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Abteilung Telecomdienste – TC
Sektion Ökonomie und Statistik – ECOSTAT

Der Schweizer Fernmeldemarkt im internationalen Vergleich

Um die Schweiz erweiterter Auszug aus dem 9. Implementierungsbericht der Europäischen Union

Biel, Juli 2004

Vorwort und Danksagung

Schon seit mehreren Jahren veröffentlicht die Kommission der Europäischen Gemeinschaften jährlich eine Mitteilung, die sich an den Rat, das Europäische Parlament, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen richtet. Ihr Ziel besteht darin, den Stand der Umsetzung des EU-Reformpakets für elektronische Kommunikation zu beurteilen. Die letzte Ausgabe dieses Berichts, der auch 9. Implementierungsbericht der Europäischen Union genannt wird, ist im November 2003 erschienen[1].

Dieser Bericht liefert nicht nur eine umfassende Analyse des Regulierungsumfelds in der Europäischen Union und in den einzelnen Mitgliedstaaten. Anhang I enthält auch eine Fülle von Informationen über den Stand des Marktes für elektronische Kommunikation im Jahr 2003 und über die Veränderungen zwischen 2002 und 2003. Die statistischen Daten in diesem Anhang stellen nicht nur eine äusserst umfassende Beschreibung des Fernmeldemarkts dar sondern haben auch das Verdienst, auf einer einheitlichen und transparenten Methodik zu basieren und somit den direkten Vergleich zwischen den betrachteten Ländern zu ermöglichen.

Da sich die Schweiz geografisch, wirtschaftlich und kulturell im Herzen Europas befindet, wäre es bedauerlich gewesen, diese Vergleiche und Analysen nicht auf unser Land auszudehnen. Aus diesem Grund haben wir uns symbolisch und materiell in den 9. Implementierungsbericht eingefügt, soweit dies möglich war. Auf keinen Fall schmälern wir damit die Leistung unserer europäischen Nachbarn, denn wir sind uns bewusst, dass ohne ihre Hilfe all dies nicht möglich gewesen wäre. In diesem Sinne möchten wir Herrn Carlos Perez Maestro, Administrator bei der Generaldirektion Informationsgesellschaft, für seine ebenso konstruktive wie wertvolle Unterstützung ganz herzlich danken.

Hauptzweck des vorliegenden Berichts ist, auf der Grundlage von Anhang I des 9. Implementierungsberichts der Europäischen Union die Schweiz mit den EU-Mitgliedstaaten und gegebenenfalls mit Japan und den USA zu vergleichen. Zudem sollen die darin enthaltenen Zahlen einen möglichst vollständigen Überblick über den Schweizer Fernmeldemarkt im Jahr 2003 geben. Zu diesem Zweck wurden die verschiedenen von der Europäischen Kommission ausgearbeiteten Methoden streng übernommen. Im Übrigen stammen die kursiv gedruckten Passagen direkt aus Anhang I des 9. Implementierungsberichts und stellen somit Zitate dar.

Der vorliegende Bericht ist bezüglich seines Datenteils nur auf Englisch verfügbar. Die Zusammenfassung ist hingegen auf Französisch, Italienisch, Deutsch und Englisch erhältlich.

[1] Kommission der Europäischen Gemeinschaften, Mitteilung an den Rat, das Europäische Parlament, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen, Bericht über die Umsetzung des EU-Reformpakets für elektronische Kommunikation, KOM(2003) 715 endgültig, Brüssel, 19.11.2003.

Zusammenfassung

Umfang des Marktes

Der Umfang des Schweizer Fernmeldemarktes (inkl. Kabelfernsehdienste) betrug im Jahre 2003 rund 9,10 Milliarden Euro. Damit steht die Schweiz in absteigender Ordnung an 9. Stelle der Länder der Europäischen Union, hinter Schweden (9,95 Mia. Euro) und Belgien/Luxemburg (9,3 Mia. Euro), aber vor Österreich (7,29 Mia. Euro). Die Organisation EITO[2] sieht für den Schweizer Fernmeldemarkt im Jahr 2004 ein Wachstum in der Grössenordnung von 2,3% vorher, womit diese Wachstumsprognose unter derjenigen für die EU-Mitgliedstaaten (+3,8%) liegt. Die Zunahme sollte hauptsächlich dem Markt für Festnetz-Datendienste sowie den Mobiltelefoniediensten zu verdanken sein, während auf dem Markt für Festnetztelefonie mit einem leichten Rückgang zu rechnen ist.

Anbieterinnen von Festnetzdiensten (Kapitel 1)

In der ersten Phase der Marktöffnung drängten in der Schweiz ebenso wie in der Europäischen Union zahlreiche Fernmeldedienstanbieterinnen auf den Markt (+112,6% zwischen 1998 und 2001). Seit 2001 hingegen ist die Tendenz jedoch leicht rückläufig (-2,1% zwischen 2001 und 2003).

Im August 2003 zählte die Schweiz insgesamt 115 Betreiberinnen, die über eine Konzession verfügten und somit zum Betrieb eines öffentlichen Netzes berechtigt waren, und 110 Betreiberinnen, die zum Anbieten von öffentlichen Sprachtelefoniediensten befähigt waren. Mit diesen Zahlen, die im Verhältnis zur Landesgrösse der Schweiz relativ hoch sind, gehört unser Land zum obersten Drittel der europäischen Länder. Zu präzisieren ist, dass seit August 2002 die Zahl der Festnetzbetreiberinnen um 10,2% zurückging, während die Zahl der Akteure auf dem Sprachtelefoniemarkt um 16,8% zunahm. Dieser Rückgang der Anzahl Netzbetreiberinnen ist wohl u.a. auf das Platzen der sog. Telekom-Blase in den Finanzmärkten während der Jahre 2001 und 2002 sowie auf die in letzter Zeit abgeschwächte Konjunktur zurückzuführen. In der Tat tragen die Netzbetreiberinnen jeweils hohe Kosten und waren deshalb wohl häufiger als die anderen Telekom-Marktakteure zur Restrukturierung ihrer Tätigkeit gezwungen. Die relativ hohe Zahl der Anbieterinnen von öffentlichen Sprachtelefoniediensten kann als ein mögliches Zeichen für das vorhandene Wettbewerbspotential im Fernmeldemarkt interpretiert werden. Die reale Wettbewerbssituation ist jedoch nuanciert zu betrachten, so soll nicht verschwiegen werden, dass von den erwähnten 110 Betreiberinnen von öffentlichen Sprachtelefondiensten nur 29 wirklich aktiv auf dem Markt auftreten. Dies entspricht lediglich rund einem Viertel der administrativ zugelassenen Anbieter. Dass die restlichen drei Viertel der berechtigten Betreiberinnen dennoch entsprechende Bewilligungen erlangt haben, deutet darauf hin, dass es in der Schweiz in Bezug auf die administrativen Abläufe wie auch hinsichtlich der finanziellen Ressourcen relativ einfach ist, eine entsprechende Tätigkeit aufzunehmen.

Um die Wettbewerbssituation auf dem Sprachtelefoniemarkt zu beurteilen, kann es sinnvoll sein, die obigen Daten im Lichte des sog. kombinierten Marktanteils zu spiegeln. Dieser Indikator drückt die Zahl der Konkurrentinnen aus, die 90% oder mehr eines bestimmten Marktes auf sich vereinen. Auf dem Schweizer Festnetztelefonmarkt teilt sich der geforderte Marktanteil von 90% auf vier Anbieterinnen auf. Verglichen mit vielen EU-Ländern befindet sich die Schweiz damit in einer durchschnittlichen Position. Vergleicht man mit Ländern wie Schweden oder dem Vereinigten

[2] Europäisches Observatorium für Informationstechnologie: European Information Technology Observatory 2004, Frankfurt a.M., Deutschland; siehe www.eito.org.

Königreich, wo die erwähnten 90% des Marktes auf neun Betreiberinnen aufgeteilt sind, zeigt sich noch ein gewisses Potential für Marktanteilsveränderungen.

Die Marktanteile, die von den alternativen Betreiberinnen gewonnen wurden, geben ebenfalls Aufschluss über die Entwicklung und den Stand des Wettbewerbs. In diesem Zusammenhang fällt auf, dass der Marktanteil der historischen Betreiberin– ausgedrückt in Prozent des Umsatzes – in der Schweiz deutlich unter dem Durchschnitt der EU-Länder liegt, und dies in allen betrachteten Marktsegmenten. Die folgenden Zahlen wurden für den Zeitpunkt Dezember 2002 errechnet:

Segment	**Anteil der historischen Anbieterin in der Schweiz**	**Durchschnittlicher Anteil der historischen Anbieterin in den EU-Ländern**
Ortsgespräche	70,2%	81,0%
Ferngespräche	51,1%	69,6%
Auslandgespräche	47,6%	62,2%
Anrufe in Mobilnetze	67,3%	68,8%

In der Schweiz hat sich der Marktanteil der historischen Anbieterin (Swisscom) in den verschiedenen Marktsegmenten zwischen Dezember 2000 und Dezember 2002 unterschiedlich entwickelt. Während sie bei den Anrufen vom Festnetz in ein Mobilfunknetz und bei den Ortsgesprächen signifikant Marktanteile einbüsste, konnte sie bei den Fern- und bei den Auslandgesprächen leicht an Boden gewinnen.

Sowohl in der Schweiz als auch in den EU-Ländern fällt auf, dass die Entwicklung der Marktanteile der historischen Anbieterinen über die Zeit je nach Marktsegment recht unterschiedlich verlief. Das Vorhandensein solcher Unterschiede kann ein mögliches Anzeichen dafür zu sein, dass das Wettbewerbspotenzial in bestimmten Marktsegmenten noch nicht vollständig ausgeschöpft wurde.

Wahlmöglichkeiten für die Konsumentinnen und Konsumenten auf dem Festnetzmarkt (Kapitel 2)

In der Schweiz wie in den EU-Ländern können die Teilnehmerinnen und Teilnehmer seit der Marktöffnung aus einer breiten Palette von Anbieterinnen von Sprachtelefondiensten auswählen.

Rund 34% der Teilnehmerinnen und Teilnehmer führen denn auch ihre Inland- und Auslandgespräche über neu in den Markt eingetretene Anbieterinnen aus, was in etwa dem für August 2003 errechneten europäischen Durchschnitt entspricht (33%). Dabei wird für die Schweiz nicht mehr wie in früheren Publikationen üblich nach Ortsgesprächen und Ferngesprächen unterschieden, da sich seit Frühjahr 2002 in der Schweiz ein distanzunabhängiger Einheitstarif für nationale Gespräche durchgesetzt hat.

Im Bereich der Teilnehmeranschlüsse unterscheidet sich die Lage in der Schweiz von derjenigen in den europäischen Nachbarländern. Während nämlich 6% der europäischen Teilnehmerinnen und Teilnehmer eine andere Anbieterin für ihren Anschluss wählen, sind es in unserem Land nur 0,02%. Allerdings gab es in der Schweiz zum Zeitpunkt der Erhebung praktisch keine Wahlmöglichkeit. Die Situation dürfte sich in der Schweiz dann ändern, wenn die Entbündelung des Teilnehmeranschlusses in der Praxis zur Realität wird und wenn die Einführung von Telefoniediensten auf TV-Kabelnetzen in grösserem Massstab greift.

Interkonnektion (Kapitel 3)

Wie die bisherige Erfahrung deutlich zeigt, hat die Höhe der Interkonnektionsgebühren einen bedeutenden Einfluss auf das Vorhandensein von gleichberechtigten Marktzugangsbedingungen für Neueinsteigerinnen und damit auf die Wettbewerbsbedingungen für die verschiedenen Fernmeldedienstanbieterinnen auf dem Markt. Aus diesem Grund stellt die Interkonnektion (Zusammenschaltung) ein zentrales Anliegen der Regulierungsbehörden dar.

Bei allen in diesem Bericht untersuchten Interkonnektionsdienstleistungen sind die in der Schweiz verlangten Gebühren im Vergleich zum europäischen Durchschnitt hoch.

Im Gegensatz zu anderen europäischen Ländern gibt es in der Schweiz bei den Festnetzen keine lokalen Zusammenschaltungsangebote (lokale Interkonnektion) sondern nur Angebote für die Interkonnektion auf regionaler Ebene („single transit“) sowie auf nationaler Ebene („double transit“).

Trotz eines Rückgangs der Tarife für single transit um 11,8% zwischen 2002 und 2003 gehört die Schweiz zur Gruppe der drei teuersten Länder. Die Gebühr für die Anrufterminierung bei single transit übersteigt den gewichteten europäischen Durchschnitt um 32,3%.

Auch bei der Anrufterminierung im Rahmen von double transit gehört die Schweiz trotz eines Rückgangs der Tarife um 9,1% zur Gruppe der Länder mit den höchsten Gebühren, wobei die Schweizer Tarife in vier Ländern überboten werden. Allerdings ist hier die Differenz zum Durchschnitt der EU-Mitgliedstaaten etwas geringer, mit 19.9% jedoch relevant.

Was die Höhe der Festnetz-Interkonnektionspreise anbelangt, hat die Eidgenössische Kommunikationskommission die Swisscom AG im Rahmen von zwei Entscheidverfahren, angestrebt von TDC Switzerland AG (Sunrise) und MCI WorldCom AG, in Verfügungen vom 7. November 2003 angewiesen, die entsprechenden Tarife für die Jahre 2000 bis 2003 für beide klagenden Firmen rückwirkend um rund 25% bis 35% zu senken. Diese Verfügungen wurden angefochten und die Höhe der strittigen Interkonnektionsgebühren ist noch vor Bundesgericht hängig.

Aus der Darstellung der Interkonnektionsgebühren für die Terminierung von Festnetzanrufen auf Mobilfunknetzen geht hervor, dass die entsprechenden Preise der auf dem Schweizer Markt tätigen Mobilfunkanbieterinnen im Jahr 2003 zu den höchsten in Europa gehören, und dies bei einer Senkung der Interkonnektionsgebühren von 2002 auf 2003 im Umfang von -10,3%. Mit einer gewichteten Interkonnektionsgebühr von 22,52 Eurocents übersteigt die Schweiz den gewichteten europäischen Durchschnitt um 29,1%. Nur in einem EU-Land sind die entsprechenden Preise höher. Die Interkonnektionsgebühr für die Anrufterminierung auf Mobilfunknetzen ist in der Schweiz im Durchschnitt rund elfmal höher als die Terminierungsgebühr bei double transit von Festnetz zu Festnetz. Auf EU-Ebene beträgt dasselbe Verhältnis neun für Betreiberinnen, die von den nationalen Regulierungsbehörden als marktbeherrschend erkannt wurden. Für die anderen Betreiberinnen beträgt das genannte Verhältnis ebenfalls rund elf.

Die eidgenössische Wettbewerbskommission hat am 15. Oktober 2002 eine Untersuchung gegen Orange, Swisscom Mobile und Sunrise eingeleitet. Geprüft werden dabei die Terminierungsgebühren. Die Ergebnisse der Untersuchung stehen noch aus.

Mobilfunkmarkt (Kapitel 4)

Im August 2003 betrug die Marktdurchdringung mit Mobilfunkabonnementen rund 81% der Schweizer Bevölkerung, was genau dem gewichteten Durchschnitt der EU-Länder entspricht. Berücksichtigt man hingegen die Tatsache, dass der Durchdringungsgrad in der Schweiz im Vorjahr über dem europäischen Durchschnitt lag und dass die Wachstumsrate zwischen 2002 und 2003 in der Schweiz tiefer als in den Nachbarländern war (5% gegenüber 6%), ist es bei gleich bleibender Tendenz möglich, dass die Schweiz kurz- oder mittelfristig unter den europäischen Durchschnitt gerät. Ausserdem haben drei europäische Länder die Schwelle zu 90% überschritten, nämlich Schweden (91%), Italien (96%) und Luxemburg (115%).

Vier Betreiberinnen sind auf dem Mobilfunkmarkt aktiv. Es handelt sich dabei um die drei bekannten Betreiberinnen eines Netzes der sog. zweiten Generation (GSM) und um eine Anbieterin, welche mobile Fernmeldedienste lediglich wiederverkauft (Tele2). Die Zahl der Schweizer Netzbetreiberinnen liegt in derselben Spanne, wie sie in den EU-Ländern festzustellen ist (zwischen zwei und fünf). Was die Zahl der reinen Wiederverkäufer von mobilen Diensten betrifft, gehört die Schweiz zu den Ländern, in denen nur eine kleine Anzahl anzutreffen ist. In einzelnen Ländern überwiegt dieser Typ von Dienstanbieterin gegenüber der Anzahl der Netzbetreiberinnen deutlich, wie die Beispiele des Vereinigten Königreichs (59) und Schwedens (21) zeigen.

Obwohl es in der Schweiz etwa gleich viele Netzbetreiber wie in unseren Nachbarländern gibt, weist der Wettbewerb auf dem Mobilfunkmarkt in der Schweiz im Vergleich zu anderen EU-Ländern gewisse Besonderheiten auf.

Zum einen stellt die Schweiz wie Luxemburg ein Land dar, in dem der Marktanteil der Tochtergesellschaft der historischen Betreiberin gemessen in Prozenten und in Anzahl Kundinnen und Kunden im Vergleich am grössten ist. In Zahlen ausgedrückt beträgt der Marktanteil von Swisscom Mobile 62,3% und liegt damit deutlich über dem europäischen Schnitt für vergleichbare Unternehmen (46,6%). Untersucht man, wie sich die Aufteilung des Marktes zwischen der historischen Betreiberin und ihren Konkurrentinnen seit 1998 entwickelt hat, stellt man fest, dass die Situation in der Schweiz im Jahre 2003 mehr oder weniger der durchschnittlichen Situation der EU-Länder im Jahre 1998 entsprach. Die beobachtete Marktanteilsverteilung für die Schweizer Neueinsteigerinnen kann einerseits auf die Schwierigkeit zurückzuführen sein, einen zeitlichen Rückstand gegenüber der ehemaligen Monopolistin aufholen zu müssen, in einem Markt, in welchem der Umfang und die Qualität der Versorgung eine grosse Rolle spielen. Andererseits kann dies auch ein Hinweis dafür sein, dass die Schweizer Teilnehmerinnen und Teilnehmer eine gewisse Verbundenheit mit der etablierten Anbieterin an den Tag legen. Dies könnte auch Teil einer möglichen Erklärung sein, weshalb gewisse Preisunterschiede zwischen Swisscom Mobile und dem grössten Konkurrenten Sunrise bestehen blieben.

Zum anderen ist die Nutzung der Mobiltelefonie in der Schweiz im Vergleich zu Europa sehr teuer, und dies unabhängig vom Ausmass des Konsums. In allen untersuchten Fallbeispielen liegen die Werte klar über dem europäischen Schnitt.

Breitbandzugang und -tarife (Kapitel 5)

In der Schweiz werden die Breitbandzugänge grösstenteils über die ADSL- und die Kabelmodem-Technologie angeboten. Der Anteil der anderen möglichen Zugangstechnologien (Satellit, Glasfaser, PLC, WLL, Mietleitungen, 3G) kann als vernachlässigbarer Teil des gesamten Breitbandmarktes betrachtet werden.

Seit Oktober 2000 bietet Swisscom ADSL-Zugänge mit verschiedenen Bandbreiten an. Selbst wenn andere Unternehmen (29 direkte Wiederverkäuferinnen[3] im Februar 2004) diese Dienste ebenfalls anbieten, hängen sie dennoch als Wiederverkäuferinnen vom Grosshandelsangebot der Swisscom ab. Der freie Zugang zum Teilnehmeranschluss und der Bitstrom-Zugang werden in der Schweiz in der Praxis noch nicht angeboten. Der Wiederverkauf stellt daher zurzeit die einzige Möglichkeit für alternative Anbieterinnen ohne eigenes Netz dar, Breitbanddienste über die bestehende Telefoninfrastruktur anzubieten, es sei denn, sie bauen ihr eigenes Zugangsnetz auf. In Europa stellt die Schweiz in diesem Bereich (noch) eine Ausnahme dar.

Ähnlich wie Dänemark und Österreich stellt die Schweiz für EU-Verhältnisse einen relativ kleinen Markt dar. Mit 637'000 Breitbandzugängen per Juli 2003 (317'000 ADSL- und 320'000 Kabelmodemzugänge) beträgt ihr Anteil rund 3,6% am europäischen Volumen. Im Juli 2003 gehörte die Schweiz jedoch mit einer Marktdurchdringung von 8,7% der Bevölkerung zu den am besten mit Breitbandanschlüssen versorgten Ländern in Europa. Nur Dänemark, Belgien und die Niederlande wiesen höhere Marktdurchdringungen auf.

Wie die meisten EU-Länder verzeichnete die Schweiz zwischen Oktober 2002 und Juli 2003 eine starke Wachstumsrate, und zwar unabhängig vom Zugangstyp (ADSL-Anschlüsse +138%, Kabelmodem-Anschlüsse +60% und Total Breitbandanschlüsse +91%). Diese Dynamik ist mit derjenigen der Mobiltelefonie in ihren Anfängen vergleichbar.

Auch nach dem Juli 2003 setzte sich diese steigende Tendenz fort, da es Ende 2003 in der Schweiz 487'000 ADSL-Kundinnen und -Kunden gab, wovon 274'000 (56% des ADSL-Marktes) auf Bluewin, der Tochtergesellschaft der historischen Betreiberin, entfielen. In der Schweiz gibt es fast 400 TV-Kabelnetzbetreiberinnen, wovon etwa fünfzig ebenfalls auf dem Markt für den Breitband-Internetzugang tätig sind. Die weitaus wichtigste dieser Betreiberinnen ist die Cablecom. Ende 2003 betrug die Anzahl Kabelmodemanschlüsse fast 350'000, wovon 200'000 oder 57% des Kabelmarktes auf die Cablecom entfielen. Schliesslich ist die sukzessive Lancierung von Angeboten durch die beiden grossen Betreiberinnen Swisscom und Cablecom zumindest in bestimmten Regionen ein Beleg für den intensiven Wettbewerb auf diesem Markt. Zwischen Februar und April 2004 hat die Swisscom zum Beispiel die Bandbreite ihrer ADSL-Produkte verdoppelt, um auf eine Marketing-Offensive zu reagieren, welche Cablecom einige Monate zuvor lanciert hatte.

Im Juli 2003 unterschied sich die Schweiz vor allem durch folgende Aspekte von anderen europäischen Ländern:

- durch die ausgewogene Aufteilung der Zahl der Abonnentinnen und Abonnenten zwischen den Zugangstechnologien ADSL und Kabelmodem von damals rund 50/50%. Allerdings verschob sich dieses Verhältnis mit der weiteren Entwicklung des Breitbandmarktes in Richtung ADSL (58% Ende 2003). Die ADSL-Technologie kann sich auf eine bessere Ausgangslage bei der Flächendeckung stützen und profitiert von den offensiven Werbekampagnen der Wiederverkäuferinnen des Swisscom-Grosshandelsangebots. Ähnlich verhält es sich dabei europaweit gesehen noch im Vereinigten Königreich, in den Niederlanden, in Österreich und in Irland;

- durch den geringen Anteil der Tochtergesellschaft der historischen Betreiberin am gesamten Breitbandzugangsmarkt (28%). Mit diesem Anteil reiht sich die Schweiz – neben dem Vereinigten Königreich (26%) und Österreich (33%) – in die Ländergruppe ein, in welcher die

[3] Die 29 konkurrierenden Anbieterinnen haben im Übrigen ihrerseits Wiederverkaufsverträge mit anderen Anbieterinnen abgeschlossen. In der Schweiz gibt es etwa 60 Unternehmen, die ADSL-Dienste anbieten.

historische Betreiberin (oder ihre Tochtergesellschaft) einen relativ kleinen Marktanteil im Breitbandmarkt für Endkunden hat;

- durch die relativ ausgeglichene Aufteilung des ADSL-Marktes für Endkunden zwischen der Tochtergesellschaft der historischen Betreiberin und ihren Konkurrentinnen (56% und 44%). Ähnlich ist die Situation noch im Vereinigten Königreich (51% und 49%).

Preise der Festnetztelefonie (Kapitel 6)

Bei den Preisen für die Festnetztelefonie präsentierte sich die Lage in der Schweiz im Jahre 2003 in den verschiedenen Marktsegmenten recht unterschiedlich.

Was den Grundtarif für einen analogen Anschluss anbelangt, liegt die Schweiz mit einem monatlichen Preis von 16,34 Euro inkl. MWSt über dem gewichteten europäischen Durchschnitt (14,20 Euro). Die Schweiz war diesbezüglich während langer Zeit und mit Abstand eines der teuersten Länder Europas. Mit der Zeit wird dieser Abstand jedoch kleiner, indem seit der Marktöffnung in den meisten EU-Ländern die Preise für die Telefonanschlüsse gestiegen sind, um die effektiven Kosten der Anschlüsse besser widerzugeben. In der Schweiz hingegen hat sich seit Januar 1995 der Preis für den analogen Anschluss nicht verändert, wenn man von den Auswirkungen der schrittweisen MWSt-Erhöhung absieht.

Da in der Schweiz im Frühjahr 2002 distanzunabhängige Einheitstarife Einzug gehalten haben, erscheinen die Gesprächstarife für Ortsgespräche vergleichsweise hoch.

Die Einführung eines Einheitstarifs hat auf der anderen Seite bei den Ferngesprächen dazu geführt, dass die Schweiz im EU-Vergleich im untersten Drittel rangiert. Der Preis eines Ferngesprächs von drei bzw. zehn Minuten Dauer liegt denn auch deutlich unter dem gewichteten europäischen Durchschnitt.

Betreffend der Tarife für Auslandgespräche belegt die Schweiz die günstigste Position im EU-Vergleich. Die verlangten Preise liegen deutlich unter dem europäischen Durchschnitt und es ist unmöglich, ein Land mit attraktiveren Preisen zu finden.

Sechs Jahre nach der Marktöffnung scheint der Wettbewerb im Bereich der Preise eine wichtige Rolle zu spielen, da (noch) keine Preisnivellierung eingetreten ist. Vergleicht man die historische Betreiberin (Swisscom) mit ihrer grössten Konkurrentin (Sunrise), stellt man fest, dass der Preis für verschiedene Verbindungsarten – in Abhängigkeit von Dauer und Verbindungsziel – bei Sunrise im Allgemeinen um zehn bis zwanzig Prozent tiefer liegt. Zudem sind auf dem Markt fallweise noch attraktivere Alternativen anzutreffen.

Einzelhandelspreise für Mietleitungen (Kapitel 7)

Im Einzelhandel mit Mietleitungen ist die Swisscom die einzige Betreiberin, die über eine landesweite Abdeckung verfügt. Sie bietet Mietleitungen zu Preisen an, die je nach Zielort, Entfernung und Bandbreite variieren. Swisscom kann dabei die Endkundenpreise flexibel festlegen und auf Konkurrenzangebote mit wettbewerbsfähigen Offerten reagieren.

Die Bandbreite der Mietleitungspreise ist sehr breit. Stützt man sich bei der Analyse der Preise von Swisscom auf die Informationen, die sie selber der Stiftung Teligen für den internationalen Vergleich zur Verfügung gestellt hat, stellt man in den meisten Fällen fest, dass die Mietleitungspreise für die Übertragungsraten 64 kbit/s und 2 Mbit/s in oder zwischen Städten unter

dem EU-Schnitt liegen: Die Preise für 64-kbit/s-Mietleitungen liegen bei einer Distanz von 200 km 12%, bei einer Distanz von 2 km 41% unter dem Durchschnitt.

Verfolgt man mittels derselben Daten die Preisentwicklung seit Mitte 1998, stellt man fest, dass offenbar bei beiden untersuchten Bandbreiten und Entfernungen zwischen August 1999 und August 2000 eine starke Preissenkung stattfand. Zwischen 1998 und 2003 sanken demnach die Preise für die Entfernungen von 2 km und 200 km bei der Bandbreite von 64 kbit/s um 30% bzw. 43% und bei der Bandbreite von 2 Mbit/s um 43% bzw. 91%. Im Vergleich zum EU-Schnitt nahmen die Schweizer Preise konsequenter ab, besonders innerhalb von grossen Städten (Distanz von 2 km). Um die Lage besser einzuschätzen zu können, sind jedoch das Preisniveau des Jahres 1998 genauer zu untersuchen sowie weitere Informationsquellen einzubeziehen.

Digitales Fernsehen (Kapitel 8)

Der Anteil der Haushalte mit Digital-TV-Empfang in der Schweiz liegt deutlich unter dem europäischen Durchschnitt. Gründe hierfür können in erster Linie im sehr hohen Verkabelungsgrad, der sprachkulturell heterogenen Kleinstaatlichkeit und der starken Präsenz ausländischer Fernsehprogramme gesehen werden, die zusammen genommen die Innovations- und Investitionsbereitschaft der nationalen Digital-TV-Produktion niedrig halten. Hinzu kommt, dass der Fernsehkonsum der Schweizerinnen und Schweizer trotz stetig wachsendem Angebot in auffälliger Weise unter den europäischen Durchschnittswerten bleibt.

Am häufigsten genutzt wird Fernsehen in der Schweiz über die Infrastruktur der Kabelnetze. Im Jahr 2003 waren 2,7 Millionen Haushalte ans Kabelfernsehen angeschlossen, was 90% aller Haushalte mit Fernsehanschluss entspricht. Diese sind bereits stark mit analogen Programmen ausgelastet. Die Kabelnetzbetreiberinnen reagieren zudem aus wirtschaftlichen Gründen auf Aufschaltanfragen von Anbieterinnen digitaler TV-Programme eher zurückhaltend.

ANNEX 1

MARKET OVERVIEW

TABLE OF CONTENTS

1 *PLAYERS IN THE FIXED MARKET*

1.1. *PLAYERS IN THE FIXED MARKET*

This section analyses the situation of the market players in the fixed telecommunications market (voice telephony and network services): the number of operators authorised to operate a network and to provide public fixed voice telephony, the number of players actually active in the market, incumbents' market shares on the fixed voice telephony market.

Data are based on the replies to the European Commission questionnaire, provided by the national regulatory authorities and give the situation as at August 2003.

The figures include a great variety of operators: fixed network operators, service providers, cable operators as well as wireless local loop, mobile and satellite operators (for the fixed part of their networks and services).

Depending on the national licensing scheme, for some countries data for both local and national operators are given.

Local operators are operators authorised to offer telecommunications services only to users located in specific areas (to whom they provide local as well as long-distance and international services through interconnection agreements with other operators).

National operators are operators authorised to offer telecommunications services without any geographical restriction. They may provide all types of telecom services (local, long-distance and international) to users located throughout the national territory.

Local operators exist in Germany, Spain, France, Italy, Finland, and the United Kingdom. This does not mean that in the other countries all operators are national, but only that the licensing scheme does not provide for a licence limited as to its geographical scope. The number of local operators is not strictly comparable between Member States, since it varies considerably between countries depending on the division of the national territory into local areas.

The figures in the following charts reflect the number of operators, rather than the number of licences, since some operators my have been granted several licence. This is particularly true for the large companies, whose subsidiaries can also have a separate licence.

After the massive entry into the market that characterised the first stage of liberalisation (+113% between 1998 and 2001), the number of operators authorised[4] to offer public fixed telecommunication services in Europe has started to decrease. In August 2003 there were in the EU a total of 1202 operators authorised to offer public voice telephony (269 local and 933 national operators) and 1484 public network operators (555 local and 929 national operators). **In Switzerland also there was an explosion in the number of players in the market between 1998 and 2001 (+112.6%). Since 2001, a very slight drop is perceptible, i.e. exactly -2.1% between 2001 and 2003[5].**

[4] *In the sense that they have an individual licence/authorisation or they are subject to a notification/ registration procedure.*

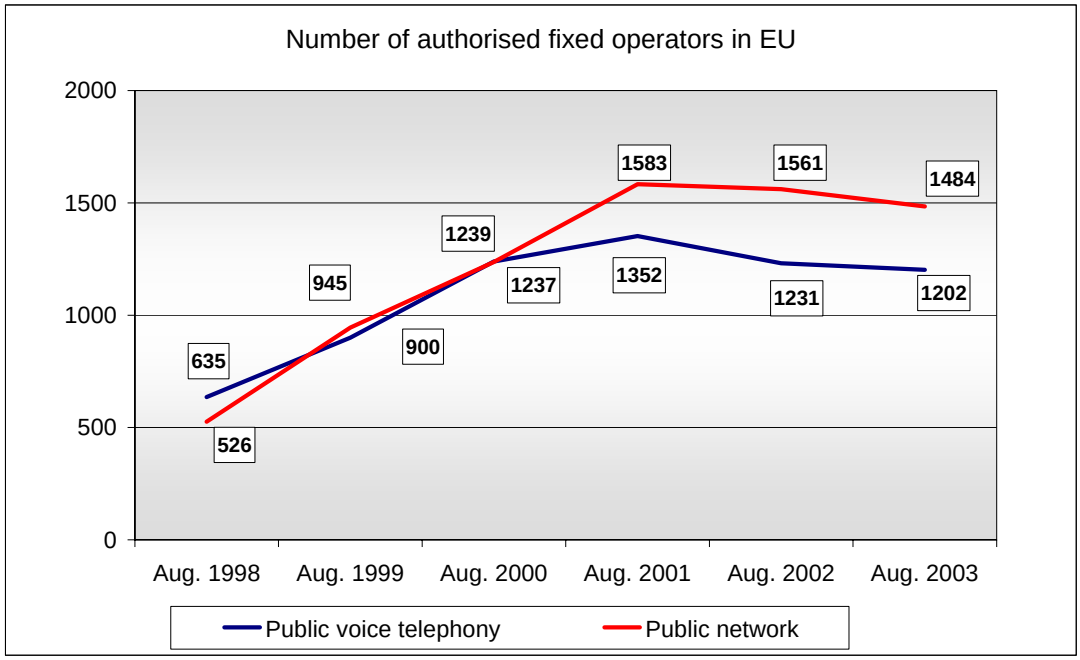
[5] **Source: OFCOM, Telecommunications Statistics, evolution up to 31.12.2003 for certain indicators, collection from various sources, Bienne, May 2004, page 30.**

Since August 2002 the number of potential players has remained more or less stable (-2%) for the voice telephony market, while the number of public network operators has decreased by 6%[6].

Among the 1202 operators legally authorised to provide voice telephony in the EU, less than half (around 500) have started operations, the majority only in some local areas or for business users. In particular, it should be noted that one third of operators effectively providing local calls are local operators only.

The total number of the major competing operators[7] in the EU is around 59 and in the great majority of EU countries there are no more than 4 real competing players (see Figure 5). **In this area, Switzerland, with four major market players, also lies within the European average.**

Figure 1



[6] *The peak in the number of authorised operators was reached in 2001 with 1352 operators authorised to provide voice telephony services and 1583 public network operators.*

[7] *See section 1.2 on incumbents' market share for more details.*

PUBLIC FIXED NETWORK OPERATORS

The following charts show the number of network operators with a public network licence and/or authorised to offer network services. Public network operators are defined as operators that install, manage and operate a telecommunications transmission network to provide public telephony services or public network services[8]*.*

Where applicable the distinction in the licence/authorisation between local and national public network operators concerns the geographical scope of the network, while the provision of network services could be subject to a different geographical limitation. In the following, "local operators" means operators whose authorisation for the deployment of the network does not cover the whole national territory, whatever the geographical scope of the service. Moreover, this does not exclude that in the other countries that do not impose any geographical distinction, national operators are not providing services only in local areas.

It should be noted that a licence to operate a local/regional public network does not necessarily imply the existence of local network access to customers.

The following chart **(Figure 2)** *shows that in the EU there are a total of 1484 authorised network operators, 63% of which are local operators. Only one third of the total authorised operators have effectively started commercial activities for local access (507 network operators, half of which are local operators) and only around 15% of the total authorised network operators are effectively active on the trunk-international network services market*[9]*.*

In Switzerland in 2003, there were 115 telecommunication services providers holding a licence[10] and therefore authorised to operate a public network. Compared with 2002, this figure has fallen fairly significantly, by 10.2%[11]. Despite this, and taking into account its small size, Switzerland has a relatively high value, which puts it in fifth position in the European table.

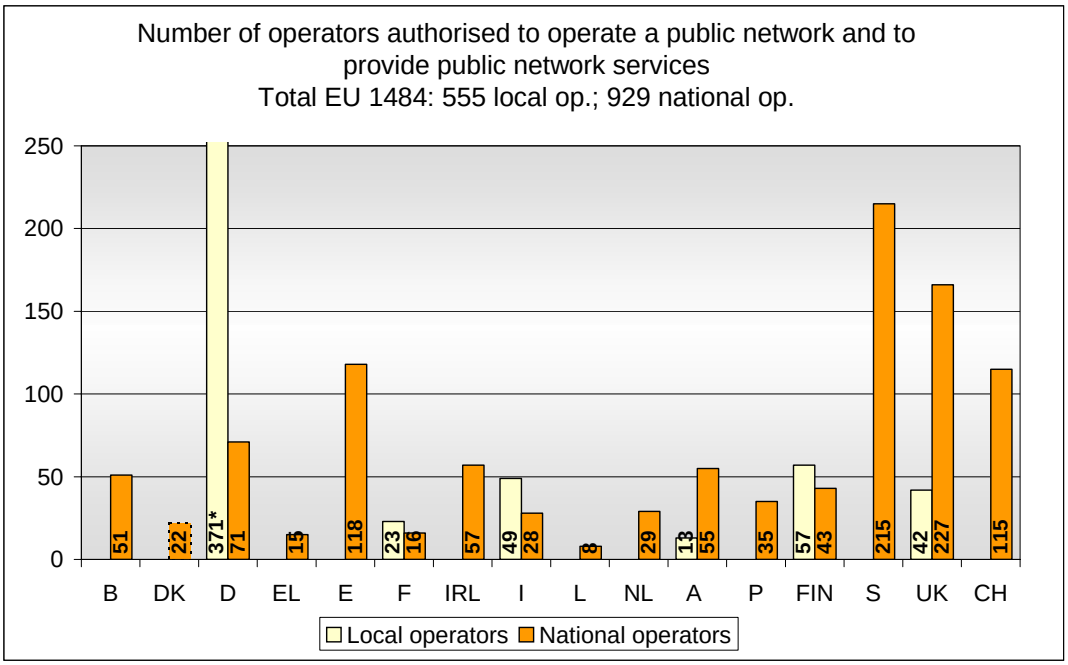
[8] *Public fixed network services are defined as the conveyance of calls, messages and signals over a telecommunications network, including any necessary switching. They may be network interconnection services, which are provided to other network operators to enable calls and associated functions to be passed through interconnected networks, or basic retail network services, which are provided to customers such as end-users or service providers.*

[9] *In this case the number of local operators is negligible.*

[10] **We have implicitly assumed that the category "operators authorised to operate a public network and to provide public telephone services" corresponded, in Switzerland's case, to licensed operators. Operators subject to the licensing regime are those independently operating an extensive part of the telecommunications installations (art. 4, para. 1 of the Law on Telecommunications).**

[11] **Source: wik-Consult, Der Schweizer TK-Markt im internationalen Vergleich, Auszug aus dem 8. Implementation Report der EU erweitert um die Schweiz, Bad-Honnef, March 2003, p. 20.**

Figure 2



** Figure not to scale.*

- *The figure for Denmark is not strictly comparable with the others due to the fact that there is neither a licensing requirement nor a central register of operators and their activities (operators only apply for numbers). The data refer to the estimates of the network operators actually offering network services.*
- *The figure for Spain does not include 74 cable operators, that have transformed their provisional cable concession into a definitive public network licence.*
- *Data for Ireland include both basic and general licences.*
- *Due to a different reporting method applied by the NRA, data for the Netherlands is not comparable with the previous reports, and do not represent actual market development.*
- *In Finland, 39 of the 57 regional network operators are local incumbents and belong to the Finnet Group. 3 local and 4 national network operators belong to Elisa Group.*
- *Data for Sweden include both licensed and notified operators.*
- *In the United Kingdom, the local operators are 42 local cable franchise operators, owned by 2 companies*[12].

Source for Switzerland: OFCOM Switzerland.

PUBLIC FIXED VOICE TELEPHONY OPERATORS

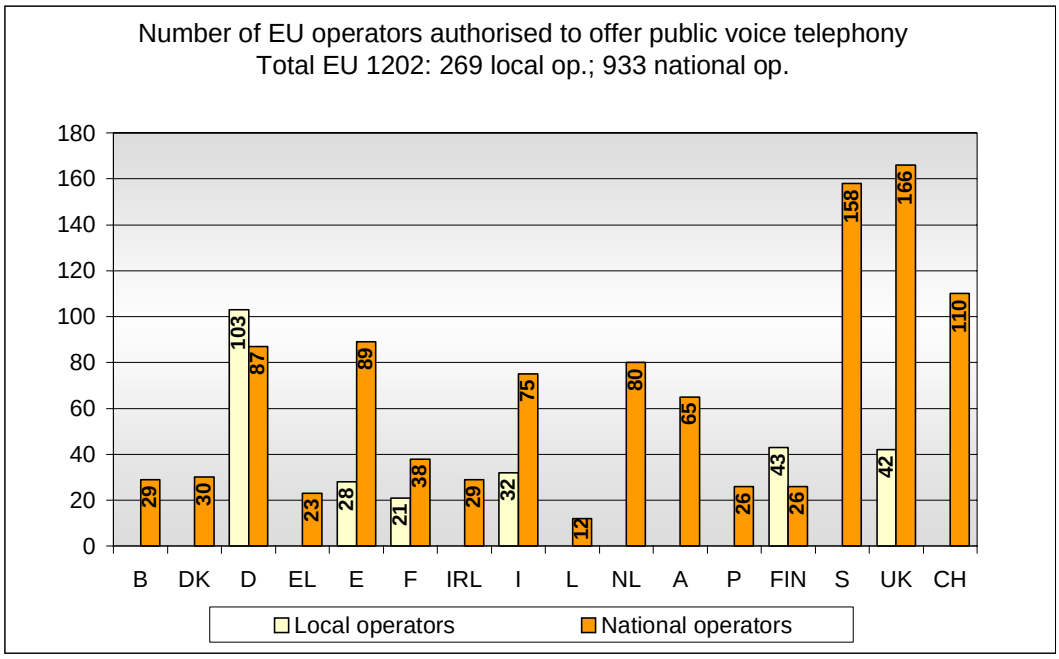
Public fixed voice telephony is defined as a service available to the public for the direct transport on a commercial basis of real-time speech via the public switched network, such that any user can use equipment connected to a network termination point at a fixed location to communicate with another user of equipment connected to another termination point.

