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Regulatory reform of telecommunications in Switzerland

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National policies towards the regulation of the telecommunications industry have undergone significant change in response to technological progress and increasing competition. This article discusses the consecutive revisions of the Swiss regulatory framework during the 1990's and presents lessons to be drawn from this process. After reviewing the Telecommunications Act (Fernmeldegesetz; FMG) 1992 and the reasons for its revision, this article presents the most important prescriptions of the FMG 98 concerning the licence regime, universal service, and interconnection. The implementation of the FMG 98 has led to a fundamental change in regulatory policy. However, transitional rules appear to promote excessively slow adjustments in the current industry configuration. © **1998 Elsevier Science Ltd. All rights reserved.**

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During the last few years, national approaches towards the regulation of the telecommunications industry have changed considerably in response to technological progress, increasing international competition and problems of funding universal service by means of cross-subsidization between different customer groups. However, it seems that so far neither in regulatory practice nor in academia has a consensus emerged concerning what a regulatory framework should look like in order to deal with these developments. Examples of critical issues abound: How should interconnection rates be pinned down? Which services should be part of universal service obligations? And how should they be priced? How are (potential) deficits stemming from universal obligations funded?

While economic research has led to a much better understanding of these issues on a theoretical level,[1] it is unclear how this research translates into the design of sound regulatory policy.[2] It is therefore not surprising that legislators in different countries have found different ways to move away from heavily administrated telecommunications markets towards a regulatory system that at least partially allows for competition between service providers and network operators.

In the context of regulatory reform, Swiss telecommunications policy presents a fertile field of study since the nation, although situated in the heart of the continent, is not a member of the European Union (EU) and therefore has developed its own regulatory approach.[3] Like Swiss competition policy in general, the regulatory framework of the telecommunications industry has been subject to fundamental change during the 1990s which is best illustrated by the consecutive revisions of the Telecommunications Act (Fernmeldegesetz; FMG).

This article studies the transition from the FMG 92 to the FMG 98 and discusses the most important characteristics of the respective regulatory frameworks as summarized in Table 1.

After providing a short description of the law prior to the FMG 98, we survey the reasons that lead policy makers to undertake regulatory initiatives in the telecommunications industry. With the enactment of the FMG on 1 January, 1998 the legislature defined a completely different regulatory

Table 1. Characteristics of the distinctive Swiss regulatory frameworks in the 1990s.

FMG 92	FMG 98
Partial separation of regulation and operation (OFCOM)	*Full* separation of regulation and operation (ComCom, OFCOM)
Network and voice services *monopoly*	*Free entry* (except for the mobile phone sector)
Internal (and external) *cross-subsidies*	*Universal service fund*
State-ownership of the monopoly operator Telecom PTT	*Partial* privatization of Swisscom
	Number portability and *free carrier selection*

framework compared to the FMG 92. Important new prescriptions of the FMG 98 include the licence regime, the definition and financing of universal service (including quality and price regulations), and the rules for interconnection, number portability and carrier selection. Then, some lessons to be drawn from the repeated revisions of the FMG are presented. The Swiss experience underscores the importance of transitional problems, the role of cooperation between the relevant regulatory institutions, and the role of credibility in signaling a serious attitude towards reform. The final section contains concluding observations.

The regulatory framework of the FMG 1992

The FMG 92, as well as the FMG 98, rests on art. 36 par. 1 of the Federal Constitution of 1874, which declares post and telegraphy a *federal matter*. This prescription is put into concrete terms in par. 2 and 3: profits have to be transferred to the Federal Treasury, and prices across the country are to be set by similar standards and as low as possible. Before the implementation of the FMG 92, these regulations were extensively interpreted. As the state-owned monopoly holder Telecom PTT was not ready to grant any licence rights to private operators, it remained the only supplier of networks, services and even terminal equipment throughout the country. At the same time prices were not only set by similar standards (as required by the Constitution) but were exactly the same across the country. The FMG 92 partially broke up the monopoly rights of Telecom PTT, leading to an important first change in Swiss telecommunications policy.

