

Switzerland

1. Country facts

1.1 Political background

Switzerland is a Federal State since 1848 – one of 23 in the world and the second oldest after the United States of America. The country has a federal structure with three different political levels:

The Confederation has authority in all areas in which it is empowered by the Federal Constitution. Tasks that do not expressly fall within the domain of the Confederation are matters for the cantons.

The Cantons are the original States, which joined together in 1848 to form the Confederation to which they ceded part of their sovereignty. Since the creation of the Canton Jura in 1978, Switzerland consists of 23 cantons, three of which, namely Unterwalden, Appenzell and Basel, are for historical reasons divided into two half-cantons. Each canton and half-canton has its own constitution, parliament, government and courts.

The Communes (currently 2,873) have tasks and competencies entrusted to them by the Confederation and the canton – such as the population register, the areas of education and social affairs, energy supply, etc. The degree of autonomy granted to the communes is determined by the individual canton and therefore varies considerably.

The Swiss legislative power (the Federal Assembly) is represented by a parliament composed of two chambers directly elected by the people: the National Council with 200 members and the Council of States representing the cantons with 46 representatives (2 per canton). The Federal Assembly elects the government, namely the seven members of the Federal Council as well as the Federal Chancellor, its chief of staff, thereby forming the Executive. The Supreme Court is also elected by the legislative authority of the Federal Assembly.

Although federalism is important in the Swiss political structure, the competencies of the telecommunications regulation remain exclusively at the national level. The regulation is assured by the Federal Office of Communications (OFCOM) which belongs to the Federal Department of Environment, Transport, Energy and Communication (DETEC), and by the Federal Communications Commission (ComCom). The OFCOM holds the administrative competency of telecommunications regulation on behalf of the DETEC whereas the ComCom, which is an extra-parliamentary commission, is responsible for the assignment of telecommunication licenses and approval of national frequency and numbering plans.

The statutory competency is divided between the DETEC (political) and the ComCom which is considered as the independent regulatory authority composed of 5 to 7 commissioners who

are experts on telecom. Decisions of the DETEC and the ComCom are implemented by the OFCOM. This institutional structure – which seems very particular – is built on a Swiss “recipe” of shared competencies and separation of powers.

1.2 Demography

- **Population: 7,261,200**¹ inhabitants as of end 2001
- **Density: 176** inhabitants/km²

Population density in Switzerland is not among the highest in Europe, but there is a significant difference between the lowlands (from Geneva to St.Gallen) and the mountain areas. While the average population density is very low in the mountains – which represent about half of the territory – it is very high in plain and metropolitan areas.

The highest population density rates of Switzerland are found in the city-canton of Basel, and the Geneva and Zurich metropolitan areas, with respective 5,045, 1,467 and 711 inhabitants per km². These cities represent the main urban centers of Switzerland. Other examples of high population density rates are the Canton of Basel-Country (505), the Canton of Aargau (393) and the Canton of Solothurn (311). The rates in the mountain area are much lower. For example, the Cantons of Graubünden, Valais, Uri and Glarus have respective population densities of 26, 53, 33 and 56 inhabitant per km² and cover together about half of the Swiss territory.

1.3 Telecom consumption habits

- **Mobile and fixed telephony**

Table 1: Telecom consumption habits Switzerland, mobile and fixed telephony

Fixed voice telephony	End 1998	End 2000	End 2002
Number of subscribers	4.274 million	4.108 million	4.078 million
Penetration rate (inhab.)	60%	57%	56.2%
Mobile telephony			
Number of subscribers	1.698 million	4.639 million	5.747 million
Penetration rate (inhab.)	23.8%	64.4%	79.1%

Source: OFCOM, Statistique des télécommunications, évolution jusqu'au 31 décembre 2002 pour certains indicateurs, 2003

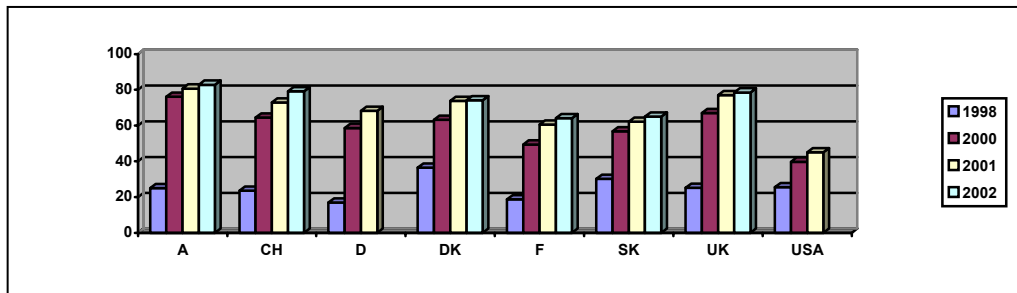
While there is a decline in the number of fixed telephony lines, mobile penetration increases rapidly in Switzerland. The penetration rate increased from 64.4% end 2000 to 79.1% at end 2002. The number of mobile subscriptions surpassed the number of fixed-line subscriptions in the fall of 2000. However, since 2001 the annual rate of increase in the number of mobile subscribers is lowering, showing that the Swiss market is close to saturation level.

¹ Source: Swiss Federal Statistical Office, 31.12.2001

² Source: Swiss Federal Statistical Office, 2001

In international comparison, Switzerland ranks quite high in terms of mobile penetration, as shown in the figure below.

Figure 1: Mobile telephony subscribers per 100 inhabitants, international comparison



Sources ITU and OFCOM

- Internet**

Table 2: Internet consumption habits Switzerland

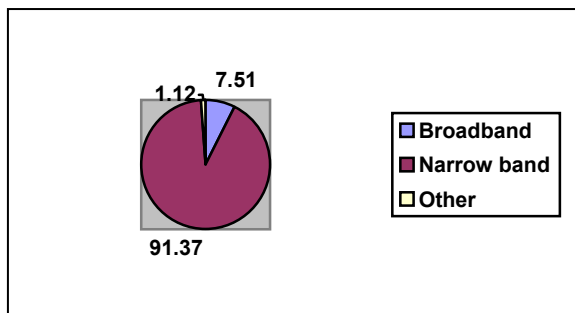
Internet	End 1998	End 2000	End 2002
Penetration rate PC/100 inhabitants	53.3%	65.2%	71.1%
Internet users/100 inhab. ¹	13.2%	29.1%	35.2%
Internet subscriptions/100 inhab. ²	6.0%	23.1%	32.4%
Broadband subscriptions, of which	6'172	48'466	455'220
ADSL	0%	0.01%	42.9%
Cable modem	100%	98.88%	57.1%
Penetration rate broadband/ 100 inhab.	0.1 %	0.7%	6.3%

Source: OFCOM, *Statistique des télécommunications, évolution jusqu'au 31 décembre 2002 pour certains indicateurs, 2003* and own calculations stemming from this source

¹ This indicator comprises private and professional users who access Internet at least twice a week.

² This indicator comprises private and corporate Internet users who have a subscription with a registered Internet provider.

Figure 2: Breakdown of Internet access types in Switzerland, December 2001, Source: OFCOM, *Statistique officielle 2001*, May 2003



The very high penetration rate of personal computers in Switzerland³, could lead to think that the country makes a very extensive use of Internet. However, the number of Internet users is rather average and comparable to the penetration rates of France and Germany,

³ For 2001, PC Penetration rate in Switzerland was 68% against 33.7% in France, 38.22% in Germany, and 25.65% South Korea (where the number and popularity of Internet Cafés is extremely high).

whereas in Denmark and Korea, the penetration rate of Internet users exceeds 50% of the population. Especially in the field of ADSL, the penetration rate in Switzerland is low compared to many other countries with equivalent purchasing power such as Canada, the United States, Sweden and Denmark. One explanation for this is that ADSL was launched only in October 2000 and as a matter of fact, the success of ADSL has been very quick and substantial after that⁴.

2. Brief telecom history

2.1 Historical background and liberalization process

In Switzerland, the first step of liberalization in telecommunications took place in 1992 with the reform of the legislation on telegraphs and telephone correspondence (LCTT).⁵ The new legislative package of 1992 introduced liberalization in the so-called *wide range services market*⁶ (commutation of messages, services of memorization, etc), while *basic services* (telephone services, voice communications, telex, etc.) remained a monopoly of the Swiss PTT company. However, rapid technological developments, combined with the aim of promoting competition, encouraged Switzerland to join the European Union in its efforts to liberalize the various telecommunications markets.

The Federal Council took the initiative to introduce the necessary changes and proposed the liberalization of telecommunications on June 10, 1996 (cf. 'message'). The Federal Law was adopted on April 30, 1997 (LTC), and came into effect on January 1, 1998 (on the same date as the European Telecommunications Legislative Framework). During the two years that preceded the liberalization, a considerable number of companies established themselves in Switzerland and started preparing to enter this new competitive market.

With the liberalization of the market, the legal monopoly of the Swiss Telecom PTT in the field of telecommunications was broken. The national telecom provider was separated from the postal activities, became a public limited-traded company on October 1, 1997 and changed its name to Swisscom AG. By allowing other telecom operators to offer services in competition with Swisscom, Switzerland made the decisive jump from a monopoly situation to the status of a commercial market.