[12] *In the UK the 42 local cable franchise operators, owned by 2 companies, must hold (inter alia) a standard PTO licence for the provision of cable TV which, in turn, also gives the right to provide public voice telephony/network service. How many of these cable operators are also providing public voice telephony/network services is unknown. From January 2001 the geographical restriction on cable companies ceased to exist and any cable licensee was free to operate outside the area laid down in its licence, but to maintain comparability with previous Reports we will continue to consider these operators as local. The big decrease in the number of local cable operators since 2001 (134 at that time) is due to intensive merger activities in the market.*

Voice telephone could be provided by the operators on an own self-operated network or on a leased network. In the first case, the operator provides voice telephony over a network fully controlled, operated and (wholly or partially) owned by him; in the second case the operator operates, controls and manages the transmission capacity which is leased from other operators[13].

Theoretically, a total of 110 operators[14] are able to offer voice telephony services in the Swiss market (Figure 3). In the European comparison, this puts Switzerland in the upper third. Compared with the previous year, with 95 operators[15], the recorded increase is fairly spectacular (+ 16.8%).

Figure 3



- *The figure for Denmark is not strictly comparable with the others. Due to the registration system, the number of operators authorised to provide public fixed voice telephony figures for Denmark has been estimated using the number of operators that have been allocated geographical numbers and/or access codes.*
- *In Finland, 39 of the 43 regional operators are local incumbents and belong to the Finnet Group. 7 national operators belong to Elisa Group.*
- *Data for Sweden include both licensed and notified operators.*
- *Due to a different reporting method applied by the NRA, data for the Netherlands is not comparable with the previous reports, and do not represent actual market development.*
- *In the United Kingdom, the local operators are 42 local cable franchise operators, owned by 2 companies.*

Source for Switzerland: OFCOM Switzerland.

[13] *Simple call-back and calling card services and operators dealing only with marketing, billing, etc., are excluded. The definition of service provider may differ from that used in the national law of individual countries (in some countries non-self operated network operators engage exclusively in reselling activities).*

[14] **In the fixed telephony sector, Switzerland has 28 licence-holding operators and 82 operators subject to the obligatory notification procedure. Operators subject to the licensing regime are those who independently operate an extensive part of the telecommunications installations used for transmission.**

[15] **Source: wik-Consult, Der Schweizer TK-Markt im internationalen Vergleich, Auszug aus dem 8. Implementation Report der EU erweitert um die Schweiz, Bad-Honnef, March 2003, p. 14.**

The number of operators authorized to offer public fixed telecoms services indicates only the potential for competition in the market rather than the current level of competition. For this reason, where possible, an estimate is given of the number of operators actually active on the market.

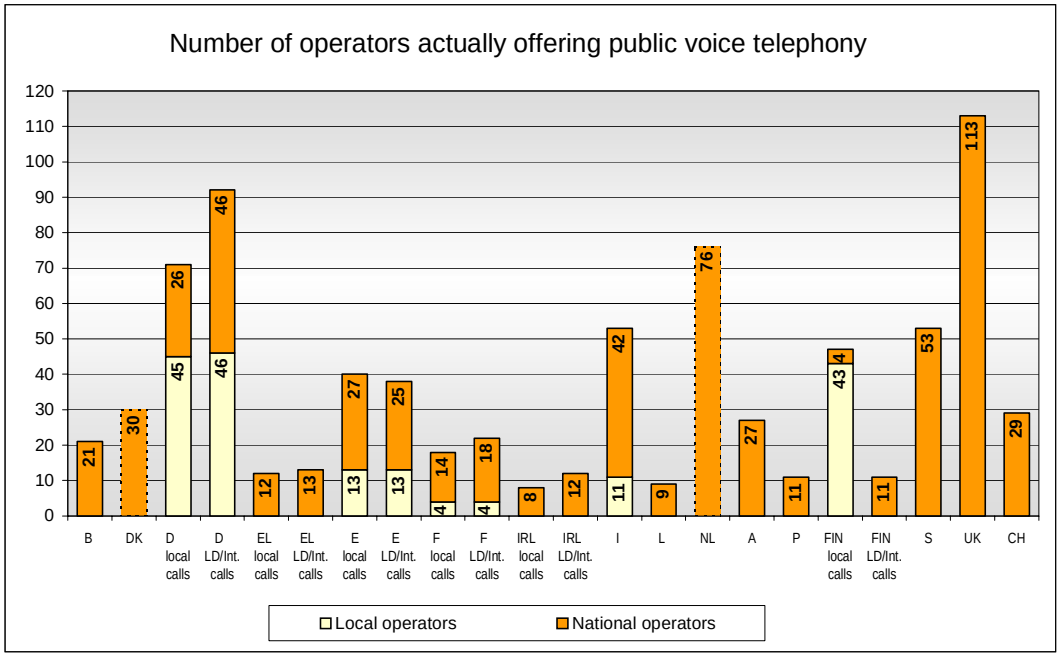
The following chart shows the estimate of the number of operators active in the voice telephony market at August 2003. Figures for local operators are available only for the countries in which the licence/authorisation system provides for this category. Moreover, this does not exclude that in the other countries that do not impose any geographical distinction, national operators are not providing services only in local areas.

Where possible separate figures for local and long-distance/international call market are provided. In these cases, the two bars referring to the same country should be read separately on a service by service bases, since the same operator can be authorised to offer more than one type of service.

The chart shows a significant presence of active local operators in the local calls market (around one third on the total number of active operators) while, apart from Germany, in the long-distance/international calls market their presence is negligible.

In comparison with the preceding figure, in this case (Figure 4) Switzerland, with 29 active providers, occupies the middle ground. From this one can conclude that approximately only every fourth licensed operator actively offers voice telephony services.

Figure 4



- *Figures for Denmark and the Netherlands are not strictly comparable with the others since they refer to the operators that have been allocated geographical numbers and/or access codes.*
- *The figures for the Netherlands are not comparable with previous reports.*
- *Figures for both Spain and Finland do not include 2 operators actually offering only international voice telephony.*
- *In Finland, 37 of the 43 regional operators providing local calls are local incumbents and belong to the Finnet Group. 2 local and 2 national operators providing local calls belong to Elisa Group.*
- *The figures for France refer to 31.3.2003*
- *The figures for Sweden refer to 31.12.2002*
- *DK, I, NL, A, P, S and UK do not provide separate figure for the types of calls.*
- *In Belgium and Luxembourg local calls does not exist as a separate category from long-distance calls.*

Source for Switzerland: OFCOM Switzerland.
Note: situation in February 2004.

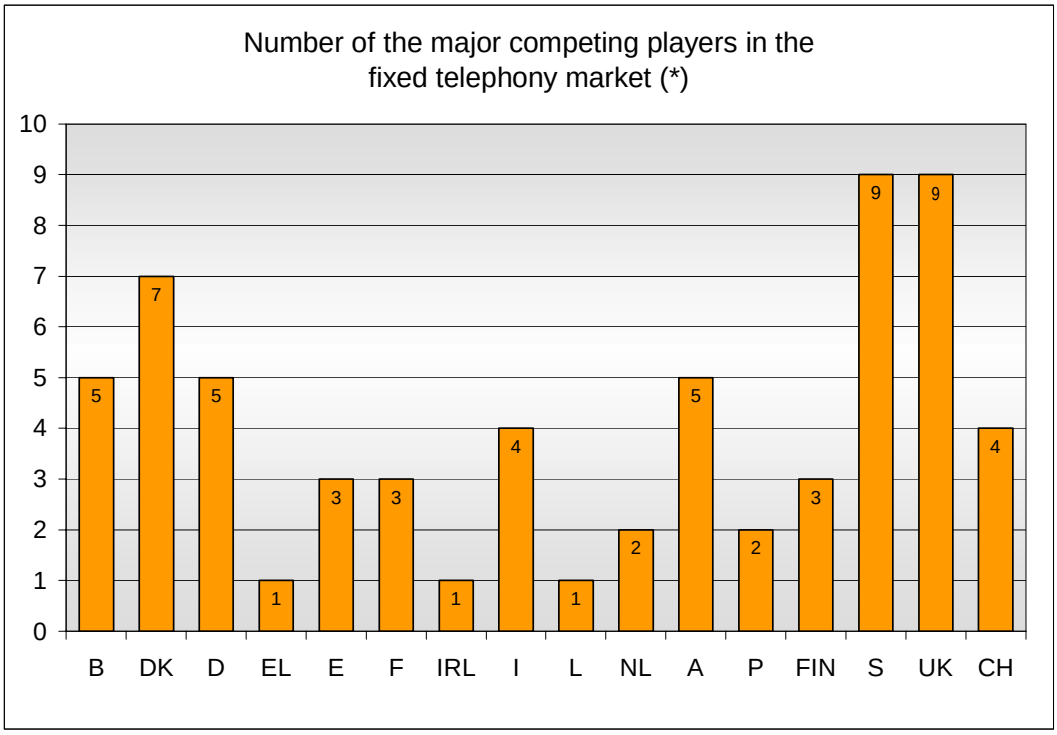
Figures in the previous chart do not show to what extent the operators are offering services. Many new entrants initially only provide services to business users in the main cities, even if they have a national license allowing them to offer all types of service throughout the country.

To give an idea of the "real" number of effectively competing fixed operators, the following chart **(Figure 5)** *shows for each country the number of operators that have a combined market share of at least 90% on the global voice telephony market (including all types of calls[16]). Generally speaking, very few countries have more than 4 competing operators (including the incumbent) that have such a combined market share.*

These figures give an idea of the number of major competing operators, but is should be recalled that the competition is largely asymmetric, with a strong position of the incumbents.

In the Swiss fixed network voice telephony market, four providers share at least 90% of the market. This places Switzerland at approximately the European average, but clearly behind Sweden and Great Britain, each with nine operators.

Figure 5



(*) Number of operators that have a combined market share of at least 90% on the global voice telephony market.

Source for Switzerland: OFCOM Switzerland.
Note: the combined market share has been calculated on the basis of the number of minutes consumed at the end of 2002.

[16] *Local calls to internet, local phone calls, long-distance and international calls as well as calls to mobile.*

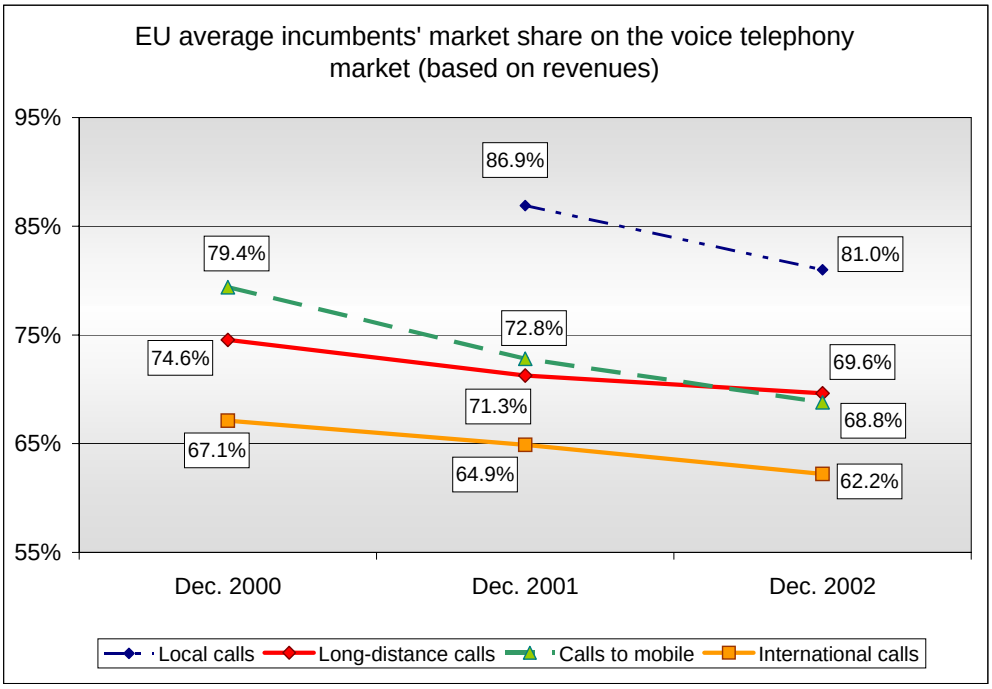
1.2. *INCUMBENTS' MARKET SHARE ON THE FIXED VOICE TELEPHONY MARKET*

This section shows the incumbents' market share on the fixed voice telephony markets on the basis of both retail revenues and outgoing minutes of traffic. Where possible, figures for local, long-distance, international call, calls to mobile and calls to internet are shown. Unfortunately, not all Member States collect both types of data, and differentiation between the various markets is not always available. DK, L and P do not provide data by revenues; NL, S, and I do not provide data by minutes of traffic. Data for A by revenues are confidential.

Figures in this section have been provided by NRAs and give the situation as for December 2002, except for Netherlands, Austria (March 2002) and the United Kingdom (March 2003).

The following chart shows the EU weighted average trend since 2001 of the incumbent's market share in the major segment of the voice telephony market[17] based on retail revenues. Due to the non availability of data for all the countries and for all types of calls, the average EU data should be considered as indicative[18].

Figure 6



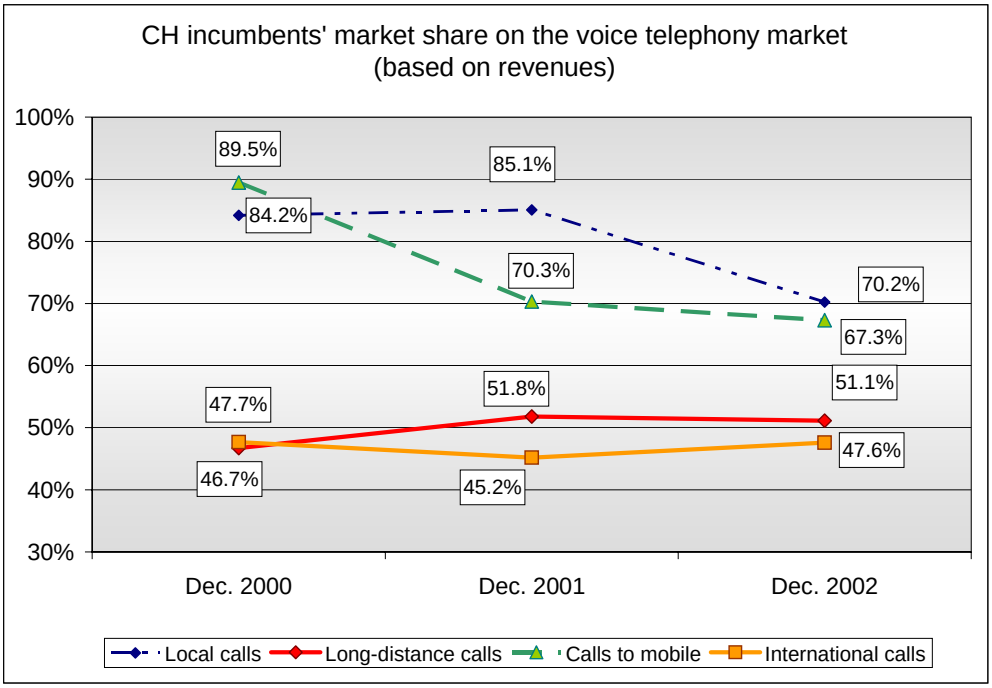
The market shares in the fixed network market (Figure 6a) of the Swiss incumbent (Swisscom) differ quite markedly from the European market shares. Whereas the European incumbents are losing market shares relatively uniformly in all the markets examined, two contrary developments can be observed in Switzerland: unlike in Europe, in Switzerland the incumbent's market shares are increasing slightly for national and international calls, but remain well below the European values. On the other hand, the market share for calls from

[17] *Data are not comparable with the previous reports, due to several factors: (1) figures for the years 2000 and 2001 have sometimes been updated to reflect revised data received from Member States; (2) the EU average is now a weighted, rather than a simple average; (3) 2002 and 2001 data for non euro-zone countries have been recalculated on the basis of 2003 exchange rate.*

[18] *Data for local call market is an average of countries that represent more than 90% of the EU population for both 2001 and 2002; data for call to mobile represent 96% of the EU population or the years 2002-2001 and 90% for the year 2000; data for international call represent more than 96% of the EU population or all the periods considered.*

the fixed network to mobile networks[19] fell between December 2000 and December 2001 by almost 20%. This evolution is essentially explained by the fact that new mobile telephony operators started to attract a certain number of customers and by the competition which occurs on fixed to mobile tariffs. In this sector competitors were obviously successful in winning market shares quickly. Market share was also falling in the local call segment: from the end of 2001 it fell within a year from 85% to approximately 70%. This shift may also be due to the introduction of the closed numbering plan in March 2002, among other things. Following the entry into force of this new numbering plan, the historic operator changed its charging system to offer only one tariff, regardless of distance. Its competitors, for the most part, followed the trend. A general reshuffle resulted from this.

Figure 6a



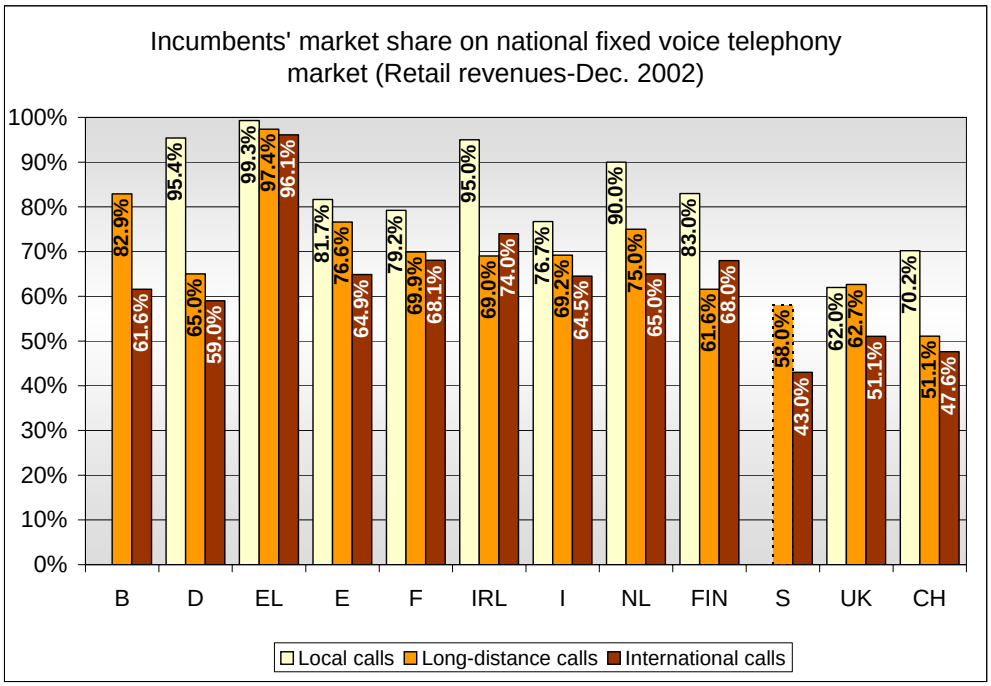
Source for Switzerland: OFCOM Switzerland; Swisscom F-20.

The following two charts show the incumbents' market share in the local, long-distance and international call market by retail revenues and by minutes of outgoing traffic. Local calls market includes both local phone calls and local calls to internet.

In comparison with the other European incumbents, at the end of 2002, in terms of revenues (Figure 7), Swisscom lost the most market shares – the sole exceptions being international calls in Sweden and local calls in Great Britain. A similar situation also prevailed in the case of market shares based on minutes (Figure 8): in this case, for example, only in Austria were the losses greater in all three segments than in Switzerland. Where both figures are available, in a direct comparison it is striking how the market shares by revenue often fell less than market shares by minutes. With Swisscom, these two values tended to be closer together. One possible interpretation would be that some of the Swiss incumbent's per minute prices were under more pressure than those of the European incumbents.

[19] **With regard to the "calls to mobile" market shares, it must be noted that these are an estimate using the figures published in the official telecommunications statistics (OFCOM Switzerland), which includes calls to indeterminate networks, and the figures published by Swisscom, which includes "calls from the fixed line network to the private user networks".**

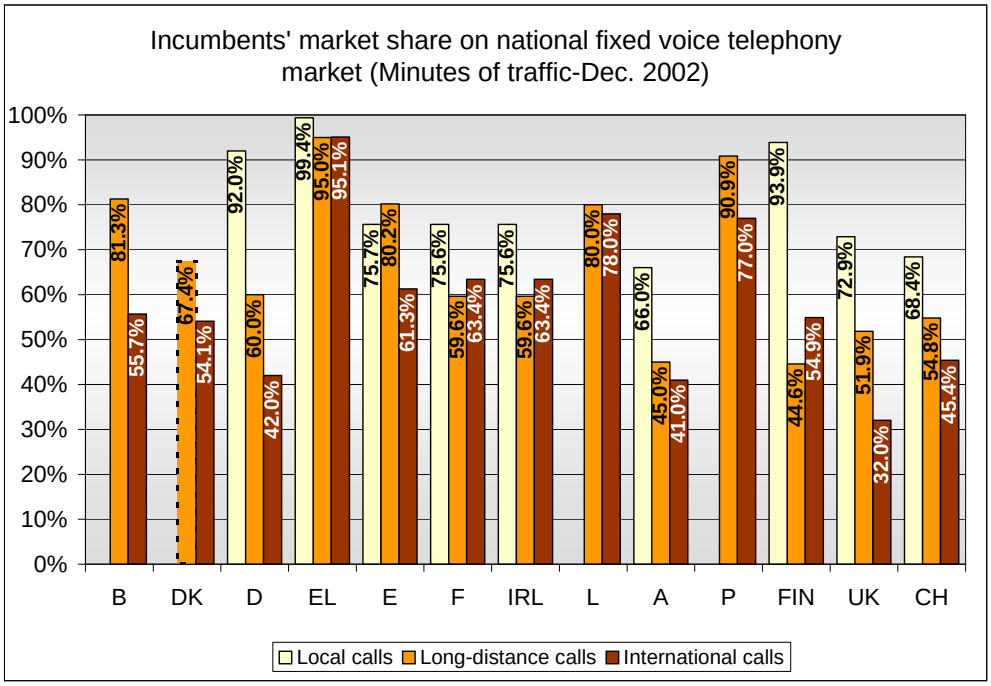
Figure 7



- *In Belgium "local calls" does not exist as a separate category from long-distance calls.*
- *The figures for the Netherlands refer to March 2002, before the introduction of CPS for local calls on 1st August 2002. Moreover, data for long distance market refer to the combined local and long-distance market.*
- *In Finland, the figure for local calls is the combined market share of Sonera, Elisa and Finnet. The figures for the long-distance and international market include Sonera only and not Finnet even if it is designated as SMP.*
- *Data for the long-distance market in Sweden is not strictly comparable with the others since it refers to the global national call market (local, long-distance calls and calls to mobile).*

Source for Switzerland: OFCOM Switzerland.

Figure 8



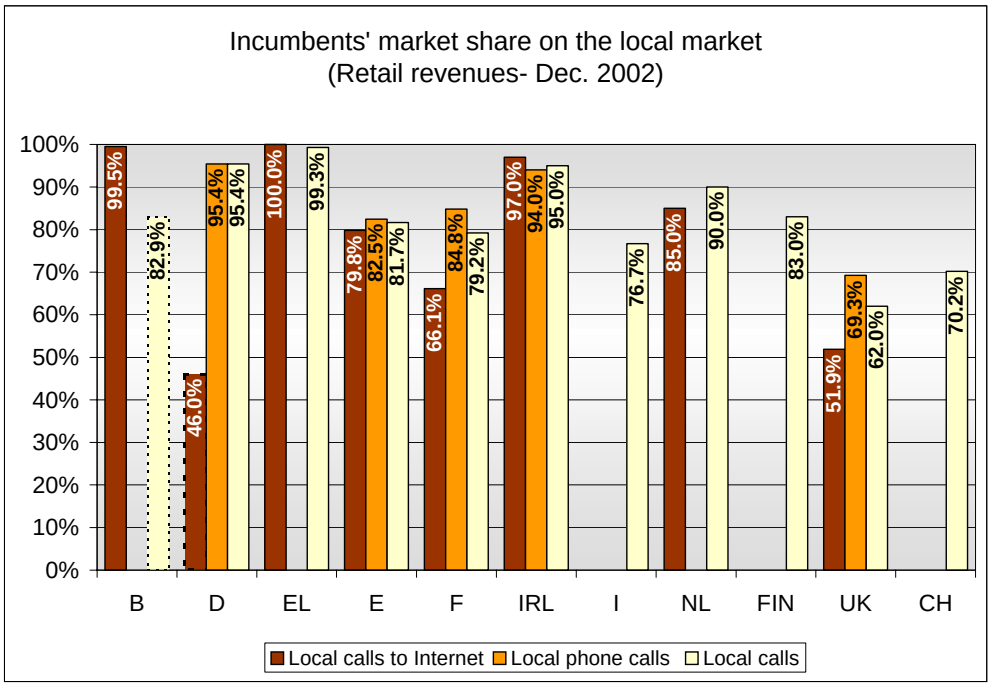
- *In Belgium and Luxembourg local phone calls does not exist as a separate category from long-distance calls.*

- *Data for long-distance market share in Denmark is not strictly comparable with the others since it refers to the global national call market (local, long-distance calls and calls to mobile)*
- *In Finland, the figure for local calls is the combined market share of Sonera, Elisa and Finnet. The figure for the long-distance and international market includes Sonera only and not Finnet even if it is designated as SMP.*

Source for Switzerland: OFCOM Switzerland.

The following charts **(Figures 9 and 10)** *show the incumbents' market share in the local calls market by retail revenues and by minutes of outgoing traffic. Where possible, separate figures for local phone calls and local calls to internet are provided.*

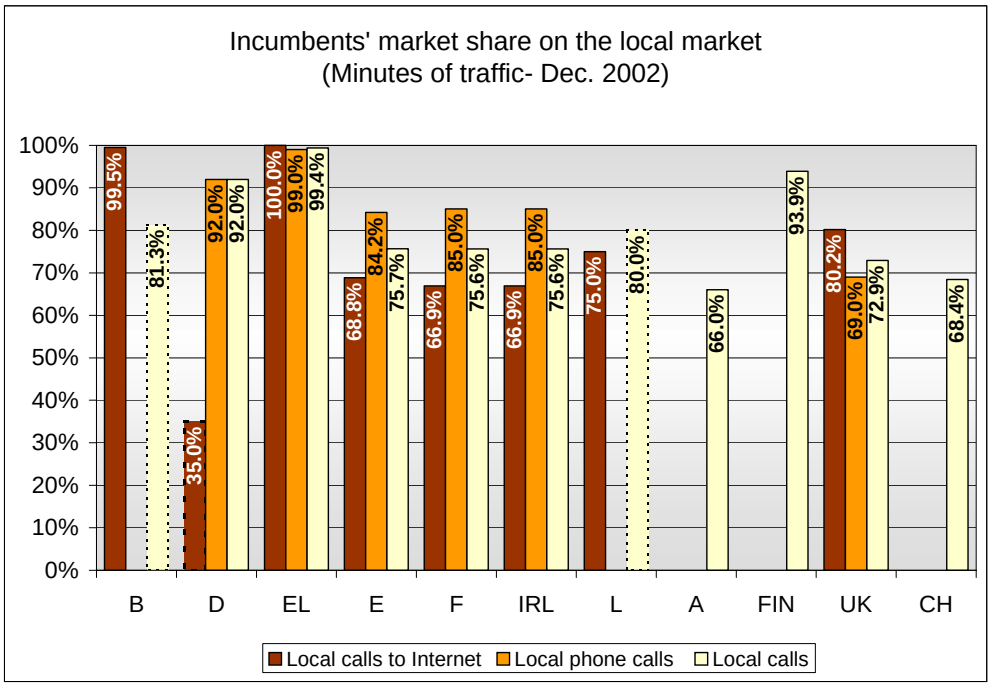
Figure 9



- *Columns with dotted border are not strictly comparable with the others.*
- *In Belgium local calls does not exist as a separate category from long-distance calls.*
- *In Germany calls to internet are not local calls.*
- *In Ireland operators may classify internet calls differently. They may be included in other call categories such as local only, national as well as internet; therefore, market shares are varied.*
- *The figures for the Netherlands refer to March 2002 before the introduction of CPS for local call on 1st August 2002. Moreover, data for local calls to internet include also ISDN access.*

Source for Switzerland: OFCOM Switzerland.

Figure 10

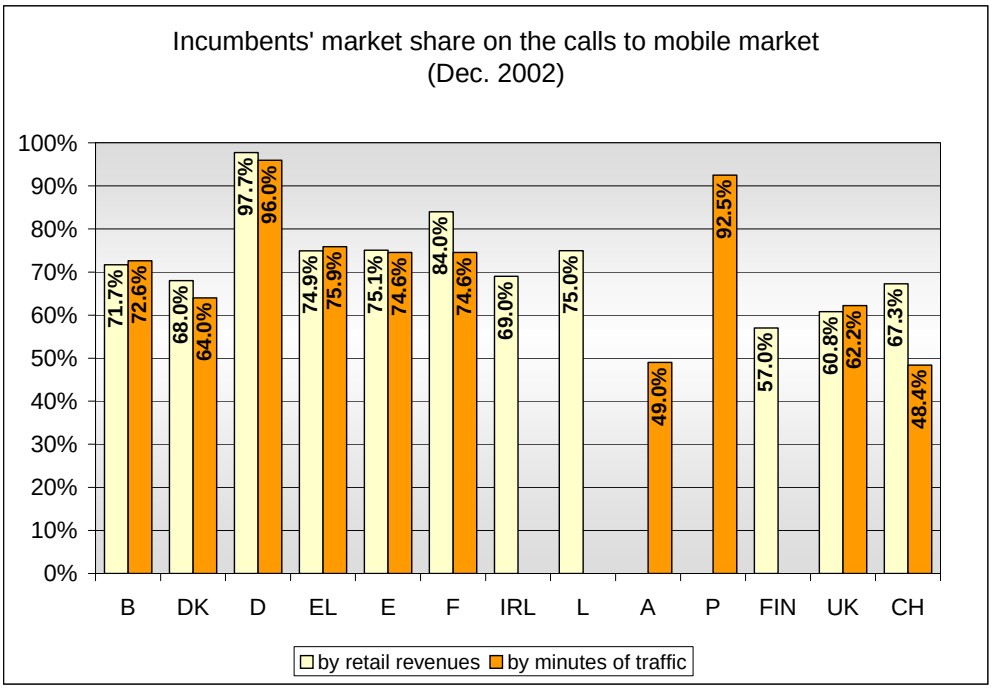


- *Columns with dotted border are not strictly comparable with the others.*
- *In Belgium and Luxembourg local calls does not exist as a separate category from long-distance calls.*
- *In Germany calls to internet are not local calls.*
- *In Ireland operators may classify internet calls differently. They may be included in other call categories such as local only, national as well as internet, therefore market shares are varied.*
- *In Finland, the figure for local calls is the combined market share of Sonera, Elisa and Finnet.*

Source for Switzerland: OFCOM Switzerland.

Figure 11 shows the market shares in terms of minutes and revenue for calls from the incumbent's fixed network to a mobile network. With 48.4% of market shares expressed in minutes, Swisscom is the historic operator which has lost the most ground to its competitors. On the other hand, Swisscom's market share in terms of revenue has shrunk distinctly less (67.3%). From the substantial difference which exists between these two values, it can be concluded that at the end of 2002 Swiss customers of the incumbent were having to pay more for calls from the fixed to the mobile network than consumers in Europe for comparable services.

Figure 11



- The figure for Finland refers to Dec. 2001.

Source for Switzerland: OFCOM Switzerland; Swisscom F-20.
Note: the two variables have been estimated using the figures published in the official telecommunications statistics (OFCOM Switzerland), which includes calls to indeterminate networks, and the figures published by Swisscom, which includes "calls from the fixed line network to the private user networks".

2 CONSUMERS' CHOICE OF FIXED OPERATORS

This section analyses the fixed voice telephony market from the point of view of consumers.

The data presented below have been provided by the national regulatory authorities and, unless otherwise indicated, report the position at August 2003. Figures for countries not included in the charts are not available.

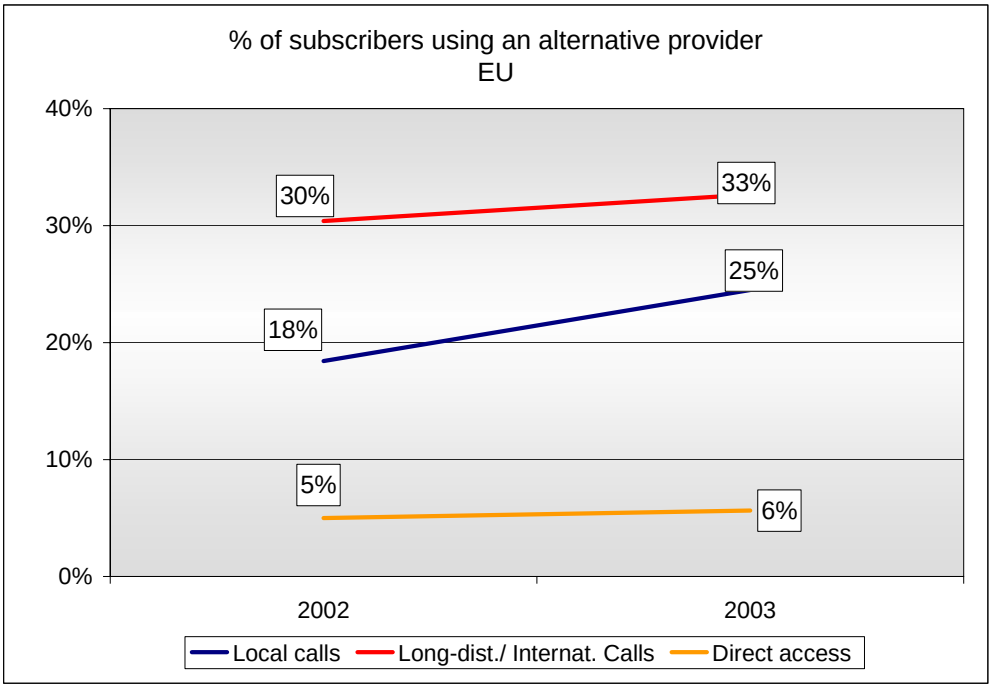
Figures are not always comparable with those published in previous Reports, due to changes in the methodologies and/or in the classification used by the Member States.

2.1. PERCENTAGE OF SUBSCRIBERS ACTUALLY USING AN ALTERNATIVE PROVIDER OTHER THAN THE INCUMBENT

Traditional incumbents' customers are more and more aware of the possibility of using a provider alternative to the incumbent, either by dialling a call-by-call prefix (carrier selection) or by choosing to route all calls by default to the network of an alternative operator (carrier pre-selection). The use of an alternative operator through carrier selection/carrier pre-selection does not exclude the possibility of using the incumbent too. Direct access is also available to users through alternative operators' proprietary wire/wireless access or through unbundled local loops leased from the incumbent.

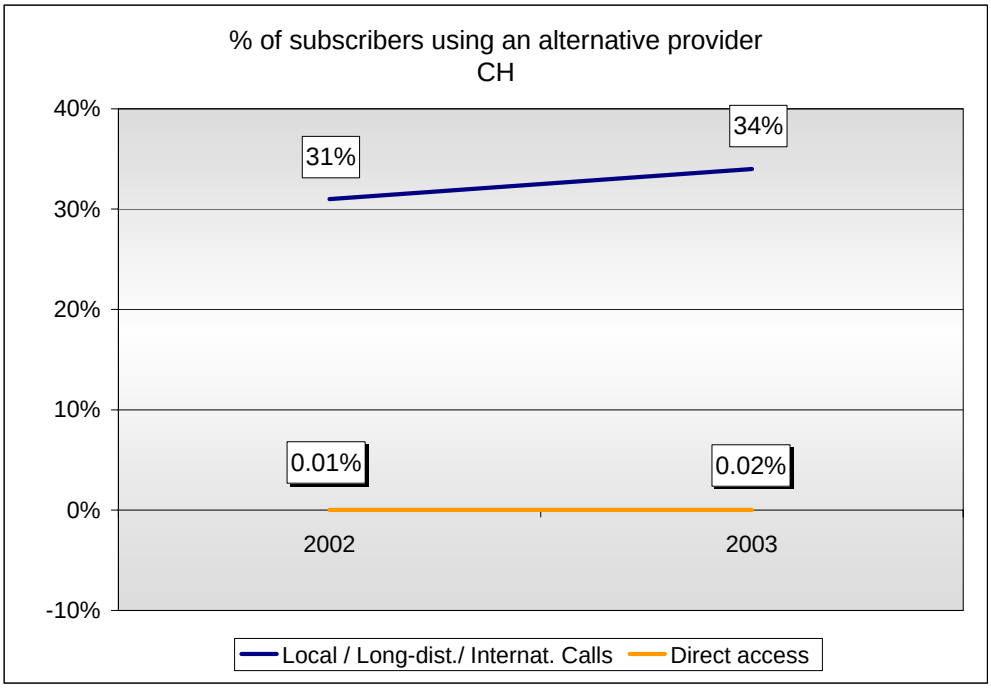
As at August 2003, 33% of EU subscribers used an alternative provider to route long-distance and international calls, while only 25% were using alternative providers for local calls. At the same time, direct access from alternative providers was used by 6% of EU subscribers. Since last year, the percentage of subscribers using an alternative provider has grown by 16% for direct access, 12% for long-distance/international calls and 39% for local calls **(Figure 12)**.

Figure 12



In Switzerland, one in three consumers was making use of the services of alternative providers to make national or international calls. This corresponds approximately to the European average – also with regard to the growth rate in comparison with the previous year. The picture is different for direct connections: due to a lack of unbundling possibilities and only rudimentary alternative access structures able to transmit voice traffic, almost 100% of connections are offered by the incumbent.

Figure 12a



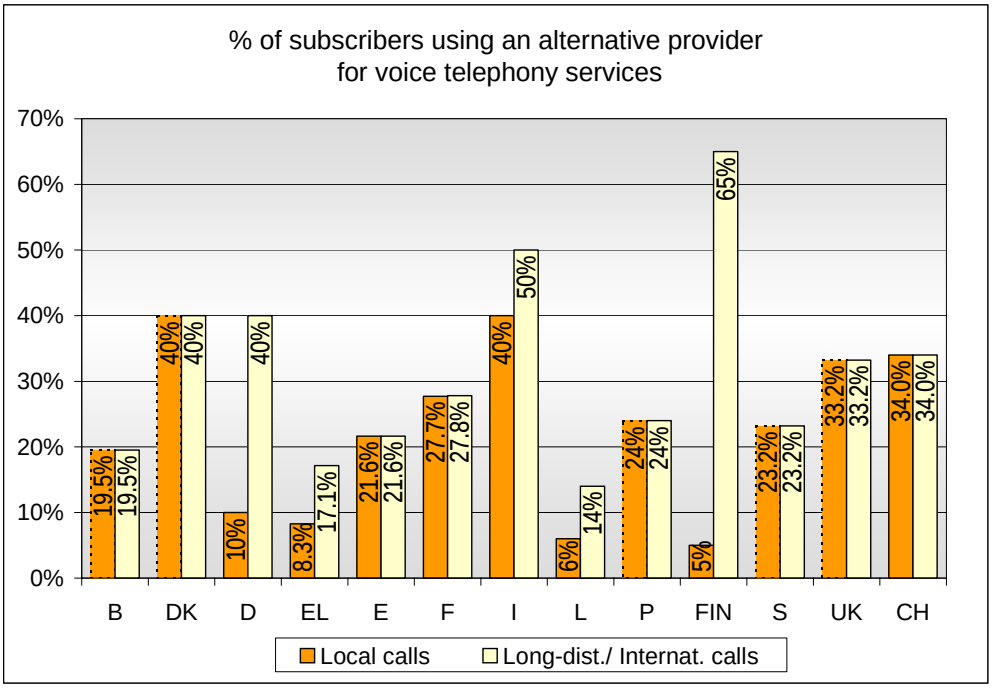
Source for Switzerland: OFCOM Switzerland.
Note: status end 2001 for the figure representing 2002 and status end 2002 for the figure representing 2003. Given that there is now only one rate, regardless of distance, all calls – local or national/international – have been integrated into the same category.

The following charts show for the 15 Member States **and Switzerland** *the % of subscribers using an alternative provider for voice telephony services through carrier selection, carrier pre-selection and direct access. Where available, separate figures for local and long-distance/international calls are given.*

Figures refer to August 2003 except for Belgium, **Switzerland** *and Sweden (31.12.02) and for France (31.3.2003).*

Data for Ireland, Netherlands and Austria are not available.