The FMG 1992 (and the respective relevant ordinances) introduced the following set of central rules:[4]

- *partial separation of regulation and operation*: The formation of the Federal Office for Communication (OFCOM) introduced an independent regulatory authority within the Federal Department of Transport, Communications and Energy (EVED). However, the separation remained partial, in the sense that the EVED as a Federal Department still reported to the government which was the owner of Telecom PTT.
- *Freedom to purchase approved terminal equipment.*
- Free entry into value added services.

At the same time, the *network and voice services monopoly* of Telecom PTT was *maintained*; here, the term voice services was broadly interpreted to include services by mobile radio, by satellites, and by leased lines (when supplied for third parties).

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[1]See Armstrong, M. *et al.*, The access pricing problem: a synthesis. *Journal of Industrial Economics*, 1996, **44**(2), 131–150 and Laffont, J. J. and Tirole, J., Access pricing and competition. *European Economic Review*, 1994, **38**(9), 1673–1710 and the literature cited therein for an analysis of the interconnection problem. For recent contributions to the universal service discussion, see Blackman, C. R., Universal service: obligation or opportunity? *Telecommunications Policy*, 1995, **19**(3), 171–176; Cronin F. J. *et al.*, Local exchange competition, rate restructuring and universal service. *Telecommunications Policy*, 1995, **21**(3), 251–264; Wolak, F.A., Can universal service survive in a competitive telecommunications environment? Evidence from the United States consumer expenditure survey. *Information Economics and Policy*, 1996, **8**(3), 163–203.

[2]Mitchell, B. *et al.*, The regulation of pricing of interconnection services. In: *Toward a Competitive Telecommunication Industry*, ed. G. Brock, Selected Papers from the 1994 Telecommunications Policy Research Conference, New Jersey, 1995, pp. 95–118, for instance, comment as follows (p. 101): 'The [···] Ramsey pricing models for interconnection provided by Laffont and Tirole are extremely hard to interpret and even more difficult to implement.'

[3]See Tempelman, J. A., Dutch telecommunications. A period of transition. *Telecommunications Policy*, 1997, **21**(8), 733–742 and Perucci, A. and Cimatoribus, M., Competition, convergence and asymmetry in telecommunications regulation. *Telecommunications Policy*, **21**(6), 493–512, in this journal for recent discussions of the reform approaches adopted in selected European countries.

[4]See Blankart, C. and Schwandt, F., Telecommunications services. In *Services in Switzerland. Structure, Performance and Implications of European Economic Integration*. ed. P. Zweifel, Berlin, 1993, pp. 103–120; OECD, *Communications Outlook 1997. Volume 2: Regulatory Annex*. Paris, 1997.

Reasons for revision

The FMG 92 turned out to be a shorted-lived law. Only four years after its enactment, the Swiss government—the Federal Council—presented a first proposal for a complete and fundamental revision. What were the main reasons?

According to Borner *et al.* (1991)[5] the first half-hearted revision of the regulatory framework of 1991/92 did not go far enough. These authors concluded that the implementation of the FMG 92—they called it an 'evolutionary liberalization'—would be outdated within a few years, given the speed of *technological progress.* As we know today, they were right. Increasing digitalization made the legal distinction between voice (under monopoly) and data transmission (under competition) more and more problematic and at the same time basically impossible to control. However, there were also important *economic* reasons for the revision of the FMG 92. The Telecom PTT monopoly for network and voice services turned out to be vulnerable to developing international competition (Call Back Systems, Internet Telephony etc.), which increasingly endangered its ability to cross subsidize local and domestic tariffs and, along with it, sustain universal service in general. This situation was complicated by the fact that Telecom PTT not only cross-subsidized (internally) its own services, but contributed to covering the costs of a subset of Postal services provided by PTT. At the same time, Swiss manufacturers and service providers increasingly complained about excessive rates for leased lines. Finally, *commercial policy* was an important issue.[6] Although Switzerland is not a member of the EU, the definite liberalization of the telecommunications markets in the respective EU-member states on 1 January 1998, generated, together with the development of the WTO negotiations, important pressure on the political and legal system in Switzerland. The cumulative effect of all these developments stimulated a legislative response.

