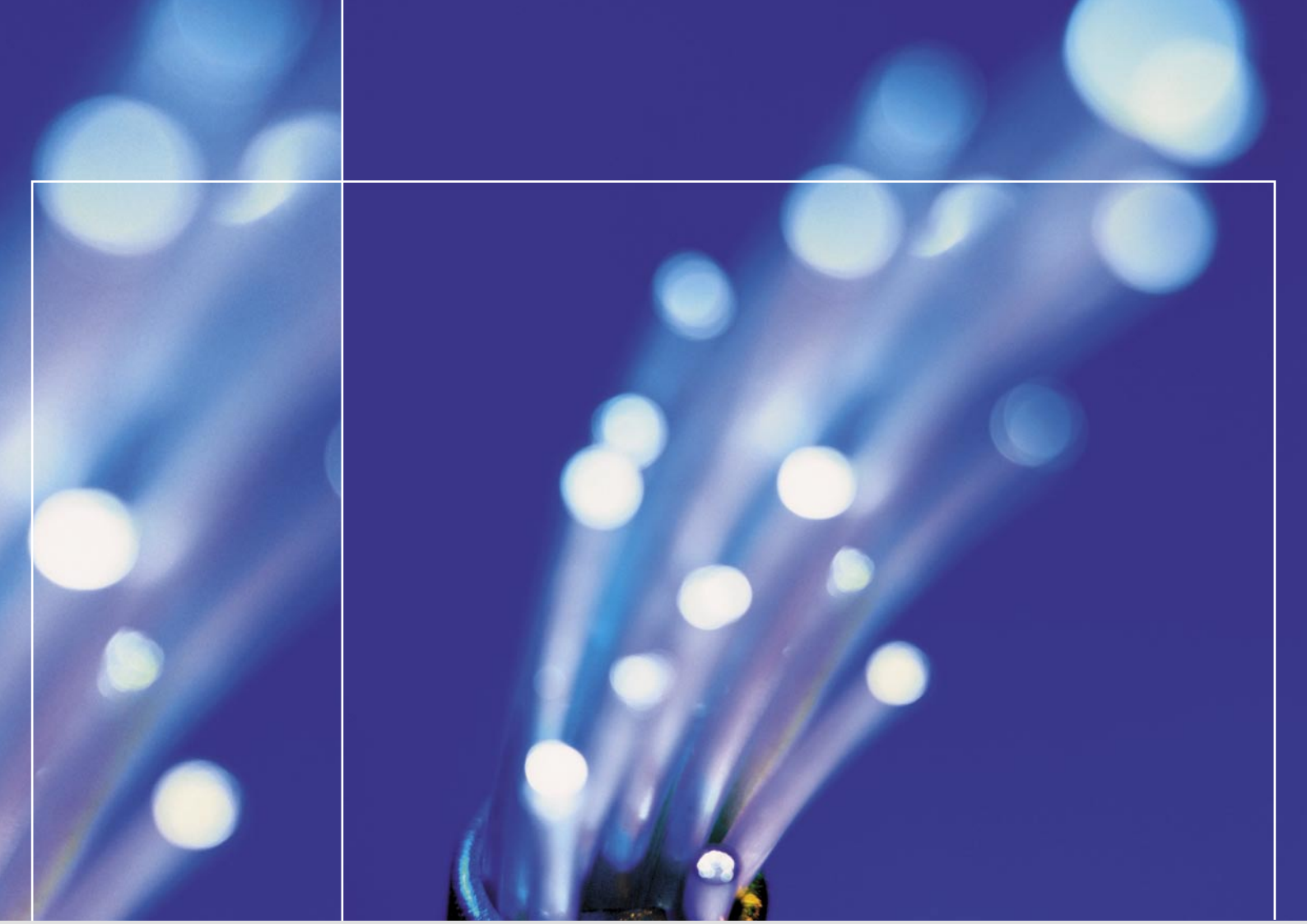


ComCom's Annual Report

2005

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Federal
Communications Commission
ComCom

The most important points at a glance

Interconnection procedures	
Cost-based interconnection prices (LRIC)	ComCom reduced interconnection prices by about 30% with retroactive effect.
Bitstream access and leased line prices	ComCom rejected the two applications, as no adequate legal basis exists for them.
Billing for the content of added-value services	ComCom rejected this interconnection application, as billing for the content of added-value services is not an interconnection service as defined by the law.
Licences	
BWA	At the end of November 2005, ComCom opened the invitation to tender for three new BWA licences. After the candidatures have been examined, it is expected that the licences will be auctioned in the second quarter of 2006.
GSM	ComCom awarded the remaining free GSM frequencies to Swisscom Mobile, Sunrise and Orange.
UMTS	The mobile operators Orange, Sunrise and Swisscom Mobile have fulfilled the coverage obligation of 50% of the population as of 31 December 2004. A surveillance procedure has been initiated against 3G Mobile, because it has not met this requirement.
Universal service	The full extent of the universal service is guaranteed throughout Switzerland. In the case of telephone kiosks which are part of the universal service, disabled access will be improved by means of structural measures.
Numbering	The migration of 01 numbers to 044 is proceeding according to plan. Until the change-over in March 2007, subscribers in the Zurich area can be reached using both 01 and 044 (so-called parallel operation).
Carrier Selection	ComCom has decided that internet telephony (VoIP) providers need not offer carrier preselection.
National Frequency Allocation Plan	The Commission approved the frequency allocation plan for 2006.

Contents

Swiss Federal Communications Commission ComCom

Marktgasse 9, CH-3003 Bern, Switzerland

Phone: +41 (0)31 323 52 90

Fax: +41 (0)31 323 52 91

Website: www.fedcomcom.ch

Foreword by the President

It is ComCom's task to ensure that competition is effective within the telecommunications market – for the benefit of consumers and with due regard to the universal service. ComCom therefore has to guarantee access to the market for all – only in this way is a fair contest possible.

This task has not become obsolete, even eight years after liberalisation of the market. The many complaints that have been received by ComCom in the past year demonstrate this. There have been complaints about interconnection but also about excessively high mobile termination charges. In addition, ComCom is confronted with new requests for the frequency spectrum. Clearly, the future is mobile and this is where new frequencies are very relevant for all current and of course new telecommunication services providers, especially when one also considers that TV and telecommunications are converging and that

many new mobile services are in demand and are therefore being offered.

As far as ComCom's task is concerned, it is therefore a matter of bringing fairness and order to this telecommunications market and allocating resources equitably. In this context, the regulatory principle has also remained the same under new management: to intervene only when ComCom is invited to do so and where this is essential. The market must exercise its freedom of action – the primacy of negotiation must apply. However, when agreement cannot be reached, where resources are lacking or when a company dominates, then ComCom as the regulator must act – in a neutral, competent and consistent manner. And this must be achieved in Switzerland where the regulatory instruments are «lighter» than in the other industrialised countries. It is like climbing a snow-capped mountain in sandals. But we must bear in mind: not all the peaks of the telecom market can be conquered in this way.

March 2006

Marc Furrer
President

Market summary and outlook

2005 was another lively year for the telecom market – change is a constant feature. The mobile telephone market is being enlivened by various new entrants, broadband connections continue to enjoy strong growth, more and more new technologies are appearing on the horizon and the trend towards «convergence» is forging ahead.

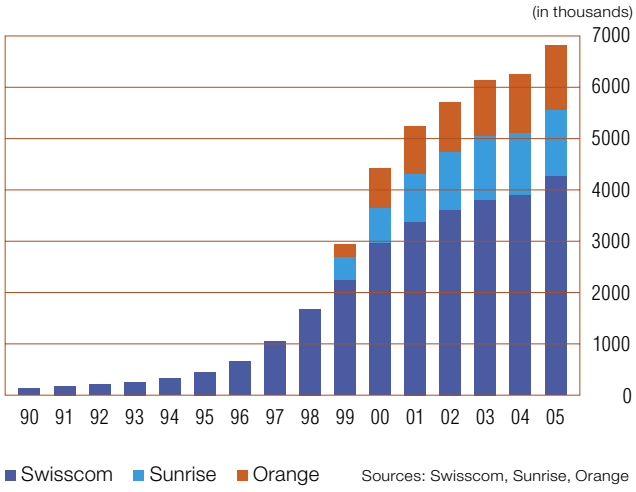
It is precisely in such a dynamic environment that it is important to know that the universal service guarantees a high-quality, low-cost basic offering of telecommunication services throughout Switzerland. A prudent mechanism in the Law on Telecommunications also ensures that the universal service will continue to be assured even if Swisscom were to be privatised.

Development of the mobile telephony market

Although the mobile telephony market is not forging ahead to the extent it had in previous years, it remains a key growth engine for the telecommunications industry.
All three national GSM providers were able to win new customers in 2005 (cf. Fig. 1). By far the greatest growth was recorded by Swisscom Mobile; accordingly, its market share grew slightly, to 63%, for the first time since the 1998 liberalisation. In comparison with other European countries, this is a high value for an incumbent. Sunrise has a 18.6% share of the market and Orange is holding on at 18.4%. In terms of population coverage, all three GSM networks are at about 99%.