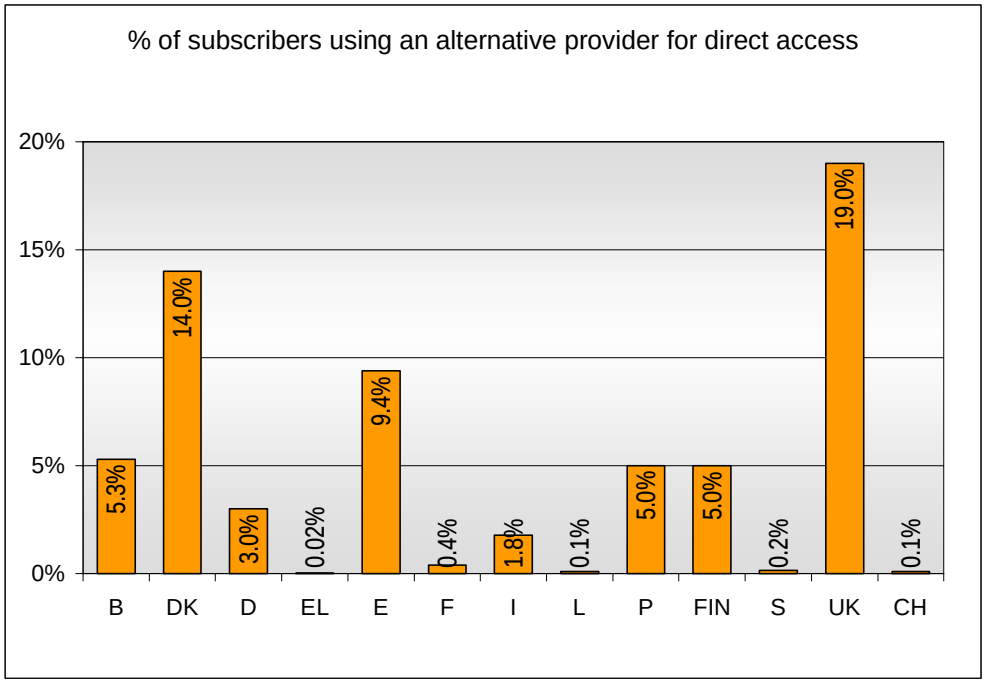
Figure 13



- *The figures for France, Spain, Sweden and Luxembourg should be read as minimum.*
- *The figure for local calls in Luxembourg includes only carrier pre-selection customers, while for long-distance/international calls, it also includes carrier selection customers.*
- *The figures for Denmark, Portugal, Sweden and United Kingdom do not distinguish between local and long-distance/international calls. In Belgium local calls does not exist as a separate category from long-distance calls.*

Source for Switzerland: OFCOM Switzerland.
Note: Given that there is now only one distance-independent rate, it is not possible to make a distinction between local and national/international calls. The same percentage therefore applies in both cases.

Figure 14



Source for Switzerland: OFCOM Switzerland.

2.2. *FACILITIES USED BY NEW ENTRANTS FOR THE PROVISION OF VOICE TELEPHONY*

This section provides information on the facilities used by new entrant to offer voice telephony, particularly to residential users.

Data have been provided by the national regulatory authorities and report the position at July 2003, except for Sweden and the United Kingdom (1.1.2003), for France (31.3.2003) **and for Switzerland (28.02.04)**.

Alternative operators can ask users to be routed to their network either by carrier selection (CS) or by carrier pre-selection (CPS). Furthermore, new entrants can obtain direct access to users through proprietary wire/wireless access or through unbundled local loops leased from the incumbent[20].

These facilities are not mutually exclusive and very often the same operator uses the three at the same time accordingly to category of customers (business or residential), type of services (local or long-distance/international calls), geographical area, availability of ULL, etc. The following figures should therefore be read separately and not aggregate as country totals.

At July 2003 we could broadly estimate that more than 2/3 of the new entrants that are operational in the European market offer voice telephony services though carrier selection and/or carrier pre-selection, and only 1/3 of them use direct access to customers. These values have remained virtually unchanged between 2002 and 2003 across the EU.

The following two charts show the number of operators using carrier selection and/or carrier pre-selection by Member State at July 2003. Where possible and appropriate, separate figures for types

[20] **At present, alternative providers in Switzerland cannot yet obtain an unbundled wholesale product. Appropriate interconnection procedures are in progress. The other comments in the text therefore refer practically exclusively to CS/CPS in the case of Switzerland.**

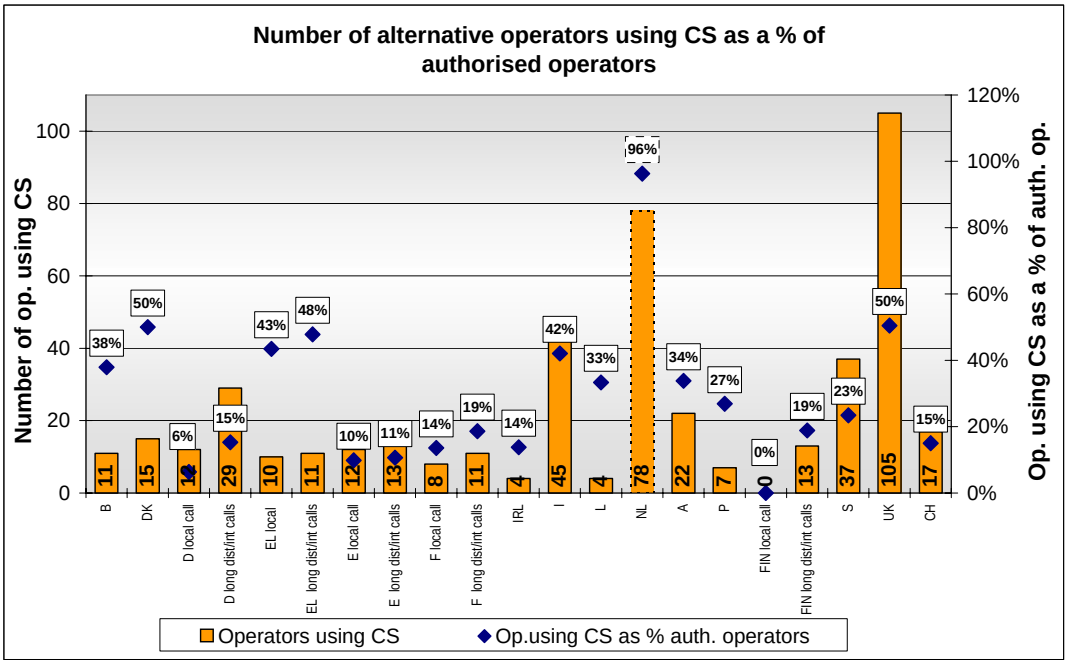
of calls are given; in the other cases (DK, IRL, I, NL, A, P, S and UK), separate data was not available or the operators do not differentiate the facilities used by type of calls. In Belgium, Luxembourg **and Switzerland** *local calls do not exist as a separate category from long-distance calls.*

The number of operators using carrier selection and/or carrier pre-selection depends on the number of authorised operators, which can vary widely between countries. This is due to the different size of the countries and to the existence, in only some of them, of the local operators category.

For these reasons, an estimate of the number of operators using carrier selection and/or carrier pre-selection as a percentage of authorised operators is also shown. It should be recalled that less than half of authorised operators have started operations. Moreover, the figures do not show to what extent the operators are offering services: residential and/or business users; nation-wide or only in local areas; all types of calls or only local or long-distance or international calls, etc.

In Switzerland, according to Figure 15, there are 17 alternative operators offering CS commercially; this corresponds to only about 15% of the providers actually authorised for this service. Note, however, that given the high proportion of inactive operators in the Swiss market (cf. Figures 3 and 4), this percentage does not offer a sufficient guarantee in terms of representativeness and cannot, therefore, be the subject of any speculation. Note again that when one examines the number of alternative operators having recourse to CS, Switzerland is in the first half of the league table.

Figure 15



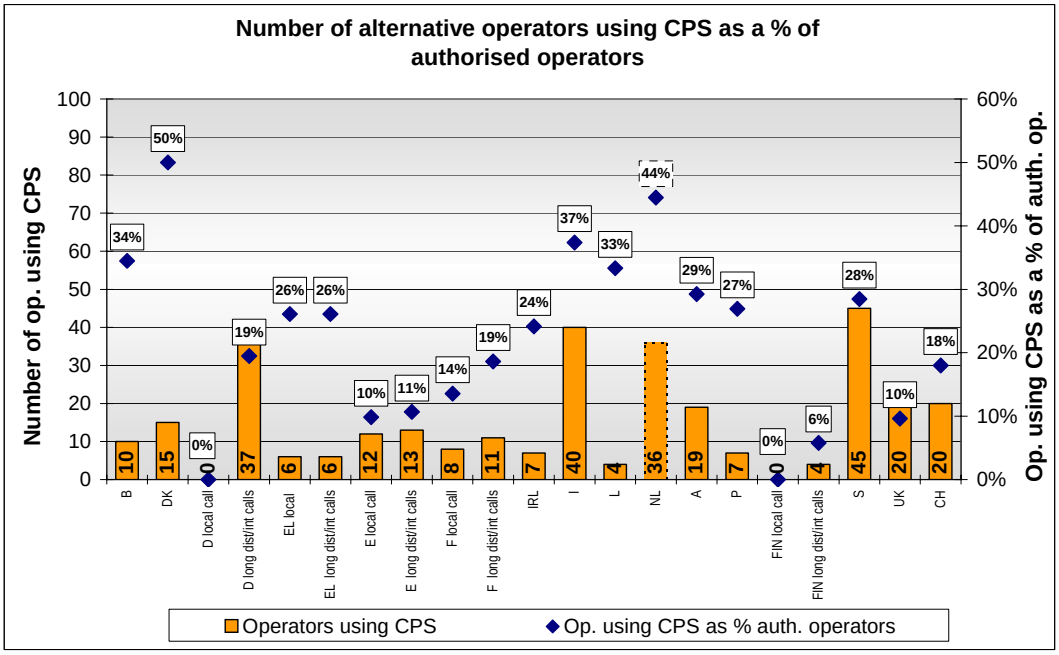
- *The figures for Belgium refer to national calls only and not to international calls.*
- *The figures for Denmark should be considered as minimum.*
- *In Germany, carrier pre-selection for local calls was not available until July 2003.*
- *The figures for the Netherlands for CS are not strictly comparable with the others since the data refers to operators with an access code and not to operators effectively active.*

Source for Switzerland: teltarif.ch; OFCOM Switzerland.

The situation with CPS appears similar (Figure 16): 20 operators are active in the market; this corresponds to about 18 % of all authorised operators. Once again, this percentage must

be treated with caution. If one considers the number as an absolute value, Switzerland's situation is relatively favourable, since only four countries have a higher number of alternative operators using CPS, namely the Netherlands, Germany (long-distance and international calls only), Italy and Sweden.

Figure 16



- The figures for the Netherlands are not strictly comparable with the others.

Source for Switzerland: teltarif.ch; OFCOM Switzerland.

3 *PUBLIC NETWORK INTERCONNECTION AND INTERCONNECTION CHARGES*

3.1. *FIXED-TO-FIXED INTERCONNECTION CHARGES*

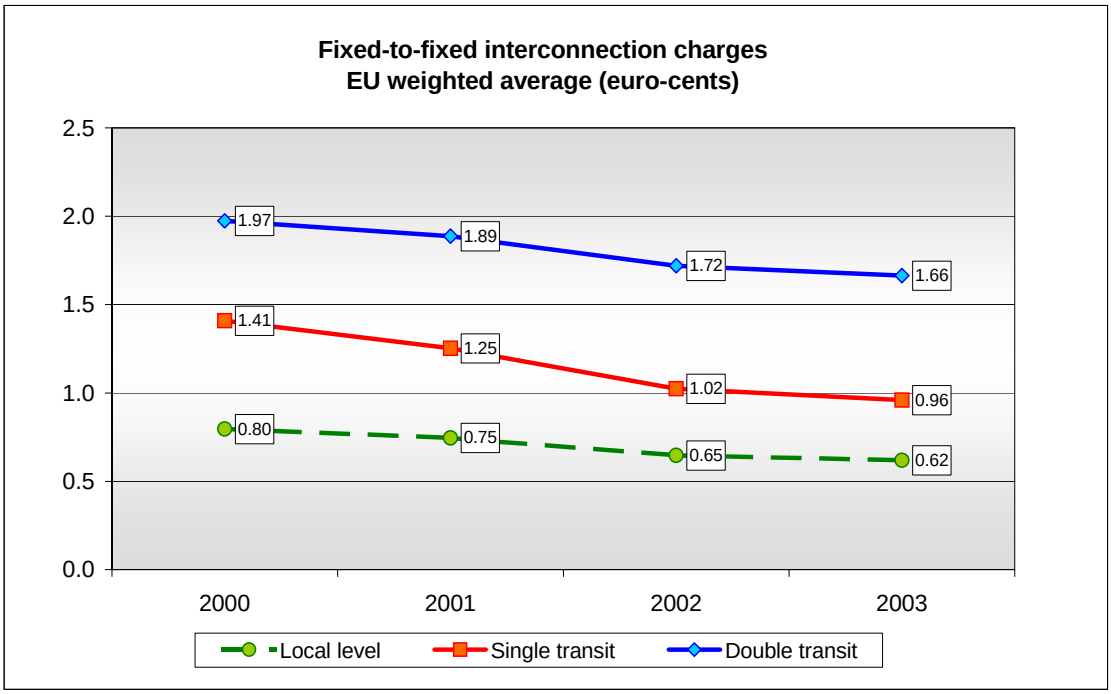
This section analyses the interconnection charges for call termination on the incumbent's fixed network[21].

The figures may have been approved by the NRA or simply agreed between operators, where the legal framework does not require NRA approval.

The following chart shows the EU weighted average interconnection charges since 2000[22] *for local level, single and double transit.*

Since August 2000, the EU weighted average charge for call termination on fixed networks has decreased by 32% for single transit, by 22% at local level, and by 16% for double transit. This happened mostly in the period up to August 2002; during the past year the level of interconnection charges seems to have stabilised (they are around 5% less for the retail and single transit levels; 3% less for double transit). Price differences between countries are still significant, in particular at the double transit level, and even seem to have increased over the past three years.

Figure 17

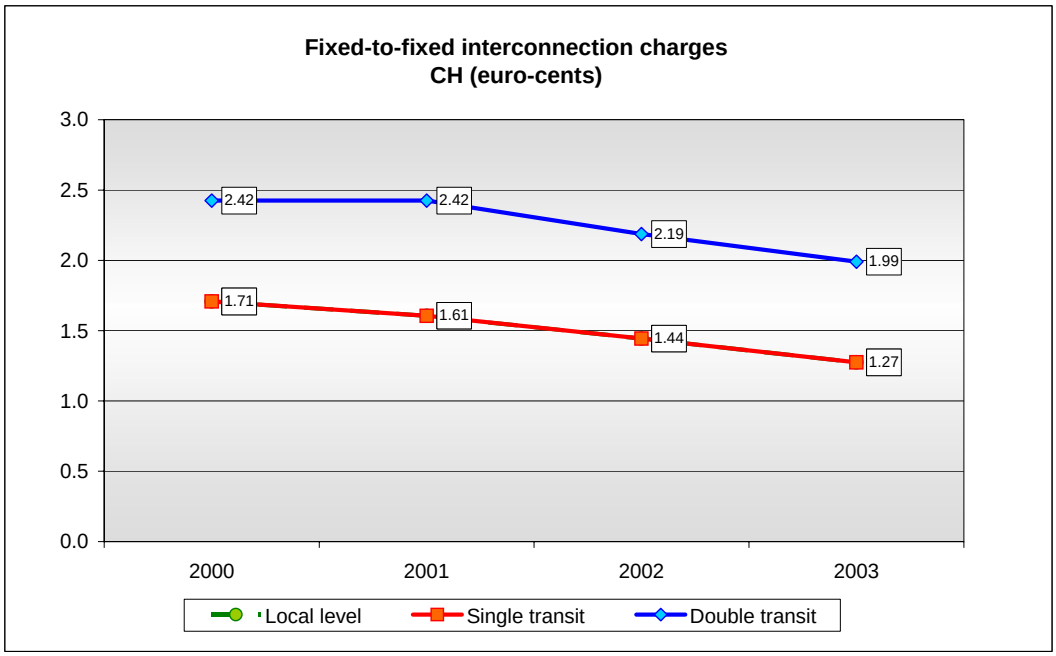


[21] *The figures shown are per minute charges based on the first three minutes of a call.*

[22] *The EU average is a weighted, rather than a simple average; this explains the difference with the data published in the previous reports. Furthermore, 2003 exchange rates have been applied to the years 2000-2002 for the non euro-zone countries.*

Figure 17a shows the same evolution, but for Switzerland. During the period in question, interconnection charges for double transit fell by 17.8%, i.e. slightly more than in the Union countries on average (16%). As far as single transit charges are concerned, these have fallen slightly more, with a reduction of 25.7% as against 32% for the Union. In 2003, the differences between the prices charged on average in the Union countries and the prices charged in Switzerland remained substantial. Thus the price of double transit is 19.9% higher in Switzerland and single transit is 32.3% higher. It should be mentioned once again that in Switzerland there are no local termination charges. This means that an operator wishing to terminate a call in a third-party network must pay a regional interconnection charge at least (cf. single transit).

Figure 17a



Source for Switzerland: Swisscom Price Manual up to and including Version 6.0.

The following three charts show the interconnection charges for local level, single and double transit as of 1 August 2003, in comparison to the values of August 2002. Charges for the Netherlands apply from 1 September 2003.

The most notable changes since last year have been the significant decreases in Luxembourg (-29% for local and single transit and -20% for double transit), in Denmark (-17% for local transit and -28% for double transit) and in Italy and Ireland, where there has been a decrease of 14% and 10% respectively at all levels of interconnection. **In Switzerland too, decreases have taken place: -9.1% for double transit and -11.8% for single transit**.

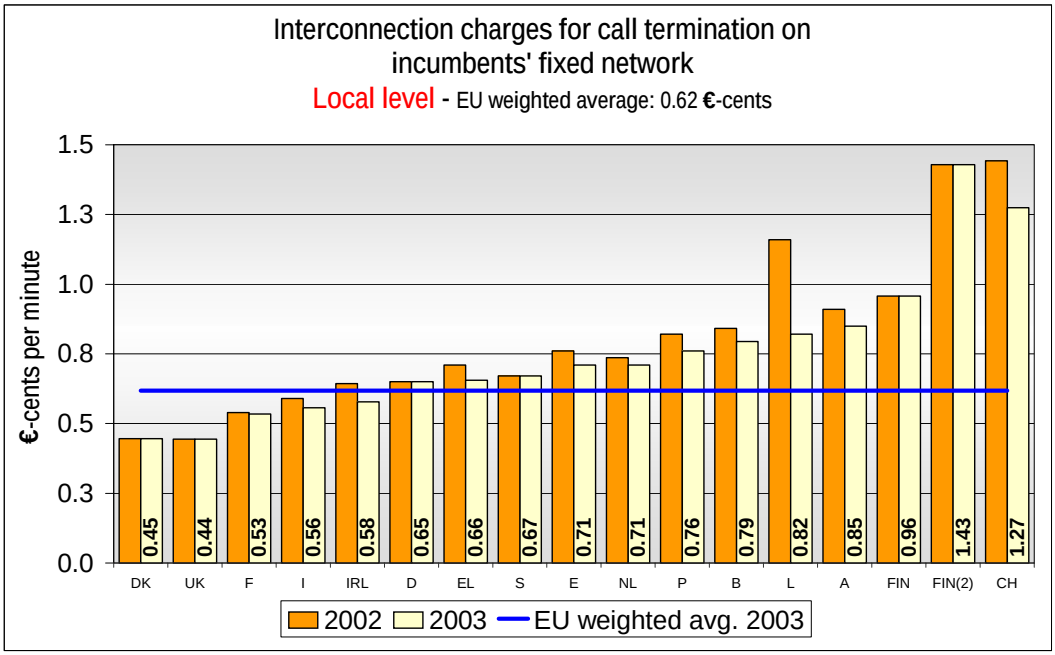
The interconnection charge for double transit has significantly increased in Greece (+35%), which brought it up to the second highest position.

In the case of France, in order to maintain consistency across Member States, the per minute charge indicated (based on the first 3 minutes) does not include the charge related to the cost of the 2 Mbit/s port which, however, according to ART, provides a better picture of the cost borne by the interconnecting party. By taking this additional charge into account, per minute average charges set by the NRA (peak/off-peak charge for a call of 200 seconds) would be 0.57 €-cent and 1.01 €-cent respectively at local and single transit interconnection levels.

In Finland there are about 50 SMP operators who apply different interconnection charges. The charts refer to charges applied by the two major operators, Sonera (FIN) and Elisa (FIN2).

When one examines Figure 18, it is apparent that the situation contrasts greatly. In fact, only five countries – Denmark, the United Kingdom, France, Italy and Ireland – have local interconnection charges lower than the weighted European average. Given that there are no local interconnection charges in Switzerland, they have had to be replaced by the minimum which an operator has to pay to terminate a call, i.e. the regional interconnection charges (cf. single transit). The absence of interconnection charges at local level explains, if only partially, the low ranking of Switzerland in the classification.

Figure 18

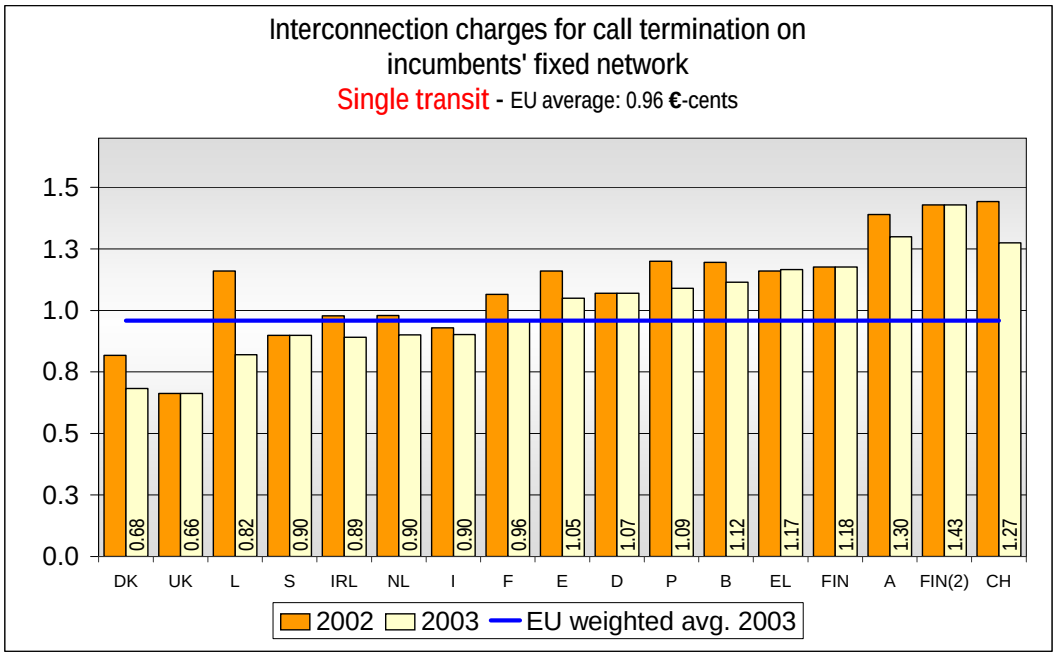


- *In Luxembourg there is no distinction between local and long-distance domestic calls.*
- *Figures for Denmark, Sweden and United Kingdom for 2002 have been recalculated using 2003 exchange rate.*

Source for Switzerland: Swisscom Price Manual up to and including Version 6.0.
Note: Local and single transit charges are considered as equivalent.

Figure 19 shows the 2003 interconnection charges for single transit and illustrates the variation which occurred between 2002 and 2003. As a result of the recorded decrease, Switzerland has improved its relative position somewhat. From being the most expensive country in 2002, it moved down to third place in 2003, after Finland (operator Elisa) and Austria. At the other end of the scale, Denmark and the United Kingdom have the cheapest charges, which are well below the weighted European average.

Figure 19

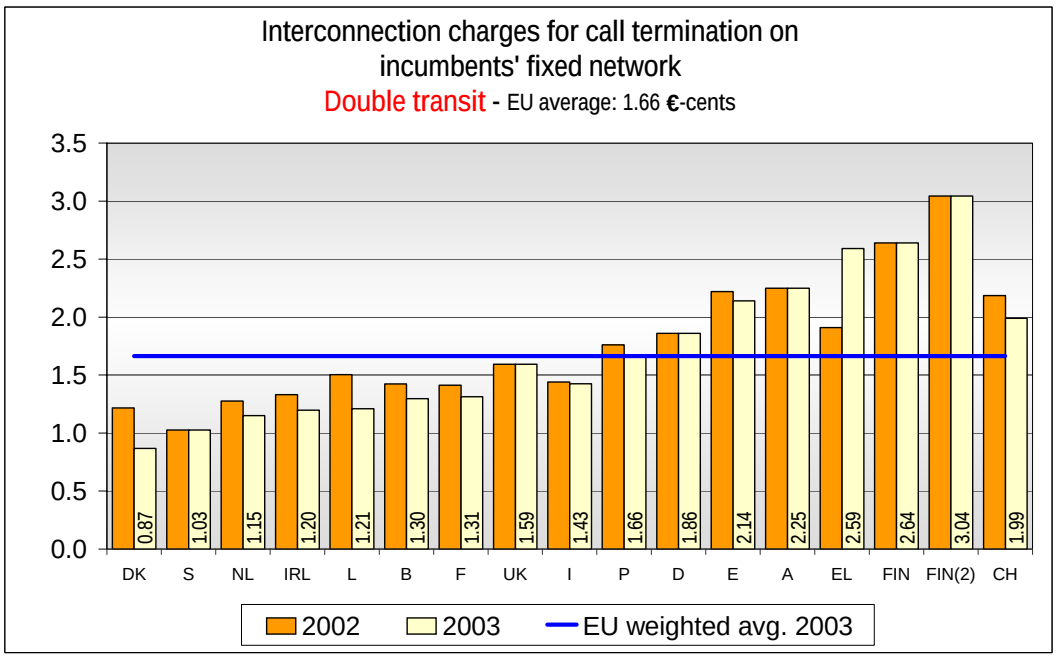


- *Interconnection charges for Spain refer to a standard single transit, but a different charge is applied in Barcelona and Madrid (0,95 €-cent).*
- *Figures for Denmark, Sweden and United Kingdom for 2002 have been recalculated using the 2003 exchange rates.*

Source for Switzerland: Swisscom Price Manual up to and including Version 6.0.

Figure 20 shows that the double transit charge in Switzerland (1.99 €-cents) was above the weighted European average in 2003 (+19.9%). Despite this, there are countries where the prices charged are higher. Specifically, in decreasing price order, these are Spain, Austria, Greece and finally Finland. Denmark is at the other end of the scale and is the only country in which the price drops below the 1 €-cent mark.

Figure 20



- The figures for Finland consist of two charges: one paid to the local operator and one paid to the long-distance operator.
- Figures for Denmark, Sweden and United Kingdom for 2002 have been recalculated using 2003 exchange rate.
- Data for the United Kingdom refer to a connection of more than 200km. For lengths of less than 100km the interconnection charge at double transit is 1.013 €-cents; and for 100-200km it is 1.26 €-cents.

Source for Switzerland: Swisscom Price Manual up to and including Version 6.0.

3.2. FIXED-TO-MOBILE INTERCONNECTION CHARGES

This section shows the per-minute interconnection charges for fixed call termination on the networks of mobile operators.

In the following charts information is shown for 50 mobile operators in the EU (representing almost 100% of the EU mobile market). A total of 16 operators in the EU have been designated as having significant market power (SMP[23]) in nine national markets for interconnection: Belgium, Denmark, Greece, Spain, France, Ireland, Italy, Finland and Sweden. SMP operators cover 45% of the EU mobile market (in terms of subscribers).

26 operators have been designated as SMP on the national mobile market (SMP-mobile) in 13 Member States: the 9 countries with SMP operators in the interconnection market plus Luxembourg, Netherlands, Portugal and the United Kingdom. In Germany and Austria there are no operators designated as SMP or as SMP-mobile either.

Charges are for calls originating in the same countries, except for Finland, where charges for mobile termination of international fixed calls are considered.

The per-minute interconnection charges are based on the first three minutes of a call at peak rate, except for the Netherlands, Finland and Sweden where the average peak/off-peak rate set by the NRA has been shown.

Except for Germany, the figures have been collected by the NRA, and give the situation in August 2003. Data for Germany are not publicly disclosed by the NRA and the figure shown in the chart was provided by Cullen International.

The following chart **(Figure 21)** *shows the evolution of the weighted average fixed-to-mobile interconnection charges for SMP and non SMP mobile operators, since August 2001[24].* **We should note that such a chart has not been produced for Switzerland. Indeed, neither the Communications Commission nor the Competition Commission has to date pronounced on any dominance as part of a procedure whatsoever. Consequently, there is no foundation on which to base any distinction between SMP and non-SMP mobile operators.**

The difference in charges between the two classes of operators has arisen mostly during the past year as a result of regulatory intervention by NRAs to bring about cost orientated charges for SMP operators. Since August 2002, the average interconnection charge for SMP operators has decreased by 15.3%, while for non-SMP operators they have remained more or less stable.

The difference between the level of the charges for SMP and non-SMP operators can be explained by the increased number of SMP operators (which now account for 45% of EU subscribers

[23] *In the following document, SMP operators means operators designated as having significant market power in the national markets for interconnection, while SMP-mobile operators means operators designated as SMP on the national mobile market.*

[24] *Figures are not comparable with previous reports, due to the use of weighted averages instead of simple averages; furthermore, the 2003 exchange rates have been applied to the previos years 2000-2002 for the non euro-zone countries. Figures for 2001 for non-SMP operators are not available: the EU weighted average for non-SMP operators representing 36% of the subscribers of total non-SMP operators' subscribers was 20.9 €-cents.*

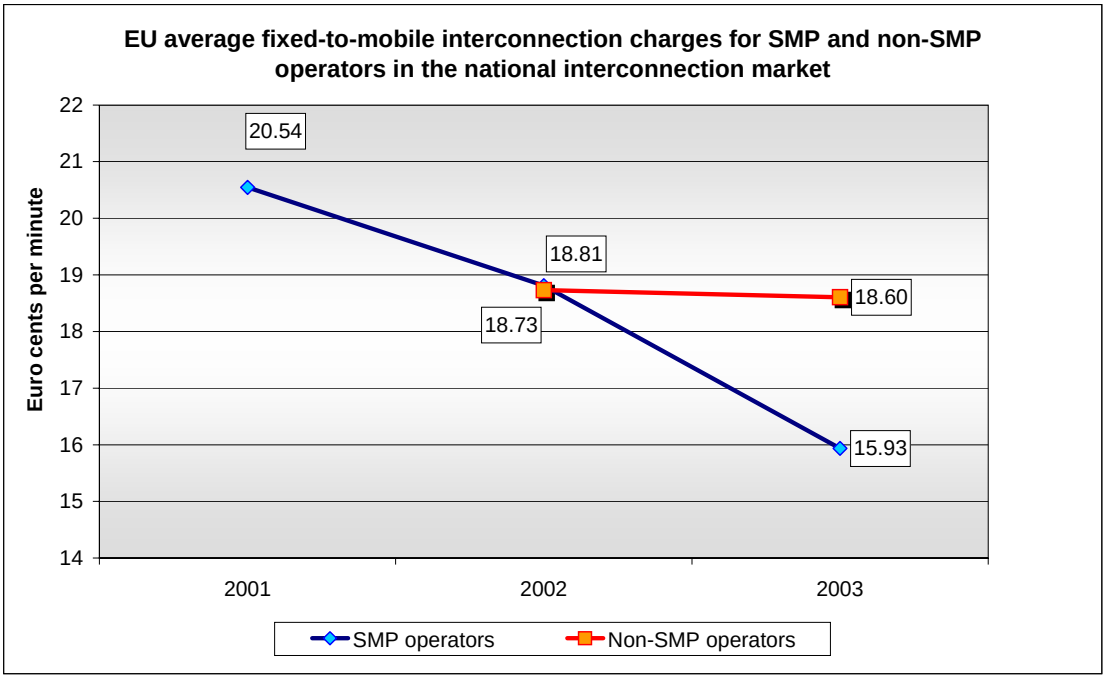
compared to 41% in 2002), but mostly by the cost orientation requirement for interconnection charges on SMP operators.

It should be noted that even for non-SMP operators in the national interconnection market, interconnection charges are sometimes set by the NRAs, for example as a result of intervention on the basis of a competition enquiry or to set price ceilings to avoid excessive of tariffs. Furthermore, in some countries NRAs intervene in setting the charges for non-SMP operators in order, for example, to resolve a dispute between market players.

It should be noted that notwithstanding the decrease, the level of fixed-to-mobile interconnection charges remains on average more than 9 times higher than that of fixed-to-fixed interconnection charges (double transit).

The EU weighted average of fixed-to-mobile interconnection charges for 50 European operators is 17.45 €-cents.

Figure 21



The following charts show the fixed-to-mobile interconnection charges for 50 mobile operators in the EU, the national weighted average[25] for SMP and non-SMP operators and the trend since August 2002.

With the exception of all operators in France and Portugal, one operator in Spain and two in Greece, mobile termination charges do not vary according the type of network in which the call is originated (fixed or mobile). In France, mobile-to-mobile interconnection charges are based on the "bill and keep" principle, so mobile operators do not define termination charges.

Data for Finland indicate the interconnection charges for an international fixed call to a mobile network (interconnection charges also apply to mobile-to-mobile calls). No mobile wholesale termination charges exist for calls originating on a national fixed network; instead, so-called "end-user" charges are levied. The originating fixed operator charges a customer a fixed network retail charge and a mobile network retail charge (to be forward to the mobile operator). Both fixed and

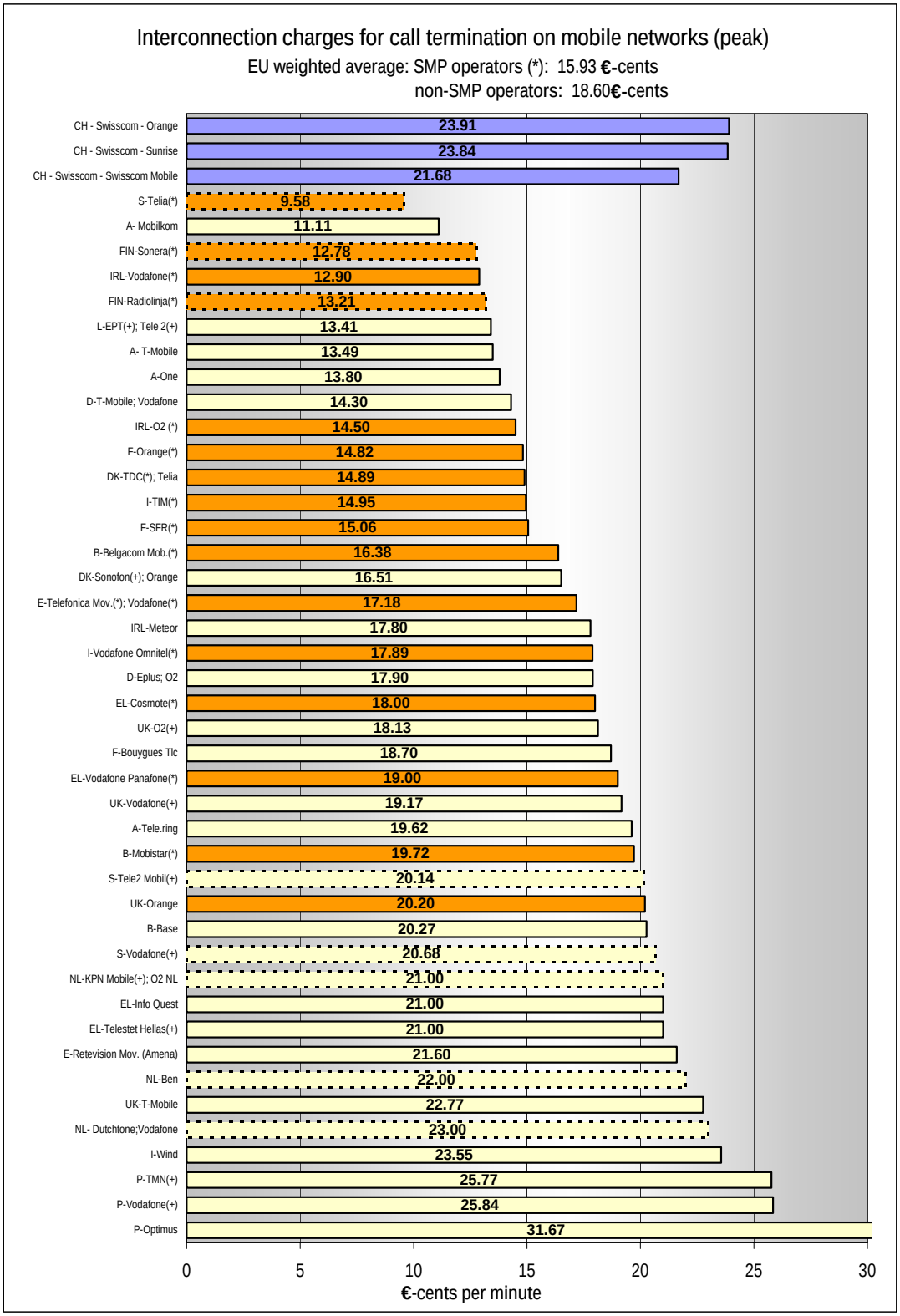
[25] *Average of the interconnection charges for the different national operators weighted on the basis of their subscribers.*

mobile operators determine the charges for their own segments. An example of a fixed-to-mobile retail call charge (at peak rate including VAT) is 27 €-cents for Sonera and 26 €-cents for Radiolinja.

The main decreases in the charges since August 2002 have been achieved in Italy (-25% for one SMP operator), in France and Spain (around -18% for both SMP operators), in Ireland -13% for the SMP operator Vodafone), in Belgium (-14% for one SMP operator) and in Greece, where charges have decreased on average by 9% for the four non-SMP operators, after intervention by the NRA. On the other hand, fixed-to-mobile interconnection charges have increased by 10% for one operator (SMP on the national mobile market) in the Netherlands.

The figures for Portugal published in the 8th report are not comparable with the 2003 figure; moreover, the NRA has estimated an average decrease of 8% since last year.

Figure 22

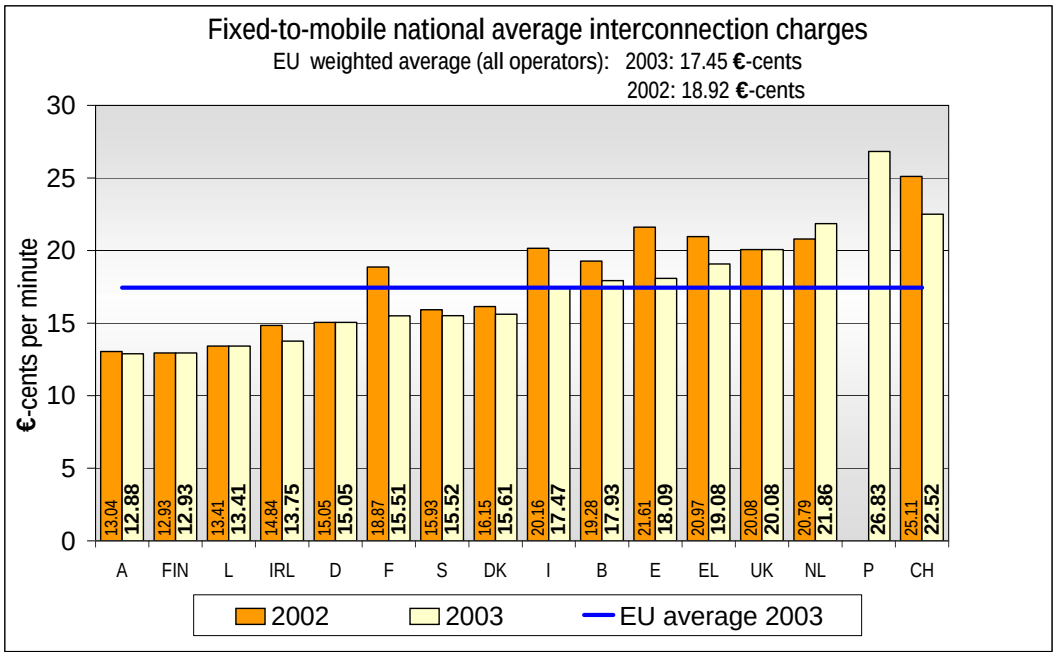


- *The figures for Netherlands, Finland and Sweden are not strictly comparable with the others since they represent an average peak/off-peak rate.*

Legend:
(*) SMP operators in the national interconnection market
(+) SMP operators in the national mobile market

Source for Switzerland: Swisscom Price Manual up to and including Version 6.0.

