the level of infrastructure and services. The other providers cannot access the last mile directly; as intermediaries, their only choice is to resell to end customers service offerings designed entirely by the incumbent. There is therefore no genuine competition.

Even the cable TV networks are not genuine competitors, since they do not cover all the

country and are only partially internet-compatible.[6]

After internal tests, Cablecom – by far the most important cable network operator, with a market share exceeding 50 percent – has announced that in 2003 it intends to introduce voice telephony in the form of a "Consumer Test Launch". If Cablecom's offer proves satisfactory, a second provider may propose a full range of fixed services via its own access network; however, from the viewpoint of competition, the formation of regional duopolies in place of a monopoly is not satisfactory. This situation is certainly expected to encourage Swisscom to introduce technological innovations to expand its offer in terms of media content. However, without access to the local loop, it is highly likely that it will be mainly the other fixed service providers who will feel the pressure of competition.

At least since mid-2002 has the strategic importance of the broadband services market for the telecom companies become apparent.. In fact, as in the rapidly expanding mobile telephony market, providers are trying to ensure customer loyalty by subsidising special offers (reduced-price ADSL modems, no installation charges). In other terms, the bitter struggle to win highly coveted market share has already begun and providers are being obliged to invest large amounts to win customers. In this area, the incumbent can make the most of its privileged position as a wholesaler. As for the other providers, they are having to make do with little margins.[7]

According to the Commission, these circumstances demonstrate the importance of opening up the last mile as quickly as possible, since if a market is liberalised when players have already consolidated their influence over that market, these configurations are difficult to change after the event. This is also the conclusion which can be drawn from the delayed opening-up, in terms of a European comparison, of the Swiss mobile telephony market: all Swisscom's competitors combined have only been able to win just over a third of mobile telephone customers. Furthermore, Switzerland not only has comparatively high charges for mobile calls, the division of its market is also clearly less advanced than in all the European Union countries.[8]

Unbundling alone can bring about genuine equality of opportunity in the market. In the medium term, unbundling would revive a market which has been stagnating for some time, whilst generating diversification of service offerings. Regardless of how competitive it is, even the incumbent would not be immune from this competitive pressure and the stimulus to innovate.

As for the other providers, unbundling would represent an opportunity for them, though one which would force them to invest heavily. In fact, it is up to those providers wishing to avail themselves of the opportunity to bear the costs of installing and housing the different

---

6 According to figures published by the media, at the beginning of 2003 Cablecom had almost 500,000 connections equipped for bidirectional communication, i.e. 33 percent of its 1.5 million connections. Swisscom has about 3.8 million ADSL-compatible telephone connections, or about 95 percent of its telephone connections throughout Switzerland (see the 17.02.2003 issue of the *Basler Zeitung*, p. 11, and the Swisscom press release dated 03.12.2002).

7 Competition Commission (Comco) has launched an inquiry on supposed discrimination by market players. Press release from the Comco dated 7 May 2002.

8 See chapter "Market development: key figures and statistics", fig. 2.

kinds of equipment in the incumbent's local exchanges. However, it should be pointed out that the providers would subsequently be able to freely choose the transmission technology they use and offer their customers either a full range of services or services tailored to customers' wishes. In this way, consumers would benefit from new possibilities of choice and lower prices.

Such a dynamic would have positive repercussions on peripheral regions too, since they will benefit from a uniform price for unbundled lines. Alternative operators will gradually be able to extend their service offerings into certain areas, introducing competitive pressure in regions where the offering has not been diversified to date.

If the broadband market were unbundled, Swisscom would also be one of the best placed in that market. Indeed, not only does it have the largest and a rather loyal customer base, but it also has much greater experience than the other providers. In addition, the fall in prices would result in a notable increase in the volume of the market for broadband services. The incumbent would be best placed to profit from this, provided it offers competitive services – this mechanism has already been observed in the mobile telephony sector. It must be emphasised that nothing will be "taken away" from the incumbent. It would merely be obliged, at customers' request, to lease certain lines to its competitors at a fair and reasonable price, which moreover, includes an element of profit.

Universal service

During the reporting year, the universal service licence was re-allocated for the first time. The Commission awarded the licence to Swisscom Fixnet SA, a 100% subsidiary of Swisscom SA, for a term of five years. In this context, it should be pointed out that unbundling in no way prejudices the universal service. The latter remains assured in its entirety.

The mobile telephony market

At the beginning of 2002, the question of sharing the infrastructures of the UMTS[9] networks was being discussed throughout Europe. The providers' main argument consisted of the possibility of reducing network construction costs. The Commission monitored the recent development of network components and in January 2002 it arrived at the conclusion that the UMTS licences are sufficiently flexible to establish a broadly shared radio access network. Nonetheless, no operator has yet announced a concrete project.

The Commission furthermore decided in June 2002 to remove from the UMTS licences the obligation to cover 20 percent of the population by the end of 2002. It did, however, introduce continuous monitoring of network construction as of 2003. The obligation to cover 50 percent of the population by the end of 2004 remains in force. This change in the licences was decided on the basis of the following circumstance: contrary to expectations

[9] UMTS: Universal Mobile Telecommunications System; third-generation mobile telephone system

a couple of years ago, which were prevalent until the end of 2002, neither multimode terminals nor UMTS-specific services were available or ready to market.

There is a well-founded hope that the mobile telephony market will continue to expand – albeit more slowly – despite the difficult economic conditions. The rate of market penetration has recently risen to 79 percent and is therefore around the average for the countries of western Europe. This technology is one of the few to have established itself so quickly and so permanently that it is now considered as indispensable. In any event, mobile telephone users seem to be continuing to communicate lively, despite the difficult economic situation in the sector.

Notwithstanding this, GPRS[10] technology running on GSM[11] networks has thus far not been very successful, particularly because few new services requiring high transmission capacities have been introduced. However, it is possible that this technology will continue in use for a time and that UMTS will be introduced as an addition only at locations characterised by intensive usage.

The development of new software and multimedia services is making slow but sure progress: in addition to text and sound, images and video are becoming more and more important, for example in the areas of MMS[12], games or news services featuring short video clips. However, UMTS – with its high transmission capacities – becomes essential only for transmission of large volumes of data or of real-time video (e.g. the videophone). Some time will elapse before these interactive multimedia services reach the broader public; indeed, a given number of multimedia terminals will have to be sold before use of the corresponding services is of any interest.

A number of countries have announced the start-up of UMTS networks for early 2003 (Austria, UK, Italy). Similarly, “bimode” mobile telephones (GSM/UMTS) are beginning to be marketed or have been announced (Motorola, NEC, Nokia). At the end of 2002, however, it remained difficult to solve the hand-over problem between GSM and UMTS cells, a hand-over which would have to occur automatically and without any interference.[13] It should also be mentioned that an adequate power supply remains a delicate subject.

And as if the uncertainty was not great enough and hesitation fairly common among mobile telephony providers who are already bearing the burden of heavy investment, we have to add the rapid spread of a low-cost technology, WLAN[14]. This technology, used in a stationary manner at points with high traffic ("hotspots") features a data transfer rate of up to 10 Mbit/s. Of course, it does not represent a replacement solution for the country’s mobile telephone networks, but WLAN will hive off some mobile telephone communications at central points. In the meantime, numerous operators are jumping on the WLAN bandwagon on the basis of rosy forecasts.