Market penetration of mobile telephones also continued to increase and was approximately 91% at the end of 2005. This places Switzerland in the mid-range compared with the EU states. Measured in terms of customer numbers, the mobile telephony market is slowly approaching the saturation limit. As far as mobile telephones are concerned, it may be extremely useful for a customer to own several, for example one small telephone and one with a large screen for multimedia offerings or to access mail and company data.

Fig. 1: Mobile phone connections in Switzerland



Sources: Swisscom, Sunrise, Orange

Many developments in the GSM market

Several new entrants into the market caused prices to fall in 2005: for example, in June Tele2 launched its first city network, in the Zurich conurbation. Tele2 is limiting itself to a reduced range of services (telephony, SMS and mailbox) and wishes to establish itself as a low-price provider – for example, calls within the city network are free. Likewise claiming to offer breakthrough prices, the two largest Swiss retailers came up with prepaid offerings: in August 2005, thanks to its partnership with Swisscom, Migros began to market the «M-Budget Mobile» product, and Coop, in cooperation with Orange, introduced «CoopMobile» in September. TDC Switzerland (Sunrise) also rolled out a low-cost prepaid offering for telephony and SMS under the «Yallo» brand, which the customer himself manages via the internet.

Towards the end of 2005, other partnerships were announced in the mobile telephony sector: the Mobilezone chain of mobile telephone shops will be providing prepaid and postpaid offerings based on Orange's GSM network. Cablecom and Sunrise have a similar concept: with its prepaid product, which has already been launched, Cablecom is now the first «quadruple player» in Switzerland.

The reduction in mobile termination charges by Swisscom Mobile from 33.5 to 20 centimes/minute as of 1 June 2005 was just as important as the new entrants into the market. This new situation made it possible for other

providers to offer cheaper calls to the Swisscom Mobile telephone network. On 1 September 2005, Sunrise also reduced the charge for mobile termination – though more modestly. At the same time, an investigation into mobile termination charges from the Competition Commission (ComCo) is pending.

As Sunrise has recently announced a national roaming agreement with Tele2 and with In&Phone, in the mobile market a lively year 2006 can be expected.

UMTS technology on the up and up

As early as the end of 2004, Swisscom Mobile quoted a population coverage with UMTS of almost 90%, Orange over 50% and sunrise about 60%. On the basis of follow-up studies, at the beginning of 2005 OFCOM could establish that these three providers are meeting the coverage obligation of at least 50% of the Swiss population for UMTS services. Since 3G Mobile (Telefónica) as the fourth licensee has not met this requirement, a surveillance procedure has been initiated by OFCOM. In early 2006, ComCom will take a decision on the revocation of a licence.

After Swisscom Mobile, in 2005 both Orange and Sunrise launched UMTS offerings for the public at large. By the end of 2005 there were 21 million UMTS users in Western Europe, corresponding to a 190% increase within one year. UMTS is undoubtedly on the up and up, yet GSM and UMTS will continue to be complementary technologies. Only in the longer term will there be talk of UMTS completely replacing GSM.

The start of mobile internet access

The three large GSM and UMTS providers are all offering their customers mobile access to the internet and to company data. In order to achieve the broadest possible coverage, GPRS and EDGE GSM technologies as well as UMTS are being used. The goal of the offerings is to give customers mobile access to data everywhere, as quickly as possible and without interruption. The data transfer rate varies considerably depending on the technology available at a specific location, between 50 and 384 kbit/s – and in comparison with the fixed network the most we can speak of is broadband 'lite'. Sales with data communication seem to have increased markedly in the last year – primarily thanks to business customers. Providers have also strengthened their efforts to bring the benefits of UMTS to individual customers, with multimedia services such as mobile TV, video clips and MP3 songs. Major sporting events such as the football World Cup or sailing races with Alinghi offer welcome opportunities to launch attractive services.

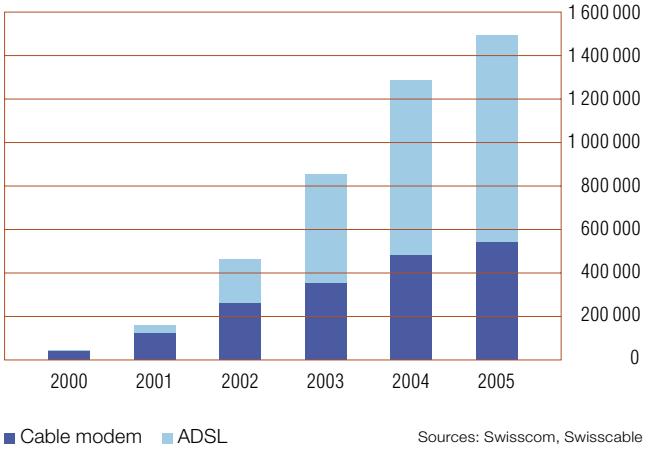
BWA call for tenders launched

In summer 2005, ComCom decided to auction three new licences in the 3.41-3.6 GHz frequency band for Broadband Wireless Access (BWA; see below for details). The invitation to tender was launched at the end of November 2005 and was running until the end of February 2006. The frequencies will be awarded on a technology-neutral basis and will provisionally be able to be used by fixed or roaming applications. However, mobile services are also expected to be permitted in the medium term.
It will be up to licensees to decide which applications they wish to offer. The few companies that are already in the market with BWA abroad are using these technologies either as a substitute for the last mile (e.g. UK Broadband and metranet in Great Britain) or to service areas with no DSL coverage (e.g. Altitude Télécom in France or WiMAX Telecom in Austria).

Development of the broadband market

The broadband market in Switzerland continues to grow. Market penetration by ADSL and CATV connections rose

Fig. 2: Broadband access in Switzerland

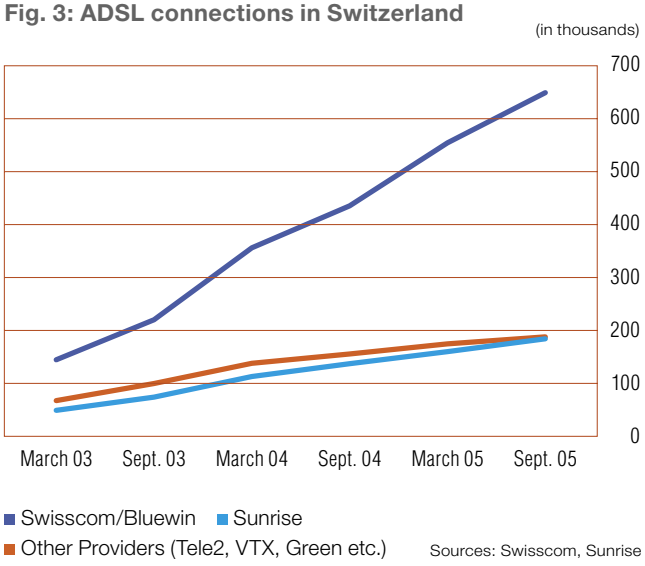


Sources: Swisscom, Swisscable

from 11.4% at the end of 2003 to 17.4% at the end of 2004 and reached 20.3% in mid-2005. With almost 1.5 million broadband connections for a population of 7.4 million, Switzerland continues to be one of the most dynamic countries in this area.

As far as the access technologies employed is concerned, 2005 confirmed the development trend already observed. The number of ADSL connections increased markedly more than internet connections via TV cable. At the end of June 2005, the market share for ADSL was 63.7% (948,000 connections) and the share for cable connections was 36.3% (540,000 connections; cf. figure 2).

Fig. 3: ADSL connections in Switzerland



Sources: Swisscom, Sunrise

Bluewin enjoys highest growth in the ADSL market

In the ADSL market, only Bluewin (a Swisscom subsidiary) was able to increase its market share: from the end of 2003 to the end of September 2005, it grew from 56.3% to 63.9%. In absolute figures, Sunrise is also growing and remains Bluewin's major competitor. However, Sunrise's market share fell from 18.9% to 17.8%. The market share of all other providers combined (Tele2, VTX, green.ch, etc.) fell in the same period from 24.8% to 18.3% (cf. figure 3). In the absence of unbundling, the alternative providers can only resell the products predefined by Swisscom Fixnet and, apart from price, therefore have little latitude to configure product features themselves.

Few new offerings in 2005...

Overall, broadband offerings hardly changed in 2005: data transfer rates were not increased, and nor did prices fall to any great extent. Apart from new low-cost offerings at low bandwidth (from 150 kbit/s), customers were hardly able to benefit from product innovations. These offerings are essentially conceived for customers who still use dial-up internet access via an analogue modem or ISDN access. Even if one takes into account the Cablecom offering of 6 Mbit/s for CHF 95, which has been in existence since autumn 2005, the products in Switzerland are not comparable with those in neighbouring countries (France, Germany, Italy), where most providers offer transfer rates of up to 20 Mbit/s for an average of 30 euros (approx. CHF 49). Today, Swiss customers are paying the same amount for 600 kbit/s.