Figure 23

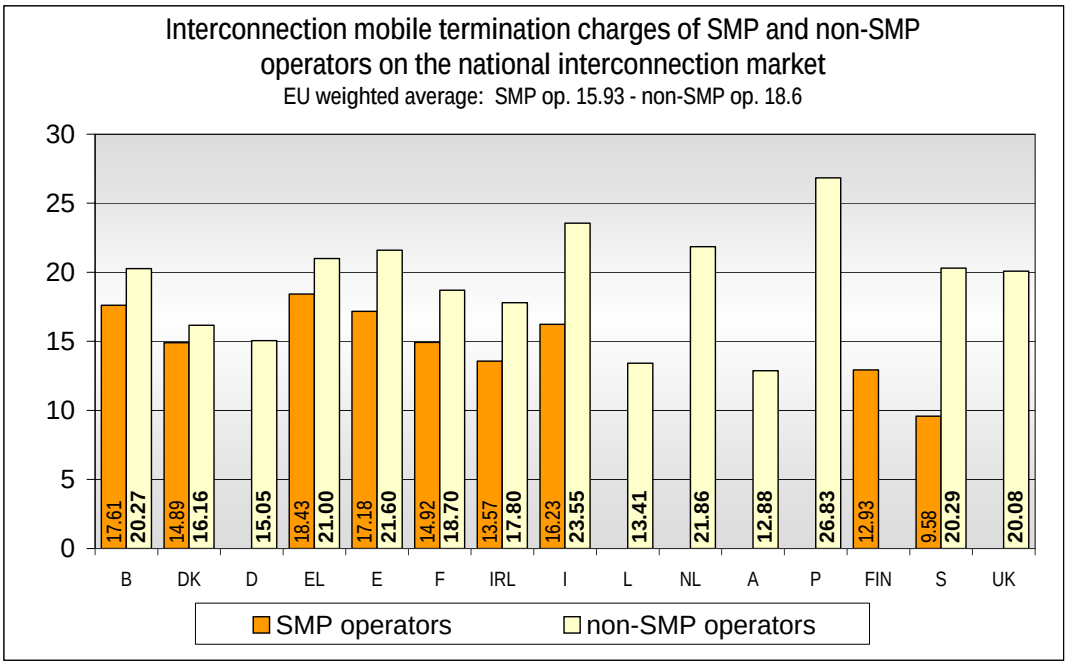


- Figures for Denmark, Sweden and United Kingdom for 2002 have been recalculated using the 2003 exchange rates.

Source for Switzerland: Swisscom Price Manual up to and including Version 6.0.
Note: The price has been weighted using the respective market shares of the three mobile telephony operators (Swisscom, Sunrise, Orange) at the end of the first half of the years 2002 and 2003.

When one examines the interconnection charges from the fixed network to the mobile network (Figure 23), it must be stated that the mobile telephony operators active in the Swiss market demand prices which are among the highest, despite a significant reduction between 2002 and 2003 (-10.3%). With a weighted interconnection charge of 22.52 €-cents, Switzerland is above the weighted European average by 29.1%. In the international comparison, Portugal is the only country in which charges are higher. Eight out of sixteen countries are below the European average; the cheapest prices are charged in Austria and Finland (less than 13 €-cents).

Figure 24



3.3. *LEASED LINES INTERCONNECTION CHARGES*

This section shows the monthly rental and the one-off charges for short-distance leased lines (local ends, excluding VAT) up to 2 and 5 km provided by the incumbent operator to other interconnected operators. An estimate of the total average monthly rental cost (based on the total cost for two years) is also presented. Deviations for the monthly rental from the "recommended price ceiling" set in Commission Recommendation 1999/3863 of 24 November 1999 are also shown. The recommended price ceilings[26] are:

- *€ 80/month for a 64 Kbit/s leased line part circuit up to 5 km*
- *€ 350/month for a 2 Mbit/s leased line part circuit up to 5 km;*
- *€ 1800/month for a 34 Mbit/s leased line part circuit up to 2 km;*
- *€ 2600/month for a 34 Mbit/s leased line part circuit up to 5 km.*

National Regulatory Authorities have provided these figures through the questionnaire for the 9th Implementation Report and the replies to the ONP COM02-18 Document. Figures indicate the position in August 2003.

New prices with effect from September 2003 have been published in the Netherlands.

In Finland the charges by SMP operators differ. Leased lines prices are averages based on the charges of Sonera, Elisa and Finnet.

There is no 34 Mbit/s price offer in France. For the calculation of the EU 15 monthly rental average price, the 2002 price in France has been used in order to maintain consistency with previous years and plot the EU 15 average deviation from the price ceiling.

[26] *Although the ceiling is not used anymore, it has been a very helpful tool to benchmark progress towards the reduction of leased lines wholesale interconnection prices. It is therefore used in this report in order to present progress.*

Note that in Switzerland, Swisscom negotiates prices on a case-by-case basis with its clients. In the absence of official data, it is therefore not possible to include Switzerland in Figures 25 to 34.

64 Kbit/s part circuit

Figure 25

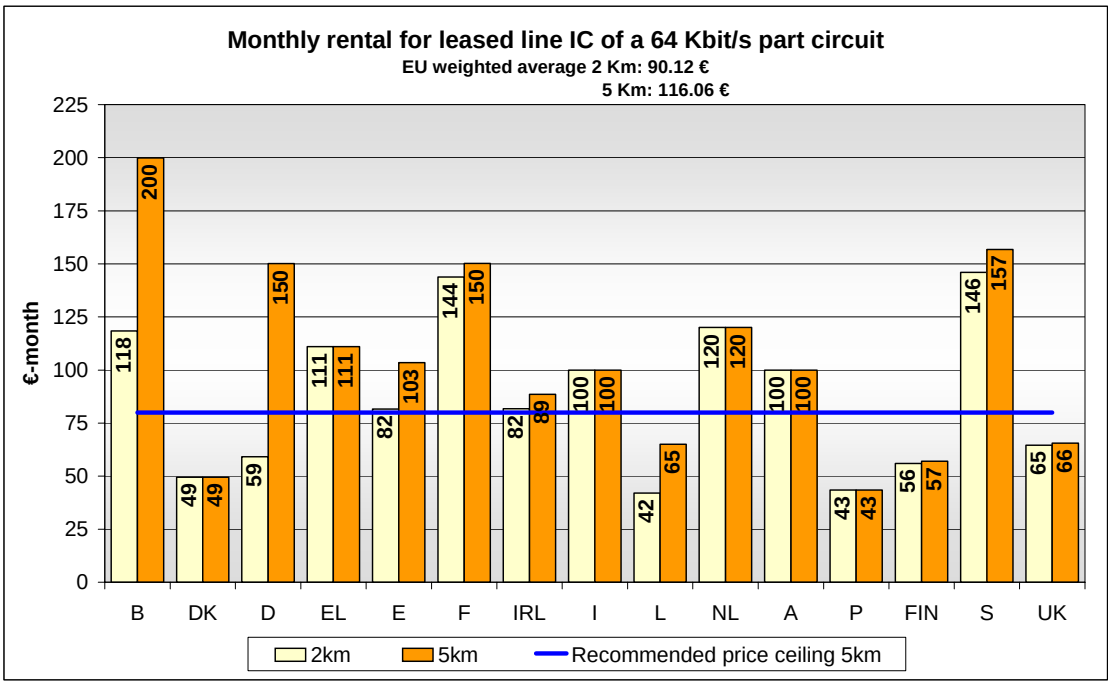


Figure 26

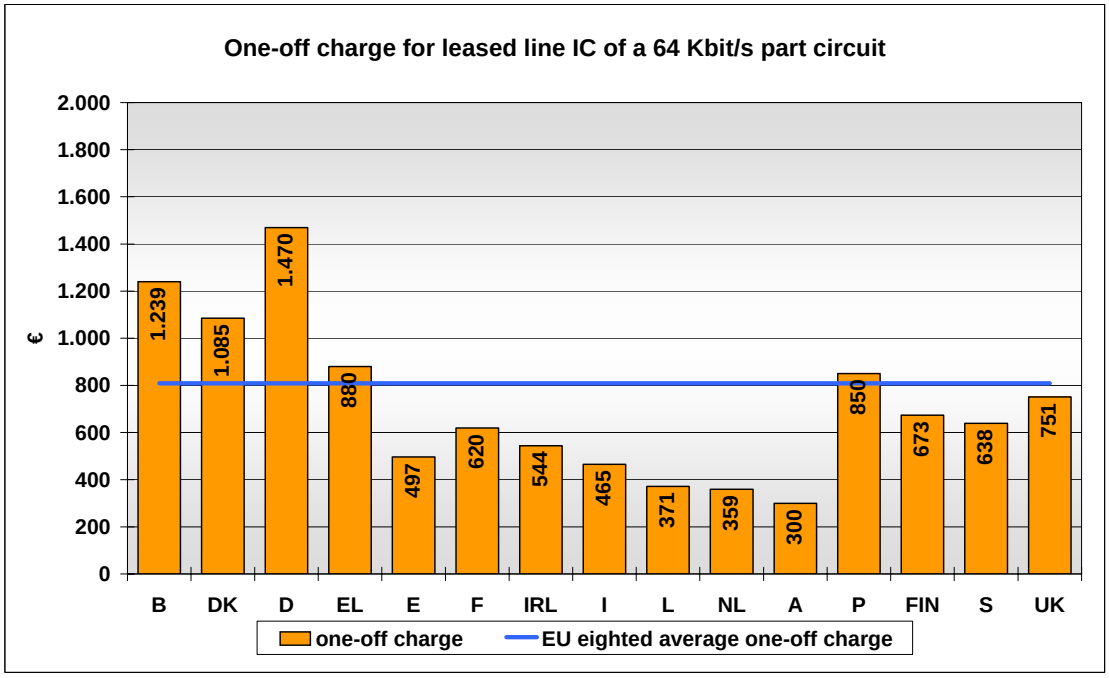
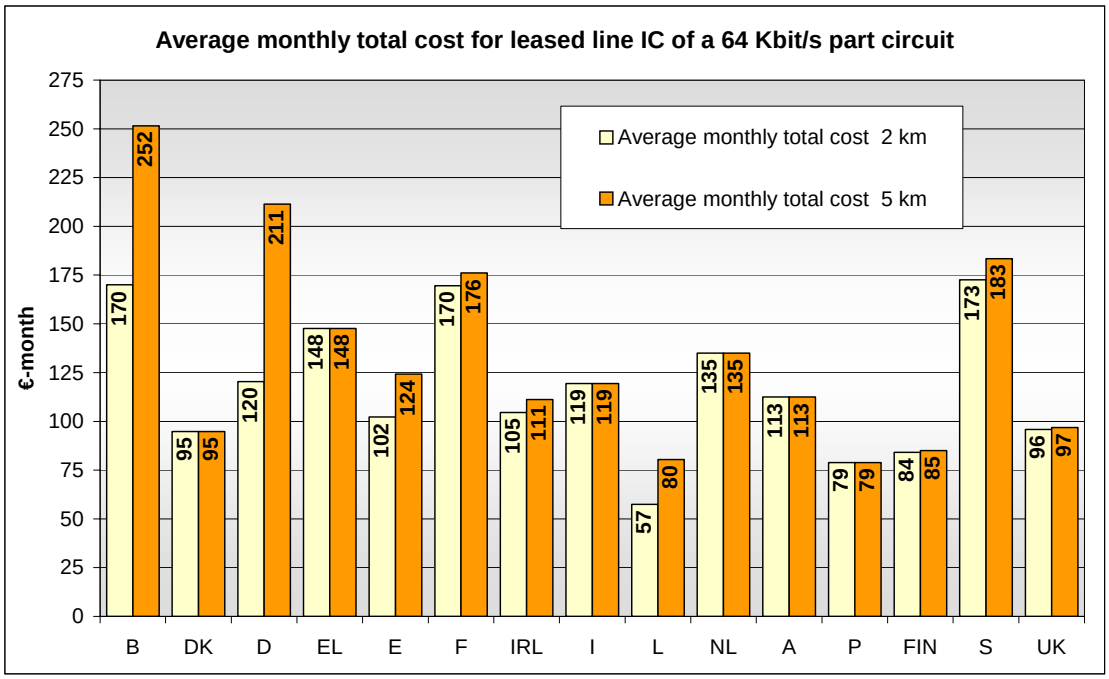


Figure 27



2 Mbit/s part circuit

Figure 28

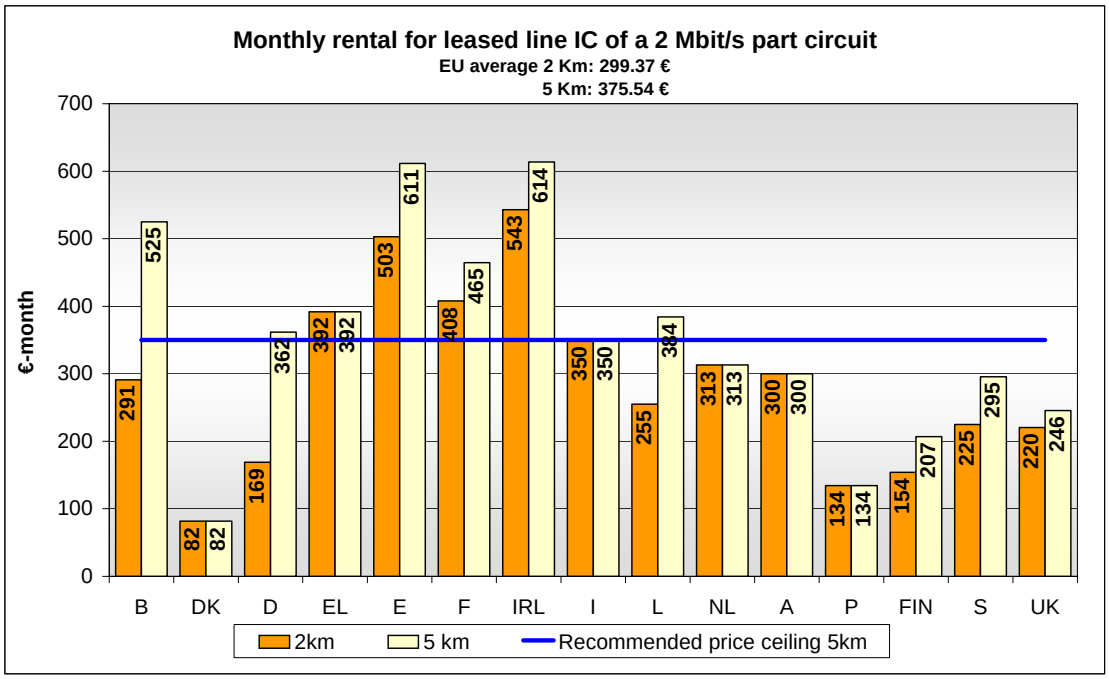


Figure 29

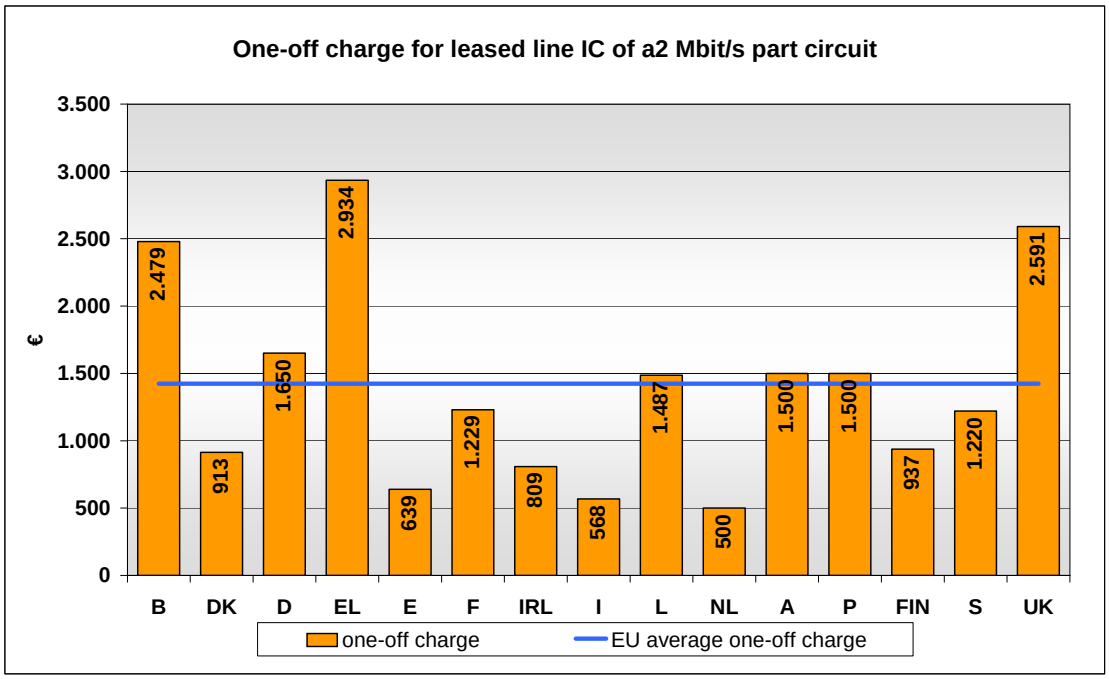
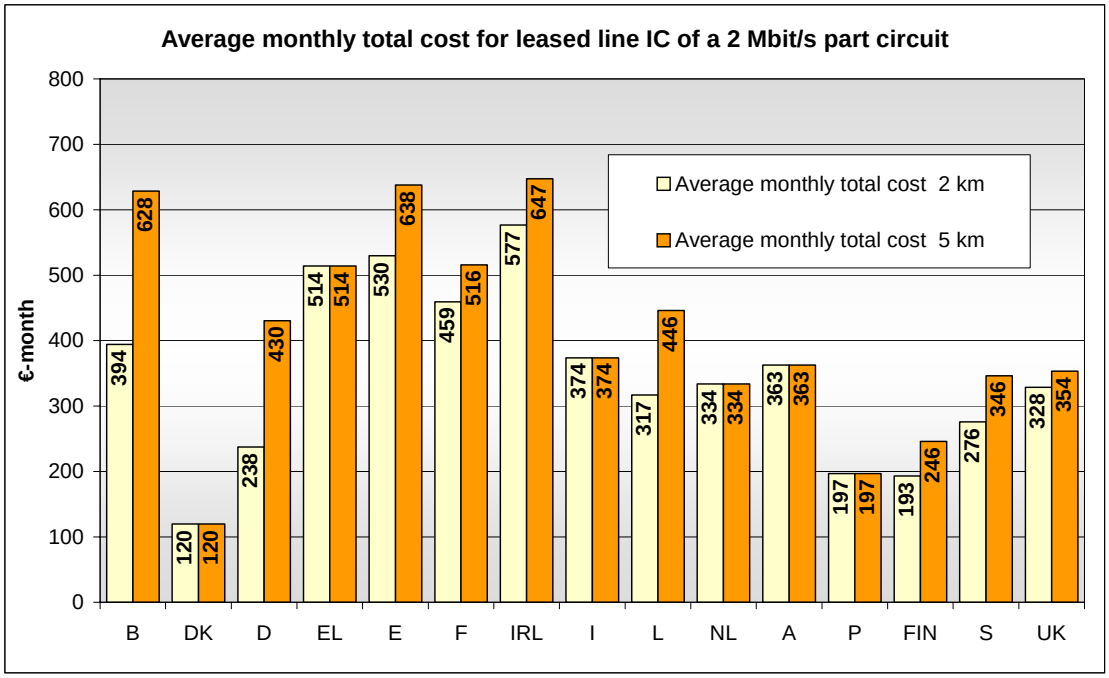
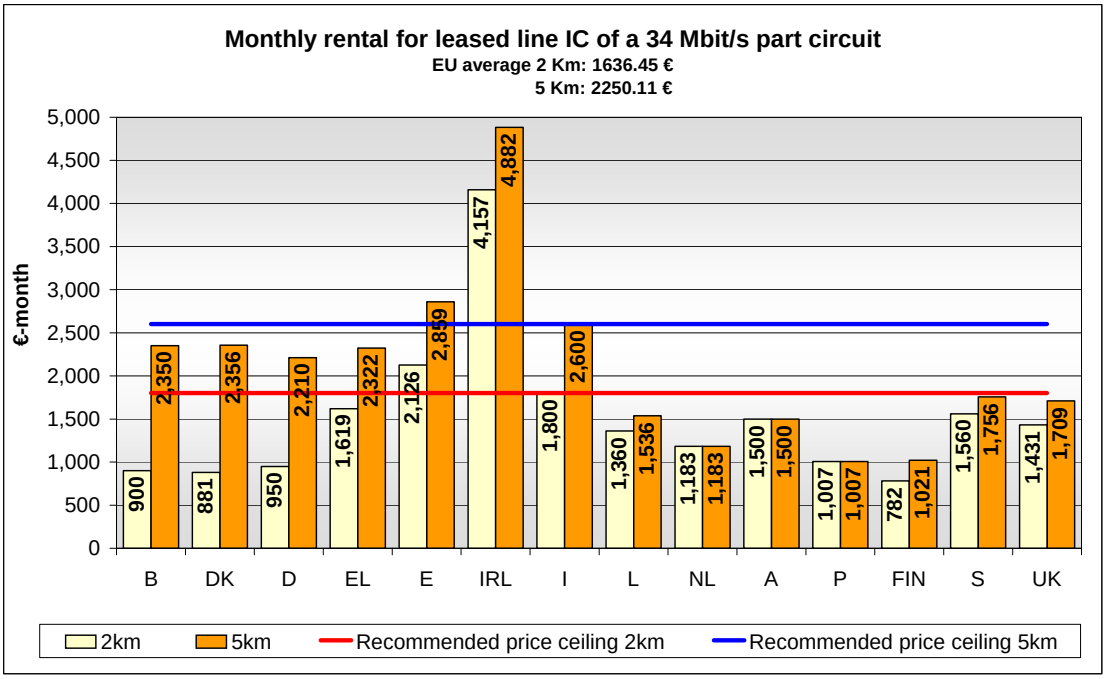


Figure 30



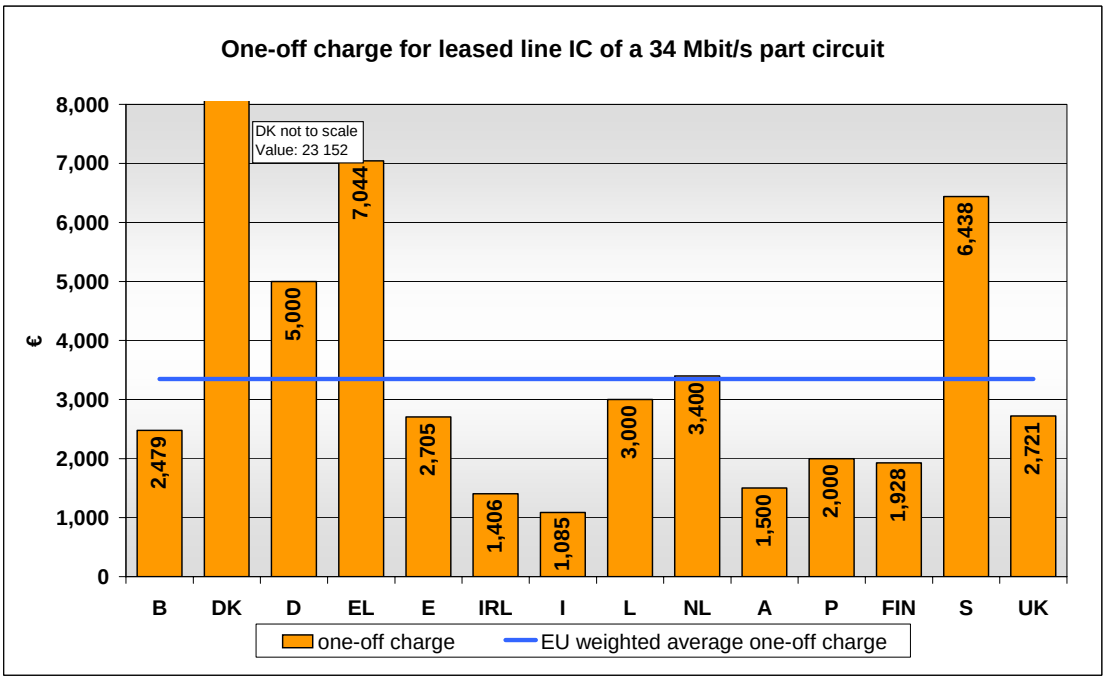
34 Mbit/s part circuit

Figure 31



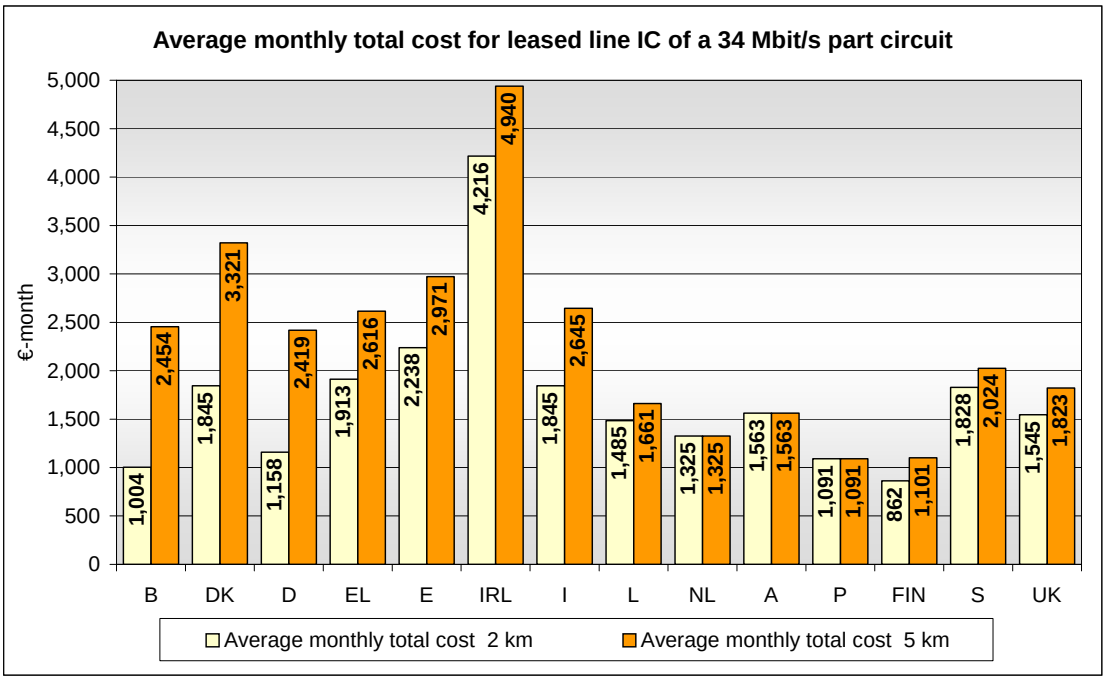
- There is no 34 Mbit/s price offer in France
- Price in the Netherlands is an average of 2 times 34 Mbit/s in a 155 Mbit/s fibre access service and a 155 Mbit/s broadband access group.

Figure 32



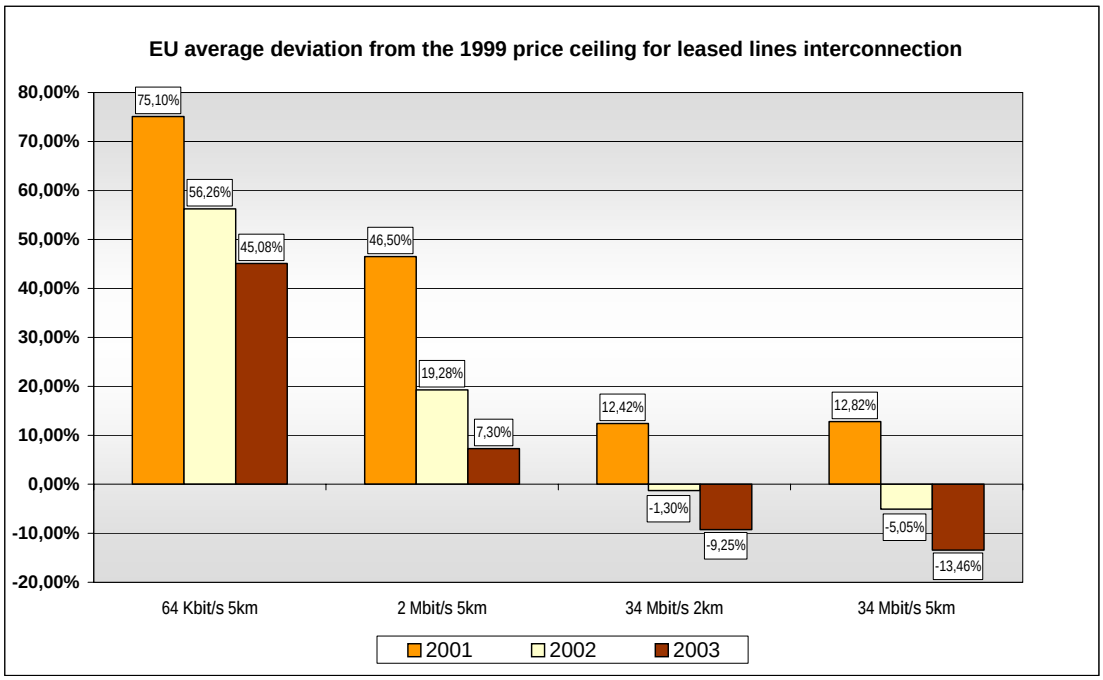
- There is no 34 Mbit/s price offer in France

Figure 33



- There is no 34 Mbit/s price offer in France
- Price in the Netherlands is an average of 2 times 34 Mbit/s in a 155 Mbit/s fibre access service and a 155 Mbit/s broadband access group.

Figure 34



4 *MOBILE MARKET*

4.1. *MOBILE PENETRATION*

The following charts show the number of mobile subscribers and the penetration rate in 2003 for second generation mobile services (DCS-GSM) in each Member State. The growth in the penetration rate since August 2002 is also shown.

Subscriber figures are taken from FT Mobile Communications (August 2003). The NRAs have had the opportunity to revise these data and, where necessary, have made corrections. In some cases the figures for August 2003 are estimates, since operators have not provided official figures. Data include both post-paid card and pre-paid subscribers and show the situation as at August 2003 with the following exceptions:

For Denmark, Greece, Portugal, Sweden and the United Kingdom the reference date is 1st July 2003. **For Switzerland too, the situation is that prevailing on 1 July 2003.**

For Spain the reference date is 1st June.

Data for Finland and Italy (estimated data) refer to the end of September.

EU average is a weighted average.

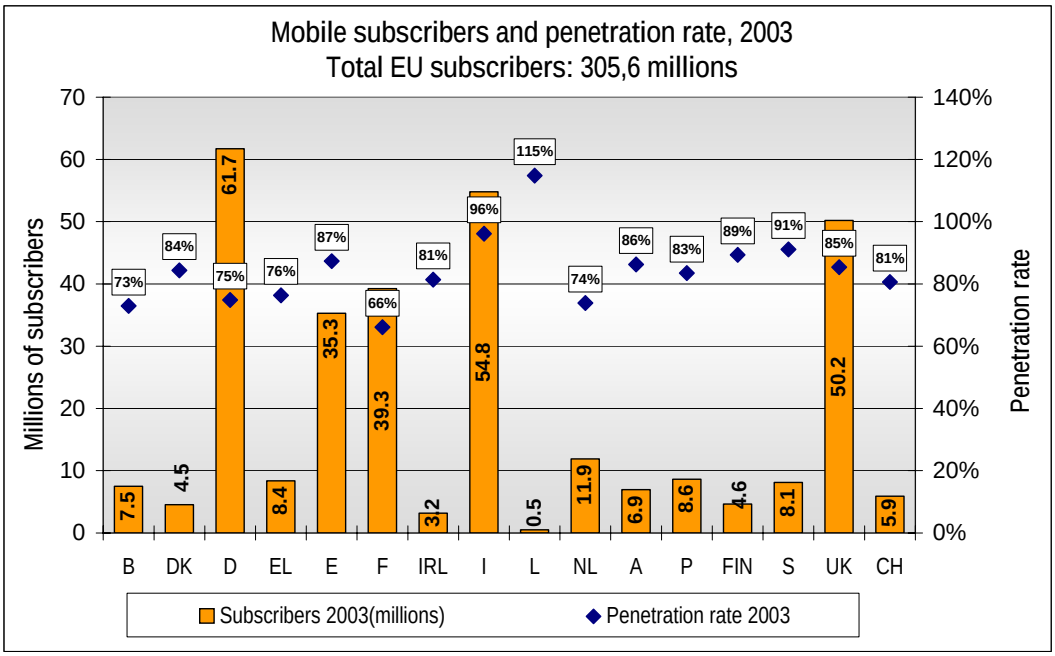
Figure 35 shows the absolute number of mobile subscribers in each Member State **and in Switzerland** *(columns) and the penetration rate (dots), measured as the number of subscribers per 100 population.*

Figures for Italy, Spain and Sweden include analogue subscribers.

In 2003, the mobile telephony penetration rate in Switzerland, at 81%, was equivalent to the weighted average for the European Union countries. More specifically, Switzerland was in equal tenth position with Ireland. Three countries reported penetration rates above 90%: Sweden (91%), Italy (96%) and Luxembourg (115%). France, with a rate of 66%, is the only country which has not exceeded 70%. Measured in terms of consumers, the largest markets are in Germany, Italy and the United Kingdom. Together, the users in these three countries make up 54.5% of the subscribers counted in the member countries of the Union. Switzerland, with its 5.9 million users, naturally belongs to the group of countries characterised by a low volume of users in absolute terms.

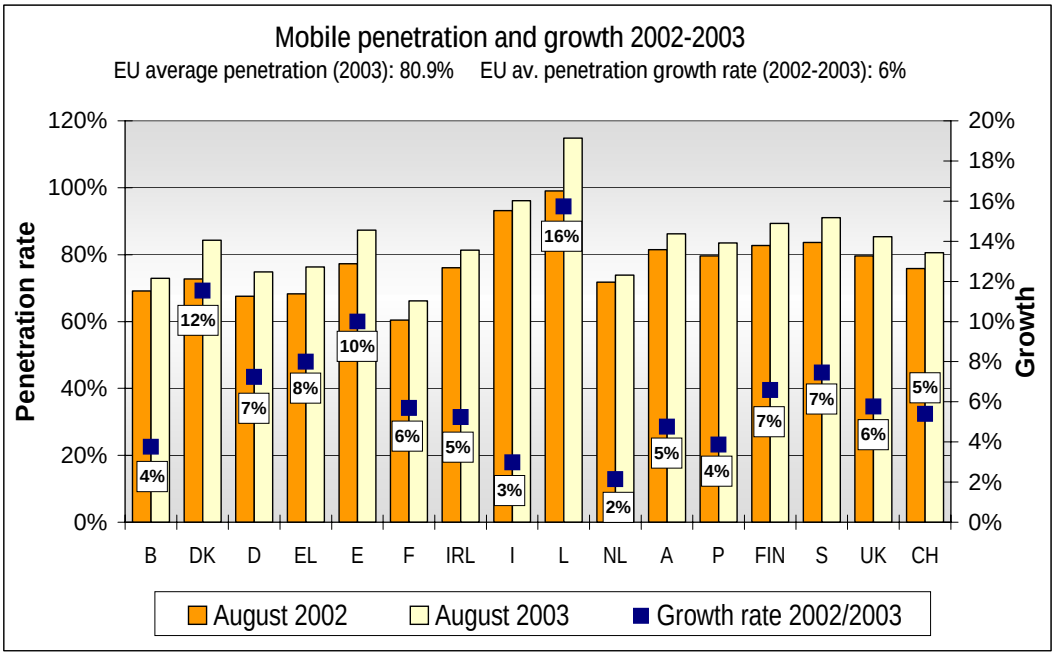
Figure 36 shows the mobile telephony penetration rate in 2002 and 2003 along with the observed rate of growth between these two years. In this regard, it is apparent that although the penetration rate for Switzerland is equivalent to the weighted European average, the rate of growth is somewhat lower, at 5% compared with 6% in Europe. If this trend were to continue, Switzerland would therefore be at risk of falling below the average in 2004. Note the special case of Luxembourg, which not only has the highest penetration rate, but also enjoys the highest growth rate, 10 points above the average.

Figure 35



Source for Switzerland: OFCOM Switzerland.

Figure 36



Source for Switzerland: OFCOM Switzerland.

The next two figures show the evolution of the mobile telephony penetration rate in the Union countries (Figure 37) and Switzerland (Figure 37a). As can be seen, the progression of the curve for Switzerland matches almost perfectly the average progression of neighbouring countries. The most marked difference, +2.8% in Switzerland's favour – still minimal – was related to the year 2002.

Figure 37

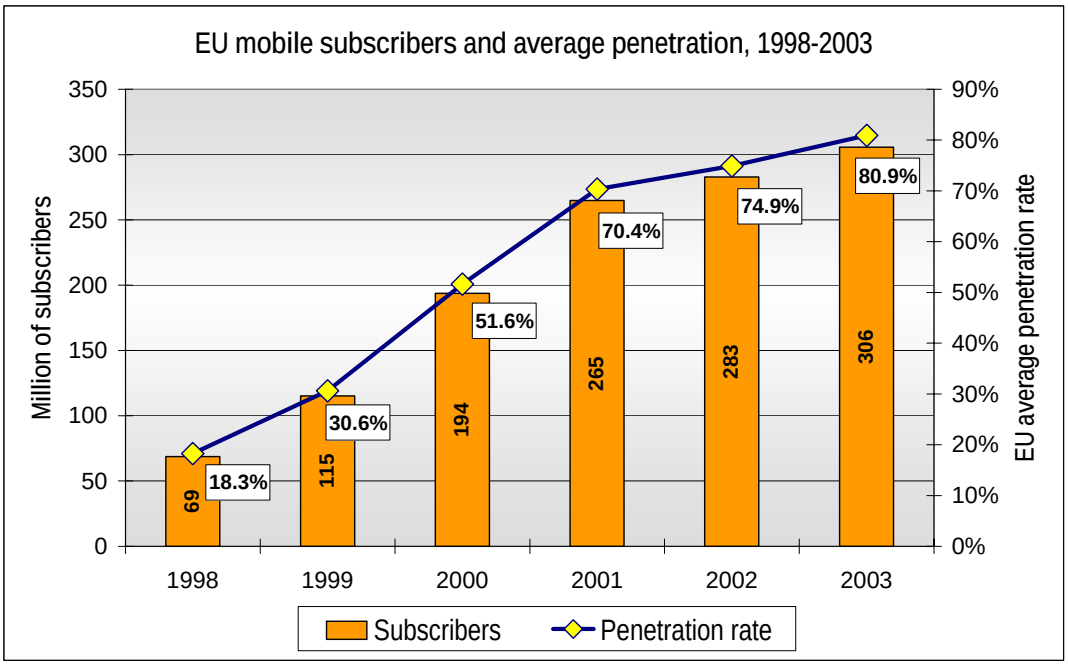
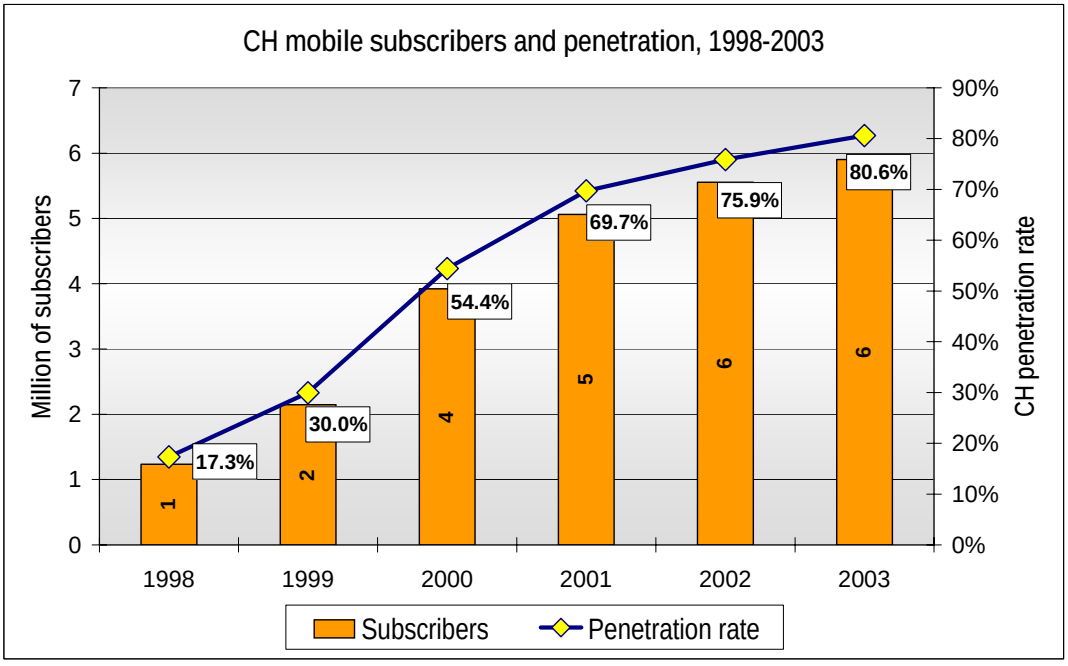


Figure 37a



Source for Switzerland: OFCOM Switzerland.

Figures 38 and 38a display the growth rate observed annually from 1998 to date. Following developments in Europe, the increase in the mobile penetration rate in Switzerland was strong primarily in the first three years (rate varying between 13 and 24%). Since 2001, development has slowed down markedly, indicating that a degree of saturation of the market is approaching. Nonetheless, if one recalls Luxembourg's exceptional penetration rate, there is still some potential for growth in Switzerland.

