

ComCom's Annual Report
2006



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 definitively reduced interconnection prices by about 30% for 2000–2003.

Number portability

The price for number porting was reduced to a cost-based level.

Mobile termination charges

Six procedures were terminated, as the parties were able to agree on lower charges.

Licences

BWA

In summer 2006, ComCom awarded a BWA licence to Swisscom Mobile. The two licences which were not awarded were put out to tender again at the end of 2006.

GSM

ComCom intends to renew the GSM licences which expire in 2008.

UMTS

The UMTS licence of 3G Mobile (Telefonica) was revoked by ComCom.

Universal service

The Federal Council included a broadband connection in the universal service for the first time. ComCom launched the invitation to tender for the new universal service licence in October 2006.

Numbering

The preparatory work for migrating 01 numbers to 044 are proceeding according to plan. From 1 April 2007, there will only be 044.

Carrier Selection

ComCom is considering amending the conditions for agreeing to a change in preselection by telephone. OFCOM carried out a consultation to this end.

National Frequency Allocation Plan

ComCom approved the 2007 frequency allocation plan.

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Foreword by the President

For consumers, 2006 was a good year, bringing falling prices, higher bandwidths and innovative, convergent products.

2007 was also a very pleasing year from the regulator's viewpoint, as some important dice were cast, opening up the way to greater competition and more legal security in the market.

For example, the Federal Court found in two cases that ComCom's actions in calculating cost-based prices were correct. Thus, the LRIC methodology, which is particularly important for the future, has been clearly defined. As a result, ComCom was able to reduce interconnection prices, for the first time and sustainably, to a lower level, and in addition the players in the market now know precisely – with particular regard to unbundling – how price calculations will be performed.

In addition, on the basis of procedures before ComCom, mobile termination charges continued to come under pressure, so Swisscom Mobile, Orange and Sunrise came to an agreement in negotiations about reducing these charges.

Even though this price reduction has only an indirect effect on end-user prices, it has to be greeted from the viewpoint of consumers, as they scarcely benefit from retroactive price adjustments.

The revocation, without compensation, of the UMTS licence from 3G Mobile (Telefonica) for non-compliance with its obligations under the licence was also a first. In this case also, the Federal Court supported ComCom's decision, i.e. a party which acquires frequencies by way of a licence is also obliged to use them.

And, last but not least: after long debates, parliament adopted both the Law on Telecommunications (LTC), with unbundling of the last mile, and the Law on Radio and Television (LRTV), which transfers the awarding of convergent radio communication licences to ComCom.

New laws are one thing, but enforcing them is another.

What parliament's compromise on unbundling actually means for the reality of the market will now become

apparent. In the interest of consumers, the – already delayed – opening-up of the last mile should now be implemented as rapidly as possible. In this context it is essential for Swisscom to make a fair offer in order to lay the foundations for fruitful negotiations. It should also – in accordance with parliament's will – offer fast bitstream access, so that competition can also develop in peripheral regions.

Only in this way will the different telecommunication services providers be able to come to an agreement quickly and, for example, find uncomplicated, appropriate solutions concerning co-location. Otherwise ComCom, as in the case of interconnection, will have to specify prices and conditions – as the regulator of a telecommunications market which is as efficient and fair as possible, intervening when the players in the market cannot reach agreement.



Marc Furrer, President
February 2007

Market overview and perspectives

2006 was a year full of far-reaching decisions: after much agonizing, parliament adopted the Law on Telecommunications (LTC), with unbundling. The privatisation of Swisscom was provisionally put on the back burner. ComCom ordered a substantial reduction in interconnection prices in the fixed network and the revocation of a UMTS licence.

The Federal Court deemed that ComCom's actions in calculating cost-based prices were correct. This means that the key LRIC methodology has been clearly defined for the future.

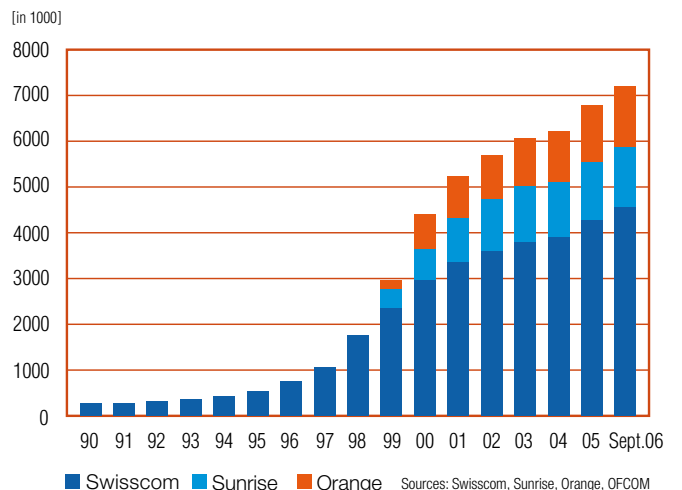
For consumers, 2006 was a good year, bringing falling prices, higher bandwidths and innovative, convergent products. In addition, the universal service throughout Switzerland is comprehensively guaranteed – and was even extended by the Federal Council for the future.

Despite customer growth in mobile telephony and in broadband services, overall sales in 2006 probably stagnated. This is largely attributable to falling end-user prices and interconnection prices. Also, investment in new infrastructures has put pressure on results.

Development of the mobile telephony market

A new technology has probably never before established itself so quickly and so durably: market penetration for mobile telephones was already up to 99% by the end of 2006. Since 2001, the number of mobile telephone connections has been increasing by about 8% a year on average. Nevertheless, Switzerland is in only in the middle of the European league table; most northern and southern European countries already have penetration rates far in excess of 100%.