---

10 GPRS: General Packet Radio Services
11 GSM: Global System for Mobile Communication; second-generation mobile telephone system.
12 MMS: Multimedia Messaging Service
13 Study: "Mobile Operators", conducted by Arthur D. Little/Exane, November 2002, p. 21.
14 WLAN: Wireless Local Area Network

Promoting the information society

In order to increase Switzerland's attractiveness as a location for business, the Federal Council and parliament want to be at the forefront of the development of the information society. Internationally competitive, high-quality, value-for-money telecommunications services are a decisive prerequisite for this. Thus the positive results of opening up the telecommunications market also support the development of a mobile information society.

The Commission welcomes the active efforts by the Confederation to promote the concrete application of the new information and communications technologies (ICT), especially in the areas of education and e-government.
In order to get the population to accept these new technologies, it is important to tackle the question of how to make use of ICT whilst at the same time exercising social responsibility; in the view of the Commission it is also necessary to analyse the repercussions of these technologies on society and on the economy. Not only must all schools be able to benefit from internet access, but teachers must also be trained in the pedagogical and didactical good use of ICT, so that important know-how for the future can be learned in the schools.

This is precisely the intention of the broad initiative "Public Private Partnership – Schools on the Net"[15], which is being implemented by the Confederation, the cantons and the private sector. This programme consists of three major areas: further education for teachers, the provision of educational content on the Swiss educational server[16] and connecting all schools to the internet. In higher education, the Confederation has launched the "Swiss Virtual Campus"[17] e-learning programme to provide electronic teaching modules.

The hope of greater efficiency and transparency in the administration is associated with making the most of the new possibilities in the area of e-government. One of the key projects is the "Guichet Virtuel". This virtual information desk "www.ch.ch", operated by the Federal Chancellery, is online since February 2003 and is currently undergoing a trial phase. It is intended to facilitate access to the online services proposed by the project's partners, i.e. the Confederation, the cantons and the municipalities. In the area of e-voting, pilot projects are currently in progress in the three cantons of Neuenburg, Geneva and Zurich.

Within the framework of promoting confidence in ICT, questions related to user security are also becoming more important. The EU, for instance, is working on harmonising data protection and the establishment of a "cybersecurity task force", which is expected to be operational by the end of 2003. In Switzerland, a body has been set up to fight internet crime – the Swiss Coordination Unit for Cybercrime Control (CYCOS), to which it will be

[15] www.ppp-sin.ch
[16] www.educa.ch
[17] www.virtualcampus.ch

possible to report dubious content published on the internet; this body is also conducting investigations itself into this subject.[18]

[18] www.cybercrime.admin.ch

II. The Commission and its secretariat

1. The Commission

In the past year the composition of the Commission remained unchanged.[19]

The Commission met in 2002 for ten meeting days. The time spent by all the Commission members is considerable: to the Commission sessions must be added a whole series of decisions taken by way of circulation, which have to be carefully prepared. In addition, it is necessary to include the preparation time for the various sessions spent by the Commission members (1 to 2 days per session), as well as the time essential for ongoing training in an area which is constantly evolving.

2. The secretariat

During the reporting year there were no changes to the secretariat's personnel. The Commission is assisted by a team of three, who are responsible for coordinating affairs, organising the work of the Commission and providing the public with information. The administrative secretary and the scientific officer are 60% posts; only the secretary general of the Commission works full-time.[20]

It is important to point out that in addition to the work it performs in accordance with its competencies, the secretariat's workload is increasing considerably because of the growing number of questions and complaints it receives on some very diverse topics – as is also the case for OFCOM. It is therefore apparent that the telecommunications market needs a specialist conciliation body. Given that the telecommunications sector has so far made no moves in this direction, the Federal Council has proposed that such a body be established within OFCOM as part of the current revision of the Law on Telecommunications (LTC). However, it should be noted that the industry has taken the initiative in the mobile telephony market: since November 2002, the mediation body "Mobile Communication and the Environment" has been performing the role of a mediator in this market. However, this body will initially devote itself exclusively to the impact of mobile communications on the environment.[21]

[19] See Appendix I: List of Commission Members.
[20] See Appendix II: The Secretariat employees.
[21] See website: www.omk.ch

3. The Commission's website

As indicated in the preceding report, the beginning of 2002 was devoted to modernising the ComCom website. The new version has been online since 1 July 2002 at www.fedcomcom.ch.

Navigation and access have been simplified by adopting a structure which is generally clearer, notably by adding several sub-menus, hyperlinks and short-cuts.

The use of Flash technology also allows attractive, modern, high-quality graphics to be used, as well as new functionalities such as the glossary, or subscription to the mailing list, which exists to foster contact with the public.

Finally, the new site now has a section in Romansch. Although it is limited to presenting the Commission, its main areas of competency and its members, it nevertheless represents a progress for a linguistic community which is often neglected.

III. Activities of the Commission

1. Interconnection

Interconnection allows interlinking of different telecommunications networks and services, by obliging market-dominant operators and all providers of services forming part of the universal service to guarantee access to their network for other providers[22]. Thus it allows operators who do not have their own network or who have only an incomplete network to offer their services to customers.

The Law on Telecommunications (LTC) stipulates that before being able to submit an application for interconnection, providers must first try to come to an agreement by way of negotiation (the primacy of negotiation). If no interconnection agreement can be reached within three months, the provider may lodge a request with the Commission for an interconnection decision to be taken. The matter is then investigated by OFCOM. When there is a question as to whether one provider occupies a dominant position in the market, it is necessary to consult the Competition Commission (Comco). Before the Commission lays down interconnection prices and conditions, the parties to the procedure have another chance to reach an amicable agreement within the framework of conciliation negotiations. However, right from the start of the procedure the Commission may impose provisional measures in order to guarantee interconnection during the procedure.[23]

1.1. Unbundling: diAx vs. Swisscom

On 31 July 2000, the diAx company (now TDC Switzerland AG) submitted to the Commission an interconnection application aimed at obtaining unbundling.

Since Swiss telecommunications law does not explicitly provide for the unbundling case, it was a matter of interpreting the law to see if unbundling constitutes a case of the application of interconnection according to the LTC and if the current legal arrangements are sufficient to oblige Swisscom to unbundle the local loop.

As indicated in the 2000 annual report, the Commission imposed provisional measures on 9 November 2000. The appeal lodged by Swisscom against this decision was upheld by the Federal Court on 13 March 2001, and for this reason it was not possible to apply these provisional measures.

Another decision, taken by the Federal Court on 3 October 2001 in the Commcare case[24], was even more decisive: it was not in fact a matter of unbundling but of interconnection of leased lines. The Federal Court arrived at the conclusion that leased lines must not be

[22] Art. 3, lit. e, and art. 11 LTC.
[23] On the interconnection procedure, see art. 11, para. 3, LTC and art. 49-58 DTS.
[24] See annual report 2001

considered as a case of interconnection, since they are not expressly mentioned as such in the Decree on Telecommunications Services (DTS). Moreover, the Federal Court has already expressed itself on the question of unbundling in its general reflections on the interpretation of the legal arrangement for interconnection. By deeming the existing legal arrangements inadequate for submitting leased lines to the interconnection regime, the Federal Court has also permanently restricted the Commission's margin of manoeuvre in relation to the interpretation of unbundling.