Figure 38

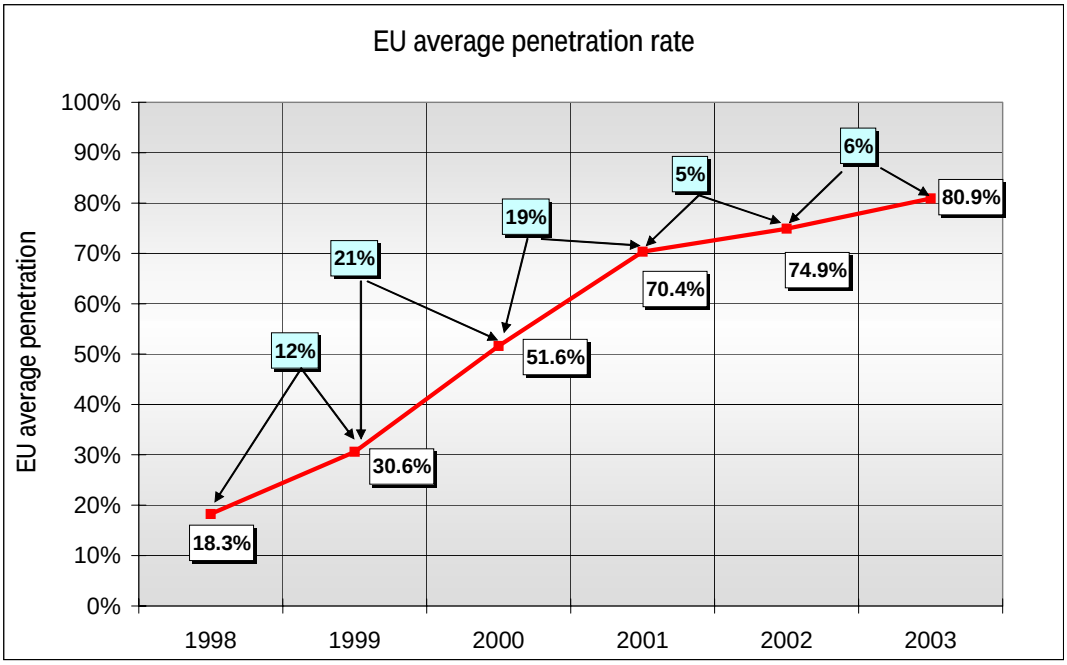
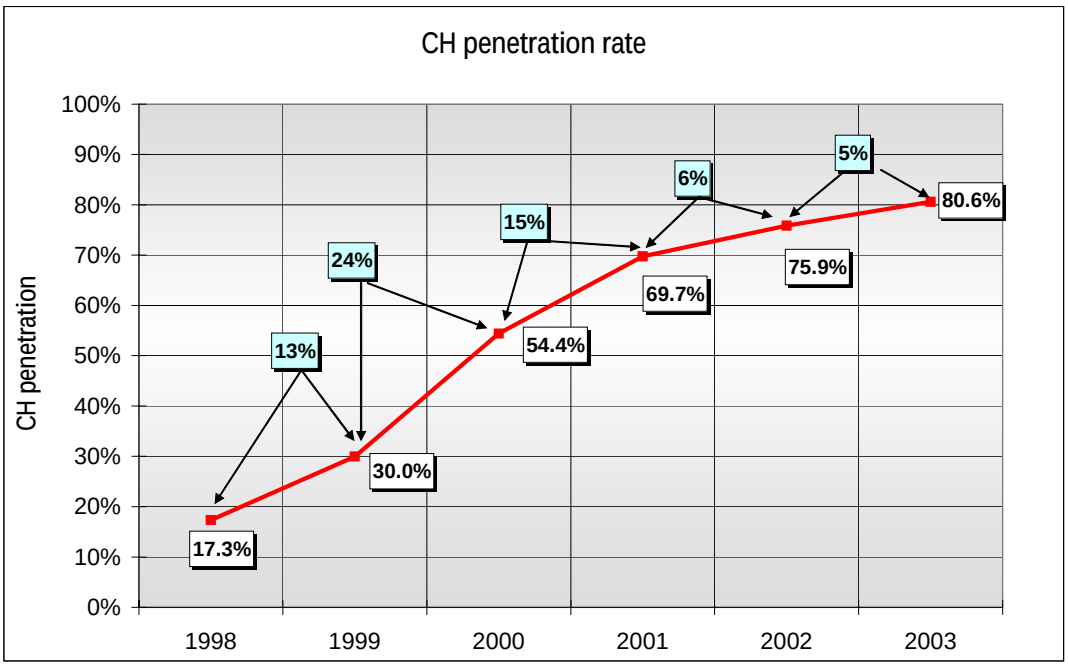


Figure 38a



Source for Switzerland: OFCOM Switzerland.

4.2. *PLAYERS IN THE MOBILE MARKET*

This section shows the number of mobile licences granted in each Member State for the provision of analogue, GSM 900, DCS 1800 and UMTS services.

The data on the number of licensed operators have been provided by the national regulatory authorities and indicate the position in August 2003.

The following chart **(Figure 39)** *shows the number of operators licensed to provide digital mobile services (second-generation) rather than the number of licences issued in each country. The number of operators indicates the real magnitude of the choice of operators for customers of digital mobile services, since very often operators have licences for both GSM 900 and DCS 1800. Mobile network operators have been identified as having only GSM 900 or only DCS 1800 frequencies, or both (in which case they have usually been granted a GSM 900 licence which has subsequently been extended to the DCS 1800 band).*

Information on mobile service providers[27] *has been included where available (without distinction between local and national coverage).*

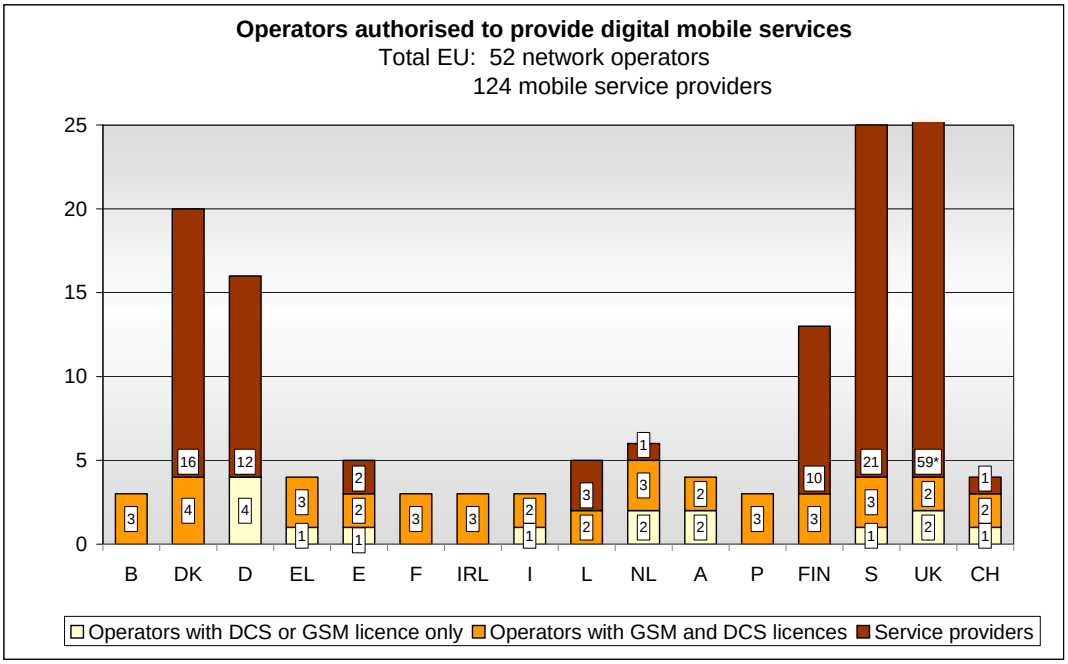
There are 3 analogue licences for mobile services still active in EU: in Spain, in Italy and in Sweden. Their phase-out is scheduled for the 1st January 2007 for Sweden and Spain and for the end of 2005 for Italy.

In Switzerland, four providers are present in this market. On one side are Swisscom Mobile, Sunrise and Orange, which all operate a network, and on the other, Tele2 which is active solely as a telecommunication services provider. It is also worth mentioning that in December 2003 the Communications Commission (ComCom) granted two additional licences in the 1800 MHz frequency range to the companies In&Phone and Tele2.

In all the countries considered, the number of operators with frequencies available and operating a network varies between two (Luxembourg) and five (the Netherlands).

[27] *Mobile service providers are defined as entities authorised to offer mobile service under their own brand name (dealing with marketing, billing, etc.), using a third party's mobile network.*

Figure 39



** Values not to scale.*

- Figures for Finland do not include 1 local GSM operator belonging to the Finnet Group (Alands).
- The figure for France does not include 2 analogue, 6 GSM and DCS local licences granted to the subsidiaries of the licensed mobile operators for the overseas departments[28].

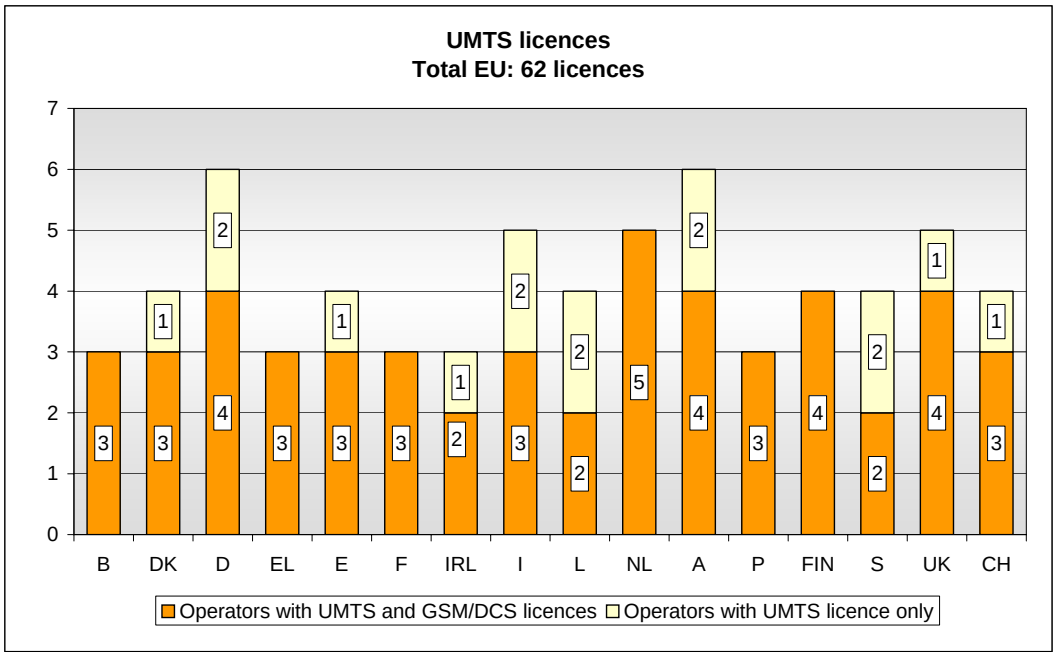
Source for Switzerland: OFCOM Switzerland.

The following chart shows the number of UMTS licences granted in Europe. The great majority of licences have been granted to players active in the second generation market, and 14 licences have been granted to new entrants.

In December 2000, the Communications Commission awarded four UMTS licences to Swisscom Mobile, Orange, TDC Suisse (cf. Sunrise) and, finally, 3G Mobile, which is a new entrant. On the chosen date (August 2003), none of these licensees was offering UMTS services to Swiss consumers. In all the countries under consideration, the number of licences awarded varies between three (Belgium, Greece, France, Ireland and Portugal) and six (Germany).

[28] *Département of Réunion, French Antilles , Guyana; Île de Saint Martin and Saint Barthélémy)*

Figure 40



The figure for Finland does not include a local service provider.

Source for Switzerland: OFCOM Switzerland.

4.3. *OPERATORS' MARKET SHARES*

The following charts show the market shares, in terms of subscribers, of the leading operator and of the main competitors in the second generation mobile market.

Operators' market shares have been calculated on the overall mobile market (including analogue, DCS 1800 and GSM 900 subscribers). There are analogue subscribers in Spain, Italy and Sweden.

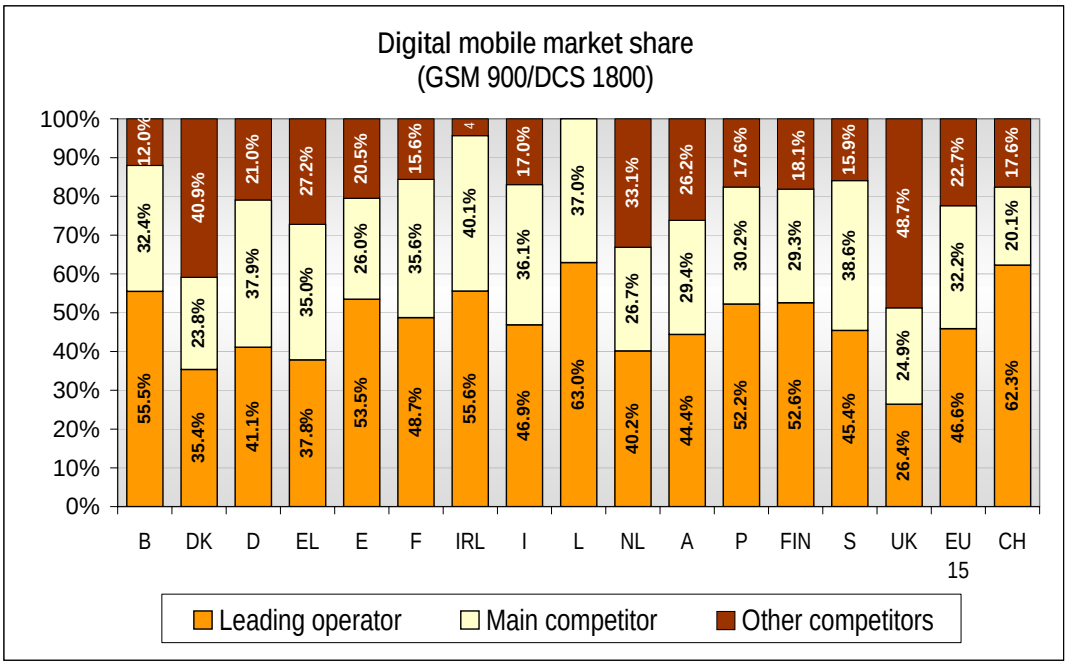
Data concerning shares of the mobile market are based on estimates on the number of mobile subscribers, taken from FT Mobile Communications, and refer to August 2003. As already indicated, NRAs have checked these estimates.

Apart from the United Kingdom, the leading operator is a subsidiary of the incumbent fixed network operator.

Figure 41 shows the shares of the leading operator, the main competitor and the other competitors on the digital mobile market only (100%).

Along with Luxembourg, Switzerland is the country in which the subsidiary of the historic operator has the largest market shares. This rate, which is 62.3%, is very well above the European average (46.6%). The United Kingdom has the most balanced market of all, as the historic operator's subsidiary and its main competitor each have about a quarter of the market, with the other players sharing the other half.

Figure 41

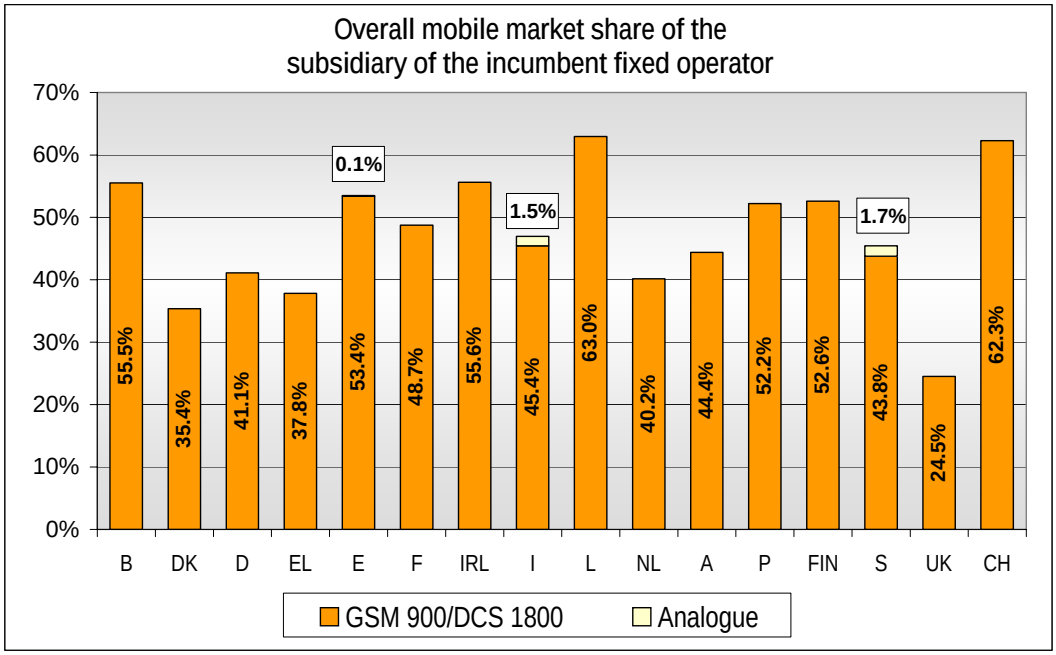


Source for Switzerland: OFCOM Switzerland.

The following chart shows the share of the overall mobile market held by the mobile subsidiary of the incumbent fixed operator. Where the incumbent still operates the analogue service, the shares of the overall mobile market of their analogue and of their digital services are indicated separately.

Note that in seven countries out of sixteen, the historic operator's subsidiary has more than half the market shares (> 50%). In Switzerland and Luxembourg, this proportion exceeds 60%, whilst in the United Kingdom, Denmark and Greece, it is below 40%.

Figure 42



Source for Switzerland: OFCOM Switzerland.

Figures 43 and 43a trace the evolution in the distribution of market shares between the historic operator and its competitors in the Union and in Switzerland respectively. The situation among the two groups of countries observed contrasts greatly. Thus in the Union countries, on average, a balanced distribution of market shares between the historic operators and its competitors occurred as early as the year 2000. Since then, even though the situation has been evolving only very slowly, the alternative operators have slightly strengthened their position. In Switzerland, on the contrary, the alternative operators are finding it more difficult to make headway and it may take some time before they break the 50% barrier, if they ever do. Examining the forces at work, it is apparent that the Swiss situation in 2003 virtually corresponds to that prevailing on average in the Union countries in 1998.

Figure 43

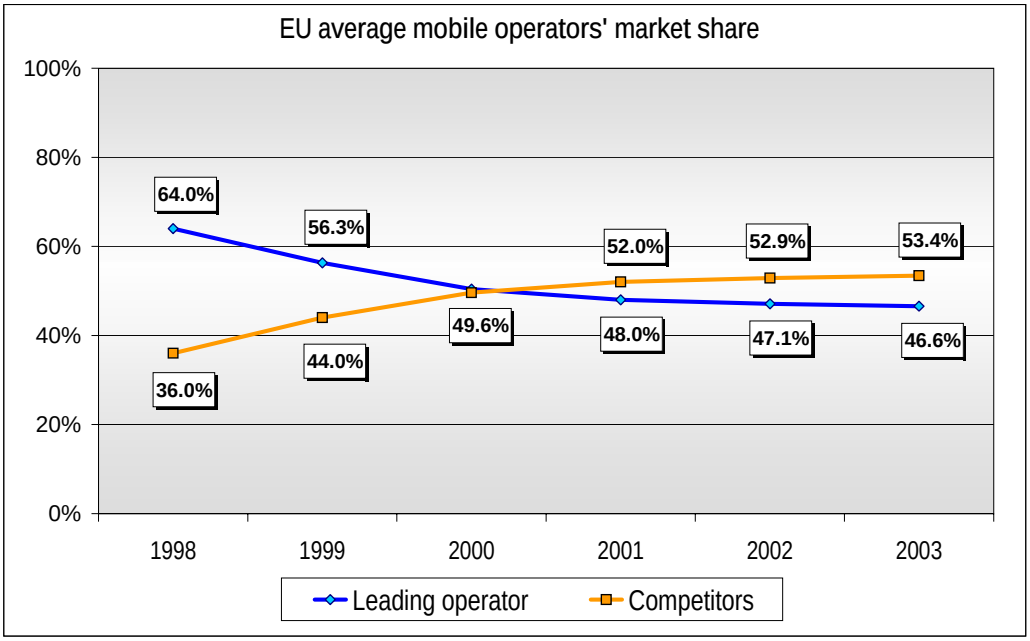
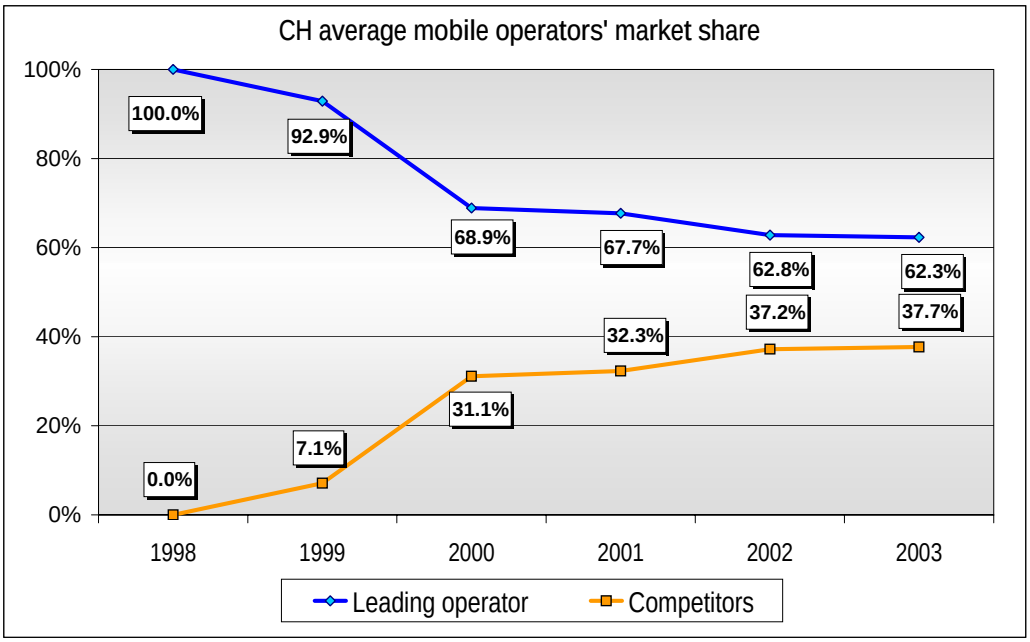


Figure 43a



Source for Switzerland: OFCOM Switzerland.

4.4. *MOBILE BASKET TARIFFS*

The analysis of national (as opposed to roaming) mobile services tariffs is based on the OECD baskets for digital mobile services. Due to significant changes in usage patterns the OECD baskets have been redefined with effect from August 2002. The new baskets are not compatible with the "old" ones, in that they contain an SMS element, they include calls to several mobile networks, and they do not cover international calls.

The new, revised baskets are used in this analysis. There are 3 different baskets, based on low, medium and high usage levels. All packages analysed in this study are post-paid packages. Some of the main properties of the new OECD baskets are:

Low usage basket with:
25 outgoing calls per month + 30 SMS messages
42% of calls are to fixed line phones, 58% to mobile phones

Medium usage basket with:
75 outgoing calls per month + 35 SMS messages
36% of calls are to fixed line phones, 64% to mobile phones

High usage basket with:
150 outgoing calls per month + 42 SMS messages
40% of calls are to fixed line phones, 60% to mobile phones

Each basket also has a unique definition of time of day distribution and call duration, and includes the monthly rental, and any registration charges distributed over 3 years.

The two most prominent operators in each country are covered, based on available subscriber numbers. All relevant packages from each operator are considered, but the final results presented here only show the cheapest package for each basket.

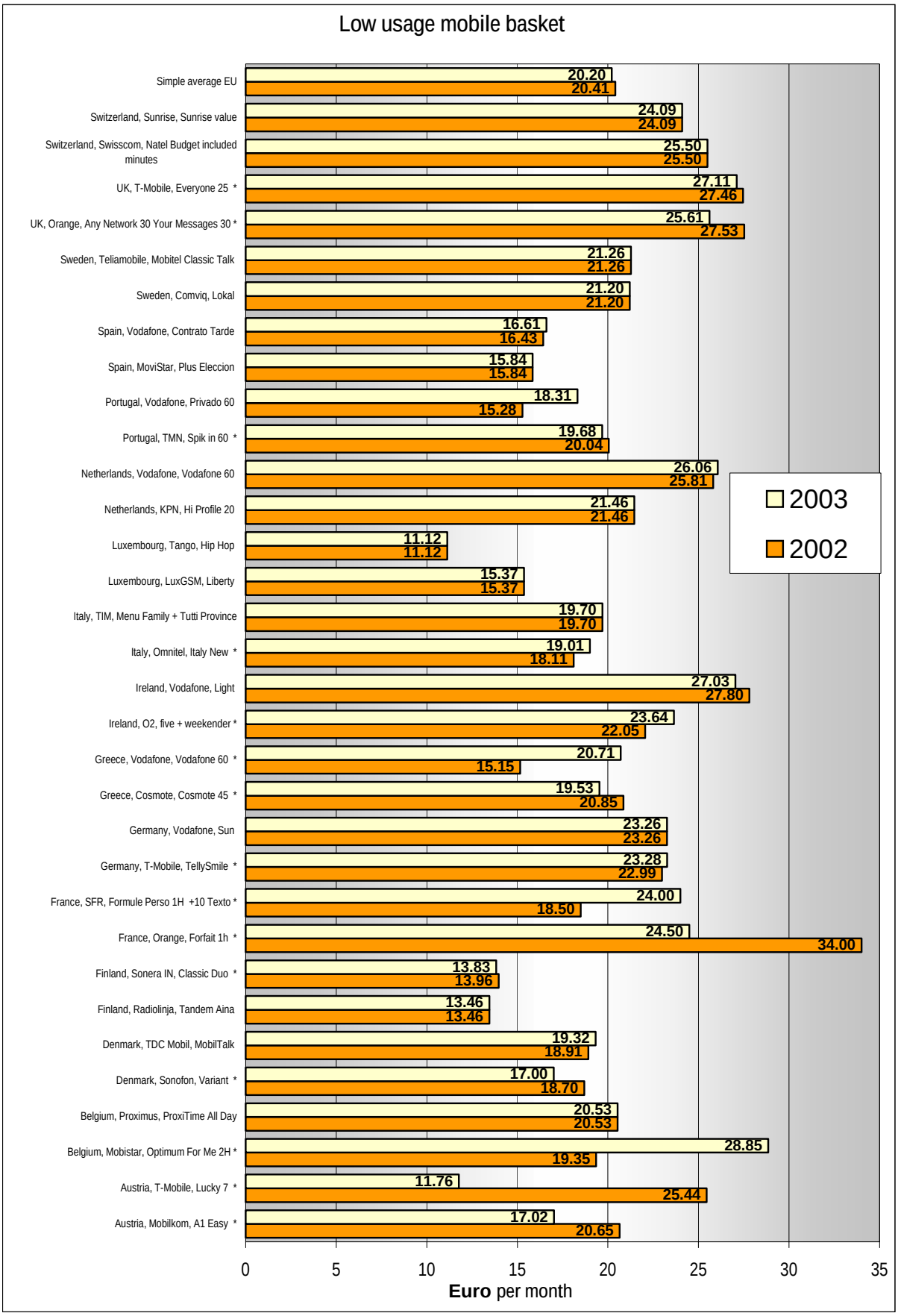
A full description of the methodology can be found at the end of this report.

In 2003, the cheapest offerings in the basket of tariffs for low users (Figure 44) are in Luxembourg (11.12 €), Finland (13.46 €) and Spain (15.84 €). Switzerland, for its part, is well above the European average (20.20 €), with a basket at 24.09 € for Sunrise and 25.50 € for Swisscom.

For an average user (Figure 45), the most attractive offerings are available in Portugal (29.15 €), Luxembourg (30.88 €), Greece (30.92 €) and Denmark (31.42 €), at prices distinctly lower than the European average (41.72 €). For Switzerland, we note that the costs of the cheapest basket – Sunrise, at 50.48 € - greatly exceeds the European average (41.72 €). As for the Swisscom Mobile basket, it is more expensive than any of its rivals.

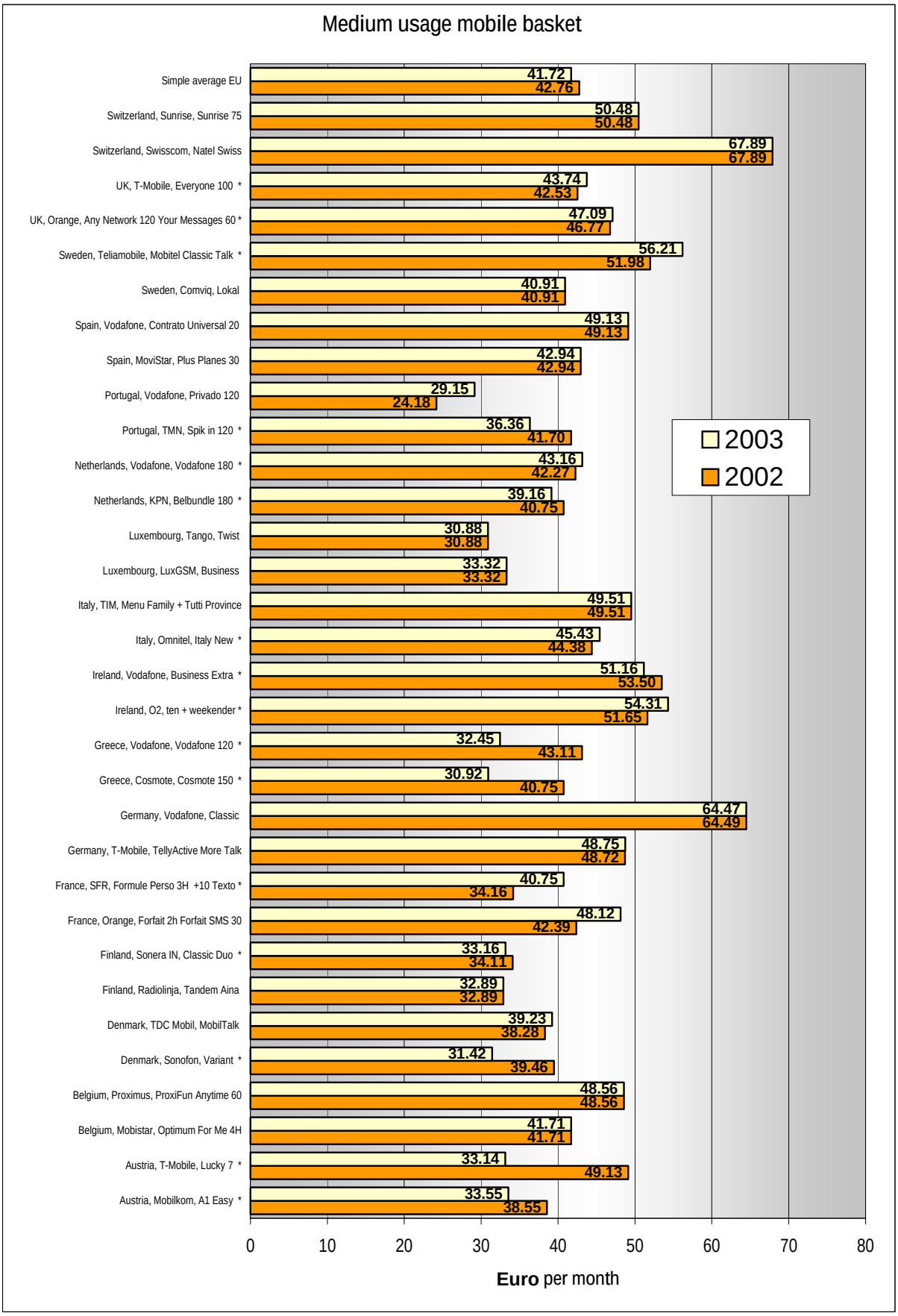
High users (Figure 46) will find the most advantageous offerings in Portugal (47.15 €), Luxembourg (48.50 €), Greece (48.74 €) and Denmark. By way of comparison, we note that the European average is 70.70 €. Swiss users are among the worst served of all the citizens in the countries under consideration. Even though the Sunrise basket (86.70 €) costs 27.0% less than that of Swisscom, the latter has the distinction of being, very clearly, the most expensive of all (118.82 €).

Figure 44



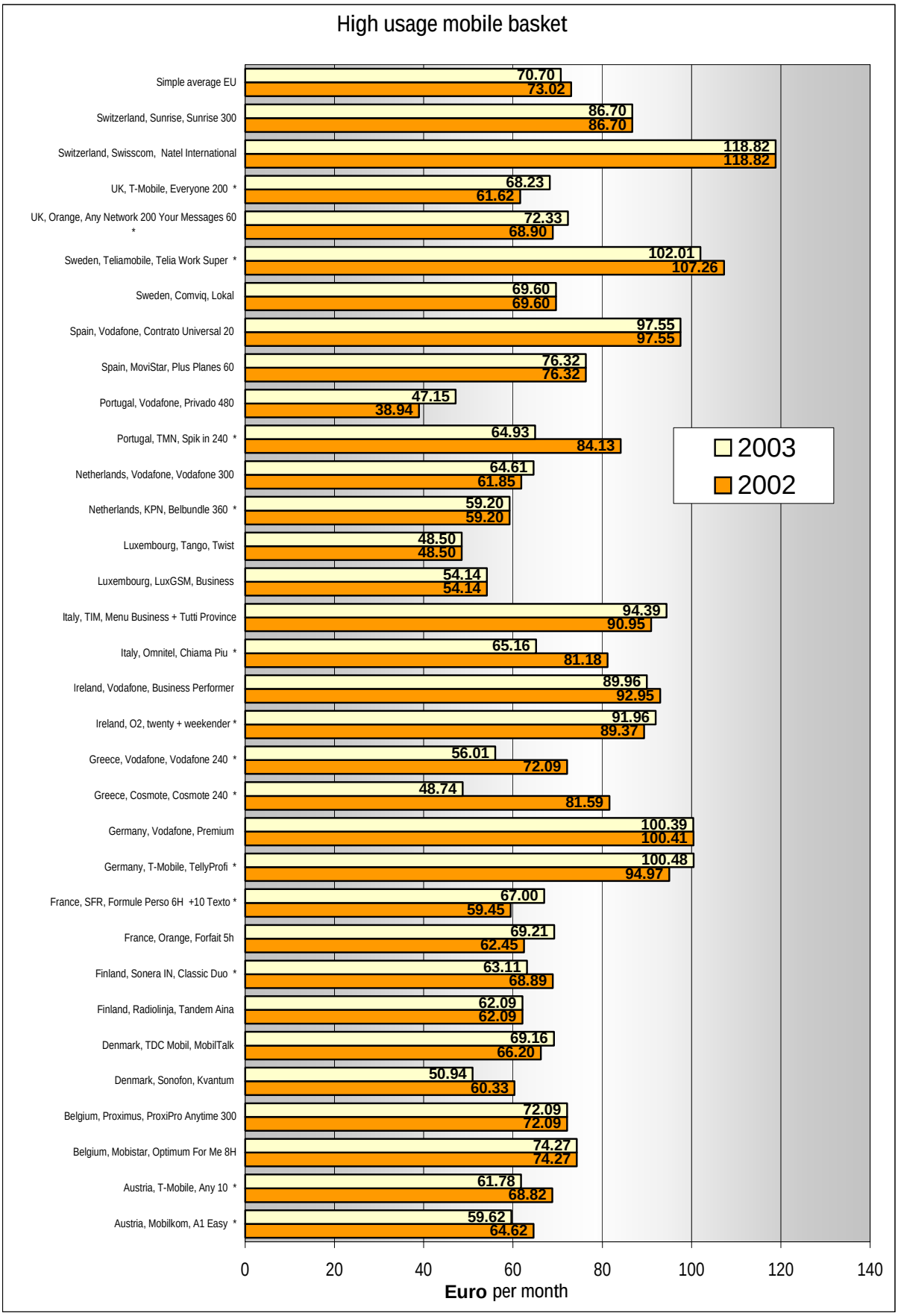
Source for Switzerland: Teligen T-Basket; OFCOM Switzerland computation.

Figure 45



Source for Switzerland: Teligen T-Basket; OFCOM Switzerland computation.

Figure 46



Source for Switzerland: Teligen T-Basket; OFCOM Switzerland computation.

5 *BROADBAND ACCESS AND PRICING*

5.1. *BROADBAND ACCESS*

This section provides data on the number and type of broadband lines supplied in the EU **and Switzerland** *by both incumbent operators and new entrants. It also contains information on access lines provided by means of alternative technologies such as wireless access (WLL), satellite and cable modems.*

Information have been collected from the national regulatory authorities though the ONP COM02-18 questionnaire on data for local broadband access. Given the rapid developments in this sector, it has been agreed with NRAs to update the ONP questionnaire data on a regular basis in January, July and October. Unless otherwise stated data below refer to the situation as at 1st July 2003 **(also for Switzerland).**

For the collection of data the following concepts have been used:

- *"New entrants" refers not only to alternative telecommunications operators, but also include the internet service providers (ISPs);*
- *In the case of full unbundling, the copper pair is rented to a third party for its exclusive use;*
- *As fully unbundled lines (ULL) supplied by incumbent to new entrants could be used for services other than broadband (voice telephony for example) the total number of ULL for access to internet might be lower than the total number of ULL;*
- *In the case of shared access, the incumbent continues to provide telephony service, while the new entrant delivers high speed data services over the same local loop;*
- *Bitstream access refers to the situation where the incumbent installs a high-speed access link to the customer premises and then makes this access link available to third parties, to enable them to provide high-speed services to customers. Bitstream depends in part on the PSTN and may include other networks such as the ATM network, and bitstream access is a wholesale product that consists of the provision of transmission capacity in such a way as to allow new entrants to offer their own, value-added services to their clients. The incumbent may also provide transmission services to its competitor, to carry traffic to a 'higher' level in the network hierarchy where new entrants may already have a broadband point of presence;*
- *In contrast to bitstream access, simple resale occurs where the new entrant receives and sells on to end-users - with no possibility of value-added features to the DSL part of the service - a product that is commercially similar to the DSL product provided by the incumbent to its own retail customers, irrespective of the ISP service that may be packaged with it;*
- *Retail broadband access refers to the access provided to the end users;*
- *Incumbents' DSL lines refers to the lines provided to end users by the incumbent, its subsidiaries or partners;* **The data concerning the Swiss DSL market represent ADSL technology only**.
- *"Other means of accessing the internet" indicates connections by means of satellite, fibre optic, powerline communications, etc;* **the figures relating to Switzerland include cable modem connections only. The other means of accessing the internet have not been considered, due to the lack of information in our possession. However, the quantitative importance of these types of access represents a negligible proportion of the overall broadband market**.

5.1.1. Wholesale access

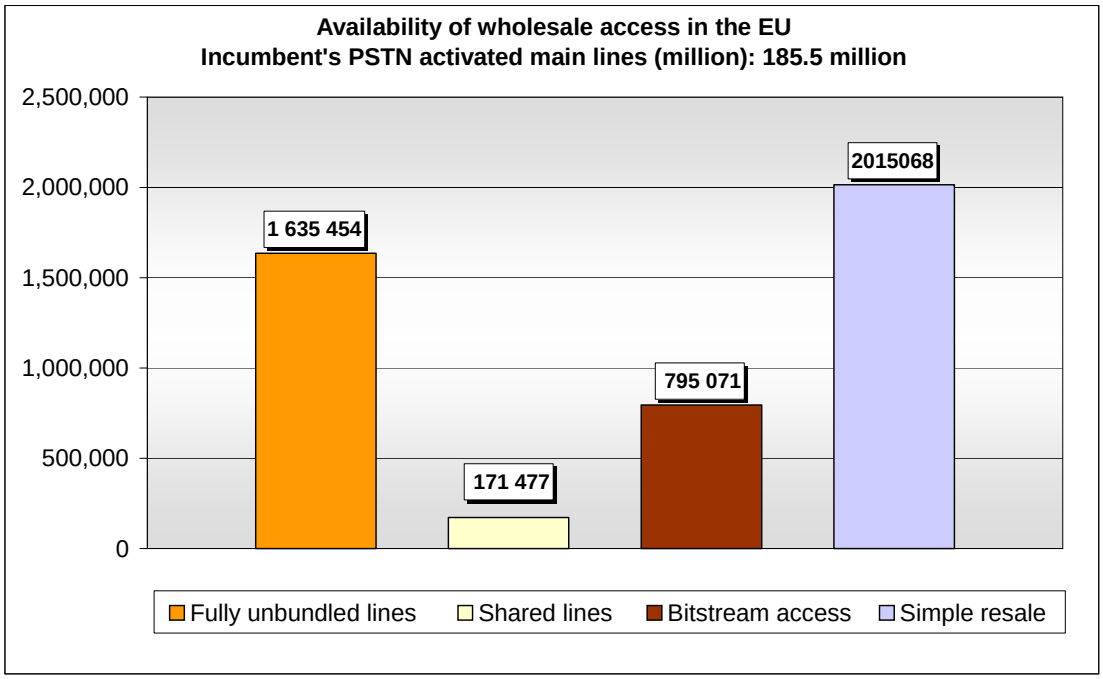
This section shows the availability of wholesale access supplied by incumbents to new entrants. Separate figures are provided for full unbundled lines, shared access and bitstream access (wholesale DSL lines).

Table 1 Number of agreements for full ULL, shared access, bitstream access and resale, 2002-2003.