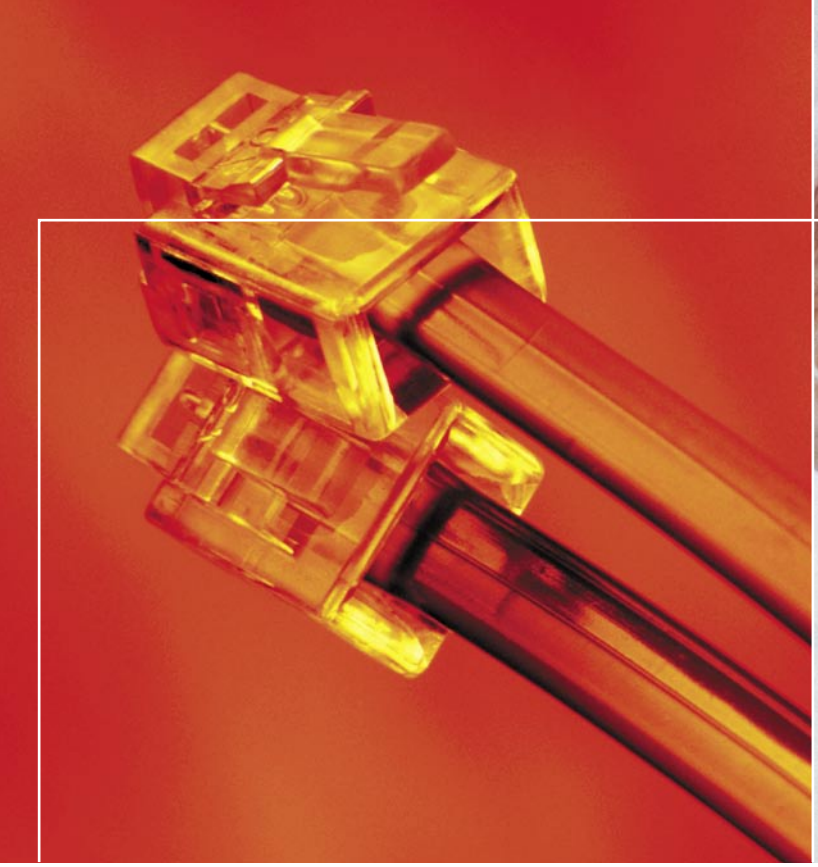
In addition, for example, the French providers «free» and «neuf» offer low-cost triple-play offerings which even include unlimited foreign calls.

... but very promising prospects for 2006

The increase in ADSL bandwidths announced by Swisscom Fixnet at the beginning of January 2006 indicates that 2006 will be a more dynamic year. In the coming months, individuals and businesses should be able to benefit from three times faster speeds for the same price.

In 2005, Swisscom deferred the launch of television via ADSL until 2006. Now that Cablecom is also offering mobile telephony, it is undoubtedly of great importance to Swisscom to become a «triple player» and offer attractive new content. The Federal Council also expects this to happen, as he said when publishing the new strategic goals at the end of 2005.

Like other European incumbents, Swisscom has also decided to modernise its network. It will leapfrog ADSL2 and introduce VDSL. This technology allows transfer rates of up to 20 Mbit/s. Users in Switzerland, however, will have to wait until 2007 before such speeds become available.



In the future, the focus will not be on acquiring new customers but on the quality of offerings and above all on multimedia content. To do this, however, higher transfer rates at affordable prices are essential.

A constantly rising demand for capacity

Demand for higher transfer rates is increasing constantly. Thus, apart from video-on-demand services, both online music purchases, which grew strongly in 2005, and the boom in digital photography and videos are leading to a rising demand for higher transfer rates. Only in this way can the new opportunities of the information society actually be exploited to the full.

Other trends point in the same direction: the boom in private websites and blogs with extensive content, podcasting (sharing image or sound data over the internet), online games or television over IP (e.g. www.SwissregioTV.ch, www.internetTV.ch, www.adsl.tv).

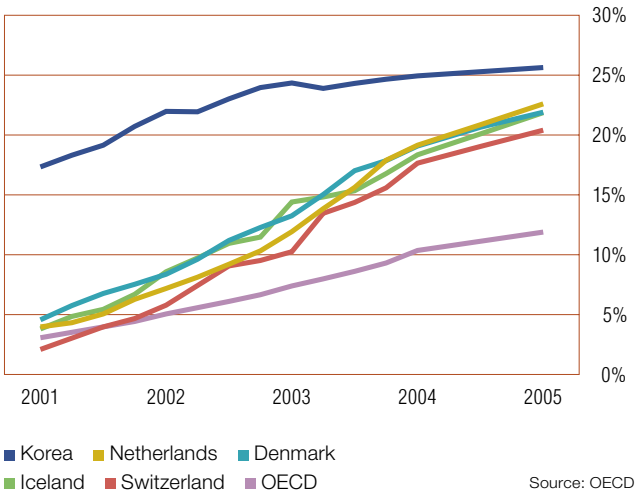
In Switzerland in 2005, e-commerce enjoyed very strong growth, both in the areas of e-tourism and retailing, especially in the high-tech sector, and in the sphere of special buying and selling platforms for individuals (such as eBay or Ricardo in Switzerland).

The information society and the digital divide

A study carried out by M.I.S. Trend for OFCOM on the use of telecommunication services in Switzerland has shown that the quality and price of services play a decisive role in the choice of a provider. At the time of the study, however, 38% of those questioned did not have an internet connection; of these, 81% also indicated that they did not want to use the internet in the next 6 months either, for a variety of reasons (lack of interest, lack of equipment…).

Today, a little more than three out of five households have an internet connection. Although this figure is encouraging in relation to the state of development of the information society in Switzerland, it seems that the saturation limit is approaching. Consequently, there is a danger that there will always be part of the population which has no access to the internet. The study also shows that the fault lines for the digital divide are defined by socio-demographic

Fig. 4: Broadband penetration, top five OECD countries



Source: OECD

characteristics such as age, level of education and income. Viewed in this way, there is a need for socio-political action in this area, in order to promote the dissemination of the new information technologies and reduce the digital divide as far as possible.

Broadband connections and unbundling: an international comparison

With regard to broadband connections, an international comparison shows that the most dynamic European countries (the Netherlands, Denmark, Iceland, Switzerland), with an annual growth of 5 to 7%, are gradually eroding the lead of South Korea (cf. figure 4). South Korea had already reached Switzerland's current level of penetration three years ago (20.6% in the third quarter of 2002). Today, however, South Korea's growth has slowed considerably, to only 1% per year.

The new 11th EU Telecoms Report comes to the conclusion that very significant progress had been made with unbundling, leading to «higher quality and greater differentiation of services». The number of unbundled lines in the EU has doubled to 8.7 million; in addition there are more than 5 million bitstream connections. The EU also point out that more and more alternative providers are switching from reselling broadband connections and bitstream access to unbundling lines, as this is the only way they can

create attractive bundled offerings such as triple play.

Let's have a look to the French example: due to unbundling, France became one of the most dynamic countries regarding broadband internet Access. Today around 90% of the French population have the possibility to receive an ADSL access (2002: 48%) and 54% can choose to unbundle their access line (2002: 11%). Due to the attractive offerings of the alternative providers, nearly on third of the ADSL lines are unbundled.

Telephony with cable network operators

Until the launch of the «digital phone» by Cablecom in early 2003, Swiss households were able to permanently switch their operator (carrier preselection), but they had to continue to pay line rentals to Swisscom Fixnet.

It is true that Cablecom's TV cable network is nowhere near as extensive as Swisscom's access network. However, where Cablecom does offer a «digital phone» connection, this can substitute the Swisscom connection. According to its own information, Cablecom was able to win 150,000 «digital phone» customers by mid-2005. In comparison with the nearly 4 million Swisscom connections, this corresponds to a market share of 3.7%. Swisscom therefore still retains 96.3% of fixed network connections in Switzerland.

It should be added that since 2005, other medium-sized cable network operators have been offering digital telephony (e.g. Wasserwerke Zug or InterGGA).

NGN and VoIP – the next «telecoms revolution» is at the gates

In the next ten years, in the most highly developed countries, most ordinary telephone networks – probably including Swisscom's – will also become IP-based data networks.

Constructing such a «Next Generation Network» (NGN) is a highly complex procedure, but in a converging environment it is probably also an economically essential investment in the future.

An NGN promises high savings on costs, as all services can be provided over a single convergent infrastructure. All types of content – from speech through internet data to entertainment offerings and television – will in future be transferred as digital IP data packets. Other advantages of an NGN are a more efficient network structure and the possibility of developing and implementing new services in a much more simple way.