Since ComCom is obliged to comply with the Federal Court's interpretation of the law, it had to reject the application by diAx (now TDC) for unbundling of the local loop.

Whilst publishing this decision, the Commission nonetheless determined that it is appropriate to intervene urgently in order to promote competition and technological innovation. In this way the Commission made known its wish that the Federal Council should subject both leased lines and unbundling to the interconnection regime by way of amendment to the relevant decree. The Federal Council acknowledged the urgent nature of the matter and pronounced itself in favour of such a solution at the end of April 2002. In July, it issued for consultation a draft revision of the LTC and two decrees (DTS and the Decree on Addressing Resources in the Telecommunications Sector). On 26 February 2003, the Federal Council published the results of this consultation as well as its decision to subject leased lines and unbundling to the interconnection regime.

As a result of this explicit assimilation of leased lines and the three forms of unbundling as interconnection services in the DTS, it will henceforth be possible to require a market-dominant operator to provide these services at cost-based prices. Furthermore, the interconnection procedure is applied in the event of a dispute and the principle of the primacy of negotiations is, accordingly, also valid: it is possible to lodge an application for interconnection with the Commission only after at least three months of negotiations. It is therefore quite possible for providers to reach an agreement without having recourse to intervention by the authorities.

Unbundling allows all providers access to the last mile which paves the way for increased competition in the market for broadband services. For Switzerland, a service-based economy *par excellence*, development of this extremely promising market is an essential factor for our country as a location for businesses. Switzerland should seize the chances offered and play a pioneering role in the development of the information society.

The Commission is convinced that this opening-up of the market should take place as quickly as possible so that no operator manages to achieve such a position of dominance over the market which would subsequently be difficult to correct or reform – as was the

case in the mobile telephony market, which was liberalised only with some delay. Without access to the last mile for other providers, competition is not strong enough to encourage innovation and investment. This would slow or even block technological progress, since the incumbent's competitors would not be free to choose the technology they wish to use.[25]

1.2. Procedure concerning the "Long Run Incremental Cost" (LRIC) calculation model: MCI Worldcom vs. Swisscom, and diAx vs. Swisscom

Market-dominant telecommunication services providers are obliged to guarantee interconnection with regard to other providers at cost-based prices.[26] Since 1 January 2000, interconnection prices have no longer been based on total historic costs but on the modern equivalent assets. In the two interconnection procedures mentioned above, since 2000 prices for a series of specific services have had to be based on the relevant costs, in accordance with the "Forward Long Run Incremental Costs" (LRIC) model. This calculation model was established on several internationally recognised principles, which have been detailed by the Federal Council in art. 45 of the Decree on Telecommunications Services (DTS). The use of the LRIC model makes it possible not only to calculate the costs which are actually relevant to a service, but also simulate the expenses, investments and therefore prices which would apply to an efficient provider in an environment of dynamic competition. For OFCOM, the authority which investigates such interconnection cases, this procedure implies, in addition to long legal procedures, very detailed economic research requiring the assistance of numerous collaborators – and this for the most part explains the lengthiness of these procedures.

It should be noted that the Law on Telecommunications concedes the right and the possibility for a market-dominant provider to prove concretely what its costs are. It is only when the provider does not provide justification for its costs that the Commission can fix prices, notably on the basis of comparative values in accordance with market practice and values at the international level (benchmarking).[27]

To facilitate justification of costs, OFCOM has carried out a detailed and extensive survey of Swisscom's costs, so that the applicable costs could be verified and those which were not pertinent could be filtered out. In view of the fact that according to the DTS[28] costs must be based on the expenditure and (theoretical) investment of an efficient provider, it was necessary to simulate a network in Switzerland which had been constructed to be as efficient as possible. The information and data on the development of demand drawn from

[25] On this topic, see the explanations given in the chapter "Summary and outlook".
[26] Art. 11, para. 1, LTC.
[27] Art. 58, para. 3, DTS.
[28] Art. 45, para. 2, DTS.

the cost analysis were used for the calculations based on this model. If, once this long and exacting work is complete, no agreement is reached between the parties after the conciliation negotiations in early 2003, OFCOM will be able to submit a decision proposal to the Commission.

1.3. Interconnection prices for calls from the fixed network to the mobile telephone networks (mobile termination)

At the end of 2002, two new interconnection procedures were initiated relating to the wholesale prices of calls from the fixed network to mobile telephone networks. These procedures were transferred to OFCOM for further investigation. Both interconnection procedures were withdrawn in the beginning of 2003.

2. Licences

As the licensing authority, the Commission is responsible for granting all licences in the area of telecommunications. However, the Commission has delegated the responsibility for granting the following types of licences to OFCOM[29]: licences for telecommunication services which are not subject to a tender procedure (fixed services, for example), and radiocommunication licences which are not intended for the provision of telecommunication services (for example, radio licences for amateur radio operators or for transport companies' private radio links). Here we shall deal only with those licences granted directly by the Commission.

The major events of the reporting year were the award of the universal service licence and the change to the coverage obligation in the four UMTS licences. In view of the development of UMTS technology, the Commission considers that extensive common use of the radio infrastructure is possible. As far as the other licences which have already been granted are concerned, they have, in certain cases, been amended or transferred.

2.1. The universal service

The Federal Office of Communications (OFCOM) was commissioned by the Commission to put the universal service license out to tender on 27 November 2001. According to expectations, only one company had submitted its candidature by 1 March 2002: Swisscom Fixnet AG, a 100% subsidiary of Swisscom AG. In its tender, Swisscom did not make any demands for an investment contribution to cover any uncovered costs as a result of the universal service obligation.

[29] Art. 5, para. 1, LTC and art. 1, para. 1, Decree of the Federal Communications Commission on the Law on Telecommunications (RS 784.101.112).

After OFCOM had evaluated the comprehensive bid documents, the Commission was able grant Swisscom Fixnet the universal service licence in early June 2002, for a five year term. The universal service licence, awarded for the first time on the basis of a competitive tender, entered into force on 1 January 2003.

The licensee is obliged to provide services defined as forming part of the universal service to all categories of the population in all the regions of the country. These services include an analogue or digital telephone connection, additional services (such as call diversion or a bar on outgoing calls), emergency call numbers, entries in subscriber directories, public call boxes and services for the visually and hearing impaired. The universal service to the population is now fully guaranteed throughout Switzerland – and will remain so in the future.