Fig. 1: Mobile phone connections in Switzerland

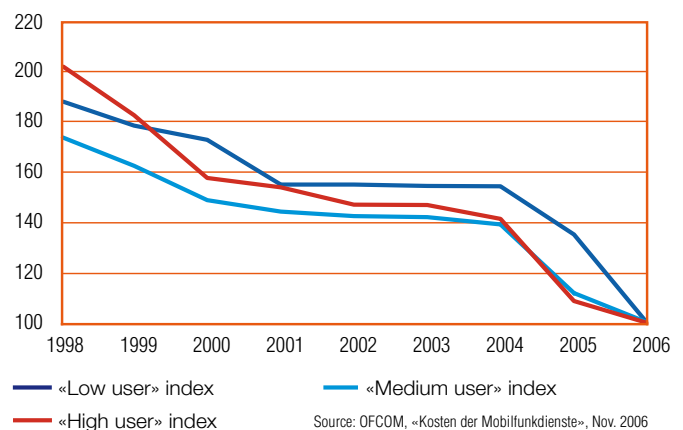


The front-runners are Italy (129%), Greece (116%), Sweden and Great Britain (113%).

In Switzerland too, the '100% barrier' will undoubtedly be broken – and in the process the acquisition of new customers will be achieved with greater difficulty and increasingly via partnerships. Even now, many users have more than one mobile device on the network – a notebook or a PDA, for example, in addition to their mobile phone.

However, the spread of new mobile phone features takes time. In 2004, for example, only 18% of users had a camera phone; in 2006 the figure was 51%, as shown by the 2006 KommTech study (IGEM/Publica Data AG, Sept. 2006). However, there is a wide gap between the features available and their use; in 2006, for example, the integrated camera was being used by only 23% of mobile owners. In any event, there are also considerable generational differences in mobile usage. The vast majority of users still use a mobile almost exclusively for making telephone calls or sending SMS text messages. Apart from generally male 'techies', it is primarily 15-24 year-olds who more often send an MMS message, take video footage, listen to music or play games

Fig. 2: Development of end-user prices on the Swiss mobile market (index of the costs of mobile phone services for three user profiles, 100 = 2006)



on their mobile. These data services are indeed still in their infancy, but their day will come.

Customer numbers for the three national GSM providers also increased considerably in 2006 (cf. figure 1). By far the greatest growth in terms of numbers was again enjoyed by Swisscom Mobile. The distribution of market share at the end of 2006, however, remained practically the same as in the previous year: 63% of users are with Swisscom Mobile and rather more than 18% are Orange and Sunrise customers

respectively. No figures are known for the fourth network operator Tele2, but its market share is probably well below 1%.

Movement on prices

After the liberalisation of the market in 1998, end-user prices for mobile telephone services – measured using the three consumer baskets calculated by OFCOM – «low use», «medium use» and «high use» – fell sharply, as expected (cf. figure 2). In the ensuing economically difficult years from 2001 to 2004, prices stabilised. After customers who use mobile services averagely or intensively were rewarded with falling prices in 2005, in 2006 low-use callers too were enjoying distinctly lower prices.

There were probably two reasons for this second fall in prices: on the one hand several new market entrants and partnerships (Tele2, Migros, Coop, Cablecom, Mobilezone and Yallo) increased competition, primarily at the level of services. On the other hand, the reduction in mobile termination charges by Swisscom in the summer of 2005, and then by Sunrise and Orange, probably had an effect.

Into the future with UMTS

Worldwide, there are already more than 100 million users of third-generation mobile telephone networks (e.g. UMTS). UMTS is also on the increase in Switzerland: in order to be

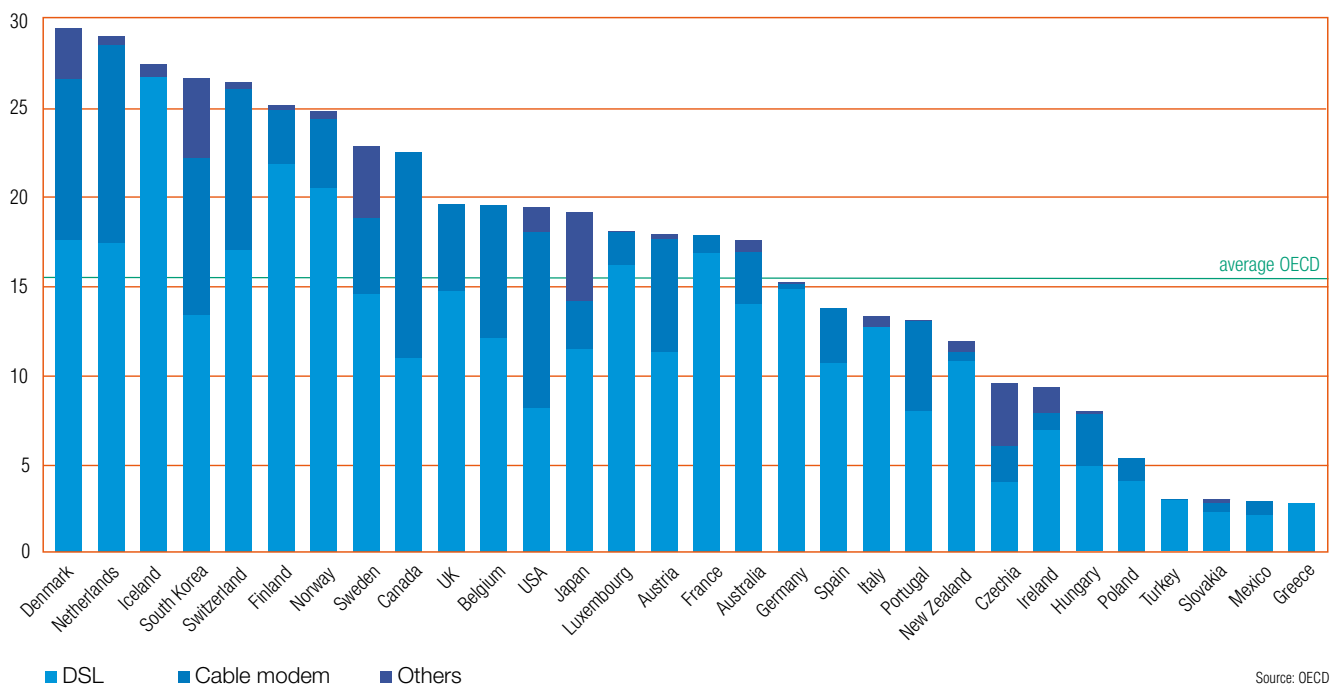
ready for the future, providers are investing in the construction of UMTS networks. Swisscom Mobile, as the financially powerful front-runner, has a UMTS coverage of 90% of the population and in the major centres is already investing in HSDPA, the extension to UMTS which allows data transfer rates of up to 1.8 Mbit/s. Orange also has reached a high coverage of UMTS in combination with GPRS and Sunrise seems to be opting mainly for the EDGE GSM technology, in addition to UMTS in the large cities.