Regulation according to the Telecommunications Act 1998

From the beginning of the legislative process, the Federal Council (see note 6) emphasized that the revision of the Telecommunications Act was not to be understood as a mere passive copying of the regulatory framework of the EU and its member states. Nevertheless, the importance of the EU cutoff date 1 January 1998, must not be underestimated. The role of the EU is indicated most clearly—to the surprise of many observers—by the remarkable speed with which the parliament has expedited its consultations concerning the FMG 98.

Aims of the FMG 98

The most important objective of the FMG 98, enacted on 1 January, 1998, is to ensure that both the people and the economy have access to a variety of low-priced, high-quality as well as nationally and internationally competitive communication services (art. 1 par. 1 FMG 98). The act particularly aims to ensure that a reliable universal service at reasonable prices is provided all over the country (art. 1 par. 2a FMG 98).

[5]Borner, S. *et al., Das neue Fernmeldegesetz: Europäisches Kleid oder Schweizer Korsett? Deregulierung des europäischen Telekommunikationssektors als Chance und Herausforderung für die Schweiz.* Chur/Zürich, 1991.

[6]Federal Council, *Botschaft zum revidierten Fernmeldegesetz (FMG) vom 10. Juni 1996* (Sonderdruck), 1996.

The Federal Council's list of requirements (see note 6) for the new act also included:

- an increase in Switzerland's attractiveness as a production location,
- the guarantee of high quality in Swiss communication techniques,
- the improvement of innovation, and finally
- the prevention of adverse effects on public budgets on all levels (Federation, cantons and communities).

In marked contrast to the past, the legislature took the view that these aims—including universal service—are easier to meet by competition[7] than by (partial) monopolization and therefore issued an entirely different set of rules compared to the FMG 92, including a complete separation of regulation and operation, plus a removal of entry restrictions (except for the mobile phone sector). So let us turn to the revised regulatory framework for telecommunications infrastructure and services according to the FMG 98 and the relevant ordinances.[8]

The licence regime

Art. 4 FMG 98 states that any supplier of communications services who runs considerable parts of the communications infrastructure needs a licence. This licence duty is supplemented by a duty of notification for all other manners of supply. The only suppliers exempted from these duties are foreign suppliers of international communication services the final leg of whose connections in Switzerland is provided by another supplier who has a licence or is notified (art. 3 FDV). Any supplier has to prove that the granting of a licence will not impede or considerably harm 'effective competition' and that he is technically able to assure the fulfilment of the requirements of the FMG 98. As far as licences for universal services are concerned, the supplier also has to provide a business plan for the complete duration of the granted licence which displays the expected prices and investments (art. 6 FDV).

Universal service

According to art. 16 FMG 98 and art. 15 FDV, universal service is defined as encompassing at minimum the following services:

- voice telephony, including any data transmission possible on voice lines;
- access to emergency services;
- public pay phones;
- access to Swiss participant directories of public telephony;
- switching services for hearing-impaired participants;
- switching services for partially sighted and blind participants.

By allowing the Federal Council to periodically review the scope of universal service and adopt changes according to social and economic needs as well as to technological developments, the legislature circumvented the economically and politically delicate problem of committing to a specific policy towards public access to the networked society.[9]

During a transition period of five years after the enacting of the FMG 98, Swisscom[10] is obliged to assure universal service throughout the country without any reimbursement (art. 66 FMG 98). This is due to the

[7]Art. 1 par. 2a FMG 98 holds that the act should make possible 'effective competition'. This is the competition concept embraced in the recently revised Swiss antitrust law of 1996.