One of the pioneers in this area is British Telecom, which intends to replace its backbone network by an NGN by 2010. The plans of other incumbents to introduce an IP-based network in their backbone network or access network are also apparently well advanced. This development could lead to new bottlenecks and new challenges for the regulatory authorities (e.g. with regard to interconnection).

VoIP – the voice telephony of the future

Voice telephony based on the Internet Protocol (VoIP) will undoubtedly be part of the future. The general trend is clear: everything is becoming «IP» – and this will profoundly change the telecommunications market. Consumers will benefit from falling telephony costs, since VoIP will lead to more competitive pressure in the fixed network and – as soon as VoIP is also possible on mobiles – in mobile telephony as well.

Voice over IP is not synonymous with «telephoning over the internet». Today there are essentially two different VoIP application concepts:

a) IP telephony in private networks: already today there is IP-based telephony in the internal networks of large businesses (e.g. Novartis, Swatch, Nestlé). A pioneer in the public sector is the canton of Waadt, whose 15,000 employees use VoIP internally – and of course the private network is also connected to the public telephone network. Unlike the internet, in this case an operator has control over his network and can therefore guarantee a high grade of service for voice transmission.

There is a considerable potential for savings for the business sector, extending beyond virtually no-cost internal calls: as a result of the convergence of informatics and communications technologies only one infrastructure has to be maintained. This offers new opportunities in the development of applications (e.g. integration of telephony, mail, fax and images, video telephony, collaboration tools) and greater flexibility when changing business processes. Telephony over an NGN or a cable TV network can also be classified in this application concept.

b) Voice over Internet: in this case there are different variants. What they all have in common is that users must have broadband internet access. Here are two typical examples:

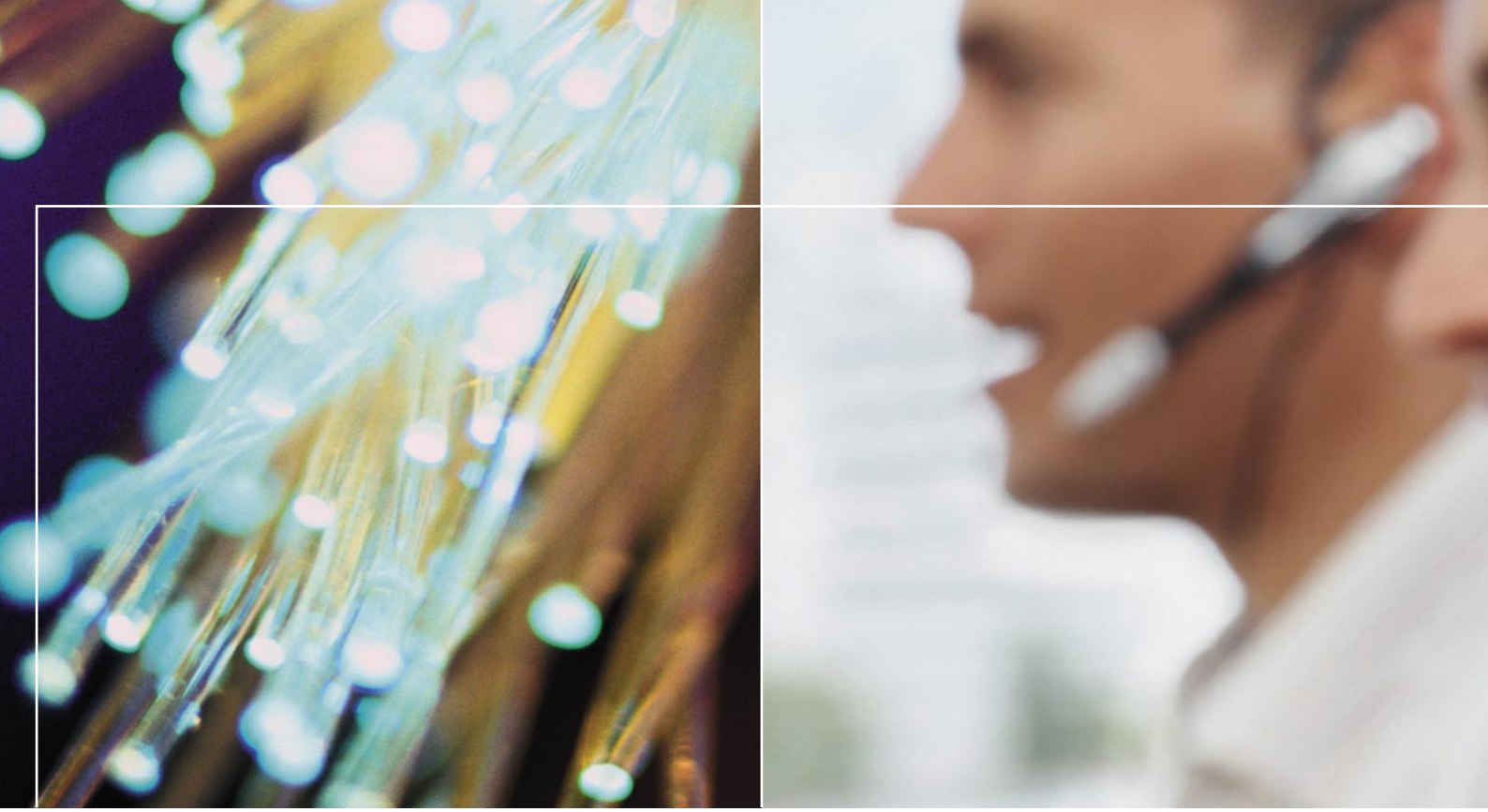
- **Pure internet telephony between two PCs:** Software from the provider enables all users who are online with the same software to make free calls (e.g. Skype, VoIPBuster, Google Talk). Videotelephony over the internet between computers is coming too (e.g. Sony IVE).
  This form of «internet only» VoIP application is not considered to be a public telephone service as defined in the Law on Telecommunications.
- **VoIP telephony between a PC and an ordinary fixed network telephone:** In order for a VoIP customer to be able to call all fixed and mobile network numbers, the VoIP operator establishes a connection via gateway between the internet and a traditional telephone network (PSTN).
  If the VoIP customer can also be reached via a «normal» telephone number, then this constitutes a public telephone service.

In order to guarantee a specific level of service and sustainable competition in the interests of consumers, providers of public telephone services must fulfil a whole range of conditions: e.g. calls to all telephone numbers, real-time voice transmission, identification of location for emergency calls, carrier selection, number portability, access to subscriber directories and enabling telecommunications traffic to be intercepted.
With the rapid penetration of broadband connections – an important prerequisite for VoIP – good-quality, very low-cost internet telephony has become a reality.

VoIP means new challenges for regulators

ComCom does not wish to set up any unnecessary barriers to new technologies. The authorities are therefore trying to find pragmatic solutions – also for VoIP – although the focus must be on customer benefit.

- In relation to the free choice of provider, which is important for competition, ComCom has decided that in the case of internet telephony, on a provisional basis, carrier preselection does not have to be offered.
- In Switzerland, customers of VoIP providers offering a public telephone service, like fixed-network customers, receive a geographical telephone number from their provider. Fixed network numbers can be transferred to a VoIP provider and vice versa.
- In contrast with the fixed network, a VoIP telephone number is not associated with a specific location. This may make it impossible to determine the location of a customer in the case of an emergency call. In this context, the Federal Council introduced a pragmatic solution for VoIP operators on 1 September 2005: until a technical solution is found, location identification must be guaranteed only for calls made from the principal location. The VoIP operator has to explicitly inform its customers about this problem.