	N. of agreements on fully unbundled lines		*N. of agreements on shared lines*		*N. of agreements Wholesale DSL lines supplied. Bitstream access*		*N. agreements Wholesale DSL lines supplied. Simple resale*	
	2002	*2003*	*2002*	*2003*	*2002*	*2003*	*2002*	*2003*
B	*7*	*8*	*4*	*8*	*4*	*9*	*12*	*21*
DK	*16*	*13*	*5*	*4*	*5*	*7*	*1*	*0*
D	*91*	*74*	*3*	*5*	*2*	*0*	*52*	*0*
EL	*2*	*7*	*0*	*0*	*0*	*0*	*0*	*0*
E	*6*	*9*	*6*	*9*	*38*	*40*	*n.a.*	*n.a.*
F	*9*	*9*	*9*	*9*	*4*	*5*	*5*	*20*
IRL	*1*	*1*	*1*	*1*	*0*	*3*	*0*	*0*
I	*31*	*31*	*2*	*2*	*50*	*45*	*n.a.*	*0*
L	*n.a.*	*2*	*n.a.*	*2*	*n.a.*	*0*	*n.a.*	*1*
NL	*10*	*12*	*10*	*12*	*n.a.*	*1*	*n.a.*	*0*
A	*12*	*17*	*0*	*0*	*24*	*24*	*0*	*0*
P	*4*	*4*	*n.a.*	*n.a.*	*4*	*8*	*n.a.*	*0*
FIN	*180*	*n.a.*	*80*	*n.a.*	*60*	*n.a.*	*35*	*n.a.*
S	*33*	*63*	*33*	*63*	*4*	*23*	*5*	*11*
UK	*53*	*57*	*5*	*7*	*309*	*n.a.*	*0*	*535*
Tot. EU	***455***	***307***	***158***	***122***	***504***	***165***	***110***	***588***
CH*	***0***	***0***	***0***	***0***	***0***	***0***	***20***	***29***

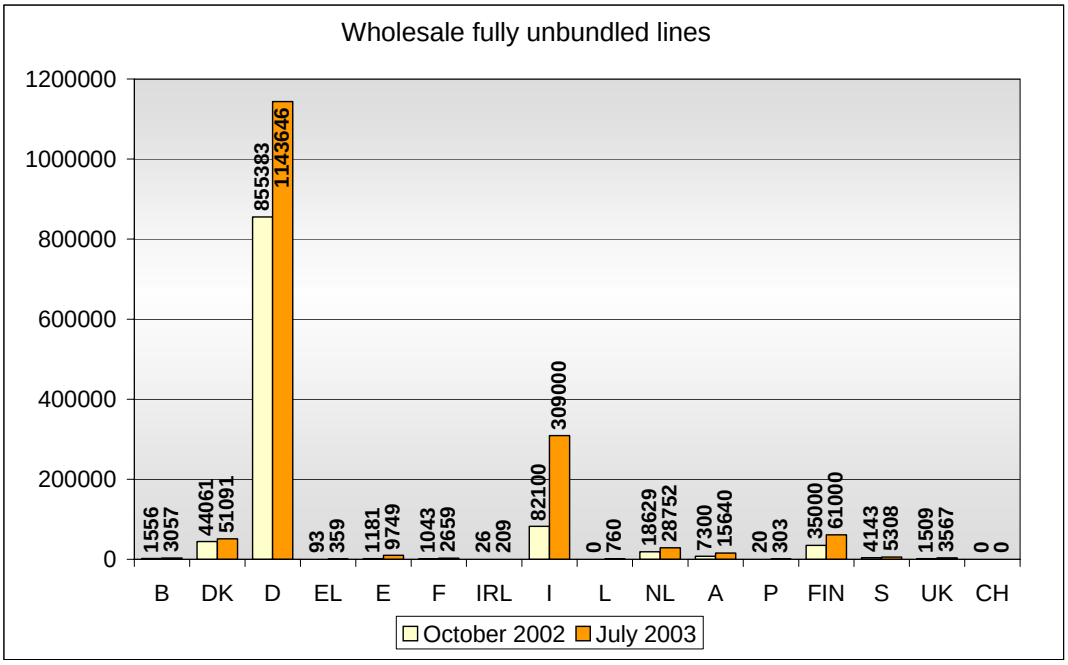
*** Note that the 29 competing operators have in turn concluded reselling agreements with other providers. In Switzerland, there are some 60 companies offering ADSL services.**
**** as of September 2002**
***** as of February 2004**

Figure 47



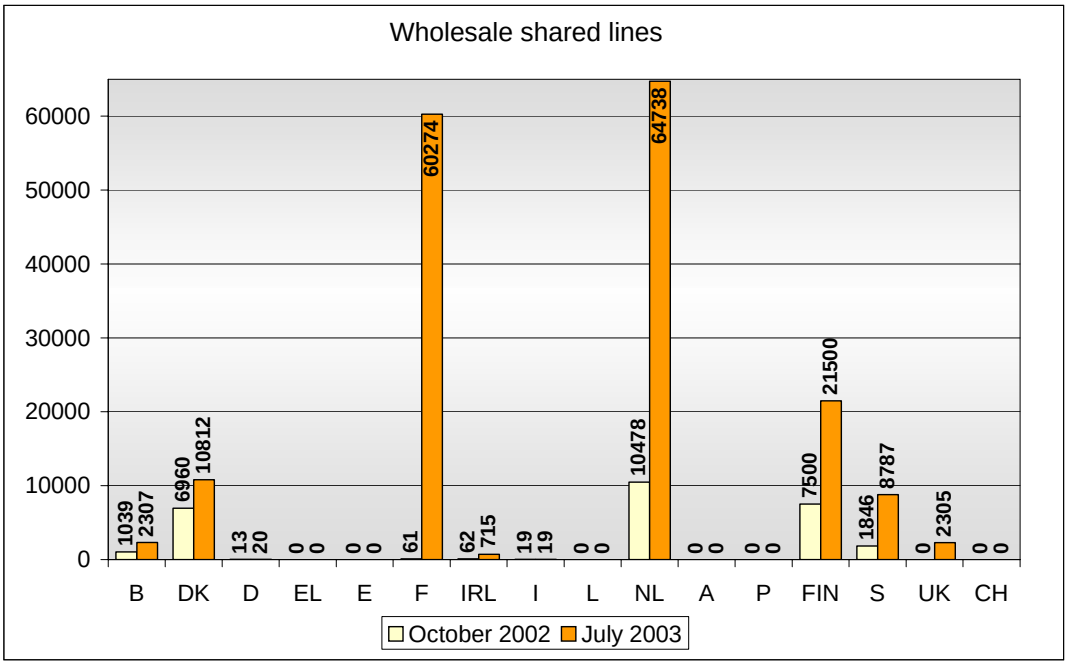
Fully unbundled lines and shared lines, as well as bitstream access, have not yet been implemented concretely in Switzerland. This is why the figures for Switzerland in the three charts below are equal to "0".

Figure 48



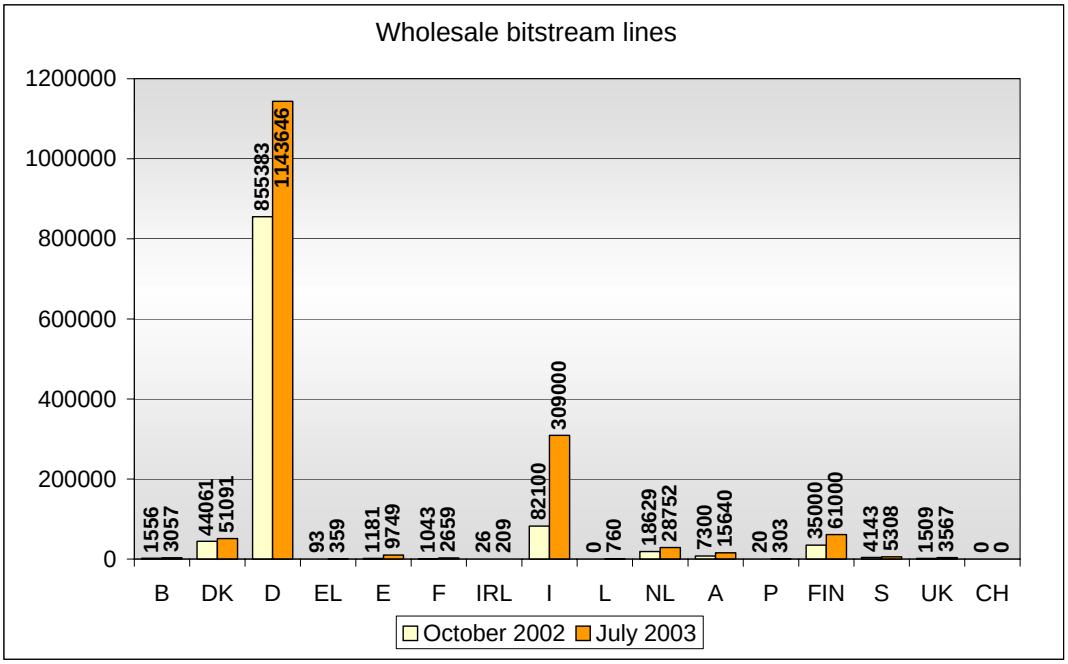
Source for Switzerland: OFCOM Switzerland.

Figure 49



Source for Switzerland: OFCOM Switzerland.

Figure 50



Source for Switzerland: OFCOM Switzerland.

5.1.2. Retail broadband access to internet

This section shows the availability of broadband access to internet for end-users provided by incumbents (their subsidiary or partners) and by new entrants (alternative telecom operators or Internet Service Providers).

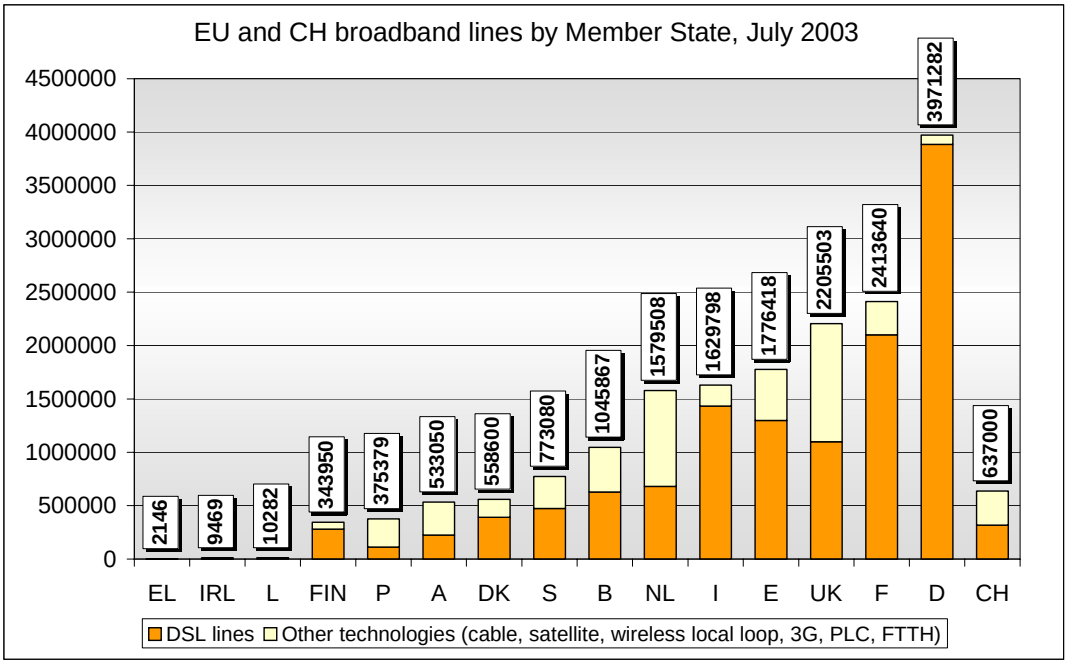
Internet broadband access can be provided through different means: DSL lines, wireless local loop (WLL), cable TV access (cable modem), dedicated leased lines and other access (like satellite, fibre optic, powerline communications, etc.)

New entrants' DSL lines can be provided to end users by means of full unbundled, shared access, bitstream access or resale.

Figure 51 shows the total number of broadband access to internet for each Member State **and Switzerland** *provided by both incumbents and new entrants and including all means of broadband connections.*

In July 2003, Switzerland had 637,000 broadband lines (active customers). Note that 317,000 customers are connected using ADSL technology and 320,000 are connected by cable modem. In the international comparison, Switzerland is on a par with countries such as Denmark and Austria, i.e. in the company of countries with a low proportion of the European market (3.6% of the European market for Switzerland).

Figure 51



Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

Figures 52, 53 and 54 present the number of broadband lines per Member State **and Switzerland** *in October 2002 and July 2003. Figure 52 displays the total number of retail broadband lines, while Figure 53 shows the DSL lines and Figure 54 the lines using other means.*

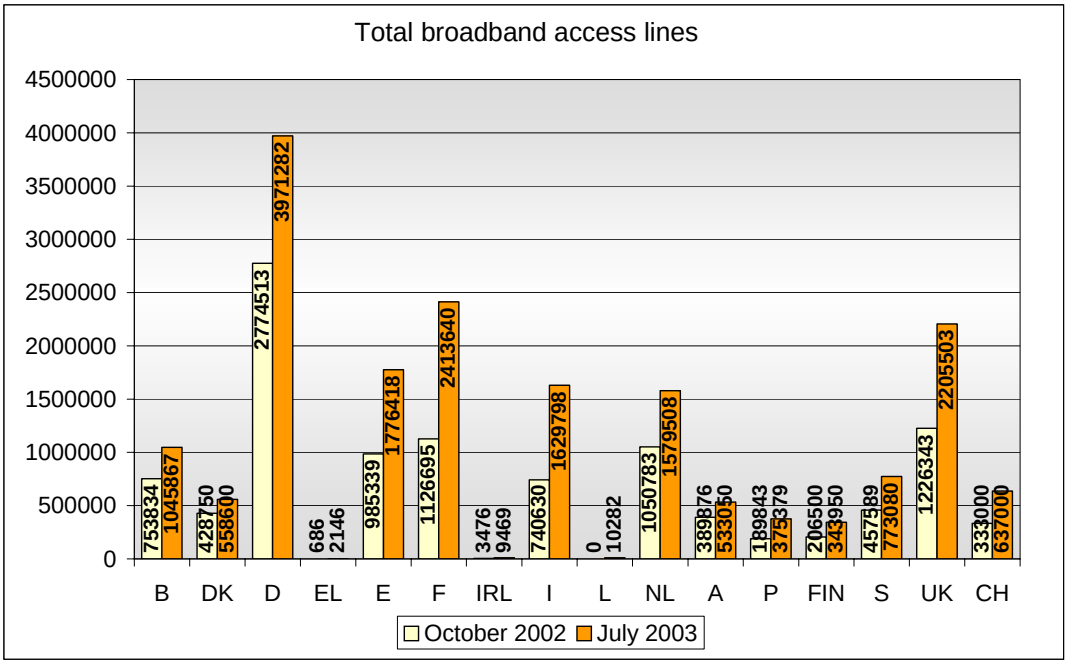
An examination of Figures 52, 53 and 54 reveals that the growth in broadband connections was substantial between October 2002 and July 2003, regardless of the type of access used:

- **+ 91% for total broadband connections (Figure 52);**
- **+ 138% for ADSL broadband connections (Figure 53);**
- **+ 60% for cable modem broadband connections (Figure 54).**

This situation can also be observed in most of the European Union countries. All the countries saw a significant increase in the number of broadband connections, although DSL access enjoyed higher growth rates than the other means of accessing the internet (CATV, etc.).

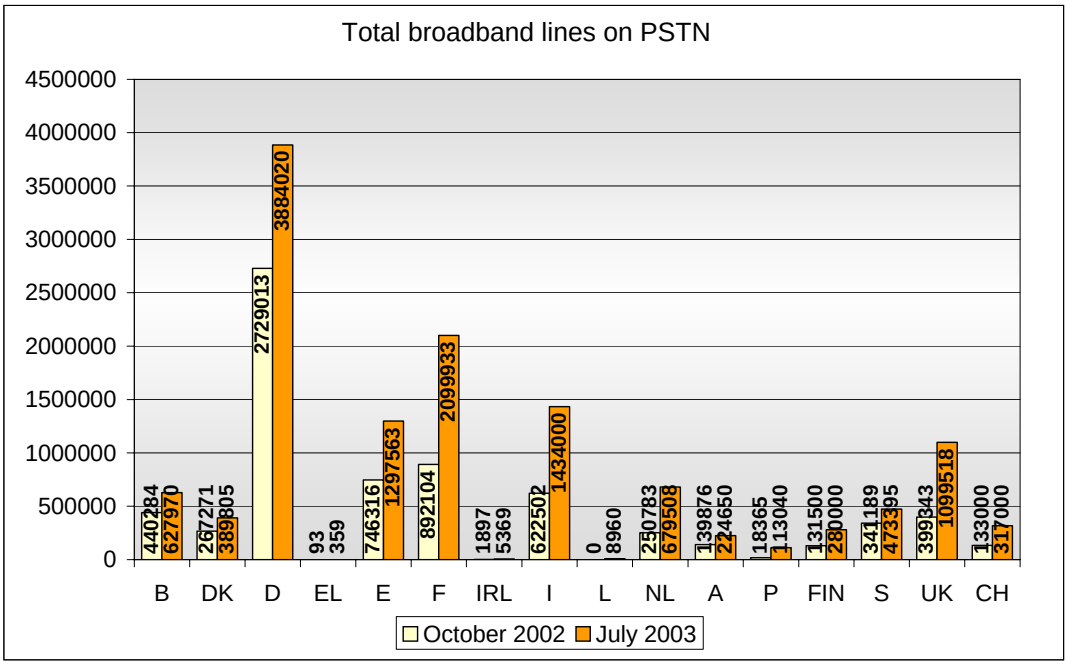
It is however advisable to be cautious with the growth rates since the countries are not all in the same phase of market development, some being more advanced in their progress along the S-curve and hence showing lower growth rates (consolidation of the market).

Figure 52



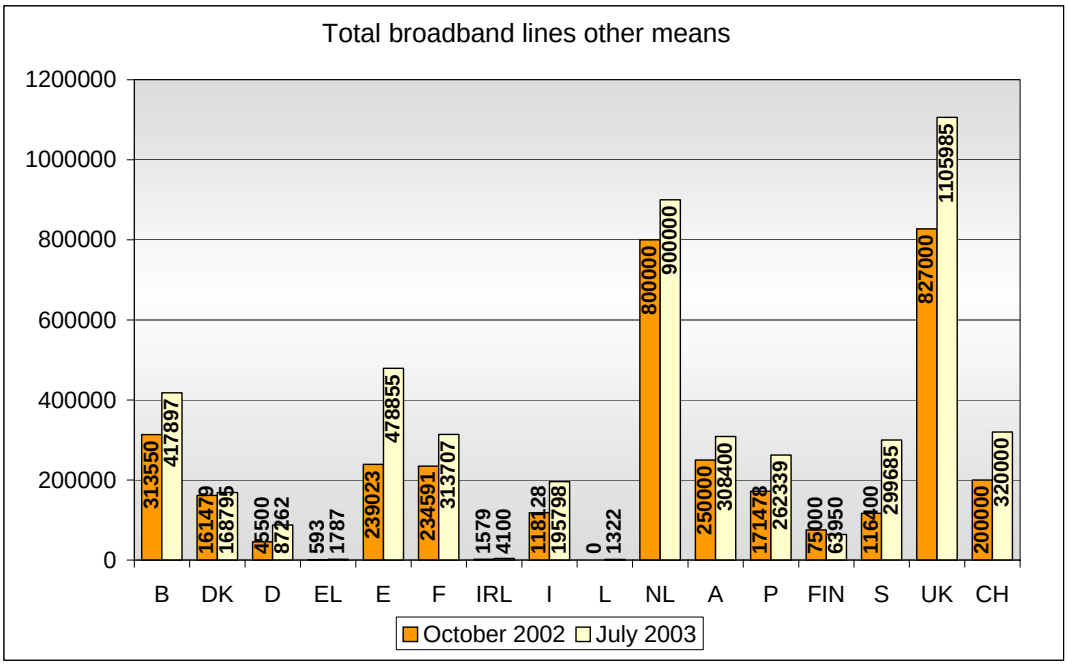
Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

Figure 53



Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

Figure 54

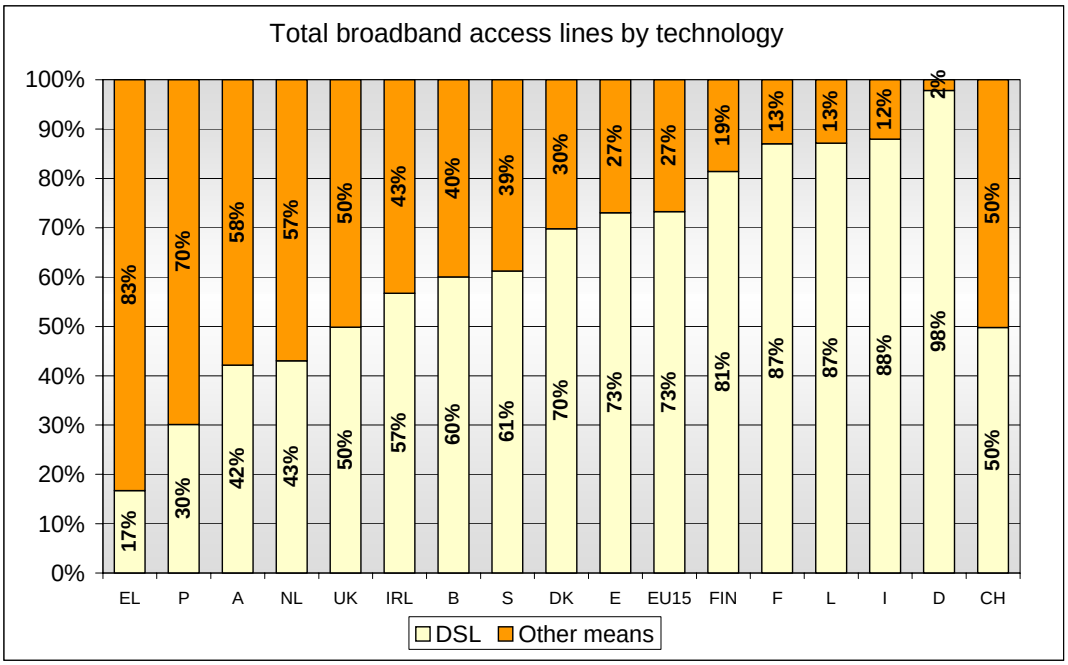


Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

Figure 55 displays the breakdown of broadband lines by technology in each Member State.

Following the example of the United Kingdom, the Netherlands, Austria or Ireland, the broadband access market in Switzerland is split relatively evenly between the DSL technologies (only ADSL technology is considered in the case of Switzerland) and the other means of accessing the internet. However, as the broadband market develops in Switzerland, this proportion is changing in favour of ADSL. Note also that the proportion of the number of ADSL connections compared to the other means of access was 58% at the end of 2003 in Switzerland. A broader coverage rate and publicity campaigns launched by resellers of the Swisscom wholesale product largely explain this trend.

Figure 55

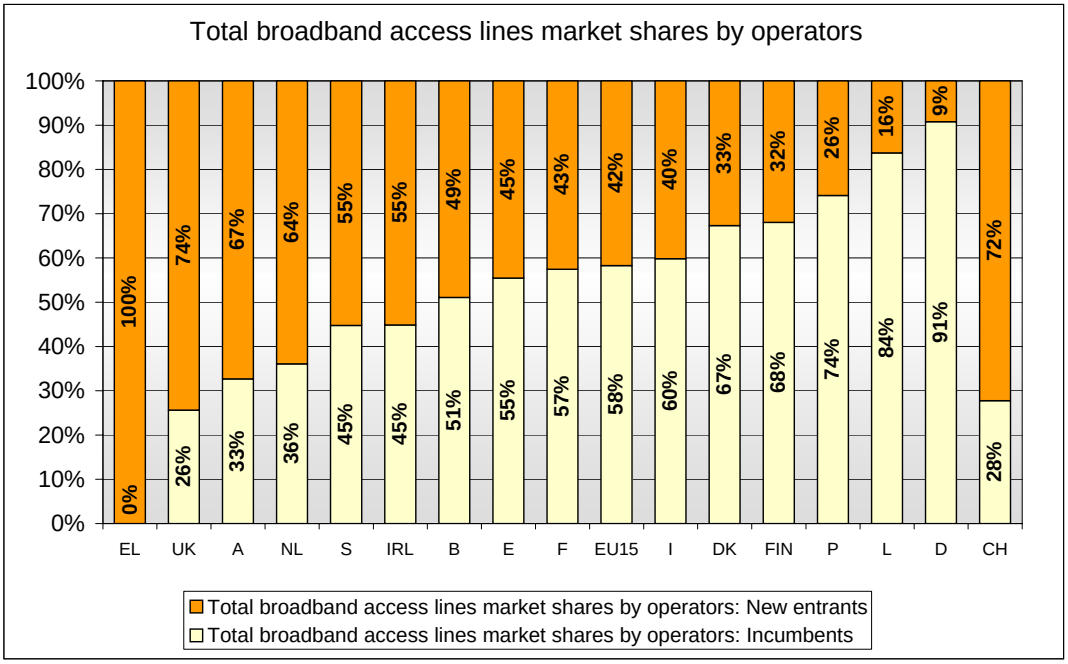


Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

Figure 56 displays the breakdown of broadband lines by operator in each Member State.

Here too, Switzerland is on a par with the United Kingdom, the Netherlands and Austria. The proportion of broadband connections held by the subsidiary of the historic operator is relatively low in comparison with the other European Union countries. In Switzerland, the competing operators had 72% of all broadband connections in July 2003.

Figure 56



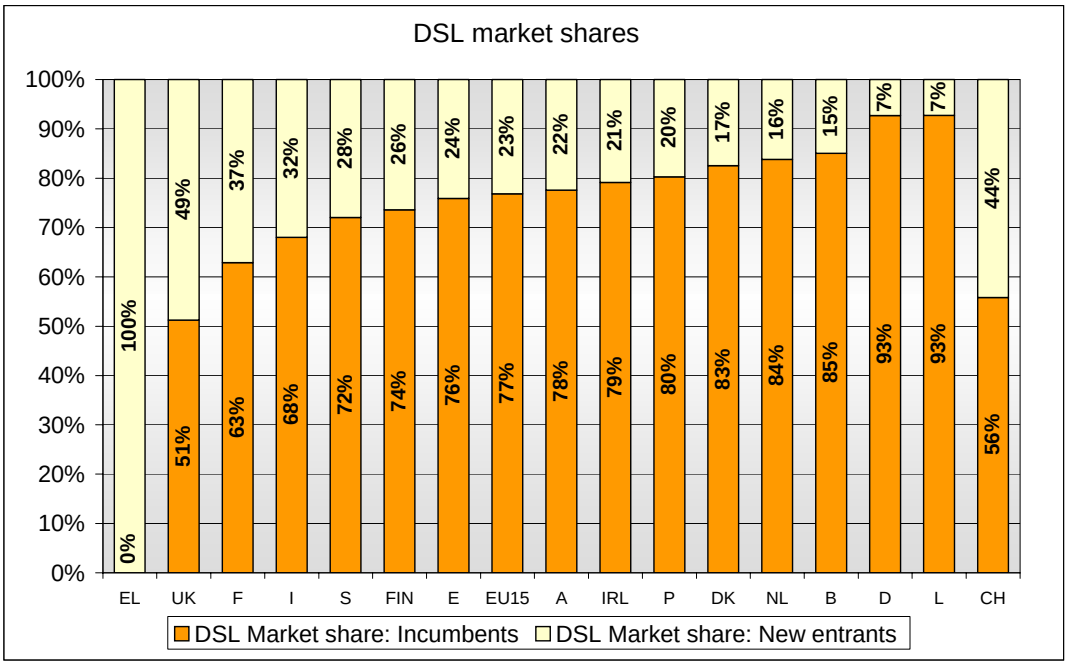
Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

Figure 57 displays the market share of DSL lines by operator in each Member State.

In Switzerland, the ADSL market is also split relatively equally between the historic operator and the competing operators (resale partners). 56% of the connections are held the subsidiary of the historic operator. In the international comparison, Switzerland occupies a relatively balanced position as regards the division of the market, similar to the United Kingdom.

This situation should not, however, obscure the fact that resale is the only mean accessible to the alternative operators, apart from the construction of their own access network, for them to market their own products. However, unlike the possibilities offered by unbundling and bitstream, resale limits the added value which the alternative operator can bring to the value-creation process.

Figure 57

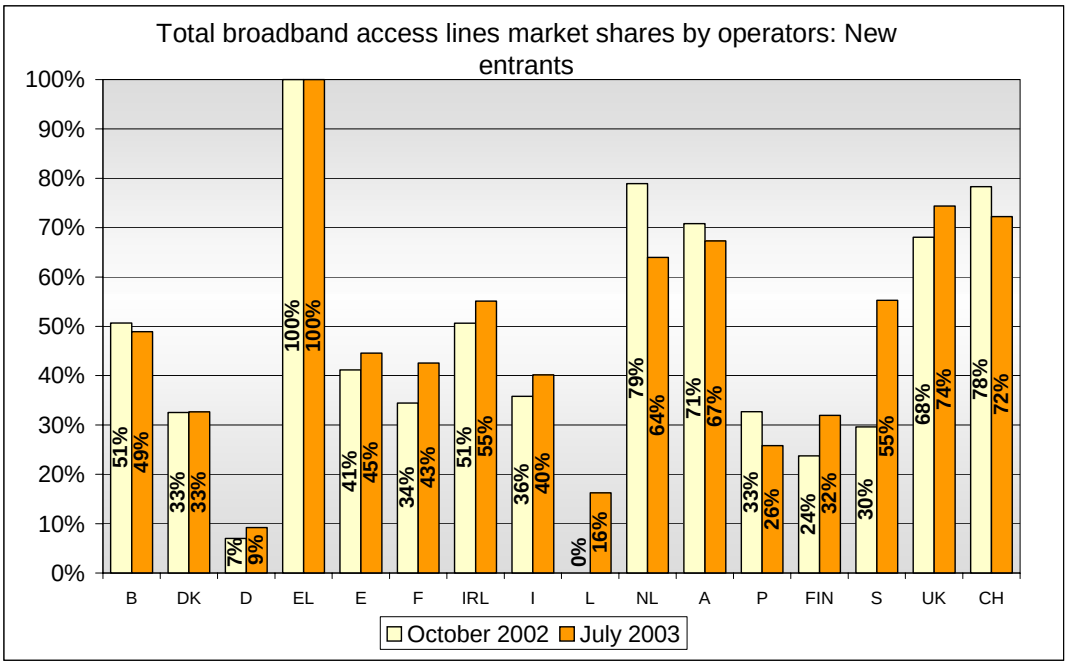


Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

The following chart shows the change in the percentage of broadband lines in the hands of the new entrants in the period from July 2002 to October 2003.

Following the example of certain countries like Belgium, Austria, the Netherlands and Portugal, the market shares held by the competing operators decreased between the two observation periods. These four countries and Switzerland are following a different route from the majority of the European Union countries. In Switzerland, this situation is explained by the substantial expansion in absolute terms of the number of broadband ADSL connections (greater than the expansion of cable modems), nearly 50% of which are held by the subsidiary of the historic operator.

Figure 58

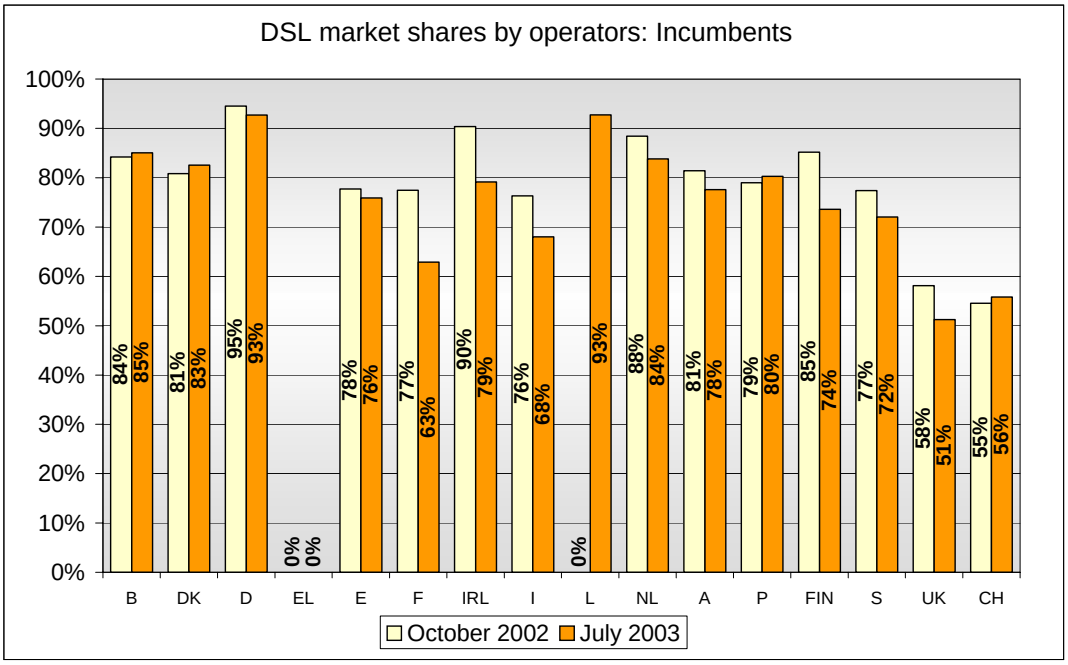


Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

The following chart **(Figure 59)** *shows the change in the percentage of DSL lines in the hands of the incumbents in the same period.*

Between the two periods observed, the subsidiary of Swiss historic operator gained 1 point of market shares in the ADSL access segment. This upward trend puts it in the company of countries such as Portugal, Denmark and Belgium, i.e. a minority of the European Union countries, in which the historic operator or its subsidiary has managed to reverse the trend and consolidate its situation.

Figure 59

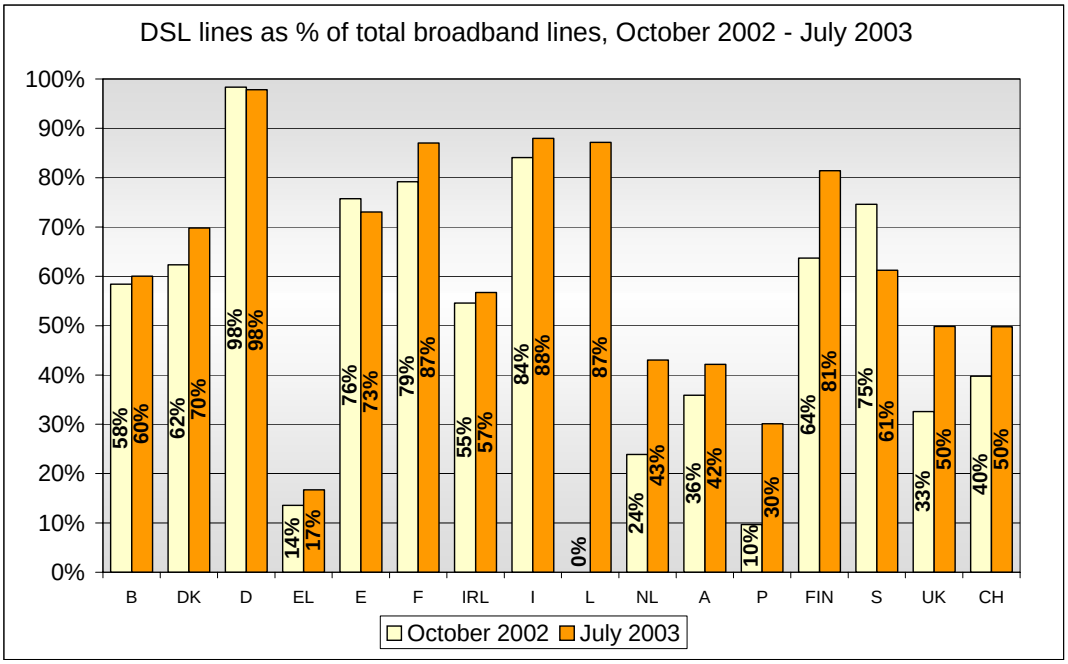


Source for Switzerland: Swisscom; Swisscable.
Note: ADSL services only are taken into account.

Figure 60 shows the evolution in the percentage of DSL lines over the total broadband lines.

Like the majority of the European Union countries, Switzerland increased the proportion of the number of DSL connections (ADSL only for Switzerland) compared with the total number of activated broadband connections. This is not at all surprising since in Switzerland the growth enjoyed by ADSL in absolute terms is higher than that of cable modems. In the international comparison, in July 2003 Switzerland was level with the United Kingdom, for which the split between broadband access technologies is very well balanced (approximately 50/50).

Figure 60

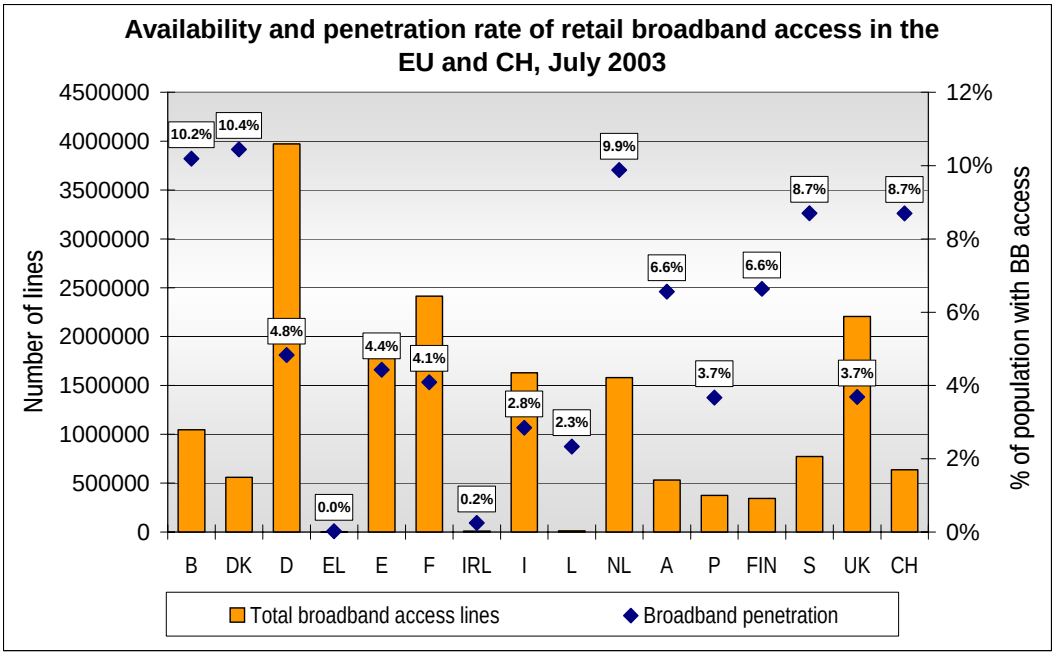


Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

The following chart displays the penetration rate of broadband lines measured as the total number of broadband lines divided by the population.

In July 2003, the penetration rate of broadband access in Switzerland was one of the highest in Europe. Only Denmark, Belgium and the Netherlands had higher rates. Nor is it surprising to note that it is primarily the small countries with a low population and a relatively high gross domestic product which are in the lead in terms of broadband penetration.

Figure 61

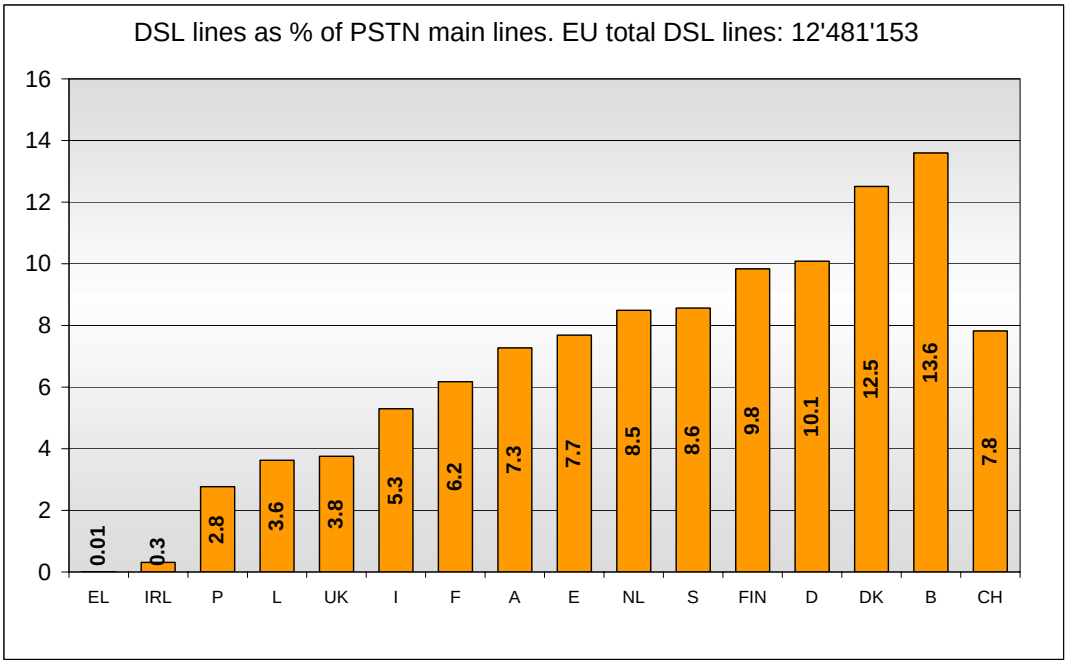


Source for Switzerland: Swisscom; Swisscable.
Note: Leased line, optical fibre, PLC, satellite, WLL, etc. services are not included. Only ADSL and cable modem services are taken into account.

Figure 62 displays the number of DSL lines per 100 PSTN lines.

The proportion of ADSL connections compared with the number of PSTN main lines puts Switzerland more or less in the middle of the league table. Six countries have a higher penetration rate, i.e. in ascending order, the Netherlands, Sweden, Finland, Germany, Denmark and Belgium.

Figure 62



Source for Switzerland: Swisscom; Swisscable.
Note: ADSL services only are taken into account.