[8]The FMG 98 is put into concrete terms in as many as 14 ordinances, the most important of which are the following: (1) Ordinance on Telecommunications Services (FDV). (2) Ordinance on Frequency Management and Mobile Licences (FKV). (3) Ordinance on Address Elements in the Communications Sector (AEFV). (4) Ordinance on Communications Installations (FAV). (5) Ordinance on Fees (GFV), (6) Ordinance of the ComCom on the FMG (in the following abbreviated by 'OComCom'). Since the ordinances are easier to change than the law, they provide some flexibility for adapting to change. However, the extensive use of ordinances makes the future regime less predictable.

[9]See Xavier, P., Universal service and public access in the networked society. *Telecommunications Policy*, 1997, **21**(9/10), 829–843 for a recent discussion of this issue.

[10]Swisscom is the current name of the former monopoly operator Telecom PTT (changed on 1 October, 1997).

fact that Swisscom is currently the only provider with an exhaustive network infrastructure. However, in principle, the law foresees that universal service licences are periodically put out to tender. The tender process follows the principles of objectivity, nondiscrimination and transparency (art. 14 FMG 98).

If the tender makes clear that the investment needed to provide universal service (in a certain area) cannot be recovered via depreciation within the usual period of time, the firm with the best offer receives—along with the universal service licence—an investment contribution (art. 19 FMG 98). These investment contributions are financed by a separate fund which in turn is financed by periodic licence fees for the right to offer services. The amount of the respective fees is calculated according to the estimated need to finance investment contributions and is fixed proportionally to the VAT-taxable turnover in licenced services (or an analogous criterion-art. 38 FMG 98).[11] In case the tender process does not attract suitable operators, the Communications Commission (ComCom) can *order* any licence holder to provide universal service (art. 18 FMG 98) in exchange for a transfer (to be specified) to recover costs. While the periodic licence fee for the right to offer services is only due if there is in fact a universal service deficit to cover, the period licence fee for the use of the frequency spectrum is always imposed. This is also true for the unique administrative fee for getting a licence or a numbering block and the periodic administrative fee for the licence's 'maintenance'.

These regulations are supplemented by rules imposing *price limits* for universal service as well as *quality requirements*. The prices of universal service are to be published. While the initial proposal of the FDV contained an elaborate price cap mechanism to regulate the prices of universal service, the final version sets as upper limits simply the respective service prices charged by the monopoly operator Swisscom as of 13 December, 1997 (art. 23 FDV).[12] After 1 January, 1999, these upper price limits are adapted to alterations of the consumer price index every year. In case of a lowering of these price limits, the licence holder has to adapt its prices by 1 February of the respective year. Any price alterations have to be notified to the OFCOM. The FDV further requires that the prices for the connection between local and long distance networks be equal for public pay phones and all other users (art. 23 par. 3).

These price rules are supplemented by *quality* prescriptions according to art. 21 par. 1: The quality of universal service has to comply on average (on a year's basis) with *ten criteria* for which the OFCOM has specified the technical details and relevant aims, taking into account the technical standards in 1997 and their development (art. 21 par. 2).[13]

Interconnection

The economic literature provides two general explanations why interconnection tariffs should be regulated: (i) interconnection regulations help to prevent abuse of market power by the incumbent; (ii) interconnection regulations ensure the realization of potential welfare gains stemming from the positive externality of connecting additional participants to a given communications network.[14] As Noam (1996)[15] points out, these explanations coexist rather uneasily.

The first rationale starts from the assumption, that a new entrant cannot succeed in becoming a competitor to the incumbent without having access

[11]See Noam, E., Beyond liberalization III. Reforming universal service. *Telecommunications Policy*, 1994, **18**(9), 687–704. for a related proposal to fund universal service.

[12]The prices for the respective services are: (a) *Line* Sfr. 25. — per month. (b) *Local connections* (within a local network or up to ca. 10 km): Sfr. 0.1 for a full or partial time unit.