Commission and secretariat

The Commission

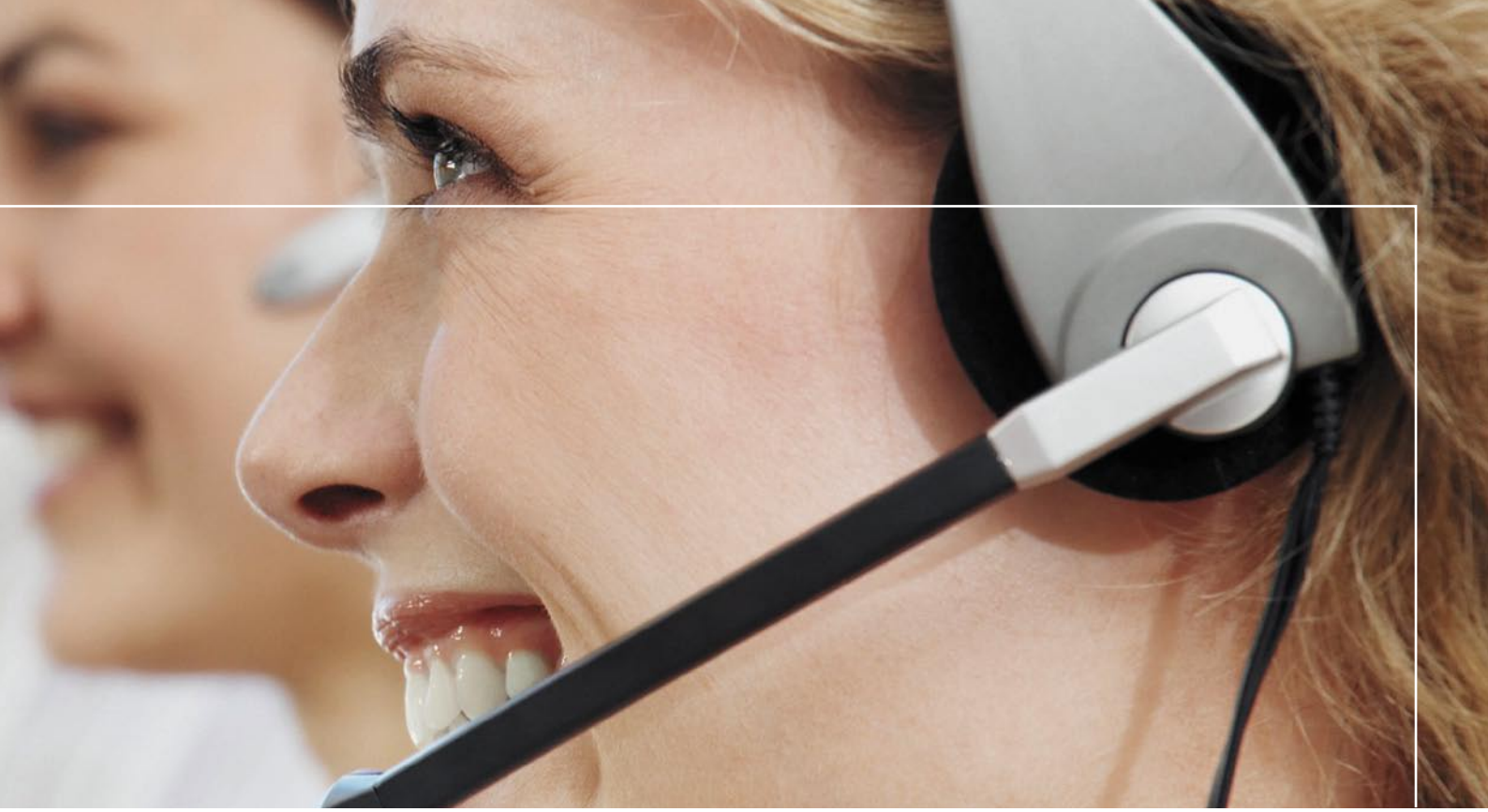
The most important tasks of ComCom as the independent Swiss licensing and regulatory authority in the telecommunications sector are:

- granting licences for telecommunications and licences for the use of radio communication frequencies,
- award of the universal service licence,
- laying down the conditions for interconnection when service providers fail to reach an agreement,
- approval of the national frequency allocation plan and national numbering plans,
- fixing the terms of application for number portability and carrier selection,
- it also takes measures in the event of violation of the applicable law and, where appropriate, revokes the licence.

The Commission consists of seven members who must be independent experts, nominated by the Federal Council. OFCOM's former director, Marc Furrer, was chosen by the Federal Council in October 2004 as the new President of the Commission from 1 January 2005. In February 2005 the Federal Council then nominated Christian Bovet, ComCom member of many year's standing, as Deputy President of the Commission. At the same time the Federal Council filled the two seats on the Commission which became open at the end of 2004 by appointing the

The Commission members:

- Marc Furrer, President, Attorney and notary
- Christian Bovet, Deputy President, Dr. iur., Professor of Law at the University of Geneva
- Monica Duca Widmer, Dr., dipl. Chem. Ing. ETH, entrepreneur with SME in the environment sector
- Reiner Eichenberger, Dr. oec. publ., Professor of Economics at the University of Fribourg
- Pierre-Gérard Fontolliet, Electrical engineer, em. Prof. EPFL Lausanne
- Beat Kappeler, Dr. h.c., lic. ès sc. pol., publicist
- Hans-Rudolf Schurter, Attorney, Entrepreneur in the electronics sector



Ticino entrepreneur Monica Duca Widmer and the professor of economics Reiner Eichenberger.

In 2005, the Commission met for a total of nine sessions and on the occasion of an internal training seminar. The Commission members' commitment in terms of time, including extensive preparations for meetings and decisions taken by way of circulation, amounts to 20 days a year.

The Secretariat

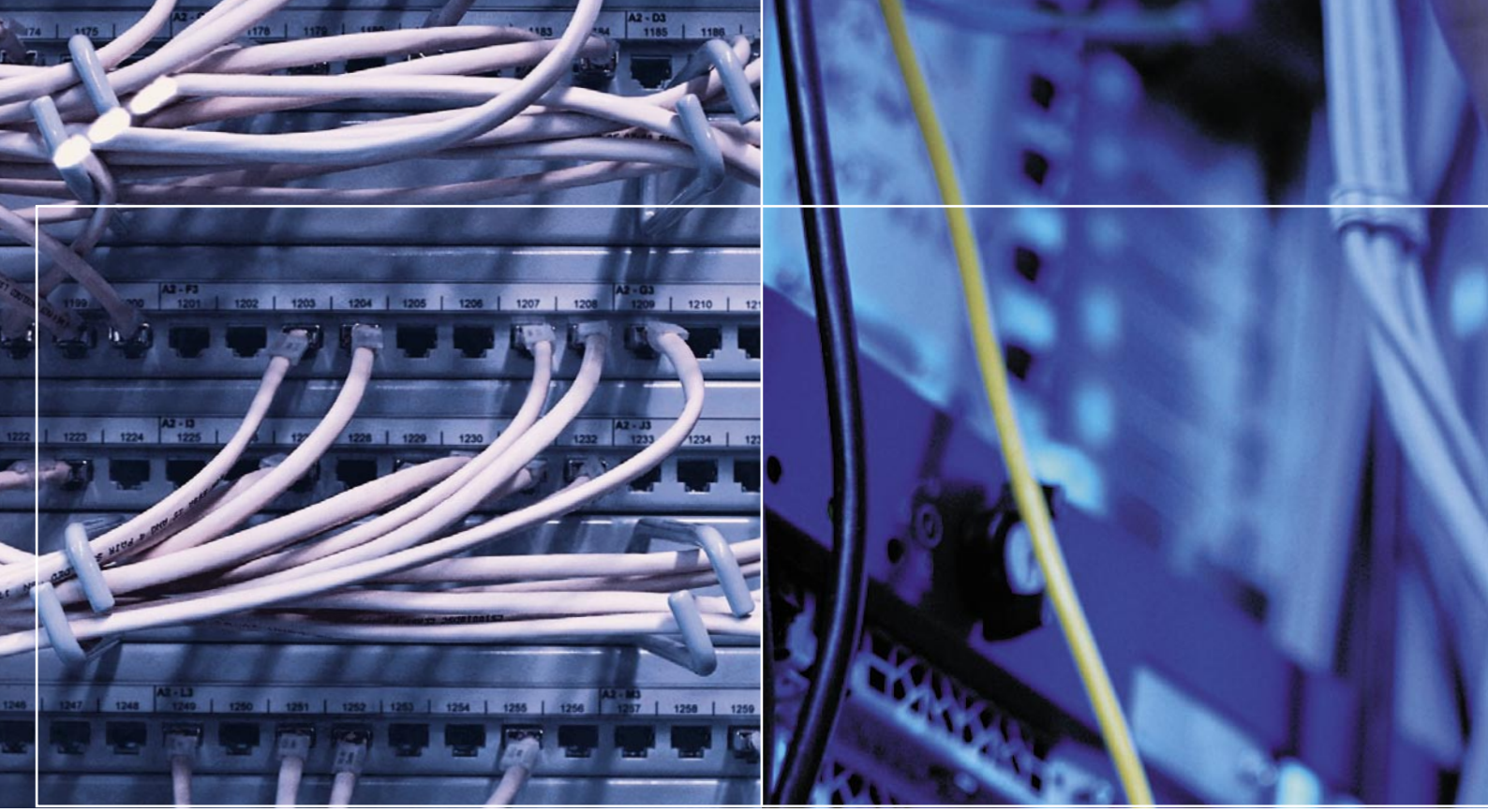
The ComCom has its own Secretariat, which is responsible for co-ordinating affairs, organising the work of the Commission and providing the public with information.

The Secretariat comprises the secretary general of the Commission (100%), a scientific officer and webmaster (60%) and an administrative assistant (70%).

The employees of the secretariat are at your disposal for any queries:

- Peter Bär, secretary general of the Commission
- Pierre Zinck, scientific officer and webmaster
- Maya Stampfli, administrative secretary

In 2005, our esteemed colleague, Verena Verdun, took well-earned early retirement. The Commission and the Secretariat team would like to thank Mrs Verdun for her many years of commitment and excellent cooperation. In Mrs Maya Stampfli, a worthy successor has been found.