In conclusion, we note that the Commission is obliged, under the Law on Telecommunications (LTC), to put the telecommunications universal service licence out to tender periodically and to award it on the basis of certain criteria. It is up to the Federal Council to adapt the content of the universal service regularly according to social and economic requirements and to developments in technology. It complied with this obligation at the end of October 2001 with a view to granting the licence. Here are the main new features[30]:

- Connection: the ceiling price for an analogue connection remains unchanged, i.e. CHF 23.45 / month (excluding VAT). Henceforth, users can request a digital connection (e.g. ISDN) for a maximum price of CHF 40.00 / month (excluding VAT). Another new feature is the introduction of an installation charge for connections (a one-off charge of CHF 40.00) which also applies in the case of a house move.
- Call charges: the Federal Council imposed upper price limits for national calls only. These upper price limits have been revised downwards as a function of the actual development of the market (standard tariff CHF 0.11, low tariff CHF 0.09 and night-time tariff CHF 0.06, excluding VAT). The introduction of the so-called closed numbering plan on 29 March 2002 means that it will no longer be possible to identify local calls as such.
- Public telephones: the extent of the obligation to provide these was reduced in terms of both quantity and equipment, since the demand for public callboxes is constantly falling as a result of the growth in mobile telephony. In principle, however, each political municipality continues to have the right to at least one public telephone. Depending on the population, geographical extent and structure of the municipality, additional callboxes may be involved, Swisscom will determine the location together

[30] For additional information, see the DETEC press release dated 31 October 2001 and the decree of 31 October 2001 on telecommunications services (status as of 22 January 2002).

with the municipality concerned.

2.2. UMTS licences

At the end of June 2002, the Commission decided to ease some of the coverage conditions contained in the licences and to adapt the four UMTS licences as follows.

The UMTS licences granted in January 2001 obliged operators to offer commercial UMTS services on their network to 20 percent of the population by the end of 2002 and to 50 percent by the end of 2004. The Commission has, however, decided to lift the first strict condition according to which the UMTS service must cover 20 percent of the population. Nevertheless, the obligation to achieve 50 percent coverage remains in force. A new measure introduced means that OFCOM will now be responsible for ensuring continuous monitoring, obliging the operators to report periodically on progress in network construction. In the event of any problems, this solution will allow the authorities to react flexibly and in good time.

All the UMTS licensees benefited from this decision, since, contrary to other forecasts made a year ago, no operator has yet offered commercial services on the UMTS market.

ComCom's decision aims to ensure that UMTS is not introduced until the technology and the market are ready for it. Operators are free to choose for themselves the date of their market launch. However, because OFCOM will be monitoring them, they will not be able to remain inactive. As soon as quality services and terminals are available, the earliest possible market launch will no doubt be advantageous for operators – there is definite competitive pressure in this direction.

For the Commission, it was decisive that the circumstances prevailing in mid-2002 in no way correspond to the forecasts which were being made when the licences were granted: when the four UMTS licences were granted in the year 2000, experts expected a launch in 2002. These forecasts, however, have not materialised; because of the crisis in the telecommunications sector, delivery deadlines have been repeatedly pushed back. UMTS technology seems to be available now, but it is not yet sufficiently mature. Moreover, construction of a complex network infrastructure and extensive functional testing still requires quite some time.

The Commission's decision was also strongly influenced by the fact that no UMTS-specific applications were ready for launch and that there was a shortage of terminals at that time – a situation which had changed little by the end of 2002. However, it is precisely in the initial phase that there will be a need for multimode terminals which work not only on the limited UMTS networks but also with GSM and GPRS technologies. Since the end of 2002, manufacturers have begun to announce that such terminals are ready for the

market.

GPRS technology, which works on the current GSM networks, is often considered to be the forerunner of UMTS, in terms of services and transmission capacity. To date this technology, introduced after some considerable delay, has not had any real success and hardly any new services have been introduced which require the high transmission capacities offered by GPRS.

In view of this new situation, the Commission will not force operators to construct a network by the end of 2002. In order to avoid not only disappointing experiences, as was the case with the launch of WAP, but also premature investment in an as yet immature infrastructure, it must be possible to offer a sufficient number of terminals and attractive services as soon as operators enter the market.

Infrastructure sharing in the UMTS networks

The Commission has continued to monitor carefully the technological evolution of the elements of the UMTS networks and, in January 2002, reached the conclusion that the UMTS licences are sufficiently flexible to construct a broadly shared radio access network. It is therefore not necessary to make any changes to the UMTS licences on this point. By interpreting the licences in this way, the Commission is following the same approach as that chosen by other European countries such as Germany and France.

Partial co-use of these infrastructures could mean possible savings with regard to network construction. However, the very strict Swiss limits imposed by the decree on protection from non-ionising radiation result in a reduction of the desired beneficial effects of infrastructure sharing, i.e. no important reduction in the number of antenna sites.

The progress in network technology which has been made allows certain network components to be treated as a single physical entity, but logically distinct, i.e. as network elements which can be controlled separately. The indispensable independence of operators will not be compromised if network elements are logically controlled separately, since operators retain control over the frequencies allocated to them individually (no frequency pooling). [31]

Concrete models for co-use of infrastructures will be examined by the Commission on a case-by-case basis. Although in the spring of 2002 it was discussed a lot about infrastructure sharing as an important measure for reducing costs, the Commission has as yet not received any corresponding request.

In the interests of protection of the environment and the landscape, the Commission had already obliged the GSM and UMTS licensees to co-use antenna installations (operations building and antenna mast), in so far as sufficient capacity was available and this was

[31] See the notice on "infrastructure sharing" on the Commission's website: www.fedcomcom.ch.

technically, economically and legally feasible. The licence also provided for co-use of antennas and of their link to the base station (Node B). By interpreting the licences as it did in January 2002, the Commission concluded that co-use, in particular of Node B and of the Radio Network Controller (RNC), was also acceptable, as long as these elements can be controlled independently by each of the sharing partners.

2.3. GSM licences

As far as the GSM mobile telephony licences are concerned, there was no change during the year 2002. Of note is the fact that in the past year all three providers achieved minimum coverage levels of 95 percent of the population and almost 55 percent of the surface area of Switzerland, thereby complying with the coverage obligation laid down in the licences.

Although the problem of radiation from mobile telephone antennas does not fall within the competency of the Commission, it seems appropriate to state that, despite the entry into force of the decree on non-ionising radiation in February 2000, the implementing provisions were not adopted until June 2002, after prolonged and controversial discussions. In particular, these concerned the method of measurement, taking into account the measurement accuracy and the definition of the term "installation". Uniform application of the decree in all cantons has been achieved and legal security has certainly been increased as a result.[32]

Consultation on granting of additional frequencies for GSM

Following a change of frequencies for the army drone system (ADS 95), some frequencies were freed up for civil use – a bandwidth of 2 x 25 MHz in the 1800 MHz GSM frequency band. These are therefore being reserved for mobile telephone systems based on the GSM standard.

As part of the preparatory work for the award of these frequencies, OFCOM conducted a public consultation procedure on behalf of the Commission between the months of September and October. The consultation is intended to obtain responses from interested parties on questions such as market development, existing demand for these frequencies and the procedure to be followed for the granting of the licence. On the basis of OFCOM's evaluation of the consultation, the Commission will decide how to proceed in 2003.

[32] See DETEC press release dated 28 June 2002: www.uvek.admin.ch

2.4. WLL licences

Before the granting of these licences in 2000, some extremely optimistic forecasts were circulating regarding the chances of WLL technology succeeding in the market, and this was reflected in the results of the auction.[33] These forecasts were unfortunately not confirmed – notably because of the changed economic conditions in the sector – and future prospects remain highly uncertain. As the supervising authority, OFCOM will have to verify regularly that the minimum operating obligation is in fact being complied with by licensees. At present, it can be stated with certainty that WLL technology, contrary to previous expectations, does not represent a viable replacement solution to Swisscom's last mile.

The past year has seen a number of changes and transfers of WLL licences to companies which intend to continue to offer WLL services to a few remaining customers or to develop new uses for this technology.