1. Monday-Friday, 08–17 and 19–21 ('normal rate'): 90 seconds.
2. Monday–Friday, 06–08, 17–19 and 21–23 as well as on Saturdays, Sundays and general holidays 06–23 ('low rate'): 180 s;
3. Any day 23–06 ('night rate'): 360 s.

c. *Long distance connections* (outside of the local net or more than 10 km): Sfr. 0.1 for a full or partial time unit;

1. Monday-Friday, 08–17 and 19–21 ('normal rate'): 24 s.
2. Monday-Friday, 06–08, 17–19 and 21–23 as well as on Saturdays, Sundays and general holidays 06–23 ('low rate'): 48 s.
3. Any day 23–06 ('night rate'): 96 s.

d. *markup for the use of public pay phones*: Sfr. 0.4.

[13]More specifically, the following criteria are imposed: (a) waiting time for connection of new services; (b) quality of voice transmission; (c) number of failures per line and year; (d) repair time; (e) frequency of connection failure due to network congestion or network faults; (f) time for connection establishment; (g) reaction time of manually switched services; (h) reaction time of operator services; (i) Share of working public pay phones; (j) precision of billing.
For a survey of service quality issues under regulation, see Berg, S. V., Lynch, J. G., The measurement and encouragement of telephone service quality. *Telecommunications Policy*, 1992, **16**(3), 210–224.

[14]The positive external effect is the utility increase to all participants of a given network due to the connection of a new participant. See Economides, N., The economics of networks. *International Journal of Industrial Organization*, 1996, **14**(6), 673–699, for a recent survey on the economics of networks.

[15]Noam, E. M., The prerequisites to competition: two proposals to reform universal service and interconnection. In *Regulierung und Wettbewerb in der Telekommunikation. Ein internationaler Vergleich.* ed. E. Witte, Heidelberg, 1996, pp. 101–119.

to existing infrastructure facilities owned or run by the incumbent. The barriers to entry due to sunk costs, economies of scale and/or scope as well as switching costs on the demand side are viewed as too high to allow for profitable entry and effective competition. According to this reasoning, the introduction of competition requires interconnection regulations favoring the entrant. This approach is clearly *asymmetric* in nature, as a competitor without market power is not necessarily required to interconnect.

The second rationale stresses the existence of external effects in network industries, as first analyzed by Katz and Shapiro (1985)[16] and Farrell and Saloner (1985).[17] Interconnection of fragmented networks is in the public interest because it allows the realization of potential gains to all participants. This approach requires interconnection of all operators (independent of market power considerations), and therefore establishes *symmetry* in the regulatory treatment of the competitors.[18]

While the symmetric approach tends to become more important as more suppliers operate their own communications facilities, the asymmetric approach is usually adopted by policy makers trying to open up formerly monopolized market structures. Given the evident problem of market dominance by the former monopoly operator, Swisscom, choosing the asymmetric approach appeared also sensible to the Swiss legislature. Consequently, interconnection rules for operators with market power are different from those imposed on operators without market power.

Services of operators with market power

An important principle of Swiss interconnection regulations is *non-discrimination*. Art. 29 FDV explicitly states that any party requiring interconnection must be treated by the dominant operator in the same manner as its own business units or subsidiary companies. As in the EU,[19] *transparency* and *cost-orientation* are further standards for determining interconnection charges.

Transparency is set out in art. 33 FDV. This article prescribes that if asked, the operator with market power has to make public its technical and commercial conditions of interconnection. The basis of the calculations has to be unbundled and understandable. At least the following information has to be published every year (art. 33):

(a) Basic offer (in accord with art. 32 FDV; assures interoperability).
(b) Description of all standard interconnection switches and the access conditions.
(c) Full description of the interconnection interfaces and signaling protocols used.