⁴ OFCOM, *Utilisation de l'Internet en Suisse*, 2002

⁵ Source : OFCOM & ComCom

⁶ "Value-added services

2.2 Incumbent operator

Swisscom remains the largest telecommunication provider in Switzerland although its market shares have continuously decreased over the past 5 years. The former national provider had to reform its functioning and structure considerably in order to become a competitive company. Today, Swisscom is one of Europe's best positioned telecommunications operators with revenue of CHF 14.526 billion in 2002 and 20,470 employees.⁷ Swisscom offers a comprehensive range of telecom products and services and is clearly positioned as the leading provider of mobile, fixed voice, data services and Internet-based services. Swisscom operates as a Group since January 1, 2002.

The Swisscom Group is currently structured into six companies:

- Swisscom Fixnet AG** Comprises all national and international activities in fixed-network telephony including network infrastructure and wholesale. Swisscom Fixnet also covers the largely autonomous business areas of Operator Services (directory enquiry services), Payphone Services (public payphones), Cards (phone cards, prepaid cards), Bluewin Ltd. and subsidiary companies cablex AG, Telecom FL AG and Swisscom Directories AG.
- Swisscom Mobile AG** Since April 2001, Swisscom Mobile has been operating as a public limited-traded company in which Swisscom has a 75% share and the Vodafone Group the other 25%. With 3.6 million customers and a market share of 62.9%, Swisscom Mobile is the leading provider of mobile communications in Switzerland (December 2002).
- Swisscom Enterprise Solutions AG** Swisscom Enterprise Solutions AG implements telecom solutions for international companies as well as small and medium-sized enterprises.
- Swisscom IT Services AG:** Swisscom IT Services plans, constructs, integrates and operates basic applications as well as highly complex IT solutions for processing large data volumes.
- Swisscom Systems AG** Provides a comprehensive range of services (maintaining, financing, renting, and leasing products) in the field of private branch exchanges (PBXs).
- Debitel AG:** Publicly quoted, Debitel AG is the largest network-independent telephone company in Europe and the third largest mobile provider in Germany. As a service provider, Debitel collaborates with network operators like Vodafone-D2, T-Mobile, E-Plus and Quam. Swisscom holds a 93% share.

⁷ Source: Swisscom, 31.12.2001

Despite important investments and acquisitions, the balances show that the Swisscom Group has been highly profitable over the past years, and has good perspectives for the future. The publicly held shares are currently traded at a price that is 16% above the IPO (Initial Public Offering) in 1998 (IPO, 5 October 1998 = 340 CHF / 26 May 2003 = 396 CHF).

Table 3: Key figures Swisscom

Revenue	CHF 14.53 billion
Operating income (EBITDA)	CHF 4.41 billion
Fixed network channels (PSTN + ISDN)	5.3 million
Mobile customers	3.6 million
Debitel customers	10 million
Bluewin customers:	860,000
Employees:	20,470

Source: Swisscom Group Activity report 2002, Swisscom Company profile

Table 4: Swisscom AG profile in 2002

Name	Swisscom Group AG		
Services	Full service: Fixed, Mobile and Internet		
Date of entry	1878		
Ownership %	62.7% Swiss government (Federal Department of Finance)		
Market share %	Subscribers	Call minutes	Revenues
Fixed lines	>99 %		
Subscriber lines			
Local calls		72% ¹	
Long-distance		68 % ¹	
International		54 % ¹	
Mobile	62.9% ¹		
Internet			
Dial-up	35.3% ²		
DSL	56% ³		

¹ Swisscom, Simply Steady, simply solid, simply Swisscom, 3rd quarter 2002 results presentation, November 2002

² Swisscom *Activity report 2002, 2003*; OFCOM, Statistique des télécommunications: évolution jusqu'au 31 décembre 2002 pour certains indicateurs, 2003, own calculation stemming from this source

³ Swisscom, *Activity Report 2002, 2003*, own calculations stemming from this source

Source OFCOM / Swisscom

2.3 Competing Operators

Since the 1998 liberalization, the Federal Office of Communications has registered 299 providers for fixed network services, 40 providers for mobile services, and has awarded four 3G licenses.

- **Fixed voice telephony**

With the liberalization of the market, a large number of competing telecommunications providers are now operating in Switzerland on national or regional level. While Swisscom still operates possesses over 99% of subscriber lines and 72% of local traffic because of its local loop monopoly, alternative providers (Sunrise, Tele2, etc.) operate more than half of the regional and national traffic.

Sunrise Telecommunications/TDC Switzerland

The current status of Sunrise is the result of a merger in November 2000 between the two main competitors to Swisscom, Sunrise (fixed telephony) and diAx (fixed and mobile telephony), which were both majority owned by TDC. TDC bought the remaining shares from the Swiss railways and investment bank UBS. The company is now traded as TDC Switzerland but the brand Sunrise has been retained for the time being.

Tele 2 Switzerland

Tele2 Switzerland is wholly owned by Tele2AB, a Swedish operator active in 23 European countries. In Switzerland, Tele2 offers fixed telephony, Internet and Mobile telephony services via its MVNO Network. Tele2 is the second alternative operator for fixed telephony on the Swiss market.

- **Mobile market**

At the end of 2002, four mobile telephony providers were operating in Switzerland: the new entrants, Sunrise and Orange with respectively 19,8% and 16.8% market share and Swisscom with a 62.9% market share. The fourth mobile operator Tele2 has a MVNO agreement with Swisscom, and a market share of approximately 0.5%.

Swisscom Mobile

Swisscom, the leading mobile operator in Switzerland, has over 3.6 million customers (end 2002) and a market share of approximately 62.9%

Ownership: Swisscom 75% (Switzerland), Vodafone Group 25% (UK)

Sunrise (merger with diAx)

Sunrise is the second largest mobile operator in Switzerland with 1'134'000 mobile customers as of End 2002 and approximately 19.8% of market share.

Ownership: 100% TDC

Orange Communications

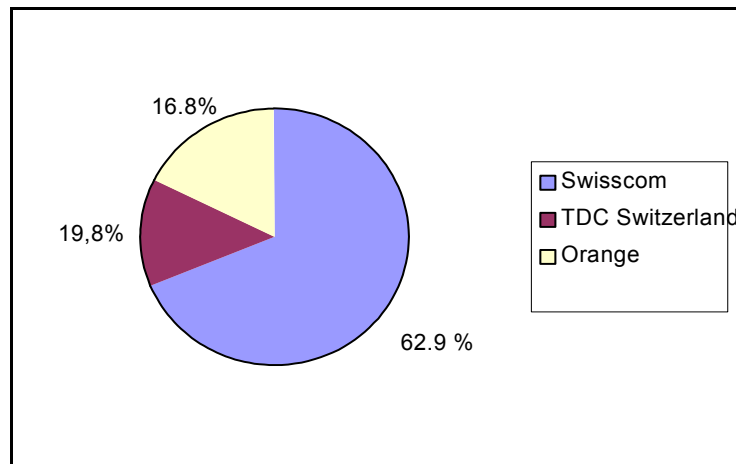
Orange is the third largest mobile operators with 963'000 subscribers as of end 2002 and a market share of approximately 16.8%.

Ownership: 100% France Télécom

Tele2

Tele2 has a MVNO network agreement with Swisscom and is the fourth operator on the Swiss market with a market share of 0.5%. Tele2 is wholly owned by Tele2 AB from Sweden.

Figure 3: Mobile Operator Market Shares by Subscriber in Switzerland



Source : Operators (End 2002)

- **Internet market⁸**

Sunrise Telecommunications / TDC Switzerland

Sunrise is Swisscom's major competitor on the Internet market (dial-up and ADSL) with 557'000 Internet customers as of May 2003⁹ or a market share of approximately 23.7%.

Cablecom

Ownership: Cablecom was purchased by the British NTL in March 2000. It is Switzerland's leading cable TV operator with a 53% market share and 1.5 million subscribers in 12 cities.

Services: In addition to offering CATV service, Cablecom also owns one of the country's largest ISPs, SwissOnline, which has around 150,000 Internet customers, and offers a broadband cable modem service under this brand.

NTL has a strategic network upgrade program for this subsidiary covering some 75% of the country. This is the key for attracting business-to-business customers with high-tech carrier services and broadband Internet access.

⁸ Source: IDC (2001), OFCOM (2002)

⁹ Sunrise website, May 2003

Other key elements of the strategy include the increase of transmission capacity in major cities and the introduction value-added services such as digital interactive, subscription, and pay per view television, in addition to telephony.

3. Legal framework

3.1 EU directives

As Switzerland is not part of the European Union, the country has no obligation to comply with EU laws and regulations. However, EU directives are often used as guidelines to amend and revise the Swiss law. The development of communications towards a global information society and the envisaged liberalization of telecoms market in the European Union put significant pressure on the Swiss telecom system. Switzerland launched the reform of its telecommunications sector at the same time as the European Union, and the liberalization came into effect on the same date¹⁰ as in the EU countries.

Nevertheless, after five years of liberalization, the Swiss legislation shows some weaknesses in comparison with the EU objectives and regulatory framework. While the European Union clearly laid down the objectives for competition in telecommunications, for instance local loop unbundling, the Swiss Telecommunications Law is less specific on telecom competition objectives, leaving more room for interpretation. Many current supporters of incumbent protectionism like to remind that Switzerland is not a EU-member and consequently has no obligation or need to follow the EU directives.