In view of the international trends, it is to be expected that UMTS will completely replace the GSM network in the medium term in Switzerland as the follow-on technology. Even if such a migration is expensive and complex, this step is pressing, for economic reasons.

Even today, thanks to a combination of second and third generation mobile telephone technologies, operators can offer mobile internet access and fast data transfer almost everywhere – though at different speeds according to the user's location.

Although the mobile internet access offered by all operators is still little used at present, together with tailored content it will be of key significance for future development. The range of offerings in terms of services is becoming ever broader,

Fig. 3: OECD broadband penetration, June 2006 (subscribers per 100 inhabitants, by technology)



with the emphasis on multimedia: for example, all three operators now also offer live TV and video telephony as well as games, music and videos downloads. In addition, there is special content for mobiles, such as Swisscom Mobile's «News in 100 seconds».

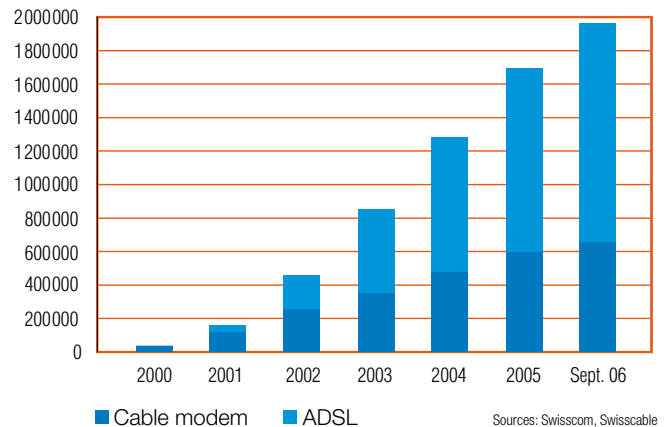
The development of devices and in particular screen size is undoubtedly key factors in the success of multimedia entertainment and television on mobile phones. Here too, progress rolls inexorably on. One innovation, for example is the small mobile «cellular book» with a 13 cm screen which scrolls open.

In the case of mobile TV, however, even modern mobile technology such as UMTS is rapidly coming up against capacity limits. Solutions might include combination with the broadcasting technology DVB-H. At present, a Swisscom Broadcast trial, in which Sunrise and Orange are also involved, is running in Berne. It is possible that ComCom will invite tenders for a licence for DVB-H in 2007.

At the regulatory level, the following points should be also mentioned:

- Six suspended ComCom procedures concerning mobile termination charges were withdrawn because the companies were able to reach agreement in negotiations. By 2009, mobile termination charges in Switzerland will consequently fall gradually by 25% to 40% – although they continue to be higher than in neighbouring countries. The price reductions should have indirect positive effects on fixed-network and mobile phone charges.
- In spring 2006, ComCom revoked 3G Mobile's UMTS licence. The subsidiary of the Spanish Telefonica company had withdrawn from Switzerland some time ago for business reasons and was therefore not in compliance with the conditions of the licence. This decision was confirmed by the Federal Court.
- The GSM licences of the three operators Swisscom Mobile, Orange and Sunrise will expire at the end of May 2008. After a consultation of interested parties in spring 2006, ComCom has decided to consider a renewal of these three licences. ComCom will determine the precise form of the licences in 2007.

Fig. 4: Broadband access in Switzerland



Development of the broadband market

The broadband market in Switzerland is enjoying rapid growth. The penetration rate, which was 17.4% at the end of December 2004, grew to almost 23% at the end of 2005 – and 26.2% at the end of September 2006. At that time, more than a quarter of the Swiss population had broadband internet access, via either ADSL or the cable network. Switzerland is in fifth position among the OECD countries, at the same level as Korea (26.4%) and just behind Denmark (29.3%), the Netherlands (28.8%) and Iceland (27.3%). This is considerably above the average for the OECD countries (15.5%) and for the EU15 countries (16.5%).

From the viewpoint of the access technologies employed, the observed trend in recent years was confirmed in 2006, since ADSL is still growing more quickly than CATV. At the end of September 2006, market shares were: 66.4% for ADSL (1,305,000 connections) and 33.6% for cable (660,000 connections; cf. figure 4).

Competition in the ADSL market: Bluewin widens the gap

Considering the ADSL market on its own, we note that all access providers recorded a total increase in the number of ADSL customers of almost 300,000 (240,000 for Swisscom, 33,000 for Sunrise and 21,000 for the other providers) between September 2005 and September 2006. As was the case last year, Bluewin (a subsidiary of the historic operator Swisscom) was the only provider to increase market share. Its market share grew from 60.1% at the end of 2004 to 63.9% at the end of September 2005 and 67.9% at the end of September 2006.

It still benefits from its initial position in this market, the availability of the telecommunications infrastructure and a larger customer base. In the absence of unbundling, the other providers are not able to offer anything better than the products which Swisscom resells to them. Thanks to its own access network, the latter is therefore the first – and only – telecommunications provider to be able to offer a full ADSL television service.