3. Numbering plan

The growth resulting from liberalisation on the one hand and the evolution of technology in the telecommunications market on the other have considerably increased demand for numbers. The Commission decided in March 2000 to introduce the "closed numbering plan" on 29 March 2002, so that addressing resources can be guaranteed in sufficient quantity. The closed numbering plan (the same format for local and national calls) makes the allocation of blocks of numbers also very flexible.

Since the end of March 2002, the national destination code must be dialled for all calls, even local ones. Telephone numbers remain unchanged and the code is integrated into the number. This new system applies to all fixed network and mobile telephone numbers (including ISDN and fax numbers). Emergency numbers and short numbers still have three digits and are always dialled without the code.

Thanks to the work performed by OFCOM, which was responsible for implementing the plan and coordinating the preparatory technical and publicity work for the introduction of the new numbering system, the integration of the national destination code into numbers from 29 March 2002 took place without any problems or technical difficulties.

Telecommunication services providers made the technical changes very quickly and these changes caused no interruptions or difficulties for users.

It may be useful to point out that widespread discussions on changing the numbering plan began back in 1996. Interested parties, including consumers' associations, were consulted

[33] See annual report 2000.

at all stages of this process. The common goal was to keep costs to a minimum. The total package adopted by the Commission in March 2000 was a compromise solution which takes into account international developments and will also make it possible to establish the essential basis for introducing geographical number portability. This will allow businesses and individuals to make genuine savings throughout Switzerland.

Apart from integrating the national destination code into numbers, the plan of March 2000 includes, in a second stage, the migration of 01 numbers to 044 numbers and the introduction of a new supplementary code, 043, for the Zurich numbering zone. The 043 and 044 network groups have been live since April 2001 and available for calls from Switzerland and abroad. The first users in the Zurich region (e.g. the cantonal administration) are already using 043 and 044 numbers.

In order to minimise costs, the migration from 01 numbers to 044 numbers was deliberately spread over 7 years. All allocated 01 numbers will be automatically replaced by the same 044 numbers. In addition, long-term parallel operation is envisaged (from 2005 to 2007), which means that for these two years all users of 01 numbers will be able to be called simultaneously using the two numbers (01 and 044). Consumers can therefore freely choose the time at which they make the switch from one number to the other. It is consequently possible to implement the necessary changeovers economically during routine technical maintenance work, or when printing new letterheads, for example.

Other arguments also speak in favour of the migration of 01 numbers to 044 numbers. If all telephone numbers in Switzerland are of uniform length, this will simplify the introduction of geographic number portability without the risk of confusion for users. The number of misdialled calls to the emergency and rescue services will fall considerably and it will be possible to call short numbers from abroad.[34]

In the course of the past two years, no objection has been raised either to this overall plan or to the migration of 01 numbers to 044 (leaving the actual telephone numbers unchanged). Since May 2002, this migration has attracted some criticism. Therefore the Commission is currently examining the different arguments.

4. National frequency allocation plan

As provided for in the Law on Telecommunications (art. 25, para. 2), at OFCOM's request the Commission approved the new frequency allocation plan, which entered into force on 1 July 2002. This plan specifies the different frequency bands allocated in Switzerland and provides an overall view of the use of the frequency spectrum in the country, indicating the

[34] For a detailed explanation, see "Documentation on the migration of 01 numbers to 044 within the framework of the March 2000 Numbering Plan" on the Commission's website: www.fedcomcom.ch/comcom/e/autres/Migration01.html

current or planned mode of use of each band, most often coordinated at international level.

As in previous years, a number of editorial and material changes were made to the frequency allocation plan, deriving for the most part from CEPT provisions and the results of international conferences. For example, there were changes in the 410-418 MHz and 420-428 MHz frequency bands (Tetra/Tetrapol), and these will allow new local PMR/PAMR networks to be constructed. Moreover, the 1215-1240 MHz frequency band was reserved for the preparation of the introduction of the European Galileo satellite navigation system.

With regard to the utilisation of frequencies, it should be noted that CT1+ and CT2 cordless telephones are protected from interference only until the end of 2005. OFCOM has informed the relevant specialist sectors of this several times and will also be responsible for informing the public at large. As an alternative, it will be possible to make use of the DECT system, which is harmonised at European level.

5. Carrier (Pre-)Selection

Generally, carrier (pre-)selection is working perfectly.

In this context, however, it should be pointed out that the Federal Office of Communications (OFCOM) has taken a decision against Swisscom as part of a supervisory procedure.[35] The Office established that Swisscom had abused confidential data for marketing purposes and for the control of bundled services. Swisscom had acquired this confidential data as part of its interconnection relations with other operators regarding the carrier selection service.

OFCOM has forbidden Swisscom from making any unlawful use of these confidential data and has estimated the illicit profit made in this way at CHF 2 million, which Swisscom must surrender to the Confederation.

Swisscom Fixnet AG has lodged an appeal against this decision with the Appeals Commission of the Federal Department of the Environment, Transport, Energy and Communication.

[35] OFCOM press release dated 14 November 2002. OFCOM took this decision instead of ComCom because of the following legal situation: The Commission gave OFCOM the authority to grant telecommunications services licences which are not subject to a tender procedure (article 1 of the ComCom decree). According to article 58, para. 4 LTC, in such a case OFCOM may decide on its own which measures are to be taken.

6. Measures taken under supervisory procedures

As the supervisory authority, OFCOM monitors compliance with the provisions of the law, decrees and licences. If an infringement of licences or violation of the applicable law is suspected, OFCOM initiates a supervisory procedure. Where applicable, OFCOM makes a proposal to the Commission which then decides on the measures which are necessary.[36] These range from obliging the provider to rectify the fault, the imposition of supplementary conditions on the licence through to the revocation of the licence. If licences or decisions are not complied with, the Commission may additionally impose administrative penalties.[37]

In 2002, the Commission had to impose administrative penalties only in one particular case: a company had repeatedly contravened an OFCOM decision, by not providing the data required to produce the official telecommunications statistics.

7. Study trips by the Commission

During the summer of 2002, the Commission's annual study trip took the form of a two-day visit to Munich, where, in addition to themes specific to telecommunications such as the new broadband technologies or mobile telephony, it looked at innovations in transport telematics. For the Commission, it was particularly instructive to become more acquainted with the development of practical telematics applications, which combine telecommunications and informatics.

Telematics is being used more and more to solve transport and mobility problems, which are constantly increasing. Thus solutions using transport telematics make it possible to tackle problems such as improving road safety, managing traffic efficiently and reducing the negative environmental impacts of transport. It should also improve passenger comfort and information services intended for transport users.

The visits to Siemens and the BMW research division showed that transport telematics will undoubtedly become a major segment of the mobile telephony market, due to the growing integration of different modes of transport. Finally, it should not be forgotten that the number of "mobile hours", i.e. the time in which a person is moving around, has increased steadily in recent years.

In concrete terms, work is being performed both on simple devices (to collect statistical data on transport, for information for transport users, either on board vehicles or at the roadside), on information systems to improve traffic flow or on cases of emergency, as well as on complex mobility management concepts in population centres such as Berlin or

[36] If the Commission has delegated OFCOM the authority to grant certain licences, OFCOM may decide on its own which measures are to be taken. See art. 58 LTC.