Availability of wholesale access at 1 July 03

		Fully unbundled lines			Shared access lines supplied by the incumbent to new entrants			Wholesale DSL lines supplied			
								Bitstream access		Simple resale	
Country	Incumbent's PSTN activated main lines	Unbundled lines	Requested lines	N. of agreements	Shared lines	Requested lines	N. of agreements	No. of lines	No. of agreements	Resale No. of lines	No. of agreements
B	4.620.560	3.057	134	8	2.307	42	8	5.501	9	88.416	21
DK	3.115.303	51.091	n.a.	13	10.812	n.a.	4	10.396	7	0	0
D	39.500.000	1.144.000	0	74	20	0	5	0	0	0	0
EL	5.485.020	359	60	7	0	8	0	38	0	0	0
E	16.884.000	9.749	1.648	9	0	0	9	308.514	40	NA	NA
F	34.000.000	2.659	0	9	60.274	10.000	9	n.a.	5	717.000	20
IRL	1.700.000	209	366	1	715	1.267	1	196	3	0	0
I	27.079.000	309.000	437.000	31	19	19	2	400.000	45	0	0
L	247.000	760	51	2	0	0	2	0	0	6	1
NL	8.000.000	28.752	n.a.	12	64.738	n.a.	12	0	1	0	0
A	3.090.000	15.640	1.300	17	0	0	0	36.900	24	0	0
P	4.092.000	303	21	4	0	0	n.a.	18.526	8	0	0
FIN	2.848.000	61.000	n.a.	n.a.	21.500	n.a.	n.a.	9.000	n.a.	0	n.a.
S	5.530.000	5.308	100	63	8.787	400	63	2.300	23	116.000	11
UK	29.300.000	3.567	188	57	2.305	101	7	N/A	N/A	1.093.646	535
EU	185.490.883	1 635 454	440868	307	171 477	11837	122	791 371	165	2015068	588
CH	**4.053.000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**140.000**	**29**

Fully unbundled lines	1635454
Shared access lines	171 477
Total unbundled lines	1 806 931
Total unbundled lines / PSTN lines	0,97%
Wholesale DSL-Bitstream access	791 371
Wholesale DSL-Simple resale	2015068
Wholesale DSL	2 806 439

Availability of incumbent's and new entrants' retail broadband access

July 03		New entrants' DSL lines on PSTN July 03					Incumbents' access lines by other means					New entrants' access lines by other means					Total number of new entrants	
	Incumbent's DSL lines	Full ULL	Shared access	Bitstream access	Resale	Total	WLL	Cable modem	Leased lines	Other	Tot.	WLL	Cable modem	Leased lines	Other	Tot.		
B	534008	1491	2159	2769	87543	93962	6	0	44	0	50	1	415617	2178	51	417847	21	B
DK	321645	47078	11986	9096	0	68160	0	50809	3604	0	54413	1211	106495	4656	2020	114382	19	DK
D	3600000	230690	20	0	0	230710	38	n.a.	n.a.	5262	5300	n.a.	45000	n.a.	n.a.	45000	800	D
EL	0	359	0	0	0	359	0	0	0	0	0	208	0	1577	2	1787	27	EL
E	985053	3996	0	308514	0	312510	-	-	-	-	0	56145	404473	5501	12736	478855	58	E
F	1320000	2659	60274	n.a.	717000	779933	0	66704	n.a.	n.a.	66704	1000	246003	n.a.	n.a.	247003	16	F
IRL	4249	209	715	196	0	1120	Trial	0	n.a.	n.a.	0	100	4000	n.a.	0	4100	40	IRL
I	975000	154000	0	305000	0	459000	0	0	283	n.a.	283	8	0	3300	192207	195515	15	I
L	8308	652	0	0	0	652	0	188	115	0	303	25	883	106	5	1019	0	L
NL	502391	28752	64738	0	0	93490	n.a.	0	n.a.	n.a.	0	n.a.	900000	n.a.	n.a.	900000	42	NL
A	174300	9750	0	40600	0	50350	0	0	n.a.	n.a.	0	0	330000	n.a.	n.a.	330000	100	A
P	90722	295	0	22023	0	22318	0	187608	n.a.	n.a.	187608	n.a.	74731	n.a.	n.a.	74731	15	P
FIN	206000	43500	21500	9000	0	74000	50	28000	n.a.	n.a.	28050	400	35000	n.a.	500	35900	50	FIN
S	341000	5308	8787	2300	116000	132395	0	0	5000	0	5000	2900	156400	0	135385	294685	n.a.	S
UK	563348	3567	2305	0	530298	536170	0	0	327000	2185	329185	2500	1098000	144000	3300	1247800	63	UK
EU	9626024					2855129					676896					4388624	Ab. 80	EU 15
CH	**177000**	**0**	**0**	**0**	**140000**	**140000**	**n.a.**	**0**	**n.a.**	**n.a.**	**0**	**n.a.**	**320000**	**n.a.**	**n.a.**	**320000**	**n.a.**	**CH**

		Market share
Incumbents' broadband	10302920	59%
Other operators' broadband	7243753	41%
Tot. Broadband on PSTN	12481153	71%
Tot. Broadband other means	5065520	29%
EU Tot. Broadband	17 546 673	100%

PSTN broadband lines/Total PSTN lines 6,73%

5.2. *PRICES FOR UNBUNDLED LOCAL LOOP*

This section shows the charges per unbundled loop (monthly rental and connection) in case of full unbundled and shared access of the loop. Estimates of total average monthly rental cost (based on the total costs for the first year) are also presented.

In the following we assume that the loop is active and will be used to provide DSL services. Belgium and Luxembourg charge a different price for the loop, depending on whether it is used for the voice telephony services or for DSL services. Furthermore, Belgium applied a different price for non-active loop and charges in some Member States are different in case of additional access.

In Switzerland, fully unbundled access and shared access, as well as bitstream access, have not yet been concretely implemented. For this reason, Switzerland will not be included in the comparisons made in this part of the document.

5.2.1. PRICES FOR FULL UNBUNDLED LOCAL LOOP

In Belgium a supplementary fee of € 28.33 for disconnection is also charged. It should be noted that a disconnection fee is not charged for the incumbent's own retail market.

Data for the connection fee in Germany refer to a unique payment option.

The price in Italy for full-unbundled local loop includes POTS and ADSL.

Data for Finland refer to a weighted average of 44 SMP operators providing ULL. Prices vary between 8 and 29 € for the monthly rental and between 105 - 303 € for the connection fee.

Data for the connection fee in Sweden refer to the first access. Charges for the following access up to 20 is 86 € and 70.75 € for additional access.

Figures for the United Kingdom refer to an average based on a price of 177.81 € per annum for the monthly rental and on a price of 128.25 € per annum for connection fee.

Figure 63

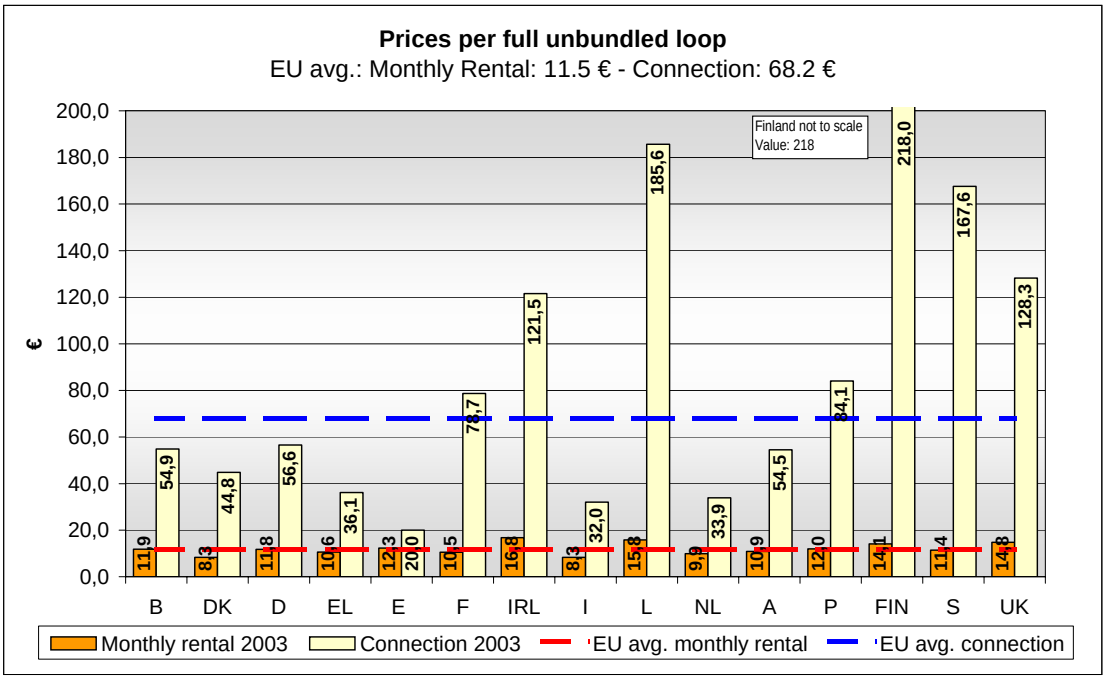
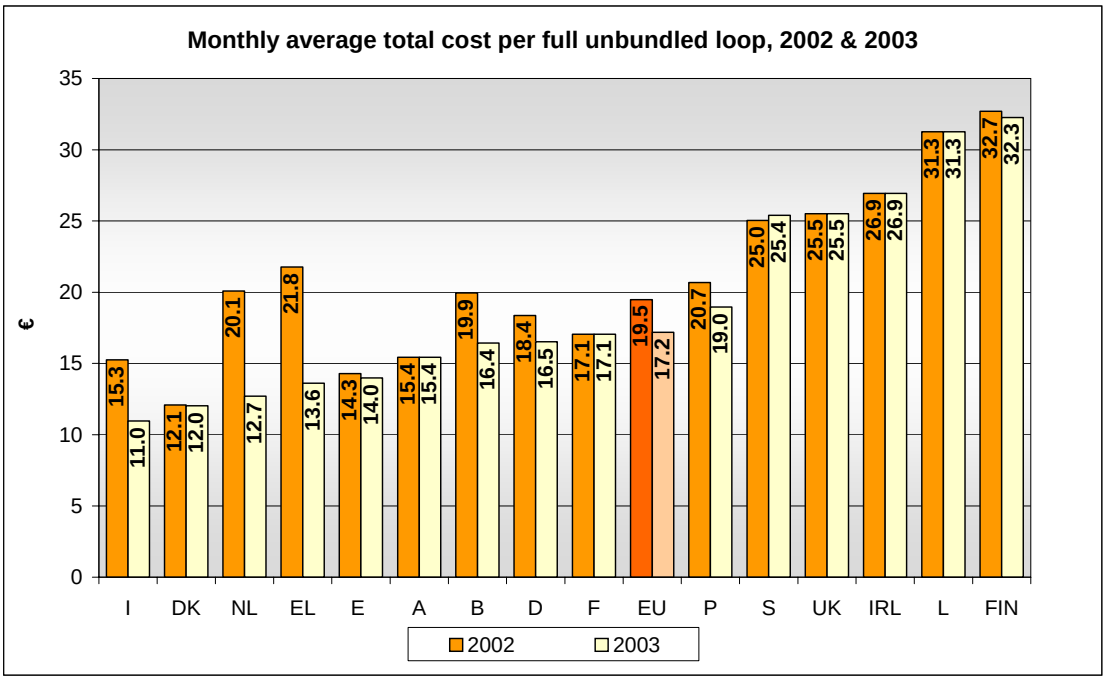


Figure 64



- Estimates are based on the total cost of the loop for the first year.

5.2.2. PRICES FOR SHARED ACCESS LOCAL LOOP

In Belgium a supplementary fee of € 28.33for disconnection is also charged. It should be noted that a disconnection fee is not charged for the incumbent's own retail market.

The connection fee in Denmark decreases to 35.3 €, when taking over an existing shared access connection.

Data for the connection fee in Germany refer to a unique payment option.

Data for the monthly rental in Luxembourg do not include the price of the splitter.

Data for Finland refer to a weighted average of 44 SMP operators providing shared access to local loop. Generally the monthly rental is 50 % of the monthly rental of the full ULL and the prices for the connection fee vary between 42 - 260 €.

Data for Sweden for connection fee refer to the first access. Charges for the following access is 86 €.

Data for France includes the price of the splitter.

Data for the United Kingdom refer to an average based on a price of 77.24 € per annum for the monthly rental and on a price of 170.5 € per annum for connection fee.

Figure 65

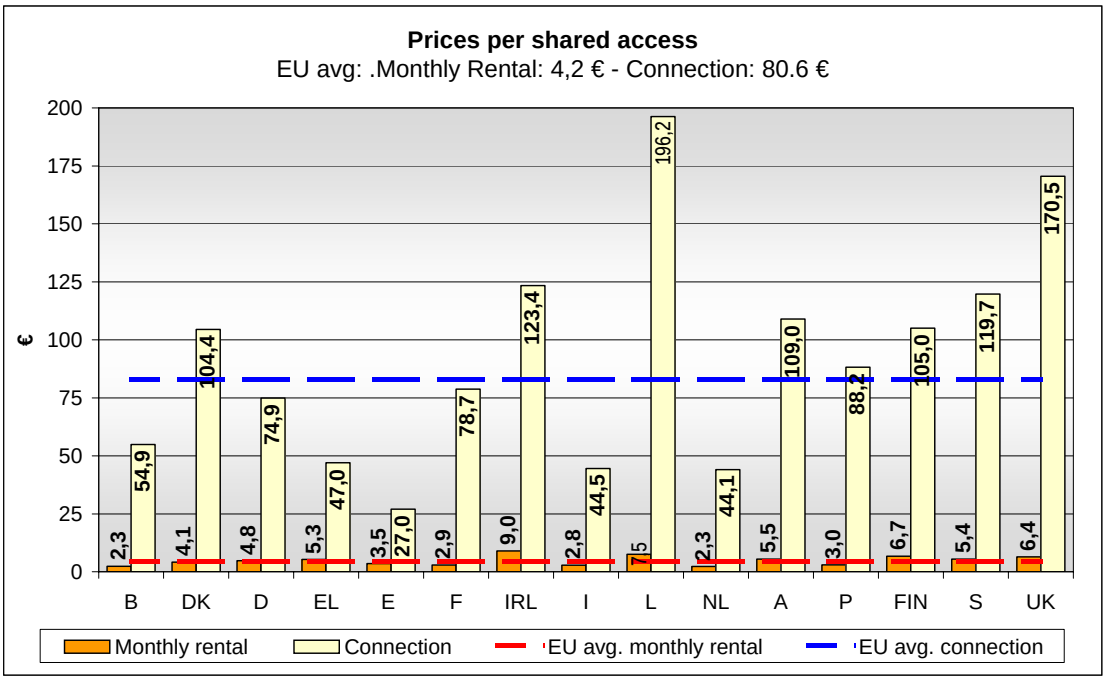
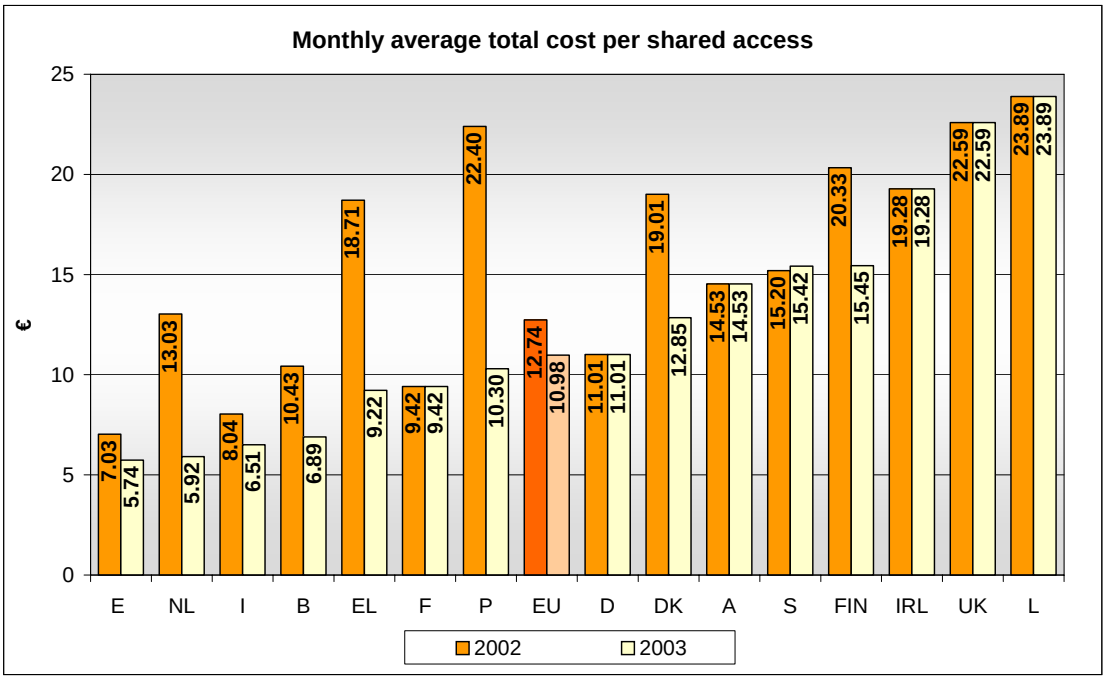


Figure 66



- Estimates are based on the total cost of the loop for the first year.

6 *PUBLIC VOICE TELEPHONY TARIFFS*

INCUMBENTS' RETAIL TARIFFS FOR PUBLIC FIXED VOICE TELEPHONY

This section examines the charging system, the line rental charges and the main tariffs for public fixed voice telephony charged by the incumbent operators in each Member State[29] in August 2003. The price trend over the past five years is also analysed.

The incumbent operators still retain a large market share, but new entrants are increasingly gaining market shares by offering cheaper prices for certain types of calls (usually long-distance or international) or destinations. The prices charged by incumbents do not necessarily, therefore, represent the lowest prices available. A comparison between the rates charged by incumbents and alternative operators is shown at the end of this section.

The figures and information are taken from a study carried out for the Commission by Teligen, HI Europe. The data were collected from primary sources (i.e. directly from the incumbent operators) and communicated to the National Regulatory Authorities (NRA), which checked the accuracy of these data before this report was produced.

Different sets of charges for fixed national voice telephony services are shown in the following sections:

- the minimum costs for different types of calls (local, long-distance, international calls and calls towards mobile networks), depending on the charging system adopted;

- the monthly rentals charged by incumbent operators;

- the charges for a composite basket of calls (local, long-distance, international fixed calls and calls to mobile), that gives an estimate of the average monthly spending by a typical "European business/residential user" for the whole range (national and international) of calls;

- the charges for a basket of national calls, that gives an estimate of the average monthly spending by a typical "European business/residential user" for fixed national calls;

- the basket of international calls for each country that indicates the average price of a single call from the originating country to all other OECD destinations. In addition, the price of individual calls to specific destinations are also shown.

- the price of some individual calls (3- and 10-minute local, long-distance and international calls) at peak time, inclusive of any initial charge. For incumbents which apply unit-based charging, the price of a whole unit is calculated.

For the various types of calls, a benchmark based on a comparison with US and Japan is also included. For the USA, the prices for national calls are those charged by Verizon, NY for local calls, Verizon, NY (1998/1999) and AT&T (2000/2003) for national (intra-state) calls and AT&T for international calls. For Japan, the national call prices are those charged by NTT and the international call prices are those charged by KDD.

[29] *The incumbent operators considered are the following: Belgacom for Belgium, Tele Denmark for Denmark, Deutsche Telekom for Germany, OTE for Greece, Telefonica for Spain, France Telecom for France, Eircom for Ireland, Telecom Italia for Italy, P&T Luxembourg for Luxembourg, KPN for the Netherlands, Telekom Austria for Austria, Portugal Telecom for Portugal, Sonera for Finland, Telia for Sweden, British Telecom for the United Kingdom.*

The EU average tariffs shown in the charts are weighted averages (by population of the Member States in 2003) rather than simple averages.

6.1. *CHARGING SYSTEM*

The billing system for public voice telephony services usually comprises two components: an initial charge applied at the beginning of a call and a charge for the remainder of the call (that may not depend on the type of initial charge used).

6.1.1. Initial charges

There are different types of charges applied at the beginning of a call, either alone or in combination. The charging method used for the remainder of the call may not depend on the type of initial charge used. The types of charges are:

- *Call set-up charge raised at the start of the call (when the call is answered). This charge does not offer any call time.*
- *Initial charge that is used in the same way as call set-up, but in addition includes a certain number of seconds call time before normal time-based charging starts.*
- *Unit charge does in effect work the same way as the initial charge. A full unit is charged at the beginning of the call, providing a certain number of seconds call time until the next unit is charged. Depending on the principle used by the operator (synchronous / asynchronous) the number of seconds call time in the first unit may be less than the specified unit duration.*
- *Minimum charge is normally used with per second billing, to ensure the operator minimum revenue per call. If the call duration is short, the actual call charge may be less than the minimum charge. In such cases the minimum charge will be applied.*

6.1.2. Charging system during the call

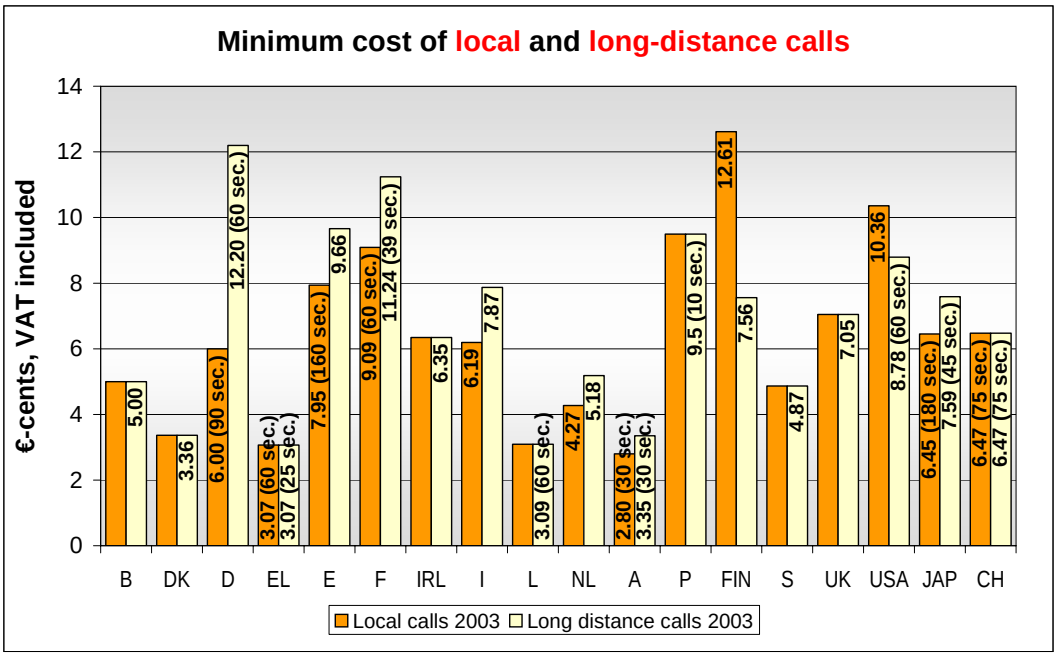
There are in principle 3 ways of charging calls. The fact that most operators tend to publish the duration charges on a per minute basis does not itself indicate which system is used. The 3 principles are:

- *Real time charging (also known as per second billing) allows the cost of the call to be calculated to the exact duration of the call (normally nearest second). Call set-up charge, initial charge or minimum charge may be applied to this structure, in addition to the duration charge.*
- *Unit based charging uses a fixed price unit. The duration of this unit will vary with the destination of the call and time of day. Call duration will always be raised to a multiple of whole units, so the user will nearly always pay for more time than is used. Call set-up charge may be applied to this structure, but is relatively rare.*
- *Fixed period charging uses a variable price, but fixed duration unit. The call is normally charged on a per minute basis, or per 6 seconds. The price for the period will vary with destination and time of day. The charged duration of the call will be raised to a multiple of whole periods. A call set-up charge or initial charge is often implemented in the form of a higher charge for the first minute or period. This initial charge may vary with destination and time of day.*

In August 2003 only the incumbents in Greece, Luxembourg, Austria and Germany still use a unit-based charging system for some types of calls. No changes are reported since the situation in August 2002. **In Switzerland, the historic operator considered is, of course, Swisscom. As with the four above-mentioned countries, Swisscom also applies a unit-based charging system (CHF 0.10 for x seconds).**

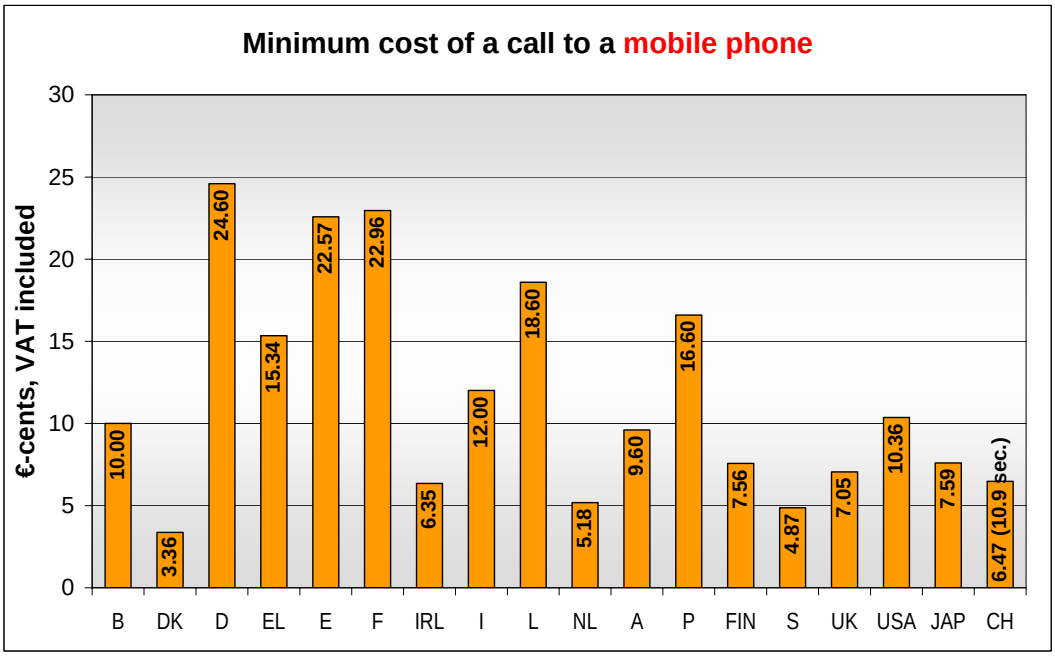
The following charts show the minimum cost, due to initial charges, for local, long-distance and international calls and calls to mobile charged by the incumbent operators. The free call time (i.e. the number of seconds of call time before normal time-based charging starts) is shown in brackets. Values are expressed in €, including VAT.

Figure 67



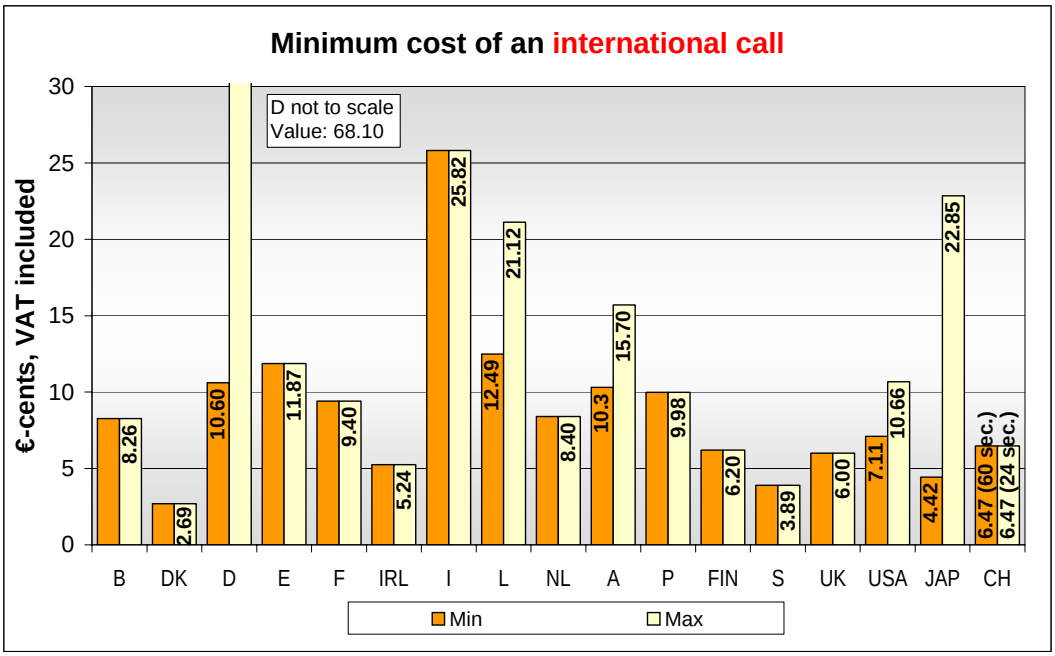
Source for Switzerland: OFCOM Switzerland.

Figure 68



Source for Switzerland: OFCOM Switzerland.

Figure 69



- Data for EL not available.

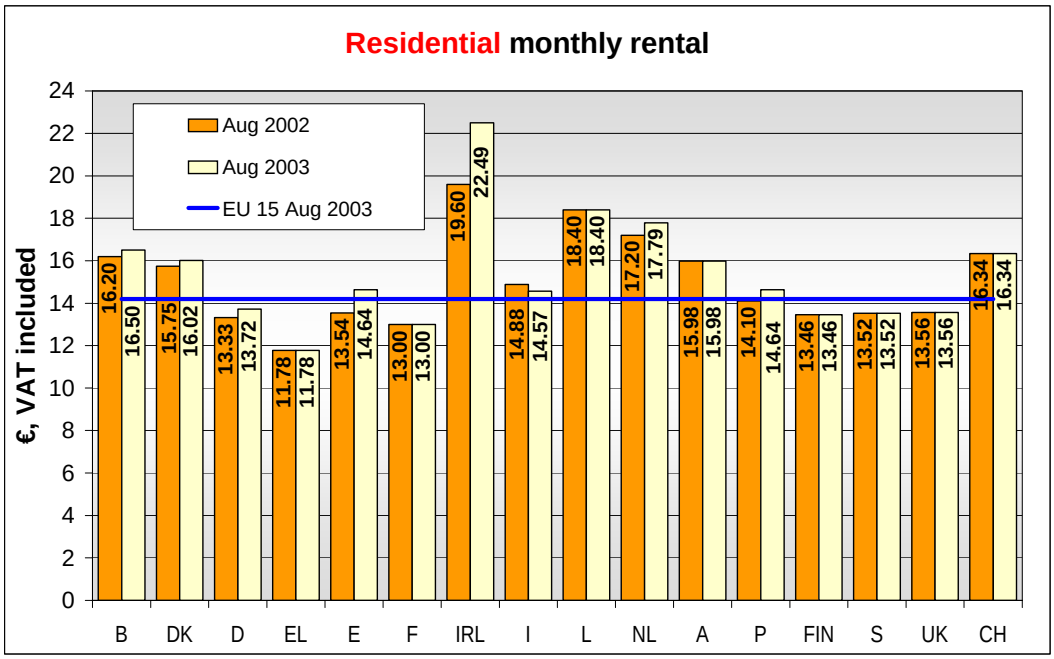
Source for Switzerland: OFCOM Switzerland.
Note: the maximum amount (as well as the seconds referring to it) corresponds to the highest amount for a call to a European country.

6.2. *MONTHLY RENTAL CHARGED BY THE INCUMBENT OPERATORS*

The following charts show the incumbent's monthly line rental charges for residential and business users in each Member State in August 2003 and August 2002 and the variation in nominal terms of the EU average since August 1998. In order to reflect the real charges actually paid by users, values are expressed in €, including VAT for residential users and excluding VAT for business users.

The incumbent operators in Italy, Sweden, United Kingdom, USA and Japan apply different monthly line rental charges for residential and business users. In Austria two different packages have been chosen for residential and business users, hence different charges. In Finland the monthly rental depends on where in the country the line is connected. In the other countries the differences between the types of users are due only to the exclusion of VAT for business users. **Note that the latter case also covers Switzerland.**

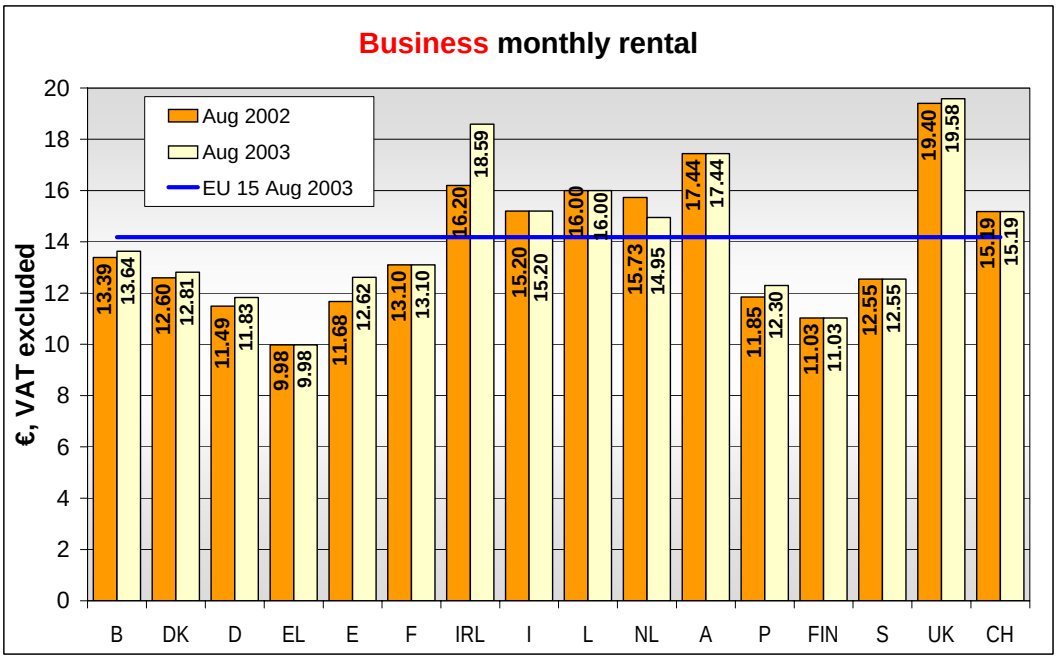
Figure 70



Source for Switzerland: OFCOM Switzerland.

In Switzerland, the monthly charge for an analogue connection (EconomyLine) is CHF 25.25, including 7.6% VAT, which corresponds to 16.34 €. In 2003, the price charged in Switzerland exceeded the weighted European average by 2.14 €. In only four countries is the monthly charge higher – in ascending order: Belgium, the Netherlands, Luxembourg and, finally, Ireland at the top with 22.49 €.

Figure 71



Source for Switzerland: OFCOM Switzerland.

With regard to the price of an analogue business line, exclusive of VAT, Switzerland is hardly any better placed in the international comparison, since the price charged, 15.19 €, exceeds by 1 € the weighted average of the fifteen Union countries. Only Italy, Luxembourg, Austria, Ireland and the United Kingdom are worse placed.

The following charts show the EU weighted average variation in nominal terms of the residential and business monthly line rental charge. **The same charts have been produced for Switzerland.**

Since the liberalisation of the telecommunications market, which generally took place in 1998, line prices have gradually increased in the Union countries. This phenomenon is known as tariff re-adjustment. Its origin lies in the fact that lines were subsidised most of the time by revenue from calls. However, what was possible, or even desirable, in a monopoly is no longer so in a market which is supposed to function according to the rules of competition, and it became imperative to adapt prices to reflect actual costs. In Switzerland, this kind of re-adjustment cannot be observed; the only recorded changes were due to increases in VAT (increasing from 6.5% to 7.5% on 1 January 1999 and from 7.5% to 7.6% on 1 January 2001). We note that the absence of increases in Switzerland had the positive effect of closing the gap which separated us from our neighbours.

Figure 72

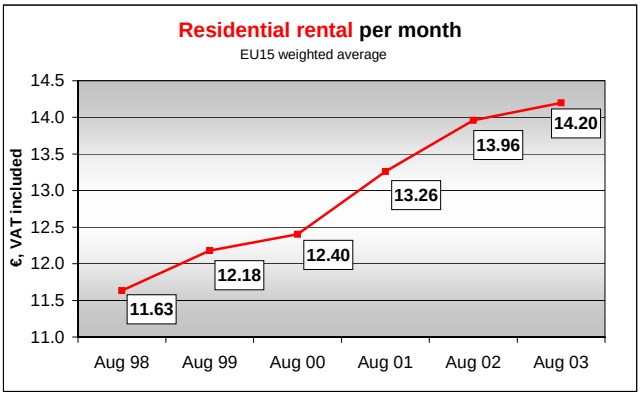


Figure 72a

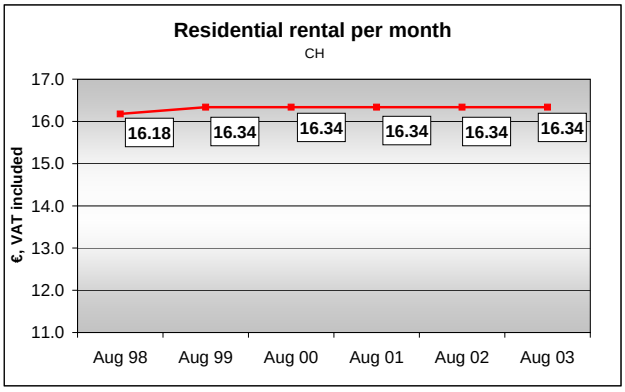


Figure 73

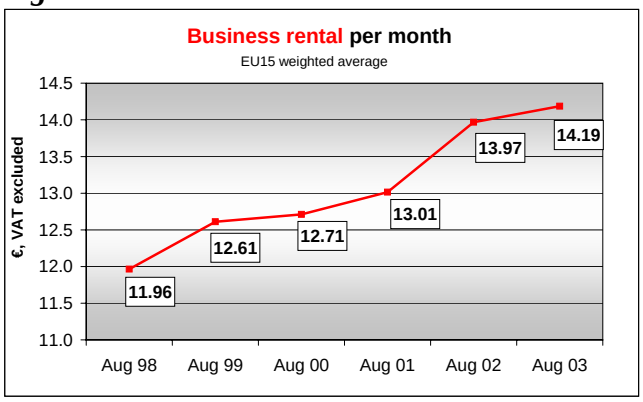
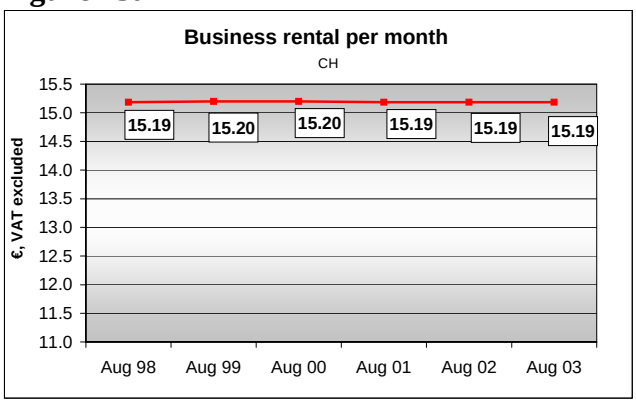


Figure 73a



Source for Switzerland: OFCOM Switzerland.

6.3. *AVERAGE MONTHLY EXPENDITURE (composite call basket)*

The figures presented in this section are intended to provide an estimate of the average monthly expenditure of a "standard" European consumer (business and residential). The Basket Methodology for Telecommunications Cost Comparison has been devised by the OECD and accepted in most countries as the most stable and neutral method of comparison.

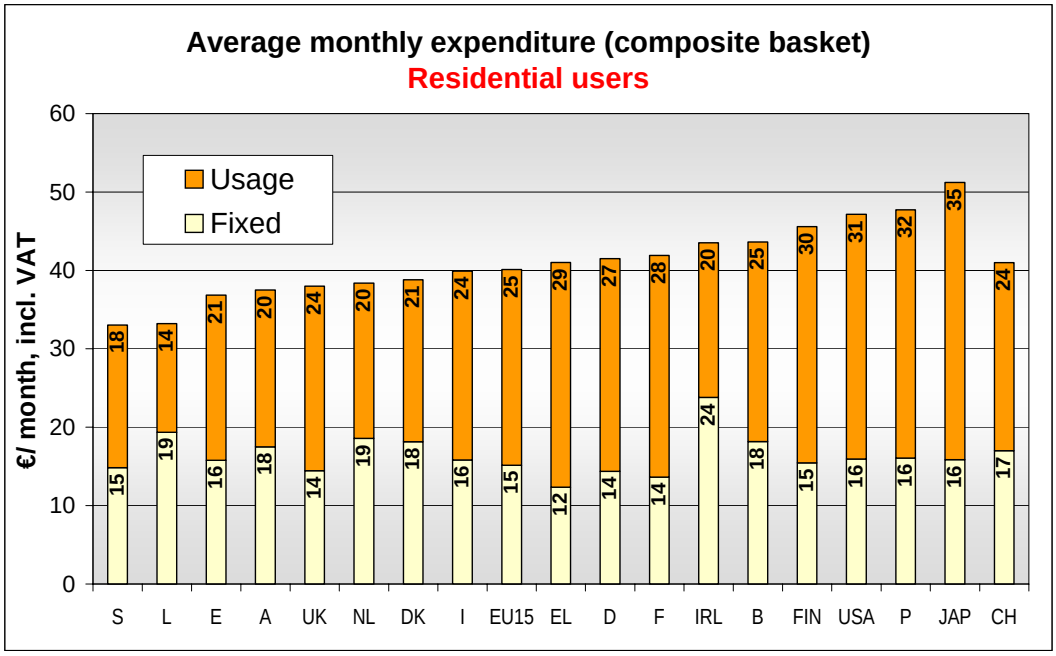
The user is assumed to have a contract for the provision of voice telephony services with the incumbent operator, and to use only this operator for all types of calls (local, long-distance, international, calls to mobile). Since consumers are making increasing use of call-by-call carrier selection, in particular for specific highly discounted types of calls (i.e. international and long-distance), the figures given below are purely indicative, and do not necessarily reflect the cheapest solution available.