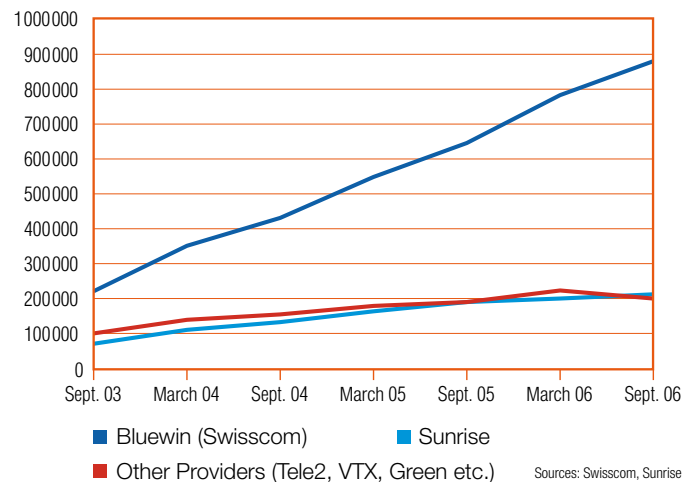
Sunrise is still its largest competitor in the ADSL market, despite the continuing fall in its market share, which dropped from 17.8% at the end of September 2005 to 16.3% at the end of September 2006. Sunrise is now ahead of all the remaining service providers combined; their market share fell from 18.3% to 15.8% over the same period (cf. figure 5).

High-speed internet: Switzerland gets up to speed

The year 2006 saw a real race towards ever higher speeds and this has helped Switzerland to close the gap with her neighbours in this area.

Since the beginning of 2006, Swisscom Fixnet and Cablecom in turn increased the bandwidth of their internet access

Fig. 5: ADSL connections in Switzerland



offerings, to speeds three and five times higher respectively. In early January 2007, Cablecom launched its Hispeed 10,000/1000 kbit/s offerings, whilst Swisscom shortly afterwards announced an increase in ADSL speeds envisaged for spring 2007, with the 2000/100 offering increasing to 3500/300 kbit/s and 3500/300 to 5000/500 kbit/s.

Entry-level offerings also appeared from most internet access providers. These ADSL 300 (or also Hispeed 300 offerings for cable) are aimed essentially at occasional users and those still using low-speed internet, and are generally billed

to the customer as a function of the connection time or traffic consumed.

The Swiss market is moving up a gear and in this way hopes to satisfy the growing demand for higher transfer rates from Swiss surfers.

However, the prices of these various offerings remain high compared with other countries. In most of the neighbouring European countries, starting with France, a market with strong competition, but also in the United Kingdom, Italy and Germany, everyone can surf on the internet at minimum speeds of 6 to 8 Mbit/s at prices identical to those charged in Switzerland; even the increasingly frequent offerings in excess of 20 Mbit/s including unlimited telephone calls and television via ADSL are cheaper than the high-speed 3 or 5 Mbit/s speeds which are available in Switzerland.

But at a time when more and more surfers are becoming content providers on the internet, via blogs, photo albums, video and music hosting, etc., an important point to remember is the consideration being given to the ever growing demands of surfers for data transfer (also upstream speeds).

Although progress has been considerable, it seems still to be insufficient with regard to users' needs. A study published

in early December 2006 by Broadband Networks (entitled «FTTx für den Schweizer Markt») also envisages that because of the development of internet TV, video on demand (VoD) or HDTV, and ever more voluminous content offerings, bandwidth requirements are expected to increase from the current 1 to 2 Mbit/s to 30 Mbit/s in the next few years.

The future of the internet is undoubtedly linked to optical fibre, which allows very high transfer rates. If Switzerland wishes to match the other European countries and generalise triple-play offerings, or offer high-definition digital TV, modernisation of the network infrastructure appears indispensable.

ADSL technology is reaching its limits and Swisscom's announcement about marketing its first VDSL offerings in summer 2007, at speeds of at least 10 Mbit/s, marks the beginning of the next generation networks (NGN). Swisscom, which has already invested heavily in deploying optical fibre and the new VDSL technology, has also announced that it wants to invest between CHF 600 and 700 million on extending its VDSL network by the end of 2008. Swisscom's announced target is to reach VDSL coverage of 75% of households by 2010.

Launch of TV down the telephone line

More and more people are watching television on a computer. However, it is important to distinguish between two types. On the one hand is TV which is carried on the internet, which is generally accessible from a portal and which consists of a video feed already encoded for display on a computer. This technique is often free of charge and does not use any specific software and the quality is rather mediocre at present. On the other hand, IPTV uses its own network, routed directly from a provider's servers to the customer, which requires a specific installation (a set-top box or a TV decoder). The data streams are carried as packets by the IP data network, converted into video and audio signals by a decoder and then displayed at optimal quality on a television set. Swisscom's Bluewin TV offering, based on IP technology, is one such offering.

Announced and long awaited, Swisscom's offering of television down the telephone line was launched in November 2006 as its Bluewin TV service. In particular, Swisscom's customers can access over 100 television channels and 70 radio stations.

Apart from Cablecom and cable television, the only alternative currently available in Switzerland is TV via the internet proposed by the Netstream company, which in particular provides the adsl.tv portal and which has recently been selling this service to Sunrise (Sunrise Desktop TV). Thanks to the live-streaming technology, users can access some 20 national and international television channels, mostly German-speaking.

Finally, there are several free software products which make it possible to view TV on the internet (adsltv, zattoo...); the first half of 2007 will probably see the launch, by the founders of Skype, of their free TV platform, named Joost (Venice Project) and based on a «peer-to-peer» distribution technology, but more closely related to VoD than IPTV as such.

Unbundling in sight

The revision of the Law on Telecommunications (LTC), sent out for public consultation in summer 2002, was finally adopted by parliament on 24 March 2006, after much debate.