[37] See art. 60 LTC.

Munich.

A specialist research institute, Fraunhofer ESK (Einrichtung für Systeme der Kommunikationstechnik), focuses its research on communications and transmission systems for modern broadband network structures in the local access area and in-house networks. The reports on this subject have demonstrated, moreover, that in the near future new DSL technologies will enable considerably higher data transfer rates than ADSL – which is currently the technology being used to launch broadband services onto the market – using the last mile of traditional copper line. It will, for example with VDSL, be possible to make telephone calls, surf the internet, watch different TV programmes and view films one has chosen oneself at the same time via this copper line. This technology therefore opens up a multitude of new prospects for telecommunications companies. It also means that the copper cable used for private household telephone lines must not be replaced in the medium term by costly optical fibres.

Once more it must be emphasised how important it is for the Commission, whose activities are often orientated towards the future, to be actively informed of developments in different technologies.

IV. Market development: key figures and statistics

In this section, ComCom usually presents some figures[38] which provide a brief overview of the development of the telecommunications market in Switzerland.

It should be pointed out that in law OFCOM has the task of drawing up the official telecommunications statistics every year. However, because of the incomplete nature of the sources available at the time of drafting this report, we are not able to provide results in the degree of detail which we would wish. For more detailed information, we would advise readers to consult the OFCOM website[39].

The number of **telecommunication services providers** in Switzerland continues to increase, even though the growth which began with liberalisation of the market in 1998 has slowed down. Thus at the end of 2002 there were 359 providers, or 11 more than in the previous year (+3 %). These include 161 providers (+ 5) subject to compulsory registration, 128 (- 3) with a licence and 3 with a GSM mobile licence. Despite the considerable number of telecommunication services providers, the total number of interconnection agreements, which increased only very slowly until last year, was a mere 51 at the end of 2002[40].

As far as the use of the **fixed telephony** infrastructure is concerned, the reduction in the number of analogue connections continues (-1.9%), to the benefit of ISDN digital connections (+10%). The total number of access lines to the telephone network (number of available channels) is also growing at about 2.6% per year[41]. The ever growing attractiveness of DSL-type broadband connections which is evident this year explains the drop in interest in ISDN connections.

Despite a penetration rate approaching 73% at the end of 2001, the growth in the Swiss **mobile telephone market** continued this year, reaching 79% at the end of 2002. Such a rate places Switzerland on the European average. It is also significant that the number of

[38] For information, note that the collection and processing of the data acquired from all the telecommunication services providers do not allow an analysis to be provided the same year. Also, the above figures published by OFCOM are estimates produced from data obtained from the main telecommunication services providers in Switzerland as well as sources available within OFCOM.

[39] www.ofcom.ch/en/medieninfo/statistiken/index.html

[40] The number of interconnection agreements was 77 at the end of 2001, though a comparison with the preceding year is difficult. Although it is true that 2002 saw a certain number of companies cease activity, such a sizeable difference is attributable above all to a change in the accounting system and to the systematic updating of data on companies and interconnection agreements.

[41] Swisscom "Consolidated financial statements, January - September 2002", p. 4.

mobile telephone connections is greater than the number of fixed telephone connections (see Fig. 1).

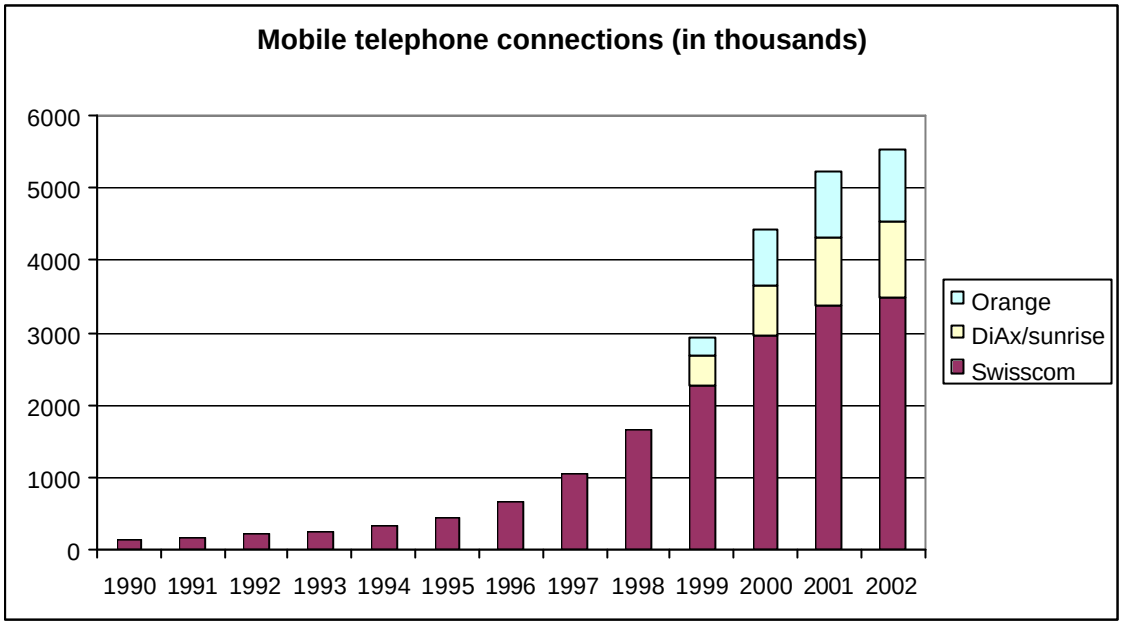

Fig. 1: Mobile telephone connections in Switzerland

At the end of June 2002, Swisscom still occupied a leader position with regard to mobile telephone connections. With a 63% **market share**, the influence of the historic operator remains considerable, despite a drop of 1.1%, again to the benefit of Sunrise, which remains in second position with a 19% market share. Orange is also making a little progress, at 18%. It is also apparent that each of the three operators has again recorded an increase in the number of its subscribers in the course of the past year.

In an international comparison[42], we note that there is no country in Europe where the leading operator has such a strong market position as it does in Switzerland, even though the leading operator is in most cases also the historic operator. In all the European countries, the operator ranked second in the market has a far greater market share than either of the two operators who share the remaining market in Switzerland (see Fig. 2).

[42] 8th EU Telecom Report, December 2002.