Activities of the commission

Interconnection procedures

ComCom reduces interconnection prices

The Decree on Telecommunications Services (DTS Art. 45) states that since the year 2000 cost-based prices have had to be established using the internationally recognised «LRIC» (Long-Run Incremental Costs) method. This is intended to prevent a market-dominant provider from obstructing competition through its pricing policy. The LRIC method leads to fair prices which promote competition, in that competitors of the market-dominant provider only have to bear the costs actually attributable to the services in question.

This method of calculation also takes into account, in addition to the costs related to interconnection, a portion of overhead costs and the capital costs which are customary

Interconnection – what is it?

The term «interconnection» (IC) covers two levels. On the one hand, it designates the interconnection of telecommunications networks with each other and on the other hand the resulting possibility of linking telecommunications services.

With regard to the obligation to guarantee interconnection, article 11 of the LTC makes a distinction between two approaches: on the one hand, the providers of services forming part of the universal service are obliged to provide interconnection in order to guarantee the possibility of communication between all users of these services (also termed «interoperability of networks and services»). Thus, for example, it must be guaranteed that a customer of any provider can call the customers of all other providers.

On the other hand, a market-dominant provider must offer interconnection under special conditions, i.e. at cost-based princes and in a non-discriminatory manner. This temporary instrument was introduced by the legislature to facilitate market access for new providers and therefore to establish effective competition.

in the industry. The capital costs include both the costs for external capital and the expected return on internal sources of capital and therefore prices also include a profit element.

This method of calculation leads to a price level which would establish itself in a functioning competitive environment.

After the first LRIC decisions taken by ComCom in November 2003, the parties in the procedure submitted appeals to the Federal Court, as in their view ComCom had reduced the prices either by too little or too much. With its judgement of 1 October 2004, the Federal Court referred the matter back to ComCom for reassessment for reasons of formality. The Federal Court was of the opinion that extraordinary circumstances justified its submitting OFCOM's decision proposition to ComCom. In addition, ComCom again had to guarantee the parties access to its files. However, in its judgement of October 2004, the Federal Court did not pronounce on the substantive issues. It merely determined that ComCom's LRIC decisions would have a «high technical content». The Federal Court refrains from substantive examination of such decisions by a specialist body. It directs its attention primarily to compliance with procedural legal rules.

ComCom implemented the Federal Court's guidelines and in June 2005 took a decision which was largely identical in terms of its content: On the basis of extensive economic investigations by the OFCOM, ComCom has come to the conclusion that Swisscom demanded prices which were around 30% too high for interconnection services in the years 2000 to 2003. These have to be reduced retrospectively to the legally permitted level. At the same time, the opposing parties, TDC Switzerland AG (Sunrise) and MCI WorldCom AG are also being obliged to offer their interconnection services at the same prices.

Several reasons have made these price reductions necessary: First of all, Swisscom's tariffs were not based on an understanding of efficiency which meets the legal require-

ments. Secondly the costs were not always allocated to the interconnection services in an accurate manner. Thirdly the capital costs, i.e. the interest charges on the company's own and external capital, should also have been reduced to a level that is usual in this sector.

Price reductions for the telecommunications industry and end users?

Basically, any decision made by the Commission will only apply to those parties involved in the procedure. Therefore, only the applicants, Sunrise and MCI WorldCom, will benefit directly from the price reductions which have been imposed for the years 2000 to 2003.
In the future, all of Swisscom's other interconnection partners should benefit from lower prices, thanks to the legal ban on discrimination. In the medium term, ComCom's decision should also have positive effects on end-user prices, since in a competitive environment price reductions in the wholesale sector generally lead to reductions in the retail sector.

However, the prices laid down by ComCom are not being applied for the time being, as several appeals have been lodged with the Federal Court against this decision.
Since 2004, several telecom companies have submitted new applications to ComCom for a determination of cost-based interconnection prices. However, these procedures are pending until the Federal Court has reached a definitive decision in the LRIC cases.

IC applications for bitstream access and cost-based leased line prices rejected

In its decision of 30 November 2004 the Federal Court determined that the unbundling obligation anchored in the Federal Council's decree did not have the necessary formal basis in the Law on Telecommunications (LTC). Accordingly, an interconnection application from TDC for unbundling of the last mile was rejected (cf. ComCom Report 2004).
The two interconnection applications for bitstream access and cost-based leased line prices are very similar from a legal viewpoint. On the basis of the Federal Court's jurisdiction, at the end of February 2005 ComCom had to reject the applications for bitstream access and cost-based leased line prices.

IC procedure «Charges for number porting»

A provider submitted an application requesting examination of whether the charges for porting numbers to another provider are actually cost-based. OFCOM is currently investigating this case. ComCom will decide on this case in spring 2006.

How is an interconnection procedure implemented?

The primacy of negotiations is laid down in the LTC. Before the Commission can decide on the prices and conditions for interconnection, the providers must first attempt to reach an agreement via negotiations. 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. Right from the start of the procedure ComCom may impose precautionary measures in order to guarantee interconnection during the procedure. 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 ComCom 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 (cf. LTC Art. 11 para. 3 and DTS Art. 49-58).

ComCom cannot intervene independently but must be requested to do so by a provider (so-called «ex-post regulation»). In contrast, «ex-ante regulation» is practised in the EU. Consequently, the regulatory authorities in the EU countries can intervene independently, in a targeted manner and at an early stage in markets in which competition is not effective. This leads to identical general conditions for all participants in the market and increases legal security.

IC procedure «Billing for the content of added-value services» rejected

It is undisputed that there is an interoperability obligation for access to added-value services – it must be possible to dial the corresponding 090x number. In the current interconnection application, however, the question was whether billing of the content provided via an 090x number also came under the interconnection obligation. ComCom answered this question in the negative in January 2005, as billing for the content of added-value services is not an interconnection service as defined by the law. Consequently the application was rejected.

Licences

In accordance with the Law on Telecommunications (LTC), ComCom awards licences in the telecommunications sector. ComCom may delegate some tasks to OFCOM. This has happened in the case of the following types of licence: 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, licences for radio amateurs or company radio). The following sections provide a summary of the licences issued by ComCom itself.

BWA licences

In summer 2005, ComCom decided to auction a total of 3 new licences for Broadband Wireless Access (BWA) in the 3.41–3.6 GHz frequency band. The frequencies are being put out to tender on a platform-neutral basis. Thus ComCom prescribes neither a specific technology nor services. By means of the licences, ComCom wishes in particular to promote the provision of broadband services and stimulate competition in the area of broadband connections.

In order to clarify interest in such licences, in spring 2005 OFCOM carried out a public consultation. There was a high level of response, with 46 replies received by the deadline. Twenty-four respondents indicated they were directly interested in a BWA licence. This also indicates that there is more interest in frequencies than there are frequencies available. The results of the consultation can be consulted on the OFCOM website (www.bakom.ch).

What is possible with BWA?

Which applications will become widespread in the future depends in particular on the respective business models of the individual licensees and on market demand.
In principle, BWA opens up a whole series of possible applications: for example, providers without their own access infrastructure can offer wireless broadband internet access – thereby circumventing the last mile. Other possible applications include networking business customers or WLAN hotspots. Apart from fixed and nomadic services, it is envisaged that mobile applications will also be permitted in the medium term.

To ensure that high-quality countrywide broadband services can be offered, each licence must benefit from a good provision of frequencies. Since part of the 3.41–3.6 GHz frequency range in question has been occupied since 2000 by a WLL licence (2 x 28 MHz to Priority Wireless), ComCom had to limit itself to three new licences. Two licences with 2 x 21 MHz and a third licence with 2 x 17.5 MHz were put out to tender.

Licence conditions

The licences will be valid until 31 December 2016. The licences include minimum conditions concerning the construction of networks. This will ensure that the frequencies being put out to tender will be used for the benefit of consumers. Licensees are accordingly obliged to commence commercial operation by 31 December 2007 at the latest and to operate at least 120 transmission/reception units by the end of 2009. This condition ensures also that the licensees are largely free to determine for themselves a level of network construction which is reasonable with a view to the market. With regard to the construction of networks, the decree on protection from non-ionising radiation must be complied with.

Award by auction

In order to ensure that the licences are awarded in the most objective and transparent manner, the new licences will be awarded within the framework of an auction. The licences will be awarded under a so-called «sealed bid» auction. In the case of this internationally proven, uncomplicated form of auction, each bidder submits a single, independent, sealed bid. The bids of the other bidders cannot be consulted. The award goes to the highest bidder. In ComCom's view, this type of auction ensures a rapid and objective selection process. The details of the design of the auction will be laid down by ComCom in spring 2006.

The minimum price of the licences amounts to CHF 6.1 million for each of the large bandwidth licences and CHF 5.1 million for the small bandwidth licence. This corresponds to the legally stipulated minimum (Decree on Telecommunication Services, art. 12).