Unbundling of the local loop (the 'last mile') was one of the key topics in the debates. The final decision to consider only the copper twisted pair, and not other technologies such as optical fibre, for example, finally made it possible to bring this highly controversial matter to a close.

Thus, a technology-neutral access system as in the EU will not be introduced; instead a final listing of the forms of access to be offered by a market-dominant provider will be written down in the law. Apart from full unbundling and interconnection, these also include leased lines, fast bitstream access for only four years, charging for the fixed-network connection and access to cable ducts. In contrast with the EU, «shared line access» does not have to be offered.

The revised LTC and the decrees governing its implementation are expected to enter into force on 1 April 2007, after which Swisscom is expected to present a standard offering.

It is a positive sign that Swisscom Fixnet is preparing for the new arrangement by clarifying the possible demand with the other providers and trialling the unbundling of individual lines. On the other hand, Swisscom seems not to want to offer fast bitstream access, as it assumes that in this case it will not be dominant in the market.

In the interest of consumers, the – already delayed – opening-up of the last mile should be implemented as rapidly as possible. This also corresponds to the will of parliament. Thus, for example, all those involved should assist in finding uncomplicated and fair solutions in the case for instance of co-location. It is to be hoped that the players in the market reach agreement quickly through negotiation, thereby avoiding procedures before ComCom.

In order to ensure that free competition still remains possible given forward-looking investment by Swisscom in fibre to the curb (FTTC), it must also be possible for other providers to unbundle only the copper line between the cable distributor and the customer (so-called «sub-loop unbundling»). In the longer term, this is the only way to ensure that other providers can roll out competitive offerings which require large bandwidths.

If the dominant operator and the alternative operators cannot agree on access prices and conditions within three months, ComCom will try to determine prices and conditions as quickly as possible.

Current developments in the EU

Looking beyond our frontiers: in the regulatory area, revision of the legal framework for electronic communications is currently the main topic in the EU. In order to meet the challenge of increasingly transnational and convergent markets, in the view of the EU Commissioner Reding regulation has to be more consistent and more effective. The following key areas are at the forefront of the revision process:

- Simpler and faster procedures to supervise markets: ex-ante regulation is not being brought into question at all in the EU. However, the need to intervene in a market has to be clarified more efficiently – and also in distinctly fewer markets.
- Greater flexibility in frequency spectrum management: measures being discussed in this context include frequency allocation which is neutral in terms of technology and services, frequency trading or the establishment of a European frequency agency.

However, the EU Commission's call for one central European regulator, who would oversee or even replace the national regulatory authorities (NRAs), is contested. It would bring into question the independence of the NRAs and would not take account of the still primarily national structure of telecom markets.

The EU Commission wants to present its proposals for adapting the legal framework in the summer of 2007. Implementation in the EU countries is expected to take until 2010.

The high charges which consumers have to pay for mobile calls abroad (international roaming) are also a large thorn in EU Commissioner Reding's side. According to EU calculations, charges for international roaming are on average four times higher than charges for national mobile calls. Prices must be reduced by way of a decree to ensure that they are not much higher than prices for national calls. When and in what form this submission will be adopted is still an open

question – it is possible that prices for data transfer will also be incorporated. Switzerland is participating in this discussion within the framework of the ERG. Also the Swiss consumers would benefit from such an EU regulation.

Revenue from online content will reach 8.3 billion euros by 2010 in Europe, a growth of over 400% in five years, says a new study for the EU Commission. Thanks to the spread of broadband and the roll-out of advanced mobile networks, mass-market online content distribution will become a reality. For the EU Commission, the information society is a unique opportunity for Europe. The EU Commission is therefore also allocating 1.2 billion euros to new ICT research projects in 2007. In Switzerland there is also a long way to go.

Commission and its 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 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.

Professor Pierre-Gérard Fontolliet resigned from the Commission at the end of 2006 for reasons of age. The Commission thanks Pierre-Gérard Fontolliet for his congenial cooperation and his tireless commitment. His outstanding technical knowledge made him a staunch pillar of the Commission for nine years.

On 24 January 2007, the Federal Council appointed a new member of the Commission, a proven expert in telecommunications technology: Jean-Pierre Hubaux, professor of the School of Computer and Communication Sciences at the Swiss Federal Institute of Technology Lausanne (EPFL).

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 (until 31.12.2006)
- Jean-Pierre Hubaux, electrical engineer, Professor EPFL Lausanne (since 24.1.2007)
- Beat Kappeler, Dr. h.c., lic. ès sc. pol., publicist
- Hans-Rudolf Schurter, Attorney, entrepreneur in the electronics sector

In 2006, the Commission met for a total of 10 sessions and on the occasion of a three-day study trip. The Commission members' commitment in terms of time, including extensive preparations for meetings and decisions taken by way of circulation, amounts to about 20 days a year.

The Secretariat

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

The Secretariat is cooperating in most of the cases with the Federal Office of Communications (OFCOM). OFCOM prepares the dossiers for the Commission and implements its decisions.

New website

At the beginning of November 2006, ComCom launched the new version of its website. Since it is a communication tool which is becoming increasingly important, the upgrade includes new and regularly updated content. For instance the new website contains a «facts and figures» section which provides an overview of statistical data on the telecommunications market in Switzerland.

ComCom also wished to comply with the new Confederation recommendations aimed at harmonising graphics, information structure and accessibility of all the federal administration's websites.

Our site can be visited at the new address: www.comcom.admin.ch.