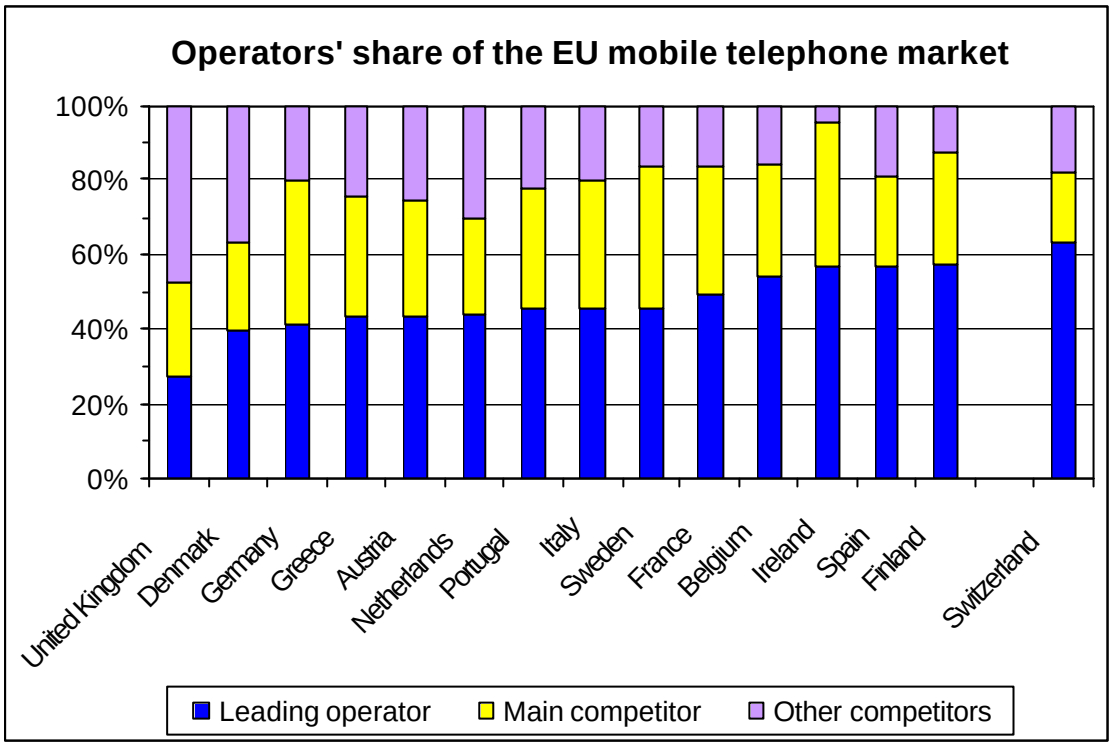

Fig. 2: Operator's shares in mobile market in EU and Switzerland[43]

Note also that with regard to total mobile telephone connections, the gap between the **pre-payment** market share and **post-payment** market share continues to shrink. The proportions are 42% and 58% for prepaid and postpaid, respectively.

With regard to telecommunications personnel employed in Switzerland[44], the year 2002 was characterised by a fall in the number of jobs at the main telecommunication services providers for the first time since the opening-up of the market. Whereas 2001 saw only a slowdown in job creation (+1.25%) in relation to the previous years, in 2002 the main providers witnessed a fall in the number of jobs of the order of 3.6% (according to the latest estimates). The total number, which was about 24,400 people at the end of 2001 was only about 23,500 at the end of 2002. Although the number of full-time equivalent jobs has remained relatively stable at Sunrise and Orange, the reduction in personnel continued at Swisscom (-3.4%) and the other telecommunication services providers. However, we note that the total number of employees with telecommunication services providers in Switzerland is still considerably larger than it was before liberalisation of the market in 1998.

[43] 8th EU Telecom Report, December 2002, Annexe I, p. 50.
[44] Since the official statistics have not been published, we are using estimates made by OFCOM.

In all sectors of the telecommunications market (fixed and mobile networks), the **prices** charged by the various operators remained practically unchanged between 2001 and 2002. Though we are indeed witnessing a slight fall in prices in the national fixed market, it seems that international calls and calls in the mobile network have not changed from one year to the next. After a long downward trend, since 2001 we have seen a certain levelling-off of prices. For the time being, it is possible only to formulate a hypothesis: either the price reductions which have occurred since liberalisation have now reached their limits, or the various sectors of the market are suffering from a lack of competition (Swisscom's dominant position in the fixed access network, oligopoly in the mobile market), or the current competition is taking place in areas other than prices (e.g. subsidising of ADSL service offerings or mobile phones).

Finally, with regard to the **development of the internet** in Switzerland, we should first note that the number of personal computers in the population, a key factor in the development of the information society, has again grown in the last year. It went from 4.9 million units at the end of 2001 to 5.1 million at the end of 2002 – an increase of 4.4%. With an equipment penetration rate of around 71.1 per 100 inhabitants, Switzerland is one of the best equipped countries in the world.

It is moreover significant that sales of new computers are down for the second year running, indicating that the equipment penetration rate is already high.

The striking factor about the reporting year was the ever growing interest in services for broadband internet access. Launched in the course of the year 2000, these have been very successful in 2002. Thus on 31 December 2002, there were 460,000 broadband connections in Switzerland. The split was 43.5% ADSL connections and 56.5% cable modem connections (see Fig. 3).

It is also interesting to note that ADSL's market share is still growing, to the detriment of cable modem connections and that the gap between the two is tending to narrow significantly.

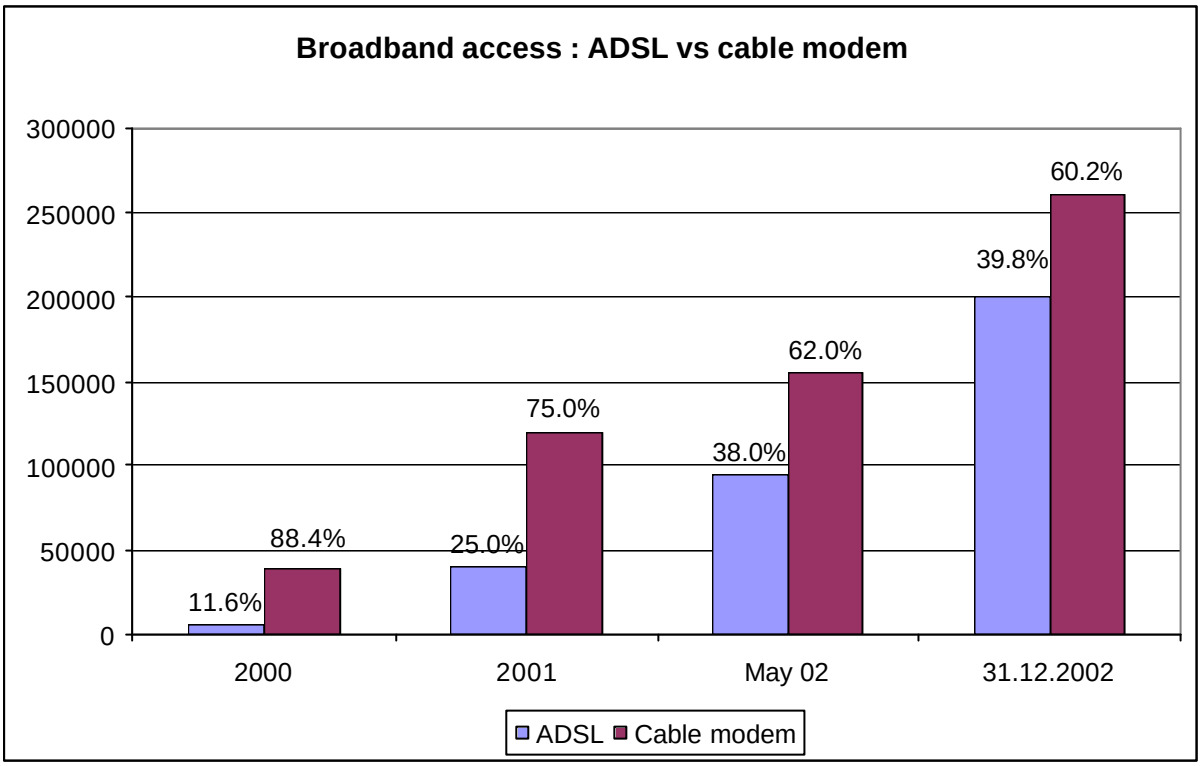

Fig. 3: Broadband access: ADSL vs cable modem

However, two comments also need to be made. First of all, considering the data transfer rates offered to customers in 2002, some of the cable modem internet deals (at least as far as Cablecom is concerned) are comparable with an ISDN access (128 kbit/s); this would further strengthen the hand of ADSL technology in the broadband market.