As far as cost-orientation is concerned, the standard applied is *long run incremental costs* (LRIC) plus a constant markup based on a proportional share of the joint and common costs (art. 34 par. 1b and 1c FDV). Prices are further required to be in a causal relationship with the interconnection ('relevant costs', art. 34 par. 1a FDV) and should allow for sector-adequate capital earnings (art. 34 par. 1d FDV). Costs are calculated for an efficient supplier on a forward-looking basis. The network costs are defined to be equivalent to the costs of replacement ('modern equivalent assets') (art. 34 par. 2 FDV).[20]

Interconnection services have to be accounted and billed separately and unbundled from other services (art. 34 par. 3 FDV). Suppliers of interconnection services have to use an accounting system that guarantees adherence to the principles mentioned above (cost-orientation, non-

[16]Katz, M.L. and Shapiro, C., Network externalities, competition, and compatibility. *American Economic Review*, 1985, **75**(3), 424–450.

[17]Farrell, J. and Saloner, G., Standardization, compatibility, and innovation. *Rand Journal of Economics*, 1985, **16**(1), 70–83.

[18]See Schankerman, M., Symmetric regulation for competitive telecommunications. *Information Economics and Policy*, 1996, **8**(1), 3–23, for a discussion of the concept of symmetric regulation.

[19]See Prosperetti, L. and Cimatoribus, M., *Andante ma non troppo: Telecommunications Liberalization Trends in Continental Europe*. Paper presented at the 25th Annual Telecommunications Policy Research Conference, 27–29, September 1997, Alexandria, Virginia.

[20]The pricing scheme therefore follows the standards defined in Mitchell *et al.* (see note 2) rather than those in Laffont, J. J. and Tirole, J., Creating competition through interconnection: theory and practice. *Journal of Regulatory Economics*, 1996, **10**(3), 227–256.

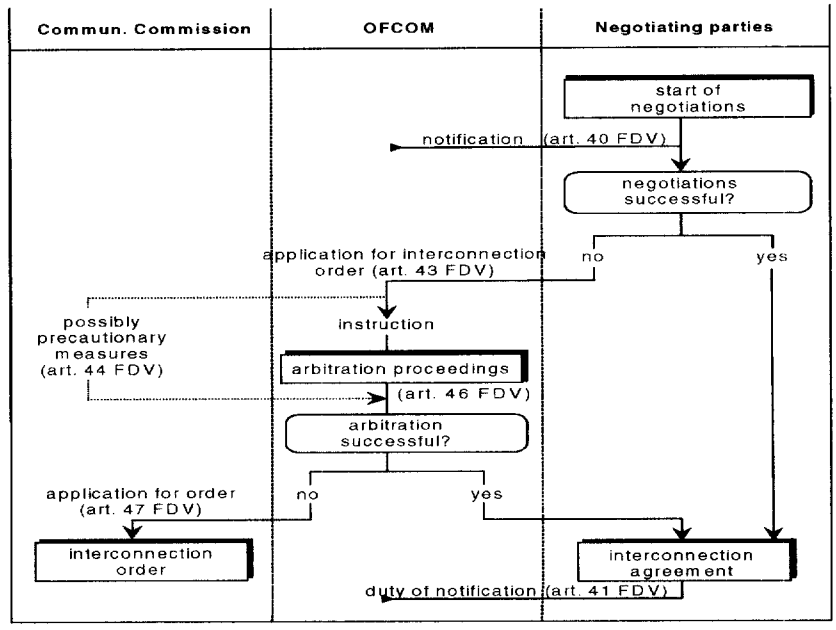

Figure 1. Interconnection proceedings in Switzerland.

discrimination and transparency) and is oriented towards the internationally accepted accounting standards (IAS) or comparable accounting procedures (art. 36 par. 1 FDV). Internal and external interconnection services enter in the books strictly separately and unbundled (art. 36 par. 2 FDV).

The OFCOM publishes a catalogue of recommended interfaces and their technical specifications. According to art. 35 FDV, the company demanding interconnection may require interfaces not contained in this catalogue, if they (i) correspond to international harmonization, (ii) can technically be realized, and (iii) imply a major advantage to the introduction of the planned services.