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

- Peter Bär, secretary general of the Commission (100%)
- Pierre Zinck, scientific officer and webmaster (70%)
- Maya Stampfli, administrative secretary (70%)

Activities of the Commission

Interconnection procedures

Interconnection prices definitively reduced 2000–2003

At the end of August 2006, ComCom definitively decided that the prices charged by Swisscom for interconnection in the fixed network in the years from 2000 to 2003 were not cost-based. On the basis of the calculations using the LRIC method, ComCom reduced these interconnection prices with retroactive effect by approximately 30%. ComCom

substantially confirmed its decisions of 10 June 2005, which were appealed before the Federal Court (cf. the ComCom activity reports for 2003 and 2005). Though the Federal Court partially upheld these appeals on 21 April 2006, it also established that there was largely nothing to appeal against in the ComCom decisions (c.f. BGE 132 II 284 and BGE 132 II 257, www.bger.ch).

The Federal Court merely objected that the procedural costs were to be reduced and that a calculation step, which is of

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 prices 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.

little importance for the amounts of the repayments between the parties to the procedure, was to be omitted.

It is worth noting that the Federal Court conceded a degree of technical discretion to ComCom on technical issues. This court judgement is also of great significance because the Federal Court supported ComCom's methodical approach for determining cost-based prices. The LRIC methodology is therefore clearly prescribed for current and future procedures (e.g. relating to unbundling).

Significance of the price reductions for the telecommunications industry and end users

Basically, any decision made by the Commission will only apply to those involved in the procedure. Therefore, only the applicants, TDC Switzerland and Verizon Switzerland (formerly MCI WorldCom), will immediately benefit from the price reductions which have been imposed for the years 2000 to 2003. In future, however, Swisscom is expected to offer all other interconnection partners lower prices on the basis of the legal ban on discrimination.

It should be added that in procedures between Verizon and Swisscom a clause on retroactive effect was also disputed.

This related to the question of whether interconnection partners would also be able to benefit from price adaptations by ComCom in third-party procedures. ComCom considered such a retroactive effect clause to be appropriate. In the final analysis, the claim for cost-based prices – in case of market dominance – actually exists because of the law. The Federal Court shared this view and determined that such a retroactive effect clause ensures «the earliest possible implementation of the principle of effective competition».

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.

Other pending procedures

At the end of 2006, ComCom still had five procedures outstanding, relating to interconnection prices between fixed-network providers from 2004 onwards. After the Federal Court had backed ComCom's methodology in its above-mentioned judgement of 21 April 2006, the procedures which had previously been suspended were re-activated. OFCOM is currently investigating the cases – with particular reference to providing the very time-consuming evidence of actual costs.

The LRIC method of calculation

The Decree on Telecommunications Services (DTS Art. 45) states that since the year 2000 cost-based prices have 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 in the industry. The capital costs include both the costs for external capital and the expected return on internal capital resources (equity capital). Therefore the LRIC prices also include a profit element.

Further information on the LRIC method can be found on the ComCom website:

<http://www.news-service.admin.ch/NSBSubscriber/message/attachments/2089.pdf>

Reduction in prices for number porting

In autumn 2004, Cablecom submitted an application to ComCom for an examination of Swisscom Fixnet's charges for porting telephone numbers in the fixed network. This relates exclusively to telephone numbers which are ported between providers with their own access network – not to a change of providers in the case of carrier preselection.

As part of the procedures, the Competition Commission was consulted with regard to market dominance. In its report of 13 June 2005, the Competition Commission found that Swisscom is market-dominant in the porting of individual numbers.

On the basis of the cost analyses carried out by OFCOM, ComCom concluded that Swisscom included in their price calculation costs which, according to the legal stipulations, must be borne by each provider itself when it implements the number porting system. In addition, ComCom reduced the permissible wage costs to a level which is customary in the sector. ComCom accordingly decided in July 2006 to reduce the prices for porting individual numbers in the fixed network from CHF 31.00 to CHF 17.65 for 2004, CHF 15.15 for 2005 and CHF 11.90 for 2006. The Swiss price monitoring authority (Preisüberwachung) also supported this reduction to a cost-based level in a comment.

Swisscom Fixnet appealed against ComCom's decision; however, the objections were rejected by the Federal Court in January 2007. In this case too, the Court allows ComCom a degree of technical discretion as the specialist authority.

The Federal Court came to the conclusion that ComCom proceeded correctly when calculating prices and that the decreed price stands up in an international comparison.

Fixing of mobile termination charges

At the beginning of 2006, a total of seven applications for reductions in mobile termination charges were submitted to ComCom. The applications were for prices based partly on costs and partly on market levels.

As part of the legal procedure, the Competition Commission was asked for an expert report on the question of market dominance. At the end of November 2006, it found that Swisscom Mobile, Orange and Sunrise each occupied a market-dominant position for the termination of calls in their mobile telephone network. This enabled ComCom to lay down cost-based prices.

With regard to the primacy of negotiations, these companies came to the negotiating table in order to find an amicable solution. Stepwise price reductions from the previous 20 centimes to 15 centimes by 2009 (-25%) for Swisscom and from the previous 29.95 centimes to 18 centimes by 2009 (-40%) for Orange and Sunrise were agreed between the negotiating parties.

Subsequently six of the pending interconnection applications were therefore withdrawn. This means that long procedures before ComCom and possibly before the federal administrative court could be avoided.

However, two interconnection applications by fixed network operators to fix mobile termination charges are still pending. The latest one was not submitted until the end of 2006. OFCOM is investigating these cases.

ComCom cannot express its opinion on the negotiated charges because of the procedures in progress. In view of their market-dominant position, Swisscom Mobile, Orange and Sunrise are obliged under the Law on Telecommunications (LTC) to offer cost-based prices. The extent to which the charges that have now been negotiated actually meet this requirement cannot be assessed because to date no cost analysis has been performed. In the process of the pending procedures such an analysis can be performed.

The average of the charges negotiated for 2007 is about 20% above the European average for mobile termination charges in 2006 (cf. ERG (06) 24 Public Mobile Termination

How is an interconnection procedure carried out?

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. 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. 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).

This procedure is also known as «ex-post regulation». In contrast, «ex-ante regulation», which does not recognise the primacy of negotiation, is practised in the EU. The regulatory authorities in the EU countries can intervene independently and at an early stage in markets in which competition is not effective.