3.2 General national framework for Telecommunications

In Switzerland, the federal law that implemented the liberalization and the regulation of the telecommunications sector (LTC) came into effect on January 1, 1998. The Federal Council took the initiative and proposed the liberalization of telecommunications in June 1996. In August, the Federal Parliament began its deliberations and approved the law by a final vote on April 30, 1997. It took less than one year to examine a law that was destined to fundamentally change the telecommunication landscape in Switzerland. The new Telecom Law is linked to the Post Office Reform and confirms the separation of telecommunications and postal services. This demonstrates the importance which legislators attached to this subject and the urgency of adopting a new law, which takes into account technological, commercial and political developments in the telecommunications sector.

¹⁰ 1 January 1998

Table 5: Telecommunications Law (LTC)
Of April 30, 1997 (status of January 1, 2003)

<p>General provisions</p> <p>Chapter 1</p>	<p>Objectives :</p> <ol style="list-style-type: none"> 1. Ensure that a range of cost-effective, high quality and nationally and internationally competitive telecom services are available 2. Ensure reliable universal services for the whole population at affordable prices and with a defined quality 3. Ensure respect of personal and intangible property rights 4. Allow effective competition 5. Regulate the transmission of information by means of telecommunications techniques
<p>Universal service</p> <p>Chapter 2, Section 2</p>	<p>The universal service is assured through licensing, based on a periodical open invitation to tender. The Communications Commission is the authority which grants the license.</p> <p>The Federal Council has the competencies to change the detailed rules for implementation (scope and quality of services as well as price caps). The Commission (ComCom) and the Office (OFCOM) ensure that the US is provided properly.</p> <p>The financing of US is assured by the operators' contributions.</p> <p>Universal service content: Public telephone service, emergency calls, directories, public telephone cells, transcription service for people with impaired hearing.</p>
<p>Interconnection regulation</p> <p>Chapter 2 , Section1</p>	<p>Prices for interconnection are negotiated between the operators wishing to interconnect their networks. When after a negotiation period of 3 months no agreement can be reached, the ComCom may be requested to rule on the interconnection prices and conditions. There is no ex ante price setting for interconnection but as a principle, prices should be cost-oriented. Interconnected operators are requested to forward the conditions of their interconnection agreement to the OFCOM.</p>
<p>Rates regulation</p> <p>Chapter 2 , Section 2</p>	<p>The Federal Council fixes price caps for USO; for all other services primacy is left to competition to regulate retail prices on the market.</p>

4. Key regulatory actors

4.1 National Regulatory Bodies

The Swiss Regulatory Agency was established in 1992, to accompany the full liberalization process. It is composed of the Federal Office of Communications (OFCOM) who acts as the operative arm of the Federal Communications Commission (ComCom) established in 1997. The Swiss regulator is converged, i.e., it deals both with telecommunications and broadcasting.

It is the OFCOM that is regarded as the Swiss NRA, but the OFCOM cannot be considered independently of its decision-making body, the ComCom, as in the end, it is the ComCom who makes decisions on telecommunications matters and the OFCOM that implements them. This regulatory structure with shared responsibilities between the ComCom and the OFCOM is quite particular and is due to the Swiss' attachment to the principle of shared competencies and separation of powers.

4.1.2 The Federal Communications Commission (ComCom)

The ComCom is the independent regulatory authority for telecommunications. Article 5 of the LTC established the ComCom as the licensing authority and market regulatory body in the telecommunications sector. The Commission currently consists of 7 members - who must be independent experts- nominated by the Federal Council. The ComCom is independent of the administrative authorities and has its own secretariat¹¹. It is not subject to any Federal Council or Department directives. It informs the public of its activities and produces a report each year to the attention of the Federal Council.¹² The president convokes the Commission as required or upon a request by a member.

The ComCom is the body that grants licenses for telecommunications service providers¹³, designates interconnection conditions in the first instance, when service providers cannot reach an agreement¹⁴, awards universal service licenses¹⁵ and licenses for the use of radio communication frequencies¹⁶. In addition, the ComCom approves national numbering plans and the national frequency plan¹⁷ and regulates the terms of application for number portability and the free choice of supplier¹⁸. The ComCom also takes measures, based on the OFCOM proposals, in the case of infraction to the Law, and has the competency to withdraw

¹¹ The Commission secretariat consists of one manager (full-time), one scientific associate (40%) and one administrative secretary (60%). Before the Commission had its own offices and employees, its secretariat was provided ad interim by the OFCOM.

¹² With the purpose of informing the Federal Council. Approval is not required.

¹³ Art. 5 LTC

¹⁴ Art. 11 LTC

¹⁵ Art. 14 LTC

¹⁶ Art. 22 LTC

¹⁷ Art. 25 LTC

¹⁸ Art. 28 LTC

licenses¹⁹. For a number of its tasks, the ComCom has delegated the administrative competencies to the OFCOM.

4.1.1 The Federal Office of Communications (OFCOM)

The OFCOM was created in 1992 based on the reform of the legislation on telegraphs and telephone correspondence (LCTT). Located within the Federal Department of Environment, Transport, Energy and Communications (DETEC), the OFCOM attends to communications and IT matters for the Federal Council and the ComCom. It also has an advisory and coordination function for the public and the policymakers.

Two major tasks were assigned to the OFCOM: to regulate the radio and television sectors, and to establish the conditions needed to open up the telecommunications market. Today the OFCOM oversees radio and television, radiocommunications, telecommunications services and telecommunications installations. It has the duty to promote efficient competition and to guarantee that market forces can freely work. It also guarantees that basic services are provided in all parts of the country and for all sections of the population. While the ComCom is the statutory regulatory body, the OFCOM is the administrative executor of the ComCom and the Federal Council through the DETEC.

The OFCOM is divided into five sections:




























1. Resource and Organization
2. Radio and Television
3. Telecom Services
4. Licenses and Equipment
5. Frequency Management

The staff of the OFCOM for the five sections total 298 employees with 32% of women and 68% of men. 23% of the employees have a technical education, 18% have a commercial education, 15% have studied law, 4% have a diploma in management of enterprises, and 37% come from various professional backgrounds. The Telecommunications Services division has about 50 employees.

The OFCOM budget is financed by a state fixed budget and by fees. The OFCOM has the prerogative of collecting fees for frequencies or numbering, but the benefits from UMTS licenses were allocated to the State budget. In 2001, the costs of the Telecommunications Services section were CHF 19,3 millions (13 millions EUR) for a fee amount of CHF 16.7 millions (11.3 millions EUR) which means a costs-coverage rate of 87%.

¹⁹ Art. 58 LTC

Table 6: Competencies of the Swiss authorities in telecommunications services (LTC Chapter 2)

	Article							
		LTC	CF	DETEC	FCC	OFCOM	AB	FSCr
								
								
								
Obligation to notify for providing telecommunication services, which do not request a license	4 ²							
Licensing authority	5				 			
Possible delegation of certain tasks	5 ²				 			
Interconnection (IC): Lay down the principles	11 ¹							
IC: Ensure the capacity to communicate between all users of services which are part of the universal service	11 ²		 ¹⁾				 ²⁾	
IC: Fix the conditions at 1st instance	11 ³							
IC: Fix the conditions on appeal	11 ⁴							
Obligation to provide leased lines	12							
Obligation for the OFCOM to inform	13							
Universal service (US): Granting the license	14 + 5							
US: Content and adaptations	16 ¹⁺³							
Scope of the US: Fix the detailed rules	16 ²		 					
US: Fix the quality criteria	17 ¹							
US: Fix upper limits for the prices	17 ²							
US: Ensure that it is provided for all sections of the population and all over the country	18 ¹							
US: Obligation to provide US	18 ²							
Territorial scope: Regulations of the procedure	18 ³							
OFCOM: Federal Office of Communications	ComCom: federal Communications Commission							
FSCr: Federal Supreme Court	AB: Appeals Board							
FC: Federal Council	DETEC: Federal Dept. for Environment, Transport, Energy and Communications							

Source: ComCom

- 1 The Federal Council may prescribe necessary interfaces to access these services according to International standards
- 2 The office edicts technical and administrative prescriptions

4.2 Ministry (DETEC)

The Federal Department of the Environment, Transport, Energy and Communications (DETEC) has only few competencies in the field of Telecommunications. The reasons for this are, on the one hand, the direct prerogative of the Federal Council in the decision making process, and on the other hand, the delegation of most competencies to its Office (OFCOM). However, the Ministry has the competence to fix the detailed rules for the universal service as far as connections outside built-up areas are concerned. The Ministry also fixes the amount of administrative charges with respect to telecommunications and defines the budget for the sector's regulation.

The Telecommunications Law designates the Ministry as the prosecution authority and judgment in connection with penalties. However, the prosecution, judgment and enforcement of law delegated to the OFCOM.

4.3 Federal Council

The Telecommunications Law of 1997 (LTC) attributes a wide range of statutory competencies directly to the Federal Council. Switzerland's executive authority has the statutory competencies to regulate the interconnection principles, the universal service content and adaptations²⁰, the US quality criteria, the procedure regulation of the territorial scope, the detailed rules for addressing resource implementation, and issues concerning vital national interests. The Federal Council determines the amount of licensing fees.

The institutional framework shows that there is a somewhat direct link between the Federal Council and the OFCOM in charge of the administrative implementation of most of the executive's decisions. The Federal Council holds an important ruling control over the DETEC and the OFCOM, which are consequently both cut from independent regulation. The only independent regulation body is the ComCom which is fully autonomous in its decisions. The only control of the Executive over this body is the nomination of the seven commission members, who once nominated have no obligation towards the Federal Council.