Similarly, the development potential of ADSL[45], with potential coverage of 95% of the population, equivalent to almost 3.8 million connections, is distinctly higher than that of cable with only 1.5 to 2 million connections[46].

In an international comparison, though Switzerland's position was far from satisfactory at the end of 2001, with a penetration rate of 2.2% of the population connected to broadband, within one year the country has largely made up the lost ground (see Fig. 4).

In fact, what we are seeing is a three-fold development of broadband in Europe. A first group of countries (Denmark, Belgium, the Netherlands) is distinguished by a penetration rate between 6.5% and 8%. Switzerland belongs to a second group, also consisting of Germany, Austria, Finland and Sweden, with a rate of 4% to 4.5% and is therefore way

[45] Swisscom press release, 3 December 2002

[46] An article which appeared in "NZZ am Sonntag" on 15 September 2002 estimated that, for example, only 30% of Cablecom's 1.5 million connections were already equipped to support bidirectional communications, a prerequisite for broadband internet use.

above the European average (2.9%).

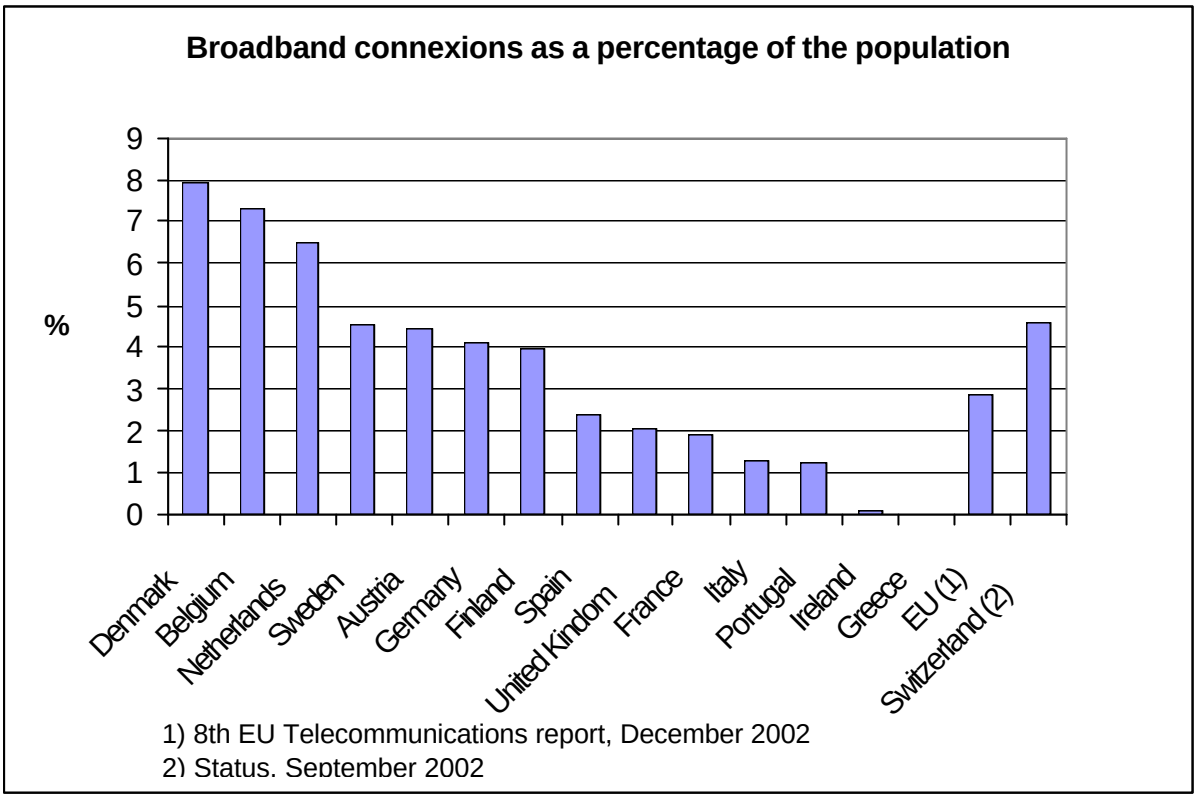

Fig. 4: Broadband access in Europe (ADSL and cable modem as a percentage of the population) [47]

[47] 8th EU Telecom Report, December 2002, Annexe I, p. 59. Eurostat, Press Release 10.1.2003 (http://www.europa.eu.int/comm/eurostat). Swisscom and Swisscable.
For EU-countries, the broadband connections for end customers include all types of connection technology (xDSL, TV cable modem, WLL, PLC). No figures are available for Luxembourg. The data for Switzerland includes only ADSL and cable modem connections.

V. Summary of the Commission's activities

Interconnection procedures

Unbundling	⇨ In February 2002, the Commission had to reject the application for unbundling of the local loop, because of the absence of a legal basis as noted in the decision of the Federal Court on 3 October 2001. Within the framework of the consultation on revision of the LTC and the DTS, the Commission pronounced in favour of rapid unbundling by way of a decree.
Procedures according to the LRIC calculation model	⇨ These fairly onerous legal procedures as well as the time-intensive analyses of economic costs are in progress at OFCOM.
Mobile termination	⇨ At the end of 2002, two new applications for interconnection were submitted by a fixed services provider. They charge the Commission with reducing the interconnection prices of two operators for calls from the fixed network to mobile networks. Both applications were withdrawn in the beginning of 2003.

Licences

Universal service	⇨ The universal service licence was granted by the Commission in early June 2002.
GSM, second-generation mobile telephone system	⇨ No licence changes in 2002.
UMTS, third-generation mobile telephone system	⇨ Given the changed situation, the Commission removed the UMTS 20% coverage obligation by the end of 2002 in favour of the establishment of a monitoring system. In view of the development of UMTS technology, the Commission considers that extensive common use of the radio infrastructure is possible.
Wireless Local Loop, WLL	⇨ In 2002, the WLL licences were the subject of a number of transfers and slight amendments.

Numbering	⇨ Since the end of March 2002, the national area code has to be dialled even for local calls. OFCOM successfully introduced this first stage of the numbering plan adopted in March 2000.
National frequency allocation plan	⇨ A modified frequency allocation plan entered into force on 1 July 2002.

Appendix I: Members of the Commission

President:

Fulvio Caccia

Vice President:

Gian Andri Vital

Members:

Christian Bovet

Pierre-Gérard Fontolliet

Beat Kappeler

Heidi Schelbert-Syfrig

Hans-Rudolf Schurter

Appendix II: The Secretariat employees

Secretary General of the Commission: Peter Bär

Scientific officer and webmaster: Pierre Zinck

Administrative secretary: Verena Verdun