Services of operators without market power

Any operator supplying universal service—even without market power—has to offer direct or indirect interconnection (art. 11 par. 2 FMG 98). However, operators without market power are not required to guarantee adherence to all three principles of interconnection. Transparency, along with the interoperability prescriptions according to the basic offer (art. 32 FDV) and the consideration of the regulations concerning interfaces (art. 35 FDV), are sufficient in this case.

Proceedings

The FMG 98 requires the involved parties to negotiate interconnection rates (see Figure 1). Therefore, the ComCom is subject to a *subsidiarity principle*: it only intervenes if interconnection negotiations have failed. In addition, the ComCom *does not approve* the negotiated interconnection rates if an agreement has been reached.[21] Nevertheless, interconnection negotiations are to be notified to the OFCOM, and the contracts need to be handed in to the same institution within two weeks after an agreement (art. 41 FDV). If the parties do not achieve an agreement within three

[21]This might be an issue of concern in the future; recently published research by Armstrong, M., *Network interconnection*. Discussion Paper No. 9625, 1996, University of Southampton, UK and Laffont, J. J. *et al., Network Competition: Part I and Part II (Revised)*. IDEI Documents de travail, 1997, p. 65, Toulouse, suggests that negotiating network operators might have an incentive to agree on excessive interconnection rates. The FMG 98 does not provide any instruments to cope with this potential collusion problem.

months, the OFCOM first undertakes an instruction and then starts arbitration proceedings (art. 46 FDV). If still no agreement is achieved, the ComCom settles the interconnection tariffs. The ComCom can prescribe preliminary measures to assure interconnection during the proceedings.

Number portability and carrier selection

According to art. 3 and art. 14 par. 1 of the ComCom's Ordinance on the FMG 98 (OComCom, see note 8), from 1 January, 2000, service providers have to ensure number portability *within the same service category* for costumers wishing to change their provider.[22] Service categories are defined as public telephony (without mobile telephony), mobile telephony and non-geographic services of the same type as the services of toll-free numbers. Art. 6 OComCom further allows geographic portability, if it is restricted to the same area code. The costs of number portability have to be borne by the operator which is required to assure it (art. 5 OComCom).

Of major importance for the market access for new service providers is the requirement that costumers can select the carrier they wish, independent of the operator providing access to the network (art. 9 OComCom). Since the enacting of the FMG 98, the transitional rules laid down in art. 14 par. 2 OComCom allow *free carrier selection* on a call-by-call-basis by letting costumers enter a five-digit access code. However, after 1 September, 1998, operators are required to provide direct switching for 50% of their costumers, and after January 1999, operators must be able to switch all costumers automatically.

Lessons from the revision(s) of the Telecommunications Act

As pointed out at the outset, the stepwise revision of the regulatory framework of telecommunications in Switzerland was caused by several developments. This not withstanding, technological progress and its tendency to render existing (and at least in part static) regulations inadequate and outdated was probably the most important initiator of regulatory reform. What has been learned during the repeated attempts to achieve the "right amount" of competition in this industry?

Transitional problems

The revision of the FMG 92 reveals a remarkable gap between the official will to establish effective competition and its immediate implementation. The most obvious sign of this fact is the number of transition rules that can be found in the FMG 98 and the relevant ordinances. One reason for this is the inability of Swisscom to adjust fast enough to the new regulatory framework. The immediate implementation of the LRIC concept to define interconnection charges, for instance, is actually impossible because Swisscom needs to adapt its accounting standards to the new rules and therefore is unable to deliver the relevant cost data. Another reason for promoting delay is to provide Swisscom with some time to build up its position in the developing market.[23] Such conditions suggest that the revision of the regulatory framework and the implementation of the law should move forward quickly, including action by the regulatory body (when constituted).

[22]This cutoff date is chosen to be the same as in the EU, see Comcom, *Erste Entscheidungen der Eidg. Kommunikationskommission* (Pressemitteilung), 1997.