4.4 Competition Authority

4.4.1 The Competition Commission (ComCo)

The Swiss competition policy is based on the Federal Act on Cartels and Other Restraints of Competition²¹. Its aim is to promote competition by opposing possible harmful effects of restraints of competition and to achieve a market economy in which the enterprises may use their resources efficiently and react to changes quickly.

The Act on Cartels includes three kinds of restraints of competition (art. 4 Acart): Agreements and concerted practices (art. 5 Acart), abuse of dominant positions (art. 7 Acart) and concentrations of enterprises (art. 10 Acart). The application of the Act is the duty of the

²⁰ Implementation delegated to the DETEC

²¹ Act on Cartels, Acart, October 6, 1995.

ComCo and its Secretariat. The ComCo is an independent federal authority. Its activities are organized according to three economic branches: Product Markets, Services and Infrastructure. The Board of the Commission together with a service of the Secretariat are responsible for each division. One of the main duties of the ComCo is to address recommendations to the authorities to promote effective competition (art. 45). Often, impediments to competition are due to governmental interventions in the markets – e.g. subsidies, protectionism, and unequal rules – which is why sometimes the ComCo contests a Government's decision. Such situations reveal how tensions can appear between the objectives of the executive's power and regulation rules. In the telecom sector, the competition regulator has no real friction point with the government objectives. However, as the Federal Department of Finance holds the majority of Swisscom's shares, conflicts can appear between competition objectives and the incumbent revenue objectives.

4.4.2 Collaboration between ComCo, ComCom & OFCOM

In the field of telecommunications market regulation, the regulatory bodies (ComCom & OFCOM) have no competencies over competition matters, except for interconnection price issues²². The OFCOM acts as an instruction authority when it comes to interconnection disputes, but the ComCom renders the final decision. The OFCOM also carries out settlement negotiations, implements provisional measurements and consults the Competition Commission when it decides on questions of dominant positions²³.

The OFCOM collaborates with the ComCo in the field of interconnections issues. According to the Act on Telecommunications²⁴, negotiation primacy applies and if no agreement between the parties concerned can be reached within three months, the ComCom decides on proposal of the OFCOM on the interconnection conditions. However, only enterprises having a dominant position may be obliged to provide interconnection at prices based on costs. Consequently, the ComCo has the task to assess if there is any market dominance and to bring it to the attention of the ComCom and respectively the OFCOM. Conversely, the ComCo consults the ComCom or the OFCOM in telecommunication matters that are not laid out in specific regulations that fall within the scope of the Act on Cartels. Therefore, the ComCom and the ComCo have established from the beginning a close contact to ensure an efficient cooperation.

In Switzerland, as the role of the ComCo is determinant in the field of competition within the telecommunications market, the legislators would not create sector specific competition surveillance. Regulation of the market based on the Federal Act on Cartels and Other Restraints of Competition, is considered as the most pragmatic solution for Switzerland's telecom market.

This issue of competition surveillance attributions has already been widely discussed in Europe and most countries have adopted the idea of sector specific regulation, especially in

²² The ComCom is in charge of interconnection surveillance. It delegates the administrative competency to the OFCOM.

²³ Art. 11 par. 3 Act on Telecommunications

²⁴ Art. 11

the field of market definition and abuse of dominance matters. For Swiss legislators, market competition issues have to be regulated by the Competition Authority, while the independent telecommunications regulation body should regulate sector specific matters such as interconnection. The LTC reform project does not contain any changes over this structure and there is no objective to give significant competition power to the new independent regulatory body.

4.5 Price Supervisor ²⁵

The function of the Office of the Price Supervisor is to observe price developments, to prevent or eliminate abusive price agreements and to inform the public about its activities. As in any other market sector, the Price Supervisor can make decisions in the field of telecommunications pricing. Since the liberalization of 1998, the Price Supervisor initiated three actions in the field of telecommunications.

First, it issued a decision against Swisscom and its pricing of telephone addresses. In 1998, the Price Supervisor refused the substantial price increase of the telephone addresses market. Swisscom submitted an appeal to the Appeals Board, which refused the case.

The second case occurred with an interconnection issue in 1998 as well. The Price Supervisor obligated Swisscom to render a more detailed report on the costs for interconnection provided to an alternative operator. After trying an appeal, Swisscom had to accept the decision.

The third case occurred in 2001 with the revision of the Ordinance on Telecommunications. On Swisscom's demand, the Federal Council looked into the possibility of raising the price of the fixed-line subscription from 23.45 to 29 CHF. The price supervisor was consulted on the matter and advised the Federal Council to maintain the price at the same level.

4.6 Judiciary

In the Swiss telecommunications sector, there are several appeal bodies according to the institution that issues the decision. Complaints against a regulatory decision from the ComCom can be addressed to the Federal Supreme Court only. Decisions taken by the OFCOM can be appealed before the DETEC's sector specific appeals body and in second and last instance before the Federal Supreme Court. The DETEC Appeals Commission takes its judicial decisions independently, but is subject to the surveillance of the Federal Council and superintendence by the Federal Assembly. Decisions taken by the ComCo can be appealed before the Competition Appeals Board and then the Federal Supreme Court.

As telecommunications regulation works on ex-post principles, decisions of the judiciary authorities have a high level of importance for the future telecom landscape especially since legal actions have a suspensory effect.

²⁵ „Monsieur Prix“

Since 1998, 24 decisions of the regulator have been appealed before the Federal Court. The regulator has lost 6 of these cases, i.e., 25%. In 5 out of six cases, the Federal Court suspended provisional measures imposed by the regulator in interconnection disputes. By doing so, the Federal Court considerably restricted the power of the regulator and imposed an important burden on the plaintiffs, in other words, the new entrants. The sixth case in which the regulator's decision was overruled constitutes a particularly sensitive one, as it laid down jurisprudence for a narrow interpretation of the LTC. Not only did it challenge the regulator's authority on an important matter; it also questioned the implementation of an important objective of telecommunications policy in the country: the establishment of effective competition.

This case is the well known *Commcare vs. Swisscom* case. After the ComCom reached its decision on the procedure concerning leased lines and transmission media²⁶, each of the two parties submitted a complaint against the ComCom decision to the Federal Supreme Court. Commcare had the opinion that the ComCom had appraised the situation regarding transmission media incorrectly. On the other hand, Swisscom contested the obligation to provide leased lines under interconnection conditions and applied for suspensory effect of the complaint. On December 15, 2000 the Federal Court granted suspensory effect and finally, in its far-reaching decision of October 3, 2001, approved Swisscom's appeal and rejected that of Commcare. In its judgment, the Federal Court concluded that neither leased lines nor transmission media could be subject to the interconnection regime, since there was no adequate legal foundation for this. In this judgment, the Federal Court already expressed itself quite in detail on unbundling issues.

According to the Federal Supreme Court, it was up to the Federal Council or Parliament to clarify what falls under the interconnection regime by means of corresponding amendment of the laws and decrees. The leased line prices of the market-dominant providers could therefore not be regulated. This decision resulted in a financial burden on Swisscom's competitors who are forced to rely on such lines. In its decision, the Federal Court also critically limited the ComCom's freedom of action to impose a pro-competitive interpretation of the Law on Telecommunications.

The consequences of this case went thus far beyond the mere facts which it referred to. It demonstrated the contradictions of the legal and institutional framework, and occasioned considerable legal uncertainty for new entrants. As for the regulator, it constituted a serious disavowal.

In 2003, the situation was cleared, at least from a legal point of view, with the decree of the Federal Council, adopted on February 26, 2003 that put leased line, bit stream access, shared line access and full access unbundling variants under the interconnection regime as of 1 April 2003.

However, this experience has shown that in the absence of a clear and exhaustive legal framework, the judicial powers have the ultimate power and opportunity to interpret the law and can thus rule against the regulator's action.

²⁶ Decision reached on October 2, 2000.

4.7 Owner of the Incumbent

For the moment, the majority of Swisscom Group shares are still owned by the Swiss Government. The Department of Finance owns 62.7% of the company while the remaining shares are publicly traded. As of October 1, 2001, Swisscom's market capitalization was 21.5 billion EUR.²⁷ Even if, in the first years of liberalization, Swisscom's management was in favor of being independent from the government, it is nowadays not a top priority. Some strategists even argue that the current situation is more profitable for the company than a larger privatization. At the moment, there is no further plan to remove the state from the company control, mainly because of political conservatism. Moreover, such a perspective would need a law review because the state ownership is guaranteed in the LTC with a minimum of 50% plus one of Swisscom shares.

4.8 Competing Operators

Two main associations, VIT (Verband Inside Telecom) and SICTA (Swiss Information and Communications Technology Association), represent the telecom operators on a nation-wide basis. They mainly work to promote the telecom industry's interests in the political field, and to build a sector network in order to be an interlocutor among other industries' interests.

VIT is the telecom association representing the incumbent's competitors. It was founded to defend the new entrants against the historical operator. The association works as a lobby and is part of the consultation process in case of law reform and amendments. The VIT also represents the competing operators during negotiations with the incumbent.