Rates Benchmark, www.erg.eu.int). In addition, it must be assumed that mobile termination charges will generally continue to fall in the European Union. Moreover, in our neighbouring countries there are regulated mobile termination charges of different levels – depending on whether they relate to the former monopolist or small newcomers. However, the prices for 2007 are in any case well below those of the Swiss mobile telephone operators.

However, ComCom also expects that the new charges will have an indirect positive effect on end-user prices, i.e. providers will pass on to consumers the reduction in both fixed network and mobile charges. This also depends on competition in the end-user market.

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 radio communication licences which are not intended for the provision of telecommunication services (for example, licences for radio amateurs or company radio). Below you will find a summary of the licences issued by ComCom itself.

BWA licences

After great interest in BWA licences was shown in a public consultation in spring 2005, ComCom decided to issue an invitation to tender for three licences in the 3.41-3.6 GHz frequency range, by means of a so-called «sealed-bid» auction. The invitation was issued at the end of November 2005.

Bids were invited for two licences with a bandwidth of 2 x 21 MHz and a third licence with 2 x 17.5 MHz. This bandwidth will enable the licensees to offer country-wide services of high quality. It is also possible to offer nomadic services in addition to fixed point-to-multipoint services. In the medium term it is planned to allow mobile services as well.

The minimum price of the licences was fixed at CHF 6.1 million for each of the large bandwidth licences and at CHF 5.1 million for the small bandwidth licence. This corresponds to

the legally stipulated minimum (Decree on Telecommunication Services, art. 12).

The licences run until 31 December 2016 and include minimum conditions concerning the construction of networks. As with mobile telephony, a BWA operator has to comply with the decree on protection from non-ionising radiation.

By the deadline of 28 February 2006, a total of five candidatures had been received (Swisscom Mobile, Deutsche

Breitbanddienste GmbH, Orascom Telecom Holding S.A.E., Swissphone Invest Holding AG and TDC Switzerland AG). All the candidates met the licensing conditions and were therefore authorised to participate in the auction by ComCom. This was scheduled for 6 June 2006.

Of the five companies which put themselves forward as candidates for the three BWA licences, Swisscom Mobile was the only one to submit a bid. ComCom subsequently awarded Swisscom Mobile a BWA licence (with 2 x 21 MHz) at the minimum price.

In the 3.41-3.6 GHz frequency range, in addition to Swisscom Mobile the company Priority Wireless already had a WLL licence (2 x 28 MHz) since the year 2000. In December 2006, this licence was transferred to Cablecom which, like Priority Wireless, is 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 Hi-perMAN). 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).

A further invitation to tender for two BWA licences

The two licences which had not been awarded in the spring were put out to tender again in December 2006, as ComCom had the impression that there might be renewed interest in these licences. When frequencies are available in an interesting frequency band which is particularly suitable for WiMAX, the Commission would like to facilitate their use.

If, when this procedure is concluded, one or both licences have not been awarded, the Commission intends to allocate these frequencies, on application, for use at regional level.

If there are at least 2 valid submissions for a licence, it will be awarded by means of a «sealed bid» auction. If there is only one valid bid for a licence, this will be awarded directly at the minimum bid price. The minimum price of the licences is CHF 5.8 million for the large bandwidth licence and CHF 4.85 million for the smaller bandwidth licence. The candidature documentation must be submitted by 9 February 2007 together with a sealed bid.

GSM licences

All operators are complying with the GSM licences. GSM mobile telephone coverage in Switzerland is approximately 100% of the population and 85% of the surface area of the country (OFCOM, 2005 official telecommunications statistics, February 2007).

The GSM licences of the three operators Swisscom Mobile, Orange and Sunrise will expire at the end of May 2008. After a consultation of interested parties in spring 2006, ComCom has decided to consider a renewal of these three licences. ComCom will determine the precise form of the licences in 2007.

At the end of 2006, Swisscom bought back the 25% share from Vodafone for Swisscom Mobile (Swisscom press release dated 19.12.2006). ComCom gave its approval of the necessary adaptation of the GSM, UMTS and BWA licences (in accordance with art. 9 LTC).

UMTS licences

In the case of UMTS, coverage according to the 2005 statistics is already 89% of the population and 54% of the coun-

try's surface area. Swisscom Mobile, Orange and Sunrise are therefore meeting the coverage obligation in their licences.

The fourth UMTS licensee, 3G Mobile AG, a subsidiary of the Spanish company Telefonica, has not constructed an infrastructure and is therefore violating the coverage obligations (50% by the end of 2004) as laid down by OFCOM within the framework of a supervisory procedure. 3G Mobile is not active on the Swiss market, nor has it any concrete plans to construct a network. ComCom therefore decided in April 2006 to revoke the unused licence without compensation. At the same time as the decision to revoke the licence, ComCom rejected applications from 3G Mobile concerning the lifting of the licence condition that had been violated and the transfer of the licence to one or more existing UMTS licensees.

In October 2006, the Federal Court rejected 3G Mobile's appeal against this decision by ComCom. It determined that revocation of the licence was in the public interest and was proportionate, as 3G Mobile itself had decided for business reasons not to fulfil the licence. If a company miscalculates during an auction for licences, continued the Federal Court, it had to bear the resulting risk itself.

ComCom will decide at a later date on how the frequencies which are released as a result of the revocation will be utilised.

WLL Licenses

In the case of the WLL licences, two licences were transferred and one was returned:

- The national licence of Priority Wireless, which is the only WLL licence in the 3.41-3.6 GHz frequency band and which is therefore suitable for use with WiMAX, for example, was transferred to Cablecom.
- Also, the licence of Star 21 Networks GmbH will now be held by Star 21 Networks (Switzerland) AG.
- The Broadnet company has relinquished its licence.