ComCom has decided too that each candidate may acquire only one licence. The same also applies to groups of companies. Companies or groups of companies which already have a licence in the corresponding frequency band are excluded from the auction. Currently this applies to Priority Wireless, which is – as Cablecom – part of the Liberty Group.

What is Broadband Wireless Access (BWA)?

BWA is a generic term for various wireless access technologies such as WLL (Wireless Local Loop), FBWA (Fixed Broadband Wireless Access) or MBWA (Mobile Broadband Wireless Access). Various standards can be grouped together under BWA (e.g. IEEE 802.16x and HiperMAN). In the public discussion, the term «WiMAX» is currently generally used instead of BWA, even though this is a brand name or rather an association of equipment and component manufacturers (the WiMAX Forum).

The invitation to tender for the three BWA licences was launched on 29 November 2005. Interested parties had to submit their candidature documents until 28 February 2006. OFCOM will then examine, for ComCom's attention, which candidates meet the requirement for the award of a licence. The auction is expected to be held in the second quarter of 2006.

GSM licences

The GSM licences are being complied with by all operators. GSM mobile telephone coverage in Switzerland is about 99% of the population. For fast data transfer, Orange additionally offers GPRS (General Packet Radio Service) and Sunrise and Swisscom Mobile have enhanced their network with more powerful EDGE technology (Enhanced Data rates for GSM Evolution).

Remaining GSM frequencies in the 1800 MHz band go to Swisscom Mobile, Sunrise and Orange

In March 2005 ComCom decided to allocate the last remaining free frequencies in the GSM 1800 MHz band (total 2x10 MHz) to Orange, Sunrise and Swisscom Mobile. These companies received more capacity so that for example they will be able to integrate the EDGE data transmission standard into their networks.

At the same time ComCom gave the operators the possibility of exchanging some of the GSM frequencies which are already in use, provided that the total bandwidth awarded to each operator remains unchanged. This improves the efficiency of use of the frequency spectrum.

UMTS licences

According to the UMTS licences, licensees must provide at least 50% of the Swiss population with UMTS services on the basis of their own network infrastructure by the end of 2004.

Examination of this coverage obligation by OFCOM at the beginning of 2005 has shown that the mobile telephone operators Orange, Sunrise and Swisscom Mobile are complying with the coverage obligation.

However, the fourth licensee, 3G Mobile (Telefonica), has not constructed a network and is not therefore fulfilling its licence obligations. OFCOM has accordingly opened a supervisory procedure in this case, and ComCom is expected to take a decision in early 2006 on measures pursuant to art. 58 of the Law on Telecommunications.

WLL licences

As the supervisory authority, OFCOM regularly checks whether the minimum operational obligation of the licences is being complied with; otherwise OFCOM initiates a surveillance procedure which may lead to the licence being revoked.

Universal service

Providing the population with a high-quality, reasonably-priced basic offering of telecommunications services is fully guaranteed everywhere in Switzerland.

Swisscom Fixnet AG is the universal service licensee until the end of 2007. The licensee is obliged to provide services defined as forming part of the universal service to the entire 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.

ComCom is responsible for awarding the universal service licence, but the content of the universal service is laid down by the Federal Council. The preparatory work for the new award of this licence has begun, as the award of the licence has to be concluded by the end of June 2007. In the first half of 2006, the Federal Council will redefine the scope of the universal service, and then ComCom will invite bids for the universal service licence(s).

In order to improve accessibility of telephone kiosks for the disabled, in 2005 ComCom amended the universal service licence: telephone kiosks which are part of the universal service will gradually be adapted to certain structural specifications.

Numbering

Number porting also possible with VoIP

In Switzerland, customers of VoIP providers offering a public telephone service, like fixed-network customers, receive a geographical telephone number from their provider.

In order to avoid placing any obstacles in the way of switching providers, ComCom has decided that fixed network numbers can be ported to a VoIP provider and vice versa. However, «new» providers are in principle not obliged to take over the «old» number of a new customer. There are also examples of companies in the mobile telephony market, which do not allow their customers to bring their old number with them: for example, Migros (with «M-Budget Mobile) and TDC (with the «Yallo» brand). However, porting is possible in the case of «Tele2Mobile» or «CoopMobile».

Migration from 01 telephone numbers to 044

The technical migration from 01 telephone numbers to 044 took place in March 2005 without any hitches. Equipment which displays the calling telephone number now automatically shows former 01 numbers with the 044 area code.
In September 2005 OFCOM commissioned a specialist institute to determine the level of awareness about the change-over among the population, in order to be able to work out an appropriate communications plan for the end of parallel operation of the 01 and 044 area codes on 31 March 2007. According to this study, the communication measures as part of the «01 code is changing to 044» project were relatively effective, and the level of awareness in the rest of Switzerland has markedly increased. 59% of Swiss people and 94% of subscribers in the 01 region indicated that they are informed about the change in the area code. In September 2004, the corresponding figures were only 17% and 49% respectively.

On the other hand, the percentage of numbers actually dialled using the 044 code still leaves something to be

desired. At the end of December 2005, the technical measures implemented directly by various carriers in their network showed that for calls in the Zurich network group (01 or 044), 55% were made using the 044 code instead of 01.

For 2006 and 2007, additional communication measures are planned to ensure that subscribers in the Zurich region make the necessary adjustments for changing the area code and that all callers dial the 044 code instead of 01. In addition, these communication measures are also intended to remind people that the 01 area code will remain in service only until 31 March 2007.

National Frequency Allocation Plan

In Switzerland, the frequency spectrum is administered by OFCOM, pursuant to article 25 of the LTC. It is the job of ComCom to approve changes to the national frequency allocation plan. 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 current or planned mode of use of each band. The 2006 edition of the frequency allocation plan was approved by ComCom in November 2005.

Carrier Selection

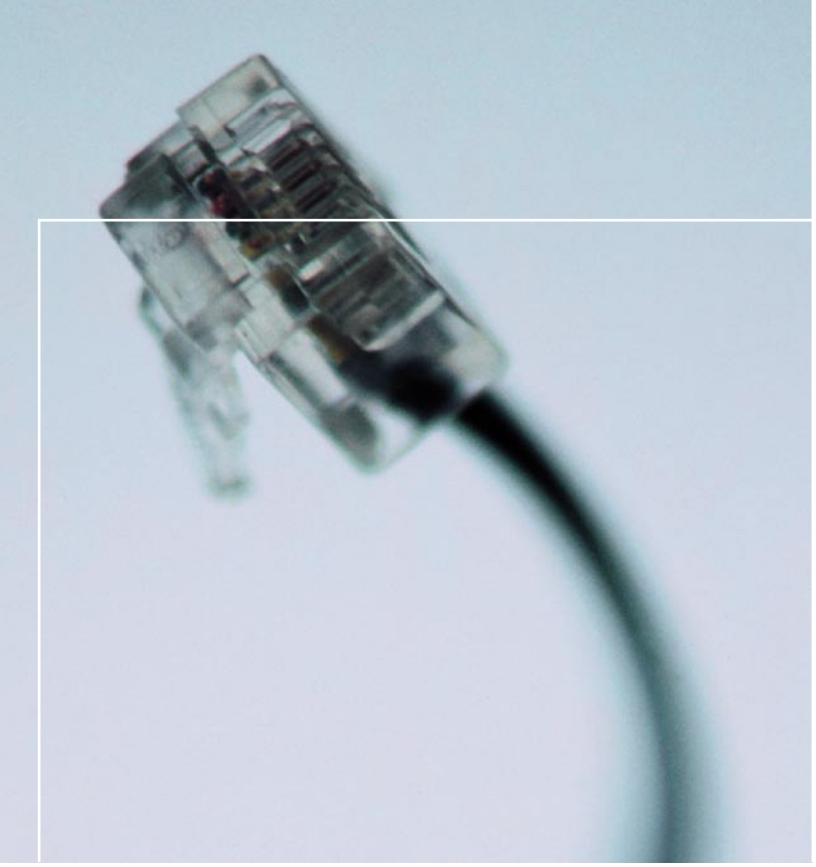
Carrier selection of the fixed network operator is an important instrument for promoting competition. This freedom of choice was introduced in Switzerland in 1999 and has been operating since then without any problems.