SICTA is the Swiss association for Information Technology industries, which includes all the telecom players. As the incumbent is a member, they do not work on issues such as interconnection and pricing problems. SICTA works on issues such as health and security of mobile telephony, the LTC reform, IT development and promotion, and also participates actively in the federal consultation working groups on telecom issues.

5. Regulatory functions

5.1 Allocation of scarce resources

5.1.1 Frequencies

Frequencies are managed at the federal level in the National Frequency Allocation Plan. The statutory competency on the National Frequency Allocation Plan belongs to the ComCom, but the OFCOM is in charge of its application, as stipulated in the Law on Telecommunications²⁸. Governmental and commercial uses of frequency are both determined in the National Plan, which presents the frequency spectrum allocated to different telecommunications applications.

²⁷ Source: Swisscom, 2002

²⁸ LTC, Art. 25. para. 2

The National Frequency Allocation Plan is periodically adapted to needs based on new international prescriptions. The last National Plan became effective on July 1, 2002.

5.1.2 Rights-of-way

There are no major problems regarding rights-of-way in the Swiss regulatory framework. All the licenses granted include strict conditions relating to obligations on area planning and the protection of the environment, as well as the co-ordination and co-use of sites. Concerns of the Swiss population regarding non-ionizing radiation were taken into consideration. This issue is regulated by the decree on protection from non-ionizing radiation, which became effective on February 1, 2000. The Federal Court stipulates that the decree takes into account the principle of prevention in the law on protection of the environment. The application of the decree belongs to the cantonal authorities, and thus the telecom regulatory body has no competence concerning this issue.

5.2 Enhancing competition

5.2.1 Licensing

Any operator providing a telecommunications service involving extensive independent use of telecommunications installations used for transmission must have a license (LTC Art. 4). Operators who do mere reselling of services only need to register with the OFCOM. The licensing authority is the ComCom, but it may delegate its responsibility for certain tasks to the OFCOM.

There are three types of licenses:

- Licenses for any telecom services provider who operates major parts of the communications installations itself.
- Licenses for any service provider using the frequency spectrum in order to regulate the allocation of a resource (frequencies) which is limited.
- Universal service license, which ensures that any subscriber within a licensed area has access to a number of services of predetermined quality and at a maximum price fixed by the Federal Council. This type of license is distinguished from the other two because it does not confer a right, but imposes an obligation to provide a service.

3G Licensing

The ComCom auctioned UMTS licenses on December 6, 2000, for CHF 205 million (€ 138.5 million). Of the ten initial candidates, six withdrew, some on the very day before the auction started. The award process was therefore interrupted and the reasons for the withdrawals were examined, however, there was no indication of collusion between the candidates. In order to avoid delays in the introduction of this new technology and to guarantee legal certainty, the ComCom decided to proceed in accordance with the existing rules. The award procedure was completed with the granting of licenses at the end of January 2001 to Orange, TDC Switzerland, 3G Mobile and Swisscom. There are no UMTS services properly ready to operate yet, and one of the license subscribers (3G Mobile) abandoned the UMTS project.

5.2.2 Granting access to infrastructure for new entrants

- **Interconnection rates and agreements**

The interconnection regime, which is defined in the Telecommunications Law in the article 11, makes it possible to link networks and guarantees user access to the services of alternative operators. Paragraph 1 sets the rule regarding dominant providers' interconnection obligations: *Providers of telecommunications services that have a dominant position in the market must (undertake to) provide interconnection for other providers without discrimination and in accordance with the principles of a transparent and cost-related price policy. They must state the conditions and prices separately for each of their interconnection services. The Federal Council shall lay down the principles governing interconnection.* The law envisages that operators who occupy a dominant position in the market must guarantee this interconnection and that the partners will first negotiate for three months²⁹. If they do not reach an agreement within this period, the ComCom may lay down interconnection conditions and prices.

Since January 1, 2000, interconnection prices have been fixed in accordance with new principles which the Federal Council laid down in the decree on telecommunication services and which are based on the Long Run Incremental Costs (LRIC) model. Consequently, prices are calculated by the costs incurred directly by interconnection services, on the current basis of the additional long-term costs generated by the use of the infrastructure.

In the year 2000, six procedures were in progress regarding interconnection agreements. The procedures concerned leased lines, transmission resources, unbundling of the local loop, mobile termination prices and interconnection prices based on the "Long Run Incremental Cost (LRIC) model of calculation. After negotiations, most of the telecom services providers reached an agreement with Swisscom on new interconnection rates, corresponding to the new calculation model. However, after failing to negotiate, two providers submitted an application, in order to have the interconnection prices fixed by the ComCom.

- **Leased lines**

According to the Telecommunications Law, *the licensing authority may require license-holders within the meaning of Article 4(1) to provide leased lines in the area covered by their license, in accordance with international standards and at cost-related prices*³⁰.

In October 2000, the ComCom ordered Swisscom to provide local access to leased lines at LRIC-based rates, and on a non-discriminatory basis. Swisscom appealed this decision, and the Federal Court ruled one year later (October 2001) that the ComCom did not have the authority to take such a decision. Because of this decision by the Federal Court, the ComCom sees an urgent need for legislative action against the high prices of leased lines³¹.

²⁹ "The primacy of negotiations"

³⁰ LTC, Art. 12.

³¹ This was done recently (26.02.2003) with the Federal Council's decision to introduce the obligation to unbundle the last mile in the Ordinance on Telecommunications services.

Despite the cost-orientation and international standard requirements laid down in the LTC, the rates charged in Switzerland for access to leased lines are still very heterogeneous and can be high in the regions where Swisscom possesses the absolute monopoly over this service. In the main metropolitan areas where alternative operators are competing for this service, the incumbent's prices have already been forced to decrease. As a result, in international comparison (OECD), prices for leased lines in Switzerland are considered low with respect to purchasing power parity. In the OECD Communications Outlook 2003, Switzerland ranks just behind the Nordic countries as far as the prices of the OECD basket of national leased line charges are concerned (August 2002).

- **Unbundling of the local loop**

The local loop was expected to be unbundled by the year 2000, but that has not happened yet. Swisscom still has a full monopoly in this market segment.

In February 2003, the Federal Council decided to break Swisscom's local loop monopoly by changing the ordinance on Telecommunications Services and at the same time through a change of the Telecommunications Law. The reason why the government wants to use both legal options to introduce local loop unbundling is that neither option is certain to bring an end to Swisscom's monopoly. The ordinance option is a way of implementing Local Loop Unbundling (LLU) rapidly, but runs the risk of being appealed by Swisscom with a possible overruling of the Federal Court. This could lead to the definitive rejection of the process by the Federal Court. The option of establishing LLU through a change in the Telecommunications Law would then be necessary, a procedure that could take two to three years. As it is mostly probable that Swisscom will use all resources possible to resist to the LLU, the government launched both options at the same time. If Swisscom opposes resistance at the ordinance level, the LLU should wait for the law modification procedure, which is not expected to be passed through by the parliament before 2004.

This decision of the Federal Council to impose unbundling by means of an Ordinance comes as no surprise after the repeated efforts of the Swiss regulator to introduce unbundling within the framework of the current LTC. In November 2000 already, the ComCom issued an injunction and ordered the incumbent to immediately implement bit stream access and draft a full unbundling Reference Interconnection Offer ("RIO")³². The Federal Court overruled this injunction in October 2001. In spite of this, the ComCom has continued to energetically promote unbundling as a key step towards greater competition and towards strengthening Switzerland's position as a business location, but the Federal Court claimed that the ComCom did not have authority over those issues. With the new legal provisions, the authority of ComCom should no longer be challenged in this respect.

5.2.3 Facilitating access to customers for new companies

- **Call-by-call carrier selection and carrier pre-selection**

The ComCom decided through decree to make the call-by-call option (choosing a supplier for national and international calls) available for Swiss consumers together with the liberalization

³² Source: CompTel, 2003, Washington

of telecom sector. This first step towards an open telecom market place came into force on January 1, 1998.

Carrier pre-selection for fixed telephony should have come into force definitively for all subscribers on January 1, 1998, but was deferred until April 1, 1999, because of the difficulties encountered with certain Swisscom telephone exchanges. The year 1998 was, thus, dedicated to the preparation for the national and international links to be pre-selected.

- **Number portability**

The technical and administrative specifications for the implementation of operator number portability are set by a Commission's decree amended in August 1999 that became effective on October 1, 1999. This ComCom decree imposed an obligation on operators to guarantee portability from January 1, 2000. However, delays occurred in the preparatory work, also because of the Y2K IT problems which might have arisen with changeover to the new millennium, and number portability was finally introduced successfully on March 1, 2000. Consumers responded quickly and in large number to this new service available. In 2000, some 50,000 numbers – mostly mobile numbers – were ported to a different telecommunication service provider³³.

5.2.4 Guarantying stable and fair market conditions

- **Legal certainty**

Legal certainty is an essential prerequisite for the sound development of the telecommunications market in general, and for the new entrants on the market in particular.

According to the LTC, the Swiss NRA has the competencies required to enforce and guarantee equal market conditions for all players. The Telecommunications Law (LTC + ordinances) sets up relatively comprehensive rules and mechanisms of regulation. However, because of the Supreme Court's ruling options, the Swiss telecom competitors are facing strong legal uncertainty.