As the supervisory authority, OFCOM as a rule regularly checks whether the minimum operational obligation of the licences is being complied with. If this is not the case, OFCOM initiates a supervisory 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.

At present, there are some 4850 public payphones in the municipalities of Switzerland, which are part of the universal service. In 2006, more than 350 public payphones were adapted for use by disabled persons, in accordance with ComCom's instructions. Outside of the universal service, however, there are some 3500 other public payphones.

Since Swisscom Fixnet's universal service licence expires at the end of 2007, the award of a new licence was prepared in 2006. In September 2006, the Federal Council modified the content of the universal service to changing social needs. In particular, it included a broadband connection (600/100 kbit/s) as well as additional services for the disabled in the universal service.

The directory enquiries service, call diversion and advice of charge have been removed from the obligations of the universal service. These services will continue to be provided in Switzerland on the open market by numerous providers.

What is the universal service?

The universal service consists of a basic offering of telecommunications services which, according to the Law on Telecommunication (LTC of 30.4.1997), must be provided nationally to all sectors of the population, in good quality and at a reasonable price. Such basic services include, for example, the public subscriber connections, access to the emergency services, an adequate provision of public telephones (public callboxes) or special services for the visually and hearing impaired. The universal service therefore ensures from the outset that any possible regional or social disadvantage does not prevent access to the most fundamental means of social communication.

It is within the remit of the Federal Council to adapt the content of the universal service periodically to social and economic needs as well as to technological developments. ComCom is obliged by the LTC to periodically put the licence for universal service in telecommunications out to tender and to award it on the basis of a competition based on criteria.

In October 2006, ComCom has launched the tender for the new universal service licence. The licence will cover the entire national territory and will run for 10 years from 1 January 2008. ComCom will award this licence by the end of June 2007.

Numbering

Migration of 01 numbers: from 1 April 2007, only 044 will exist

In March 2000, ComCom had already adopted the «closed» numbering plan E.164/2002 (the same number format for local and national calls) in order to guarantee a sufficient quantity of addressing resources and also to establish the necessary conditions for the introduction of geographical number portability. To be able to do this, it is preferable to provide subscriber numbers of identical length throughout Switzerland. This is the aim of the final step of the numbering plan, which involves the migration of 01 telephone numbers to the same 044 numbers in the Zurich numbering zone.

The first and most important stage of the numbering plan took place on 29 March 2002: since then, it has been necessary to use the area code for both local and national calls. Apart from the fact that the area code became a fixed part of the number, all the previous numbers and area codes remained unchanged.

The second stage, prepared over seven years, is the migration of 01 numbers to 044. In addition, the creation of the new 043 area code greatly increases the number range for the Zurich region. The technical switch from 01 telephone numbers to 044 has already taken place in March 2005 without any hitches.

On 1 April 2007, the final stage of the numbering plan will finally be completed: from this date it will be necessary always to dial 044 instead of 01, as the parallel operation which has been guaranteed since March 2004 will end. As a rule, in the event of misdialled calls after 1 April 2007 the following message will be played: «Area code 01 is not in service any more; please dial the area code 044».

The repeated information campaigns in recent years have meant that the level of awareness of the change within the

population is good, according to a survey in August 2006: 69% of Swiss people and 97% of subscribers in the 01 region indicated that they are informed about the change in the area code. In the summer of 2006, about 60% of those questioned in the Zurich area had already made the necessary adjustments. Also, the percentage of calls actually dialled using the 044 code has greatly increased. Measurements by the most important operators in their own networks have shown that in October 2006 about 75% of calls were being dialled using 044.

Information about this topic can be obtained on the OFCOM website at «www.bakom.admin.ch/044» or via the free number 0800 210 210.

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. In November 2006, ComCom approved the 2007 edition of the frequency allocation plan.

Carrier Selection

Carrier selection 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.

However, the number of customers who have set up carrier preselection on their line has not increased since 2002, but has even begun to fall slightly. In 2005, approximately 30% of lines had preselection with an alternative provider. On the other hand, manual carrier selection for individual calls has fallen greatly (only 3.8% of all customer contracts). The reasons for this are probably the general drop in call prices and the emerging Voice over Internet and digital telephony via TV cable networks.

Amendment of the ComCom decree concerning carrier preselection

Individual cases of customer canvassing resulting in a change in carrier preselection which is against the will of the concerned consumers are constantly heard in public. A large proportion of the letters of complaint received by OFCOM and ComCom concern this problem area.

ComCom is taking this as an opportunity to reconsider the current regulations in Annex 2 of the ComCom decree. It therefore commissioned OFCOM to put several options up for discussion in a public consultation in the autumn of 2006. After analysing the consultation, ComCom will discuss possible measures which will lead to improved consumer protection – and a better reputation for the telecommunications industry. However, competition must not be obstructed at the same time.

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 di-

alled 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, ComCom decides on the measures which are necessary (LTC Art. 58). If licences or decisions are not complied with, ComCom may impose administrative penalties (LTC Art. 60).

In 2006, ComCom had to apply administrative sanctions in five cases because of failure to submit data for the 2004 telecommunications statistics.

The most important supervisory measure in 2006, however, was without doubt the revocation of the UMTS licence from 3G Mobile AG (see section entitled «UMTS licences»).

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)
DVB-H	Digital Video Broadcasting for Handheld Terminals
EDGE	Enhanced Data rates for GSM Evolution
ERG	European Regulators Group
GPRS	General Packet Radio Services
GSM	Global System for Mobile Communications
HDTV	High-definition Television
HSDPA	High Speed Downlink Packet Access
IC	Interkonnektion
IP	Internet Protocol
IPTV	Internet Protocol Television
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
LRIC	Long Run Incremental Costs
LRTV	Radio and Television Law (SR 784.40)
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
VoD	Video on Demand
VoIP	Voice over IP
WiMAX	Worldwide Interoperability for Microwave Access (association of equipment and component manufacturers)
WLL	Wireless Local Loop

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