[23]Such an attitude could make sense to the government, as the Federation remains the main shareholder of Swisscom.

In addition, the need to ensure universal service without any interruptions usually implies that the incumbent has to provide it at least during a transition period, because no other operator has the necessary infrastructure at its disposal. The willingness of the incumbent to provide universal service without any reimbursement can solve the (transitional) problem of financing universal service. However, this advantage might be overcompensated for by the inefficiencies stemming from higher interconnection charges which the incumbent charges with relatively good reason under these conditions. In the Swiss case, this mechanism is illustrated by the transitional rules laid down in art. 65 FDV, which allow the incumbent to add to the interconnection charge a proportional share of the costs incurred due to the former industry configuration.

Regulatory institutions, credibility and privatization

The regulatory framework for the telecommunications industry cannot be defined without reference to the competition concept of the antitrust law. This is most clearly demonstrated by art. 11 par. 3 FMG 98, which states that concerning the question of market power the OFCOM has to consult the Competition Commission. As special law usually supersedes competition law, the sector-specific regulations should generally be defined as narrowly as possible so as not to interfere with competition policy. In any case, cooperation between the regulatory bodies is an important ingredient of effective reform.

The example of a strategic alliance between Swisscom and Cablecom Holding, the most important competitor of Swisscom in the field of local networks, illustrates how cooperation between the relevant institutions raises concerns of *credibility*. The Competition Commission recommended that the Federal Council (as the supervisor and main shareholder of Swisscom) obligate Swisscom to sell its 32% participation in Cablecom. The decision not to follow the recommendation of the Competition Commission considerably damaged the credibility of the Federal Council's attempt to introduce effective competition into the telecommunications industry. This also brings *privatization* into play. It seems that privatization is an additional useful means to support the credibility of a new regulatory framework and its institutions. This is also the view taken by Wasserfallen and Müller[24] (p. 19):

> "[···] the crucial step to get higher quality telecommunications services at lower prices is to lower or eliminate barriers to entry into the market. This goal is achieved through deregulation but also through rapid technological progress. Privatizing state-owned enterprises is a useful additional step because it reduces political influences on internal decision-making and incentives for subsidization."

However, the legislature did not seem to agree. Politicians preferred to regulate the status of Swisscom in an additional Telecommunications Corporation Act (TUG). According to art. 2 TUG Swisscom is a stock corporation according to special law with the Federation holding the majority of the shares (art. 6 par. 1 TUG). The Federal Council sets the goals of the corporation every four years (art. 6 par. 3).

[24]Wasserfallen, W. and Müller, S., *Deregulation and Privatization: Evidence from the Telecommunications Industry in Europe and Implications for Switzerland.* Paper presented at Aktuelle Probleme der schweizerischen Wirtschaftspolitik, 21–23. März 1996, Gerzensee.

Concluding observations

Major revisions of the national approach towards the regulation of any industry usually introduce a considerable amount of uncertainty and often hurt incumbent suppliers in the affected markets, at least during a transition period. Interestingly enough, in the case of the Swiss telecommunications industry, the potential loser and former monopoly operator Swisscom never really opposed the revision of the FMG 92. While there were some heated discussions concerning the abolition of the civil servant status and the expected loss of privileges on the side of the personnel of Swisscom, the revision was only relatively weakly opposed by labor unions, which did not succeed in persuading people to initiate a referendum against the FMG 98. This result was achieved by ensuring that *no subscriber would be worse off* after the revision: universal service was defined comprehensively and flexibly enough to encompass a wide array of services (potentially) important to the consumers, and initial price limits were set at the level prior to the revision.

One might argue that the broad support of the revised regulatory framework, especially on the side of Swisscom, was partially caused by the presumption that enacting of the FMG 98—in spite of its evident objective of introducing effective competition in the telecommunications industry—would not really hurt the incumbent operators. In any case, the transition rules contained in the revised act seem to allow for a relatively slow adaptation of the current industry configuration.