First, as we have seen earlier, there have been 6 cases (out of 24 submitted to the appreciation of the Supreme Court) in which the regulator's decisions in favor of the new entrants have been overruled or suspended. Although 6 cases are not that many, they still show that the Swiss legislation leaves room for interpretation, in which the judicial power has the ultimate power of arbitrage. In particular, it demonstrates hesitation on behalf of the Swiss authorities between a competitive telecom market and an incumbent monopoly status. For new entrants, this has led to strong legal uncertainty over the past 3 years. The uncertain outcomes as well as the length of the procedures have been a particularly heavy burden on new companies. The situation should be partially cleared with the Federal Council's decree on the unbundling of the local loop, at least with regards to that particular issue.

Second, the enforcement mechanisms should be much clearer with serious penalties attached to none complying with the rules.

³³ 2000 Annual Report of the ComCom.

- **Sanction Power**

According to the Telecommunication Law (LTC), the regulatory authorities – namely the ComCom, the OFCOM and the ComCo – have the ability to fine companies whenever they do not respect telecommunications legislation, for instance when they show anti-competitive or discriminatory behavior or when they do not provide or provide falsified requested information.

If we look at the actual supervisory procedures initiated by the regulator, we notice that only a small minority of all procedures have lead to fines for the incriminated companies. Most of the time, litigations are resolved through advertisements, changes brought into the licenses and the confiscation of benefits realized through illegal practices. Between 1998 and 2003, fines have been mainly addressed to the incumbent, for discriminatory behavior or illegal use of data that the incumbent possesses to provide interconnection. Even though the amount of the fines can be rather important, many people in the Swiss telecommunications sector argue that their amount is not dissuasive, especially given Swisscom's financial strength. This is a recurrent problem in many of the observed countries, where fines are sometimes dissuasive for new entrants but rarely for the Incumbent operators.

5.3 Guarantying public service

- **Universal service**

The Telecommunication Law (LTC) of 1997 lay down the universal service principles. The Federal Council is competent to adjust the content of the universal service regularly, according to changes in technology and the needs of society and economy. The Federal Council also determines the maximum prices and quality requirements relating to the services.

After liberalization, Swisscom has been designated as the universal service provider for a transitional period of five years. By 2001, the regulator considered whether or not to have one main national license for Swisscom, or several regional licenses split between several facilities-based providers. The ComCom concluded that for the moment a single license is considered as the best choice. In 2002, the universal service license was re-allocated to Swisscom, the only candidate for the license. In case several operators are candidate for the universal service license, the license is to be granted to the applicant who has submitted the best bid, according to the terms of the LTC.³⁴ The operator assuring universal services can receive compensation for the provision of US if it constitutes a financial burden. Until now, Swisscom has not requested any compensation.

5.3.2 Consumer protection and quality control

Consumer protection is not a major task for the Swiss regulator as the quality requirements for universal service are precisely verbalized in the LTC. In Switzerland, the philosophy behind a good quality of telecom services is based on competition. In order to obtain the best technology and the best choice for consumers, the Swiss regulatory system mainly focuses

³⁴ 1997 LTC, Art. 19.

on assuring a competitive market place, believing that competition is the best way to obtain a good quality of services. Of course, Swiss regulation does not neglect the basic surveillance of services provided, i.e. failure in interoperability obligations and abuse of prices.

The NRA does not provide specific consumers information on its website – such as tariff comparison, services comparison, availability of technology, quality standards – and refers to private consumers association when the public asks for such information.

6. Evaluation of the regulatory system

6.1 Assessment of the NRA

6.1.1 Resources and Expertise

Both regulatory bodies – OFCOM and ComCom – are known to have well-qualified staff that has the expertise required for regulating telecom specific issues. However, many people in the sector claim that the regulator should have a larger legal department in order to deal with the numerous appeal cases, often initiated by Swisscom. Moreover, there are concerns about the durability of the actual system in which a few leading key people (participants to the foundation of the institutions in 1998) have a major influence. Even though from a formal point a few, the personalities of the people working at the OFCOM and ComCom should not be an issue, in practice however, these personalities precisely seem to have a major impact.

Indeed, many people in the sector believe that the current level of expertise and collaboration between OFCOM and ComCom may be challenged in the future with the relief of some of the principal actors of the system. In particular, concerns exist about potential conflicts of interest arising between the ComCom and the OFCOM. At the time of writing however, collaboration and expertise seem to be good.

In terms of financial resources, the fact that the OFCOM's budget is in majority³⁵ financed by the private sector through fees seems to have a rather positive impact on the whole system.

6.1.2 Independence vis-à-vis political interests and transparency

Both regulatory bodies – OFCOM and ComCom – benefit from great independence vis-à-vis political interests. Even if the OFCOM depends on the DETEC, it works as an independent government agency and has a large range of competencies for which no approval from the Ministry is necessary. Regarding the ComCom, the seven Commissioners have a total autonomy for regulating the sector. The only political control is the nomination of the Commissioners by the Federal Council. However, indirect political pressure over the ComCom can occur through the judicial authorities who may act as a threat to discipline the regulator.

As for transparency, both regulatory bodies have the reputation to release broad and good information to the industry and the population. The OFCOM is in favor of consultative procedures when new telecom issue arises and prompts the set-up of working groups with representatives of the telecom providers concerned.

³⁵ The fees amount represent 87% of the OFCOM budget.

6.1.3 Efficacy and credibility

The Swiss telecom regulatory authorities enjoy a good reputation of efficacy and credibility vis-à-vis the public and the industry. They are recognized, also at the international level, to exploit the best of their resources in order to improve the sector's functioning. Both regulation authorities have worked together to make the Swiss telecom sector a dynamic competitive marketplace. They are recognized as having no privileged attitude towards the incumbent. On the contrary, they are considered to work hard to make the market viable and attractive for new entrants. However, as we will examine more deeply in the conclusion, these efforts to make Switzerland an interesting marketplace – for both the industry and the consumers – have been somewhat restrained by the judicial authorities and their interpretation of the sometimes unclear LTC language.

6.2 Flexibility of the whole regulatory system

The Swiss telecom regulatory framework elaborated in 1997 was intentionally and explicitly drawn to allow a maximum of adaptability with regard to future developments. The flexibility of the LTC showed that the legislator:

1. could not (did not want to) predict the development of the telecom sector in the future
2. wanted to leave room for the OFCOM and ComCom to statute on the necessity to complement the LTC with Ordinances
3. wanted to avoid overregulation and leave ample room for market mechanisms to develop

While the intended flexibility indeed allowed the LTC to be completed with Ordinances when the need arose, the initial intention to leave room of maneuver to the regulator turned out to be a risky enterprise. In reality, it happened more than once that the fuzziness of telecommunications legislation benefited more to the Incumbent operator and the judicial power than to the regulator, in particular with respect to the ability of the regulator to rule on interconnection issues. As we have seen before, the regulator has been confronted with a serious disavowal while attempting to regulate interconnection prices and the unbundling of the local loop. According to the Federal Court, the regulator did not have the legal backup to statute on that issue. Flexibility thus turned out to bring uncertainty. Recently, the Federal Council has completed the legislation by introducing the obligation to unbundle in the Ordinance on Telecommunications services, thus addressing this question of legal void.

During the review process of the actual telecom legislation, there was also a debate on the opportunity to introduce ex-ante price regulation, considering that negotiations between operators were often characterized by asymmetric bargaining power and consequent long procedures for ex-post intervention by the regulator or the judicial powers. The idea was to empower the regulator by authorizing ex-ante regulation whenever market dominance has

been recorded, following the example of the EU countries. In the end however, the Federal Council renounced to introduce ex ante regulation in the law.

All in all, the Swiss regulatory framework for telecommunications can be considered as rather flexible, and it is currently being revised in light of the developments that have occurred during the past 5 years and the new European framework for telecommunications legislation. However, we have seen that in the past, too much 'flexibility' can also lead to imprecision and consequent legal void or institutional problems.

7. Outcome performance indicators

7.1 Competition

- **Number of operators on the market**

Since the 1998 liberalization, a good number of new entrants have been providing telecom services in Switzerland. According to the Telecommunications Act, the core of the liberalization took the form of an obligation to grant interconnection to new entrants. However, the incumbent is not yet complying with the principles to provide full access to the end-users, as well as to provide interconnection to the new entrants without discrimination and in accordance with the principles of transparency and cost-oriented price policy. Both regulatory bodies have been working hard to encourage competition, but they had to face resistance at various levels.

Nonetheless, Swisscom witnessed the market entry of strong competitors such as diAx and Sunrise. In 2001, diAx merged with Sunrise, both bought out by the Danish operator TDC. The result has been an effective duopoly situation for fixed-line services, although Swisscom still dominates the market.³⁶ Other operators such as Tele2 have also gained some market shares.

In the mobile market, three telecom providers share the market. Orange and Sunrise together gained a third of the market by the end of 2000. Competitors made constant efforts to increase their own coverage infrastructure and their mobile service quality for individual and business consumers. In addition to the three initial mobile providers, Tele2 Mobile is offering MVNO services (Mobile Virtual Network Operator) and as such, is the first MVNO in Switzerland. Tele2 is specialized in pre-paid services and resells services on the Swisscom Mobile network, on the offer available on the Swisscom Natel tariff, including international roaming, dual-band reception and information services. By the end of 2002, Tele2 had a market share of approximately 0.5%.

As for internet service providers, Switzerland counted 113 operators in 2000. Among them 59 via PSTN or ISDN connections, 55 via cable modem, 42 via xDSL, 2 with satellite internet access and 27 by other means³⁷.