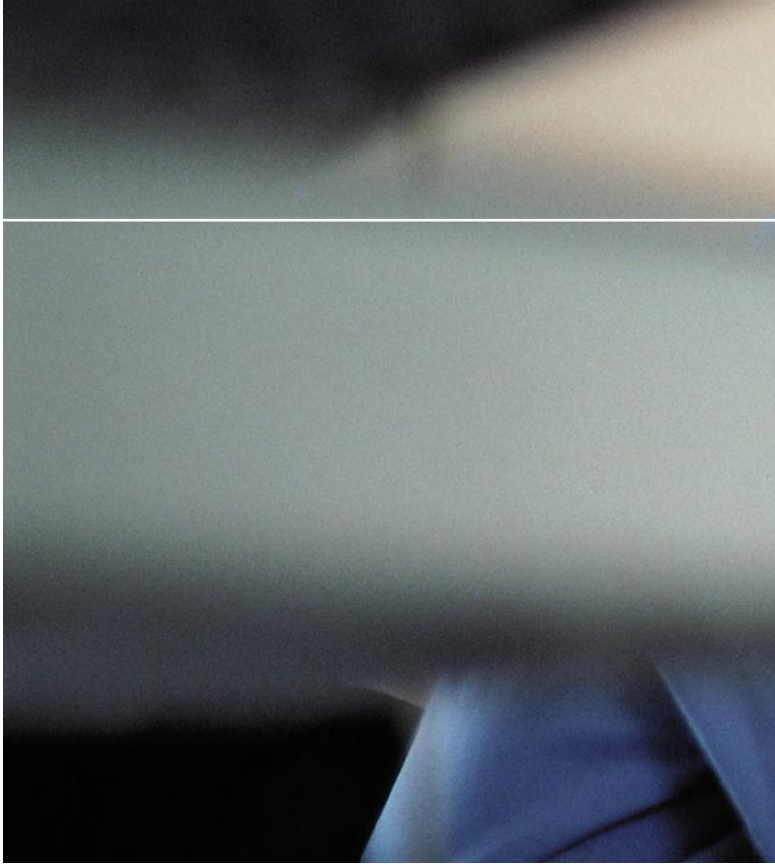
No carrier preselection in the case of internet telephony

The goal of carrier preselection on the fixed network is to break the close link between the telephone network and telephony services and thereby promote competition. With internet telephony the situation is completely different: customers are free to choose their internet service provider (ISP). As long as there is an internet connection, various VoIP operators can be selected (e.g. e-fon, econophone, green.ch etc.). Moreover, none of the pure VoIP operators has a dominant position within the market and prices are distinctly lower than in traditional telephony. Implementation of a technically complex preselection procedure would be likely to adversely affect competition, which is contrary to the goals of the Law on Telecommunications.

On the basis of this situation, ComCom has decided provisionally not to impose carrier preselection in the case of public telephone services which are provided via VoIP. However, this decision is based on the assumption that access to the internet is open and possible without discrimination. Otherwise, ComCom might re-introduce the corresponding obligation.

Call-by-call carrier selection, on the other hand, is being retained by ComCom, as this is simple to implement in technical terms.

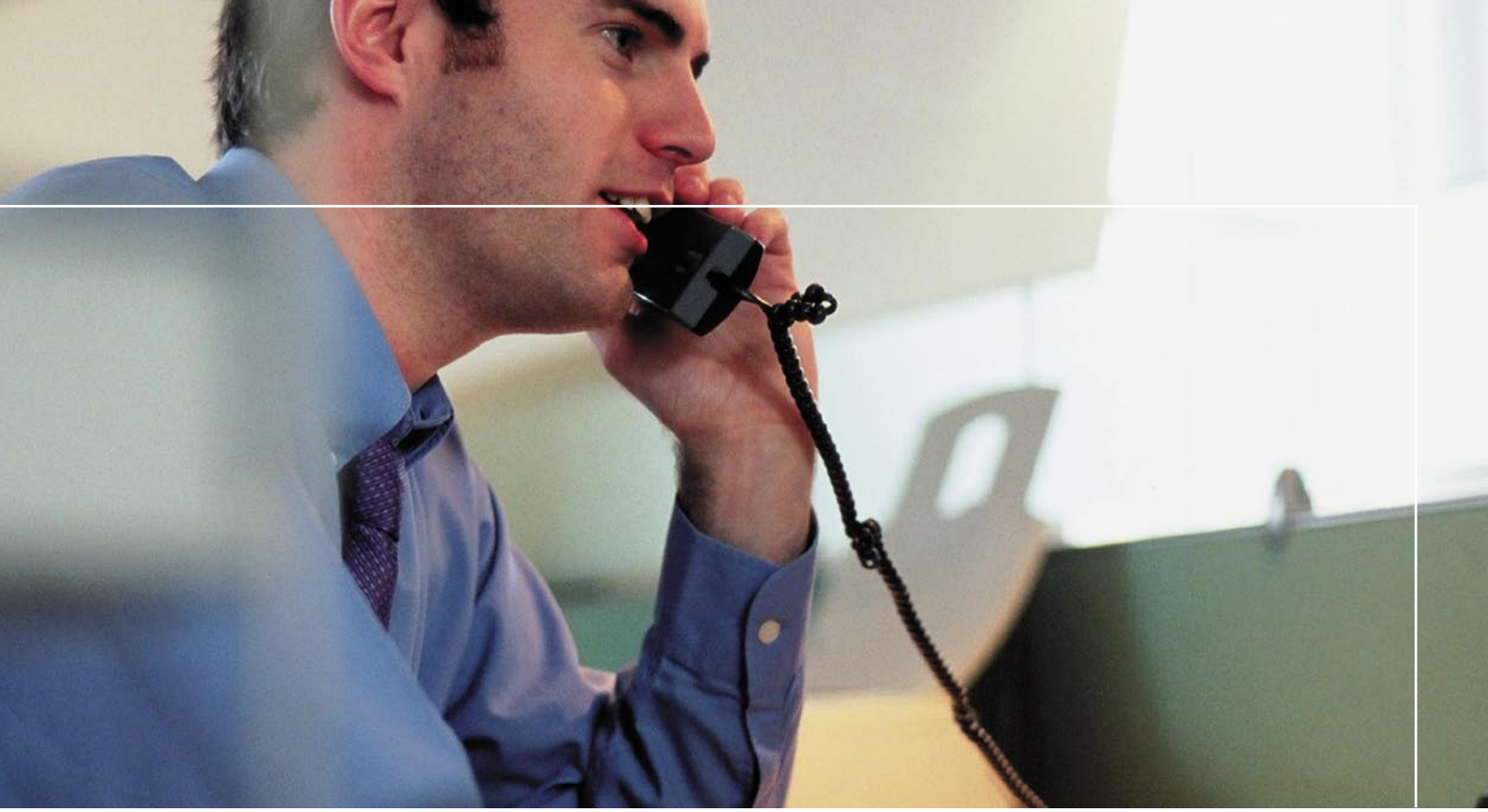




In the fixed network there are two possibilities for choosing one's desired carrier:

- **call-by-call** (or manual) **carrier selection**: Whenever a customer likes to make a call, he can decide which provider will carry this call and bill for it. To make a call, you simply dial the five-digit access code of the desired provider before you dial the telephone number (for example 107xx 031 323 52 90). A full list of access codes is available at www.e-ofcom.ch.
- **Carrier preselection** (or automatic selection): After a customer registers with a new carrier, the access code of the chosen carrier is permanently programmed in the network and must not therefore be dialled for every call. Even if a user has opted for preselection, it is still possible to use a different provider by using the call-by-call selection method.

Note that if users are no longer sure with which telecommunication service provider they are preselected, they have the possibility at any time of checking the preselection status by dialling the test number 0868 868 868.



Supervisory measures and sanctions

If an infringement of licences awarded by ComCom is suspected or the applicable laws are violated, OFCOM initiates a surveillance procedure. If OFCOM determines fallible behaviour, the Commission decides on the measures which are necessary (LTC Art. 58). If licences or decisions are not complied with, the Commission may additionally impose administrative penalties (LTC Art. 60).

In 2005, ComCom had to apply administrative sanctions in several cases because of failure to submit data for the 2003 telecommunications statistics.

Abbreviations

ADSL	Asymmetric Digital Subscriber Line
BWA	Broadband Wireless Access (WiMAX/WLL)
CATV	Cable Television
ComCom	Swiss Federal Communications Commission
CSC	Carrier Selection Code
DTS	Decree on Telecommunications Services (SR 784.101.1)
EDGE	Enhanced Data rates for GSM Evolution
GPRS	General Packet Radio Services
GSM	Global System for Mobile Communications
HSDPA	High Speed Downlink Packet Access
IC	Interconnection
IP	Internet Protocol
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
LRIC	Long Run Incremental Costs
LTC	Law on Telecommunications (SR 784.10)
MMS	Multimedia Messaging System
OFCOM	Swiss Federal Office of Communications
PSTN	Public Switched Telephone Network
SMS	Short Message System
UMTS	Universal Mobile Telecommunications System
VoIP	Voice over IP
WiMAX	Worldwide Interoperability for Microwave Access (association of equipment and component manufacturers)
WLL	Wireless Local Loop

Impressum

Editor: ComCom

Print: Druckerei Feldegg, Zollikon

Design, typesetting: Giger & Partner, Zürich

Images: GettyImages

Copies: 350 german, 250 french, 150 italian, 200 english

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Federal
Communications Commission
ComCom