³⁶ World Markets Research Centre, Telecom Country Report: Switzerland, 28.1.2003

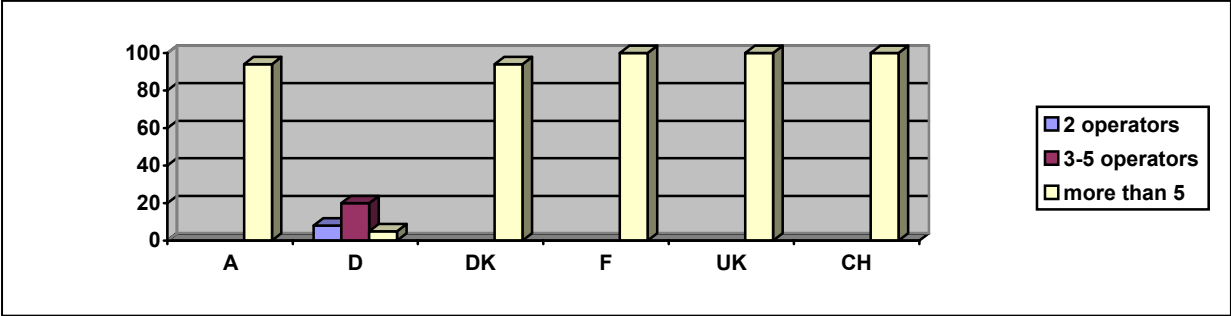
³⁷ OFCOM, Statistique officielle des télécommunications 2001

As a general rule, entry on the Swiss market is easy and quick, administrative and financial obligations are kept down to a minimum. With the 1998 liberalization, the Swiss market rapidly became very attractive for new entrants which lead to an increase in the number of providers as well as in the number of telecom services. Even if some factors of this success are linked with the specific Swiss market configuration³⁸, the most important factors are the regulator's will and ability to stimulate a positive market environment. The two regulatory bodies have worked together in order to transform the telecom sector into a dynamic marketplace and reached this objective in a very short period of time. One of the strategies of the regulatory system – especially the ComCom – has been to keep the Swiss regulatory regime in line with the EU directives. However, there is resistance – such as those against LLU for instance – from the incumbent and also political tendencies against the implementation of competition at all levels and for all services. This situation removes some of the legal and regulatory certainty, which competitors operating in other EU countries can enjoy.

- **Choice for the consumers in terms of operators**

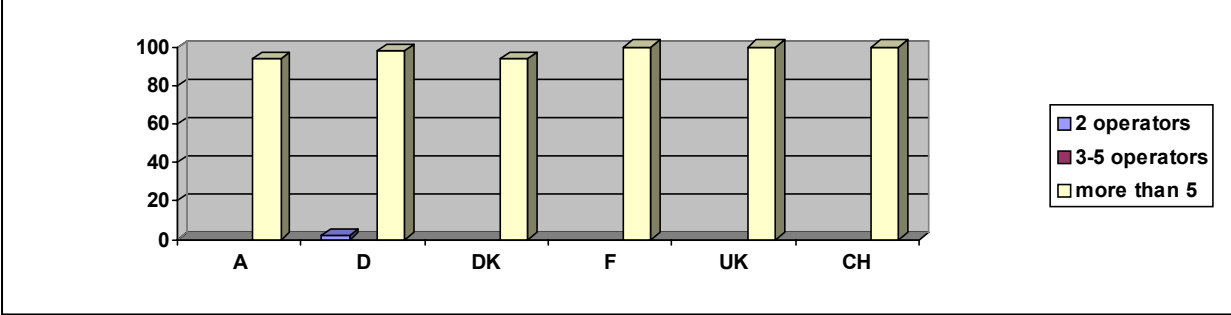
In Switzerland, various operators are providing services for every fixed service – except for the last mile – as shown in the graphs below.

Figure 4: % of population that can choose between different operators for fixed telephony local calls



Source: WIK Consult Auszug aus dem 8. Implementation Report der EU -erweitert um die Schweiz, 2003

Figure 5: % of population that can choose between different operators for fixed telephony domestic long distance and international



Source: WIK Consult Auszug aus dem 8. Implementation Report der EU -erweitert um die Schweiz, 2003

At the time of writing, the Swiss consumers have a carrier choice for all fixed telephony market segments thanks to carrier pre-selection introduced in April 1999 by the regulatory

³⁸ Many areas with highly concentrated population; the Swiss standard of living

authorities. As for the last mile, Swiss consumers have no other choice but to subscribe to Swisscom's service.

Indeed, despite the pro-competitive work of the regulatory authorities, the Swiss telecom sector has for long been hampered by strong legal and political blockage against full liberalization. Until April 2003, unbundling of the local loop was not possible, i.e. competitors had no possibility of using their own technology in order to offer broadband services adapted to their own customers' needs. They were constrained to resell the incumbent's product, which considerably reduced the choice for users. The situation of leased lines was also unsatisfactory for new comers on the market. The lack of competitive regulation pressure in these areas had far-ranging negative economic consequences and lead to a restricted freedom of choice for end-users.

Following the regulator's recommendations and under pressure of Swisscom's competitors, the Federal Council put an end to this situation and enforced local loop unbundling as of April 2003. The Federal Council also decided to put leased lines under the interconnection regime. As a result, alternative operators should be able to have a direct access to their customers, which means that the Swiss telecommunication users will have more choice in the future. The development of fixed voice telephony over cable could also increase the consumers' choice. When this technology is ready, about 50 % of the Swiss households (Cablecom customers) will have the opportunity to choose to receive voice telephony via cable services.

All in all, the Swiss regulatory authorities have been actively engaged in order to implement all the elements necessary to obtain a good quality for telecom services, including a fair amount of choice for the consumers.

- **Market shares of the Incumbent**

As in the other liberalized telecom markets, the market share of Swisscom has decreased after liberalization. The mobile, the long-distance and the international markets are – as in the other countries – the most competitive ones. The lack of competitors providing full access services to the consumers is due to the absence of local loop unbundling. Consequently, Swisscom owns almost all fixed access lines for telephony except for those that CATV operators have upgraded for telephony services. The main competitor to Swisscom is TDC Switzerland, also known as Sunrise, which has an approximate market share of 10% of revenues.

As Swisscom owns most access lines, it also controls the domestic access leased line market. There are competitors in Switzerland using capacity rented from Swisscom to offer data services, but again Swisscom has the majority market share, particularly for domestic services. Due to Switzerland's role as a financial and international organization center, global providers have a presence in the international data market.

Swisscom also dominates the mobile sector, with its mobile subsidiary accounting for 62.9% of total subscribers. The Swiss population has the choice between 4 mobile operators of which one VMNO. The incumbent had a monopoly until 1998, but since then the new entrants have succeeded in conquering about 40% of the market.

For the internet, the incumbent's ISP Bluewin, has the majority of Internet connections, followed by far by its main competitor TDC. For broadband services, Bluewin has the majority of DSL subscribers in Switzerland with 56% of all DSL subscriptions. Swisscom owns the totality of subscriber lines and offers wholesale DSL to Bluewin and to its competitors. In addition Cablecom, which covers mainly urban areas, offers cable modem service.

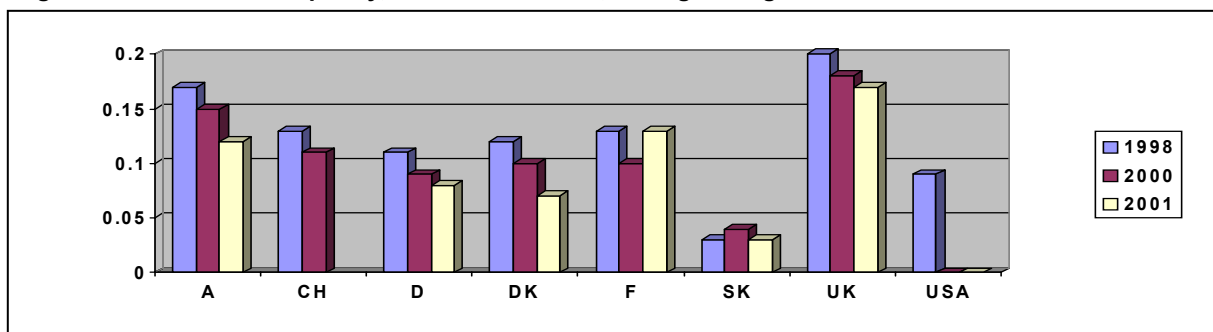
As the Swiss telecom regulation is not based on pro-active practice or asymmetric regulation principles, but rather on competition promotion, there are still service areas where the incumbent holds a dominant market share position. However, dynamic competition in the fixed-line services and the mobile telephony have made the incumbent's market share decrease dramatically since the start of liberalization. This shows that the Swiss regulatory authorities, by promoting a competitive marketplace, have greatly helped competitors to evolve towards a viable situation, in spite of Swisscom's de facto advantages.

- **End-user prices**

Considering telecom service prices, the 1998 liberalization reached some success quite rapidly. In 1998, the general telecom service prices³⁹ decrease was still weak, with only 2.6 %. But the year 1999 saw a dramatic price drop by 14.7 %. In the first ten months of 2000, telecom service prices even declined by 16.8%. Since 2000 however, prices have stagnated with even a light increase between 2001 and 2002 due to a change in the tariff structure. Since the liberalization, prices generally decreased for both the private and commercial sectors in Switzerland: respectively -8,6 % for private and - 24,6% for commercial activities⁴⁰.

In international comparison, the current Swiss end-users prices are average, as shown in the tables below.

Figure 6: Fixed voice Telephony, 3 minute local call, average charge in PPP €

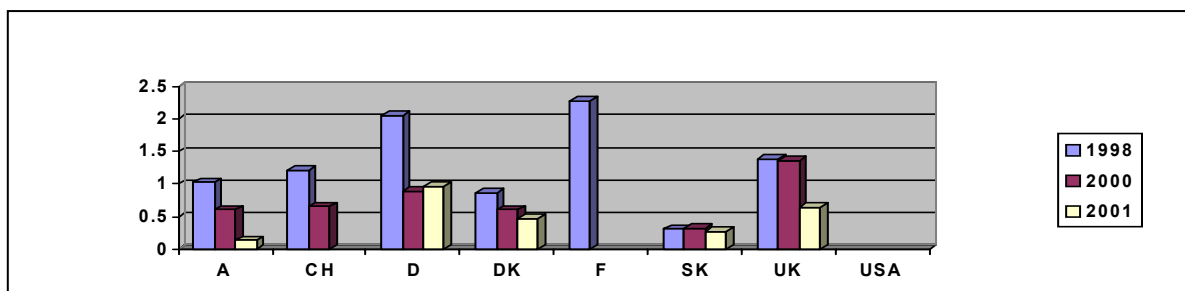


Source ITU

³⁹ Global consumption price index, OFCOM, *Statistique des télécommunications : Evolution jusqu'au 31 décembre 2002 pour certains indicateurs*, 2003

⁴⁰ OECD, *Competition and regulation issues in telecommunications*, 2002, p. 357. These price drops are much more important than the OECD average : -1,8% for private and - 2,9% for commercial.

Figure 7: Mobile telephony, 3 minute local call, average charge in PPP €



Source ITU

With respect to prices, the Swiss regulatory authorities have had no major impact on the telecom services market. Even though the Telecommunications Law wants to assure fair prices for consumers, the regulatory framework objectives do not include a direct control over prices, but rather assure healthy competition between telecom providers. In the view of the Swiss regulatory regime, competition is the key element in order to create dynamism of offers and telecom services at advantageous prices for consumers. However, the regulator has a control over prices by fixing price caps for telecom services provided by the holder of the universal service provider. All the telecom companies have lower prices than the limit fixed by the regulation, except for the services where there is no or very few competition. The most notable ones are the incumbent's last mile monopoly access – where Swisscom applies the highest price permitted by the law – and the leased lines, a service with still little competition⁴¹, where Swisscom applies prices that are much higher than the OECD average.

7.2 Public service

- **Availability of services throughout Switzerland**

ADSL coverage: 95% of local switches

Leased lines: n.d.

ISDN 100% availability

Voice telephony over cable: available

Penetration rate CATV 37% population, 77% households, cable modem availability for 2 million CATV connections

Voice telephony over powerline: pilot projects

FWA availability: yes

Mobile coverage in percentage of population 99% (OECD 2003)

Sources: OFCOM, *Statistique des télécommunications, évolution jusqu'au 31 décembre 2002 pour certains indicateurs*, 2003, OECD, *Communications Outlook 2003*, www.swisscable.ch

The availability of services is good in Switzerland, especially in the region stretching from Geneva to St Gallen (the lowlands) where most of the Swiss population lives. In the mountain regions, there are areas where mobile or broadband services are not yet available. There exists little information about the availability of services in the country, as the OFCOM does not collect this type of information. Globally speaking, availability of services in Switzerland is similar to that of most European countries.

⁴¹ Especially in the rural areas.

There are no specific policies for developing new technologies such as power line communications or FWA, the responsibility is left to the enterprises to propose new solutions. As far as broadband Internet (ADSL & cable modem so far) is concerned, the Swiss government has elaborated a strategy entitled 'Strategy of the Federal Council for an Information Society in Switzerland' in 1998, which focuses on the expansion and improvement of Internet within the country. A special working group within the OFCOM is in charge of implementing the Federal Council's strategy. The actual impact of this strategy on the availability of services is limited to the deployment of Internet in schools and the administration.

All in all, the regulator's role with regards availability of services is very limited in Switzerland.

- **Quality of services (QoS) throughout the country**

Globally speaking the quality of telecom service is good throughout the country. In Switzerland, the quality of service is not based on strong regulation incentives, but rather on the competitive market providing dynamism between competitors. Still, Universal Service Obligations standards are frequently adapted by the Federal Council which has the competencies to fix the USO standards obligations.

The LTC gives very few regulatory mandates to the OFCOM about QoS surveillance. Consequently, the NRA does not provide services such as assistance on the website or lists about the telecom services' quality of different operators. However, the Swiss regulator holds adequate quality control over some licensees, such as the universal service provider or major mobile licensees.

- **Information to the public**

The Swiss regulator has no special mandate to provide services to the consumers. As the Swiss Telecommunications Law does not stipulate specific tasks for the regulator to provide consumers service, there are no consumer oriented report produced by the OFCOM. The statistics and data provided by the OFCOM are more market and industry oriented. To compare prices and quality of services, consumers have to refer to the provider's websites or to private consumers association. Unlike many of its counterparts, the OFCOM thus has a very small role to play in this field.

8. Conclusion

In Switzerland, the consumer demand for communication services has grown greatly over the past few years. The telecommunications sector guarantees not only a basic service offering for all segments of the population, but also makes a contribution to the development by means of large investments in new technologies. An important factor in the Swiss national economy is the future evolution of the information society. After several years of liberalization, from the viewpoint of consumers, notable changes and successes can be discerned. However, there are still weak areas in the telecommunications market development due to the regulatory and legal framework.

One objective of the 1997 Telecommunications Law reform was to have a 'light' general legal framework that would permit further adaptations to the sector's needs. At that time, the legislators did not know how the liberalization of the telecom market would work. For this reason the legal mechanisms adopted a learning approach, in order to make self-regulation and adaptation possible depending on the future market's needs. This approach was considered as the best reasonable choice for Telecommunications Law makers, as the further adaptation could be enforced by ordinance or law amendments.

Yet, evidence has shown that with the current legislation, the NRA does not have the ability to enforce the necessary regulation in the most relevant markets, i.e., where dominance and market failures are confirmed. Where effective competition among providers has been able to establish itself, the Telecommunications Law has reached the objectives desired by the legislator. For consumers, it is undeniable that today's telecom services availability has made Switzerland a much more attractive place than before the liberalization. However, despite the positive results for consumers, the liberalization process with its promises is facing a danger in some areas. The main reason for this is the continuing Swisscom *de facto* monopoly over the access network. Full access to consumers for competing operators has not been implemented yet, mainly because of the incumbent's resistance and the unclear Telecommunications Law language leaving too much room for interpretation. Also, for various communication services, competitors are limited to resell products and technology, defined by the incumbent and have then no possibility to offer services adapted to their own customers' needs. The regulation of leased line prices which the NRA was ready to implement has been rendered impossible by the Federal Court's decisions. The lack of competitive pressure in these areas provokes negative economic consequences and leads to restricted freedom of choice for end-users. This is making Switzerland a particular case regarding the telecoms sector, as the European Union is actively trying to improve the general conditions for new players in the market and to increase competition. Furthermore, Switzerland is running the risk of missing technology and market trends, possibly making the Swiss telecom sector an unattractive market, with the risk of paralyzing competition and provoking the degradation of IT offers and dynamism.

As mentioned earlier, an amendment to the Swiss Telecommunications Legislation is pending. The public consultation results closed on October 15, 2002. The proposed

amendments concern the unbundling of the local loop and the application of non-discriminatory leased lines pricing and availability. A first modification has already occurred through change in the Telecommunications Decree, which has been implemented in April 2003. A second one is planned through modification of the Telecommunications Act. With the first option, the Federal Council is running the risk that Swisscom appeals any of ComCom's decisions based on the decree, by arguing that the legal provision is not a sufficient one. With the LTC modification option, the process can take several years to pass through parliament, and the issue is uncertain because of political resistance and Swisscom lobbying. The very recent decisions at the governmental level show that the Federal Council is strongly determined to break the remaining incumbent's monopoly. In order to have the greatest chance of reaching the objective of complete liberalization, the government has decided to attack Swisscom's last monopoly with both options – decree and LTC modification – at the same time.

The 1997 Telecommunications Law set up a regulatory framework that could freely enforce the necessary measures in order to avoid market failures. The ComCom received a very wide range of statutory competencies. However, the current situation is extraordinarily different from the 1997 LTC projects, mainly because of the Federal Court's ability to overrule the NRA's decisions. At the moment, the main challenges of the regulatory system are:

- The Federal Court's ability to overrule ComCom's and OFCOM's telecom specific regulations (i.e., interconnection and access issues)
- The unclear language of the LTC (which leaves room for contradictory interpretation and may paralyze the sector's development towards a competitive marketplace)
- A lack of resources of the OFCOM (financial, number of legal experts)
- The weaknesses of the Competition Commission (resources and expertise in telecommunications market matters) which has sometimes problems to properly apply the competition law to the telecom sector.
- Asymmetry of information and resources in favor of Swisscom

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