The charts below show the average monthly expenditure for standard residential and business users as of August 2003, expressed in €, based on the standard tariffs charged by the incumbent operators (i.e. excluding any discount packages). This means that lower costs can be achieved if the user subscribes to one or more discounted packages.

The basket of calls used to estimate average monthly expenditure is the new "composite OECD basket"[30], which includes not only fixed national calls (as did the old basket), but also fixed international calls and calls to mobile networks.

A full description of the methodology can be found at the end of this report.

Figure 74



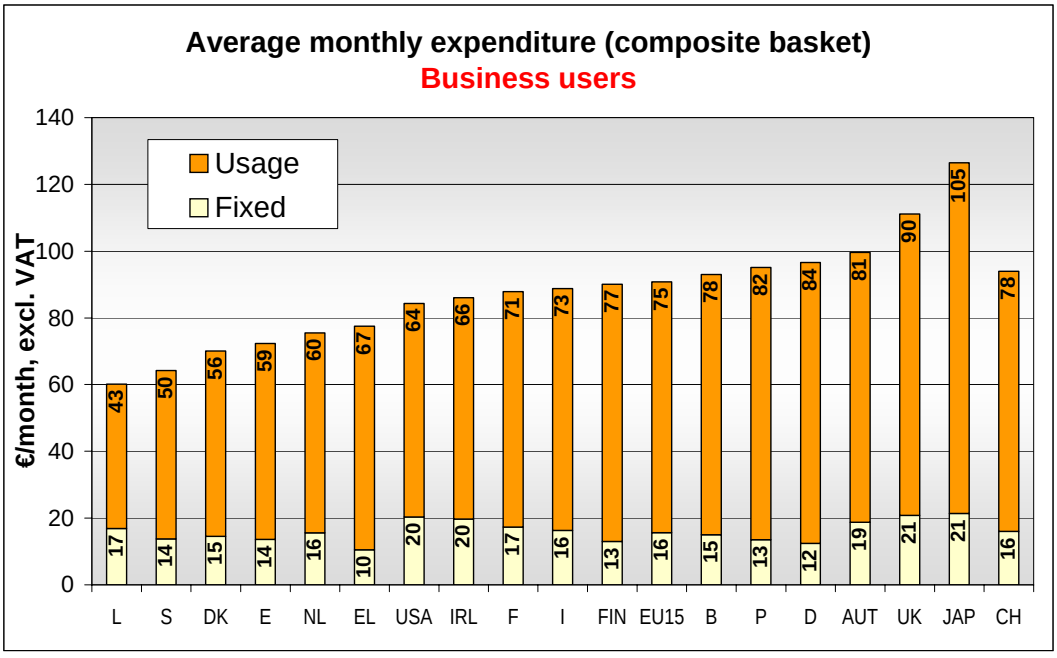
Source for Switzerland: Teligen T-Basket; OFCOM Switzerland computation.

[30] *The revised OECD baskets were adopted in May 2000.*

On the basis of the basket established by Teligen, we find that a Swiss residential user pays 41 € per month for a standard range of services, i.e. hardly more than the average measured cost in the Union countries (40 €). In five countries, the cost of the basket is higher – in ascending order: France, Ireland, Belgium, Finland and Portugal. We also note that Japan and the USA, the only non-European countries considered, are among the less attractive countries.

The same exercise has been carried out for businesses and the results are displayed in Figure 75. The cost of a standard basket of services in Switzerland is slightly above the European average (94 € as against 91 €). The United Kingdom and, once again, Japan are at the bottom of the table. One extremely interesting fact is that the results for businesses have a greater spread than those for residential users, the cheapest basket being 60 € (Luxembourg) and the most expensive 111 € (the United Kingdom); Japan is not included. This seems to indicate extremely diverse practices among different countries in terms of product segmentation. In this sense, the USA is an extreme case, since it leaps from 16th position for residential users to 7th position for businesses. In Switzerland, Swisscom does not really differentiate its fixed network offerings depending on whether it is dealing with a residential customer or a business. If there are any special reductions, these are generally the result of negotiations between the operator and the business.

Figure 75



Source for Switzerland: Teligen T-Basket; OFCOM Switzerland computation.

6.4. *FIXED NATIONAL CALLS*

6.4.1. Prices charged by the incumbent operators for individual fixed national calls

This section shows the prices charged by the incumbent operators for individual fixed calls. Where the incumbent operator uses a unit-based charging system, the price of calls of different duration and/or distances may in some cases be identical, where both calls are charged the same number of

units. Any call set-up charges, minimum charges and/or call specific duration allowances have been taken into account.

Prices refer to peak hours (weekdays 11.00) and are expressed in € including VAT. Except where otherwise specified, the figures refer to August 2003.

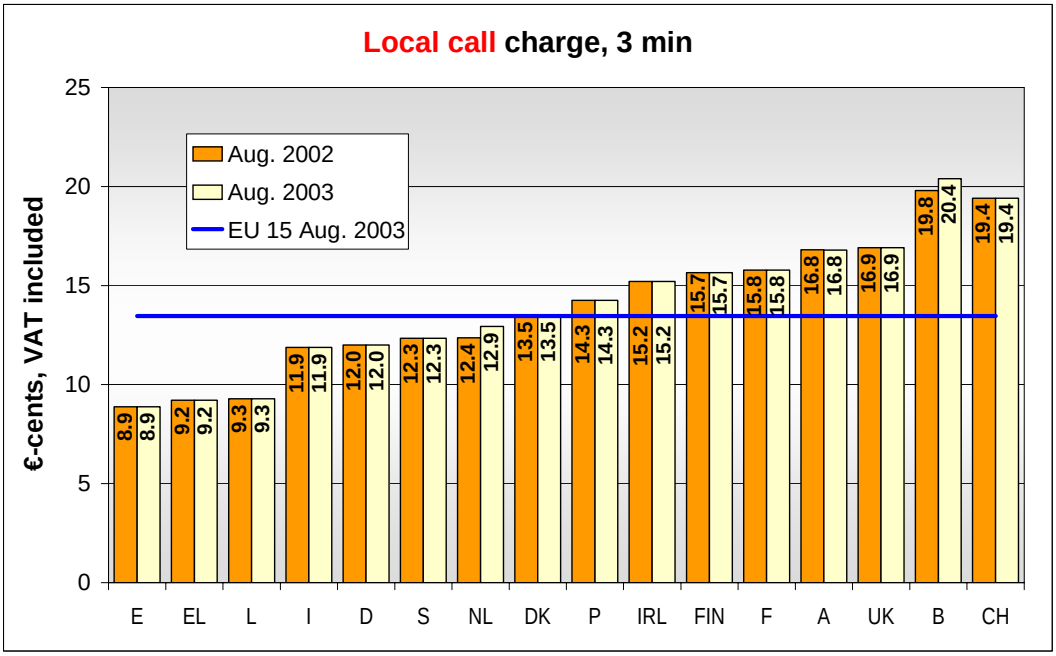
Prices are indicated for three-minute and ten-minute calls over two distances: 3 km (equivalent to a local call) and 200 km (equivalent to a national call). In several countries the tariff changes at exactly one of these distances: in these cases, the rates for the lower distance band are used.

The price of a three-minute call is more affected by the magnitude of the call set-up charge than the price of a ten-minute call.

With the exception of Austria and the Netherlands, the standard tariff is used for this analysis. In the Netherlands the basic, residential package is selected. In Austria the Tik-Tak package has been selected for residential users and the Business 1 package for business users. No discount packages are taken into account.

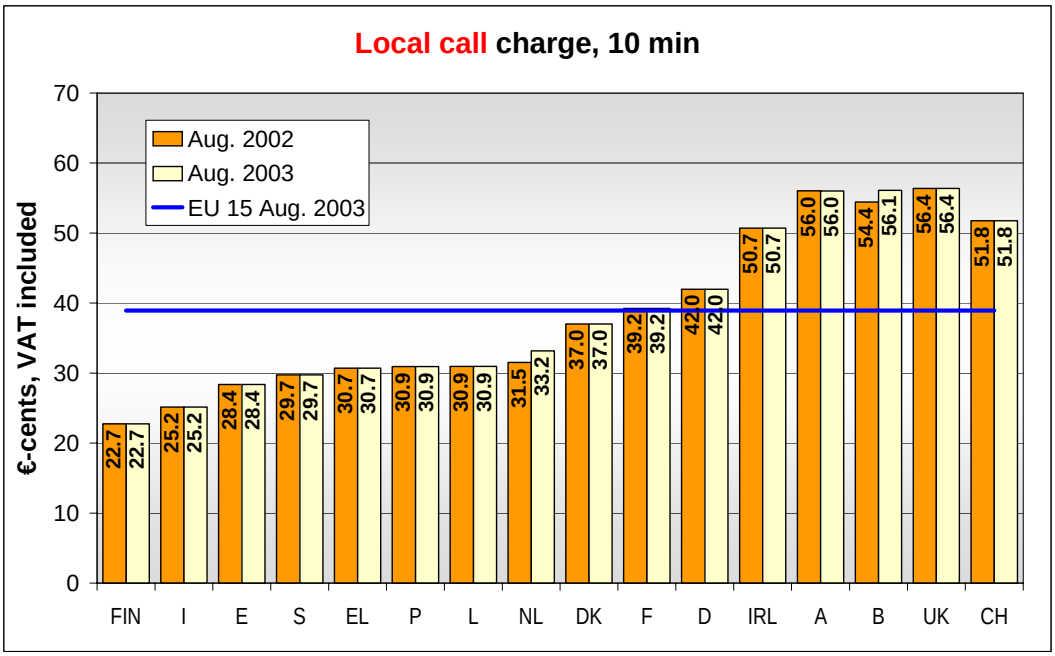
The EU average value is the average of the EU countries weighted according to population in 1999.

Figure 76



Source for Switzerland: OFCOM Switzerland.

Figure 77

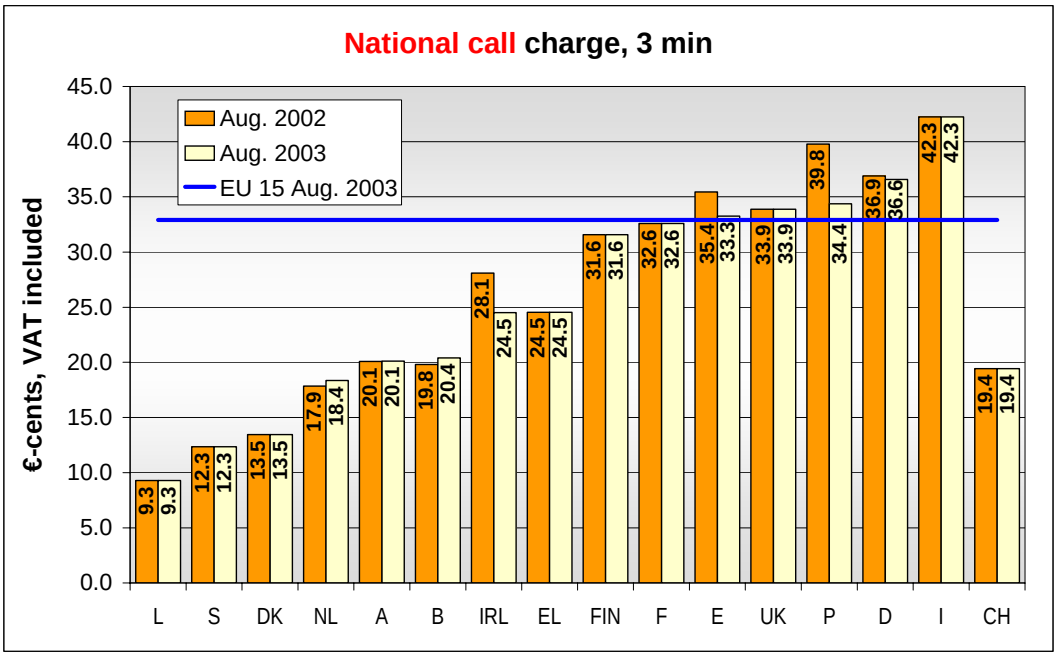


Source for Switzerland: OFCOM Switzerland.

Whatever the duration of the call (3 or 10 minutes), the prices charged for local calls in Switzerland are clearly above the weighted European average. For a three-minute local call (Figure 76), only Belgium charges a higher price. The situation is slightly different for a ten-minute call (Figure 77), since three countries apply higher tariffs: Austria, Belgium and the United Kingdom. We note that Switzerland's poor showing is largely attributable to the introduction, in spring 2002, of a single national rate, independent of distance. Following this new method of charging, the price of local calls increased whilst that of national calls decreased. It should also be noted that, in all the countries considered, prices remained stable between 2002 and 2003, with the exception of Belgium.

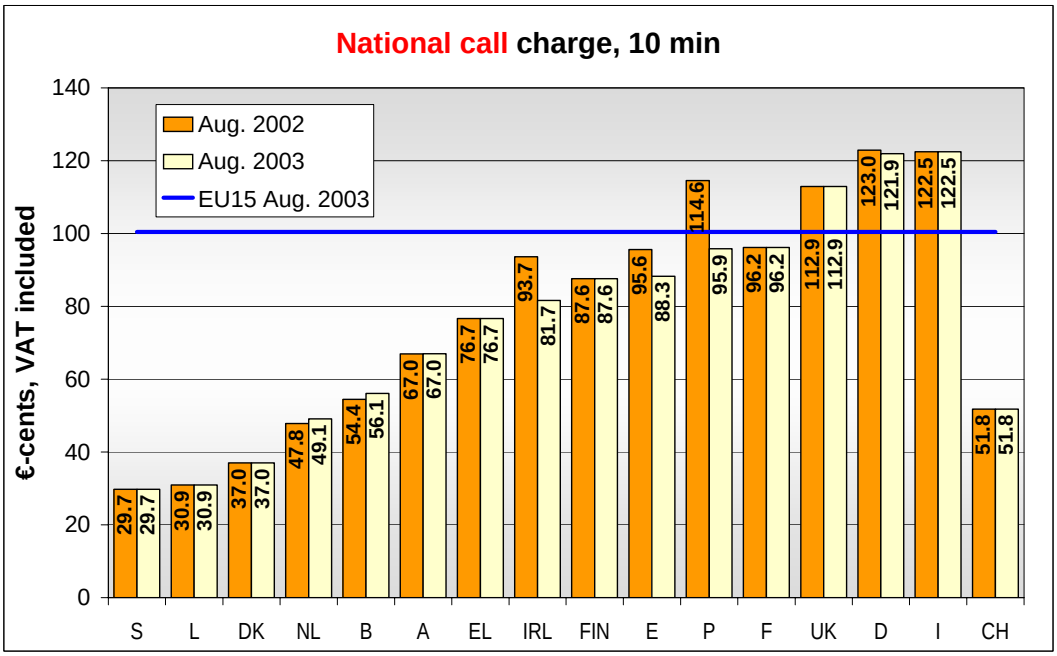
With regard to prices charged for national calls (Figures 78 and 79), Switzerland, however, is well placed in the international comparison. Indeed, whatever the call duration, it is ranked fifth, with prices coming in clearly below the weighted European average. Prices are lowest in Luxembourg and Sweden, at 9.3 €-cents in Luxembourg for a three-minute call (19.4 in Switzerland) and 29.7 €-cents in Sweden for a ten-minute call (51.8 in Switzerland). In both cases, Italy has the highest charges. Unlike the prices of local calls, one can observe a number of changes between 2002 and 2003, but the volatility of the changes was contained within narrow limits.

Figure 78



Source for Switzerland: OFCOM Switzerland.

Figure 79



Source for Switzerland: OFCOM Switzerland.

Figure 80

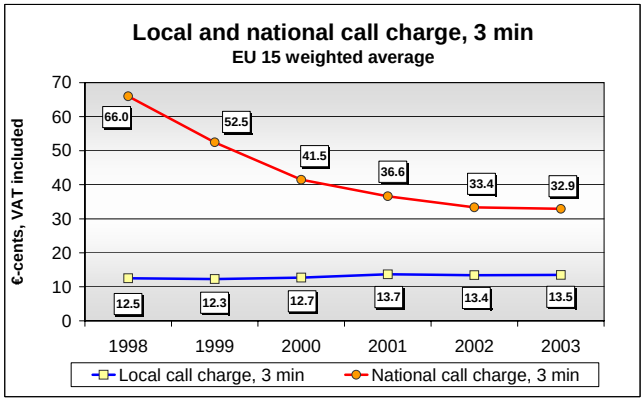


Figure 81

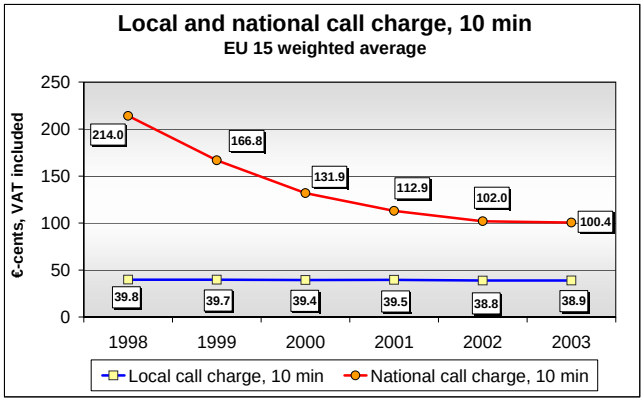


Figure 80a

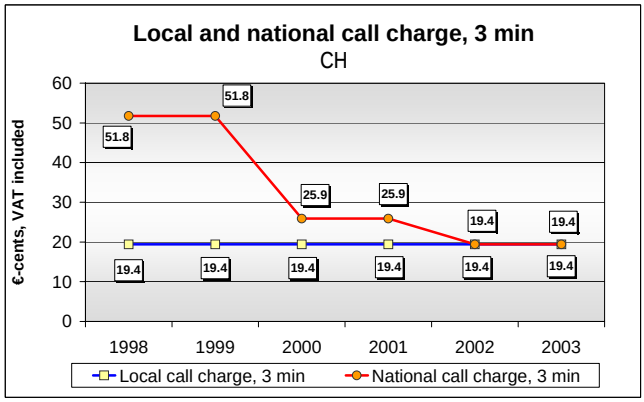
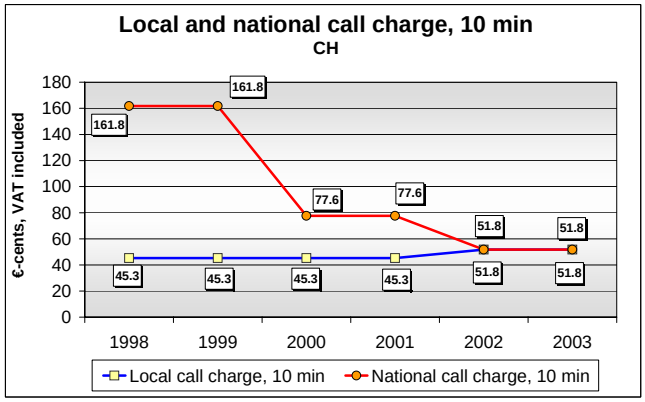


Figure 81a



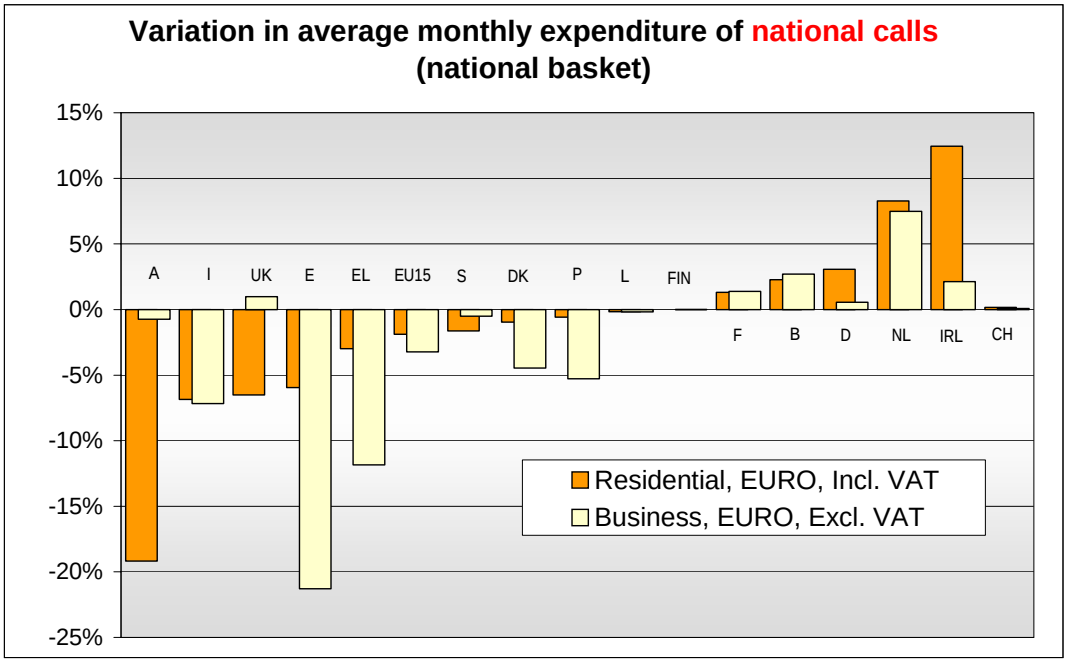
Figures 80 and 80a show the evolution, from 1998 to 2003, of local and national prices for a three-minute call in the European Union countries and in Switzerland, respectively. With regard to local call prices, it has to be said that they remained stable, in both cases, throughout the period in question. The prices of national calls for a three-minute call, on the other hand, fell in the geographical areas considered, quickly at first and then more slowly. Between 2002 and 2003, the changes were negligible in Europe and non-existent in Switzerland, the market seeming to have stabilised itself. There are, in addition, two other differences between the Union countries and Switzerland. First, the evolution charted for the Union is smoother because it takes several countries into account. Secondly, since 2002 Switzerland has had a single price, independent of distance, and this explains why the two curves meet. One can draw more or less the same conclusions from the analysis of the trend in prices for ten-minute calls shown in Figures 81 and 81a.

6.5. *TREND OF THE BASKET FOR FIXED NATIONAL CALLS (NATIONAL BASKET)*

The following chart **(Figure 82)** *shows the variation of the monthly expenditure of residential and business users on fixed national calls in each Member State between August 2001 and 2003 (in order to maintain consistency over time, the "old" OECD basket is used, which, unlike the "composite", does not include international calls).*

This figure shows situations so diverse that it is impossible to draw any conclusions from it. Indeed, although some countries show an increase, of varying levels, in their two baskets, others, however, record a decrease. The United Kingdom is an interesting case, since the cost of the basket calculated for business increases whilst that of the residential basket moves in the opposite direction. In Switzerland, a very slight increase can be observed in both cases.

Figure 82



Source for Switzerland: Teligen T-Basket; OFCOM Switzerland computation.

Figure 83 displays the change in the EU average national basket for residential and business users in the period from August 1998 to August 2003. **Figure 83a shows the situation for Switzerland.**

The change in the international basket is shown in section 7.

A full description of the methodology can be found at the end of this report.

When a comparison is made between the changes which have been recorded in the costs of the baskets (business and residential users), on average, in the Union countries and in Switzerland, one can immediately see the extent of the positive effect which the liberalisation of telecommunications in Switzerland has had. Indeed, since 1998, the cost of the business basket registered a drop of 42.1% in Switzerland as against 22.7% in the Union countries. Though somewhat less spectacular, the drop in the cost of the residential basket is also encouraging (-33.7% as against -13.5% in the Union countries). It is advisable, however, to temper this enthusiasm somewhat by considering the fact that the original costs (1998) were

considerably higher in Switzerland. Notwithstanding this fact, the estimated cost of the business basket at the end (2003) is still lower in Switzerland than abroad. The slight increase observed between 2002 and 2003 for the two types of basket are explained by the introduction of a one-off charge for putting the line into service.

Figure 83

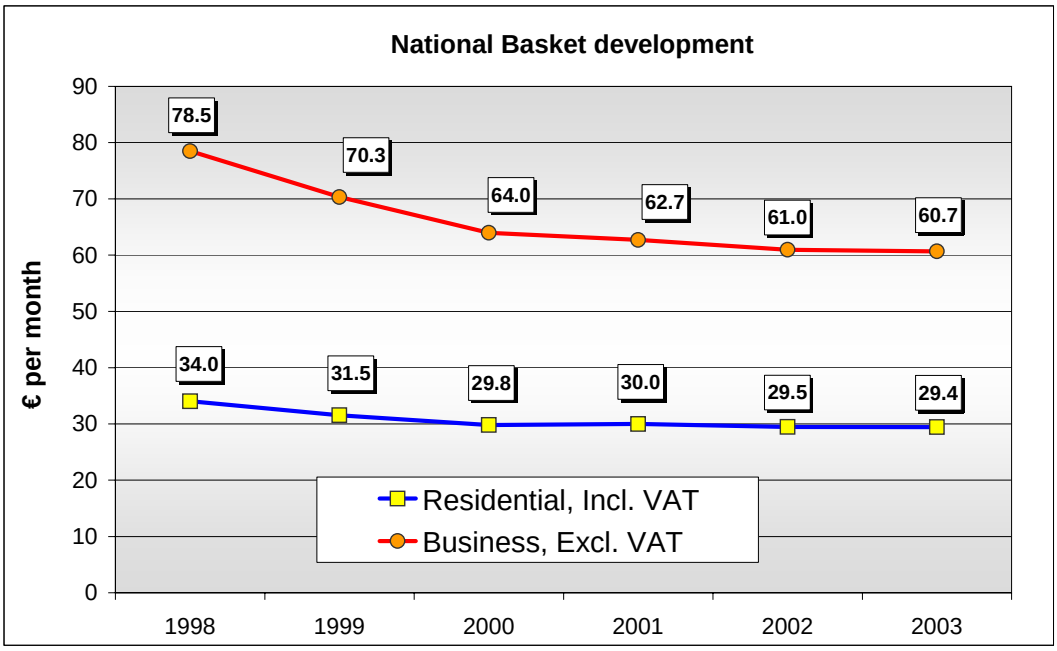
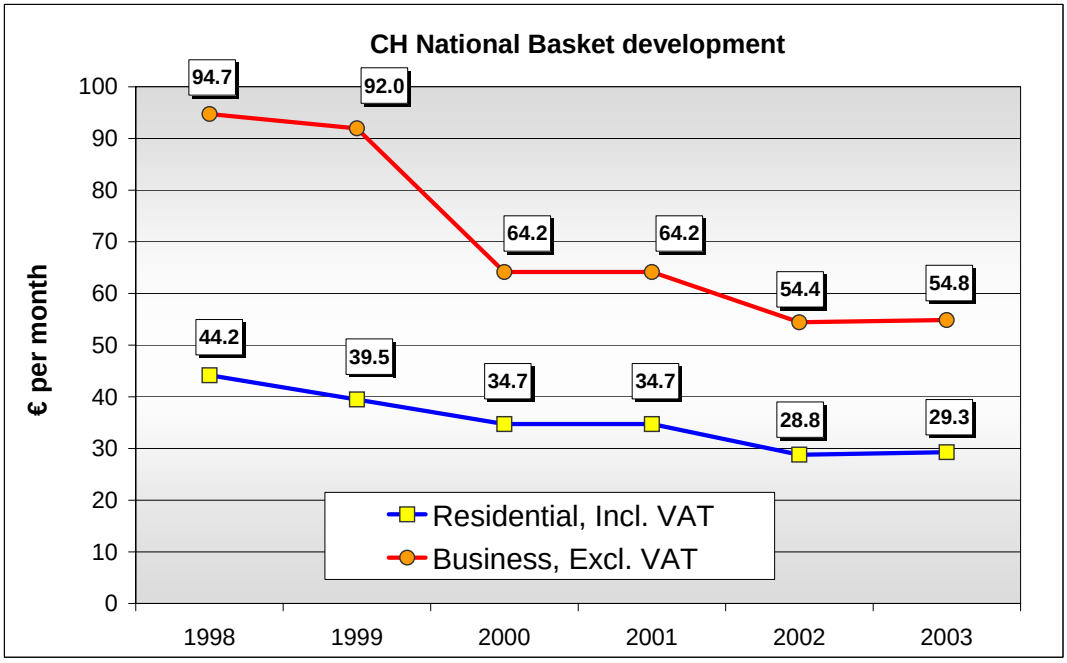


Figure 83a



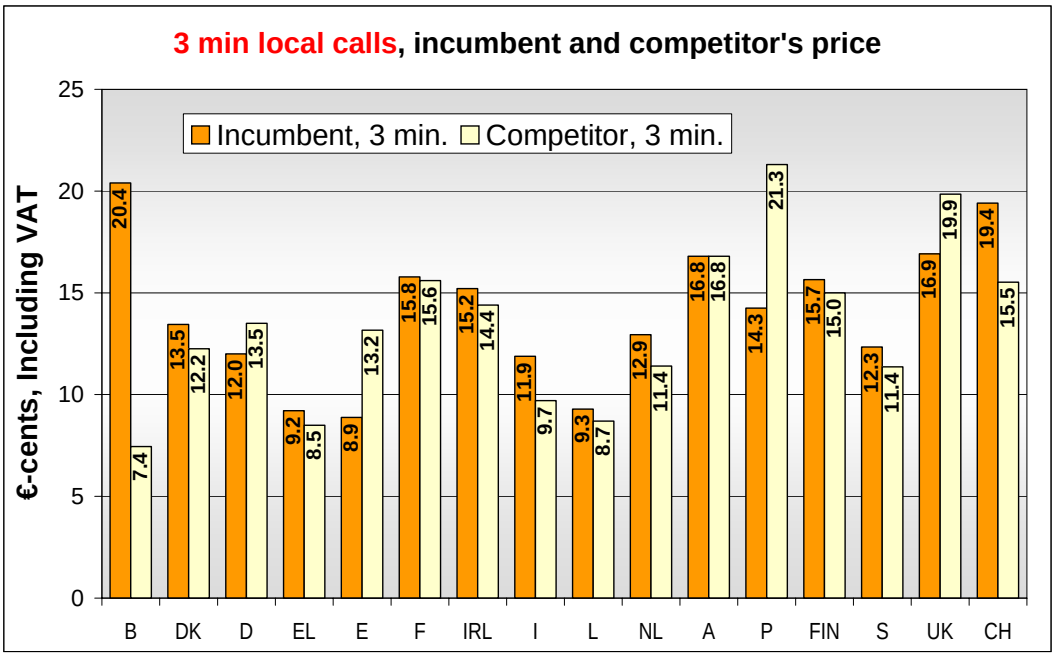
Source for Switzerland: Teligen T-Basket; OFCOM Switzerland computation.

6.6. *ALTERNATIVE NATIONAL OPERATORS*

This section compares the prices charged for public voice telephony services by the incumbent operator by one competitor in each Member State.

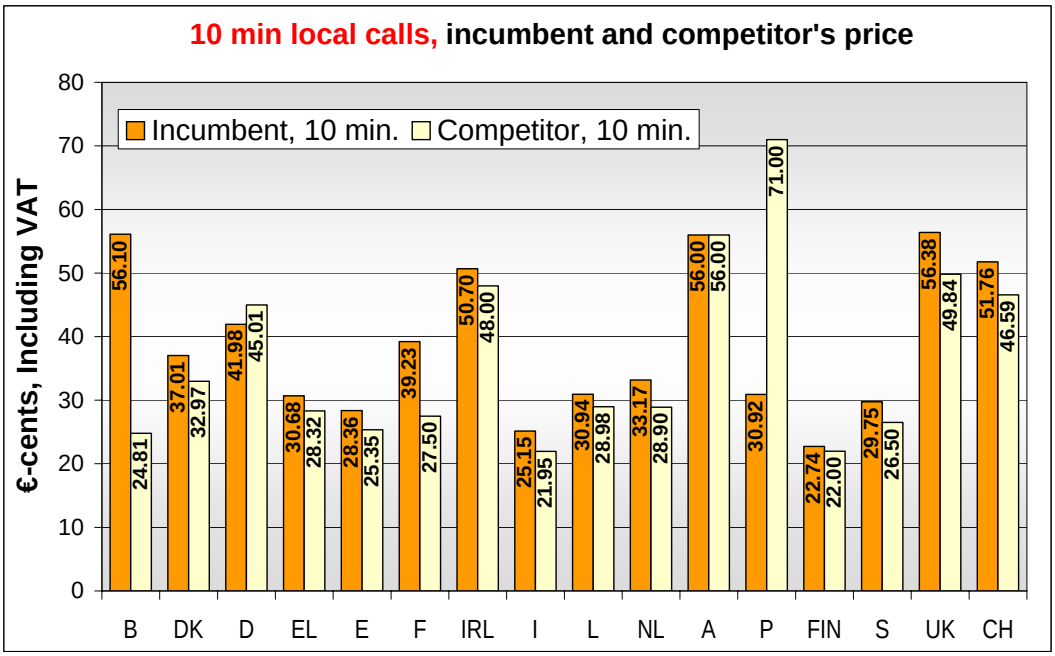
In Switzerland, the comparison was made with Swisscom's main competitor, Sunrise, which does not automatically mean that it represents the cheapest alternatives available to consumers. The prices are those of August 2003 and correspond to the peak period. If one compares the price of a three-minute local and national call (Figure 84 and Figure 86), Sunrise charges 20% less. The same comparison made for a ten-minute call (Figures 85 and 87) show a 10% difference between the two operators, again in favour of Sunrise. It should be noted that this narrowing of the difference is largely explained by the fact that the two operators do not apply the same charging systems. Swisscom applies a unit-based charging system (CHF 0.10 per x seconds) and Sunrise charges by the second; the results are therefore dependent on the choice of the exact number of minutes on which the comparison is based. In fact, if the number of minutes considered corresponds to the precise moment at which the switch to the next additional unit occurs, Swisscom's prices are comparatively less attractive. We further note that since Switzerland now has only distance-independent prices, it is not necessary, unlike in other countries, to carry out an analysis which is differentiated according to the distance of the call (local or national). Looking at Figures 84 to 87, there are two more interesting general discoveries to be made. The first is that there are still substantial differences in price between the historic operator and its main competitor, which means that competition has not yet completely homogenised prices. The second lies in the fact that in certain countries the alternative operator charges a higher price than the historic operator (the case of Portugal, for example). The reality is therefore always more complicated than one might first imagine.

Figure 84



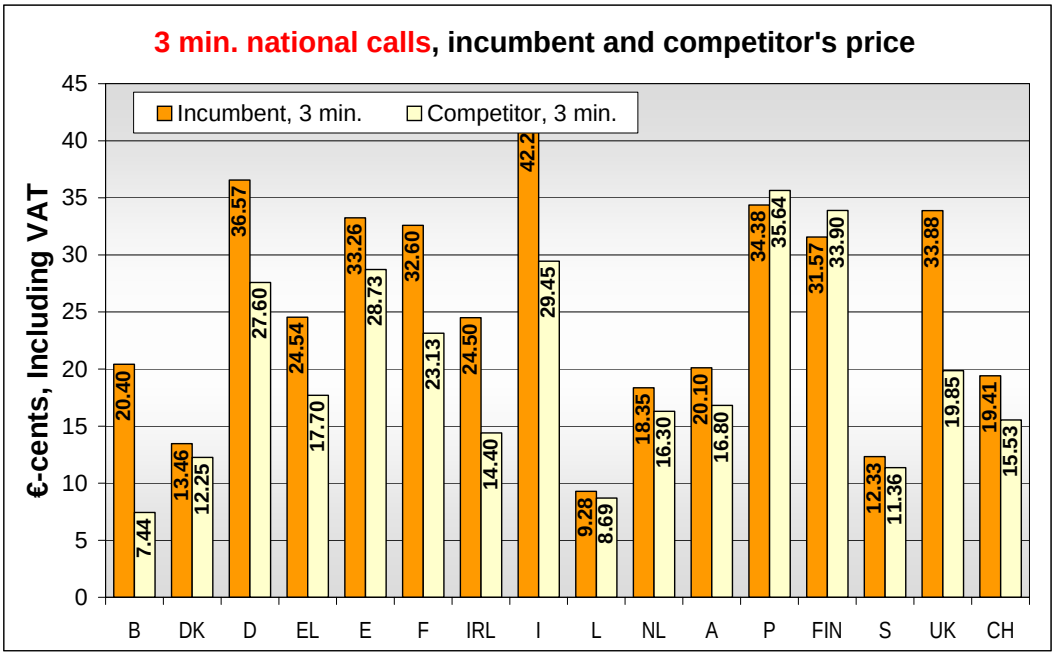
Source for Switzerland: OFCOM Switzerland.

Figure 85



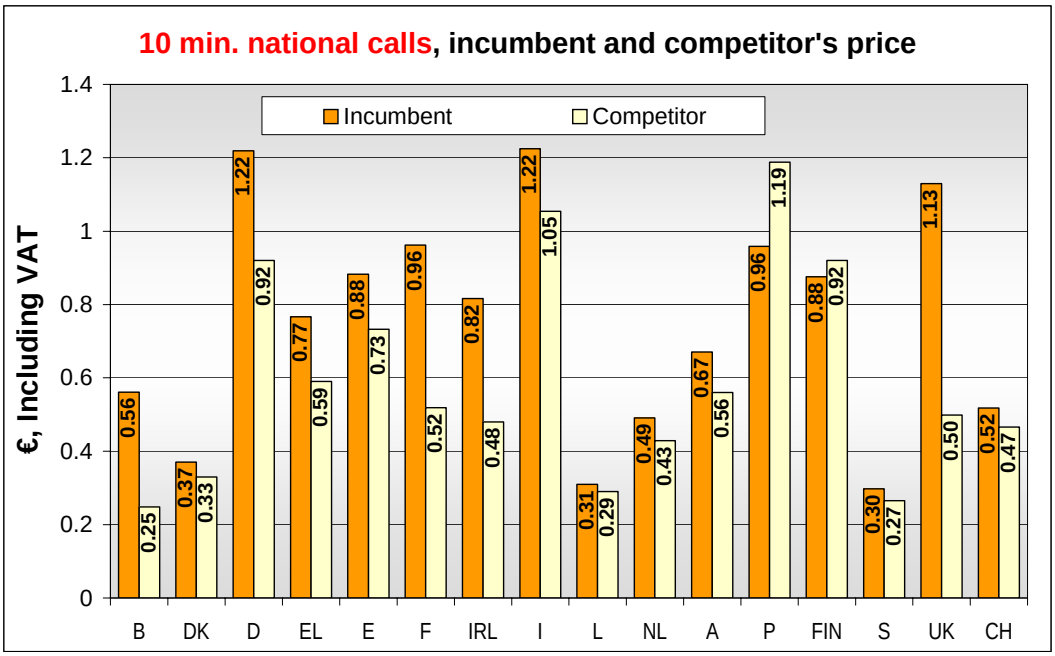
Source for Switzerland: OFCOM Switzerland.

Figure 86



Source for Switzerland: OFCOM Switzerland.

Figure 87



Source for Switzerland: OFCOM Switzerland.

FIXED INTERNATIONAL CALLS

The following charts show the prices of the international call basket (an estimate of the average cost of an international call in each country) and the actual price of a 10-minute call to specified destinations (within the EU, to Japan and to the USA).

6.7. *PRICE OF AN AVERAGE FIXED INTERNATIONAL CALL (international call basket)*

The basket of international calls for each country provides an estimate of the average cost of an international call.

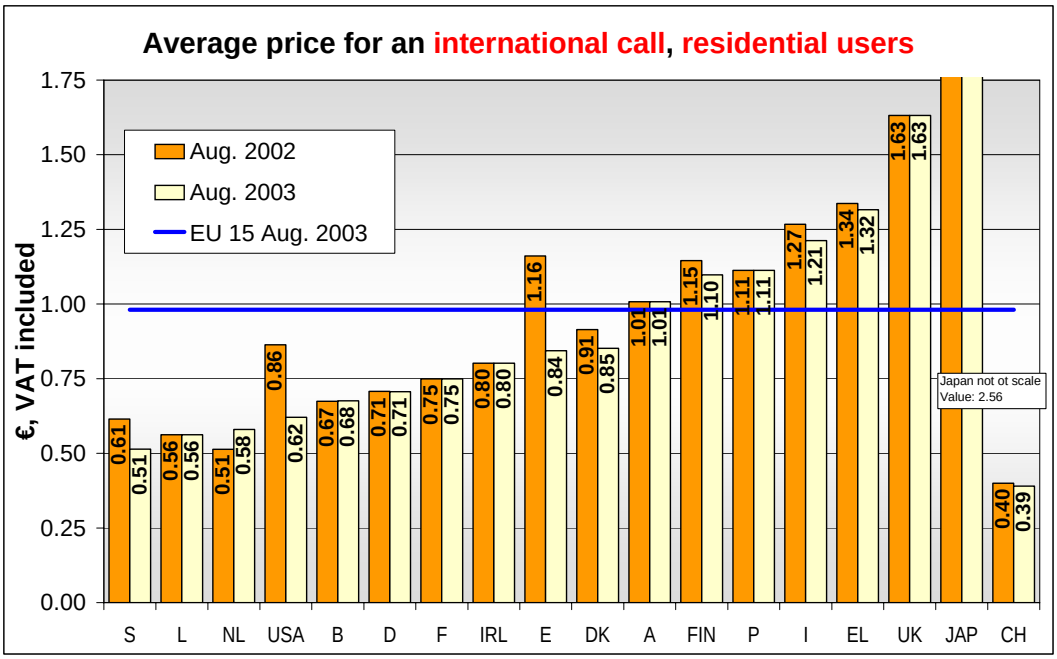
*For the basket comparison of international PSTN call charges, the OECD Traffic weight basket methodology is used. The basket calculates **an average charge** for calls to all OECD destination countries.*

The EU average value is the average of the EU countries weighted according to population in 2003.

A full description of the methodology can be found at the end of this report.

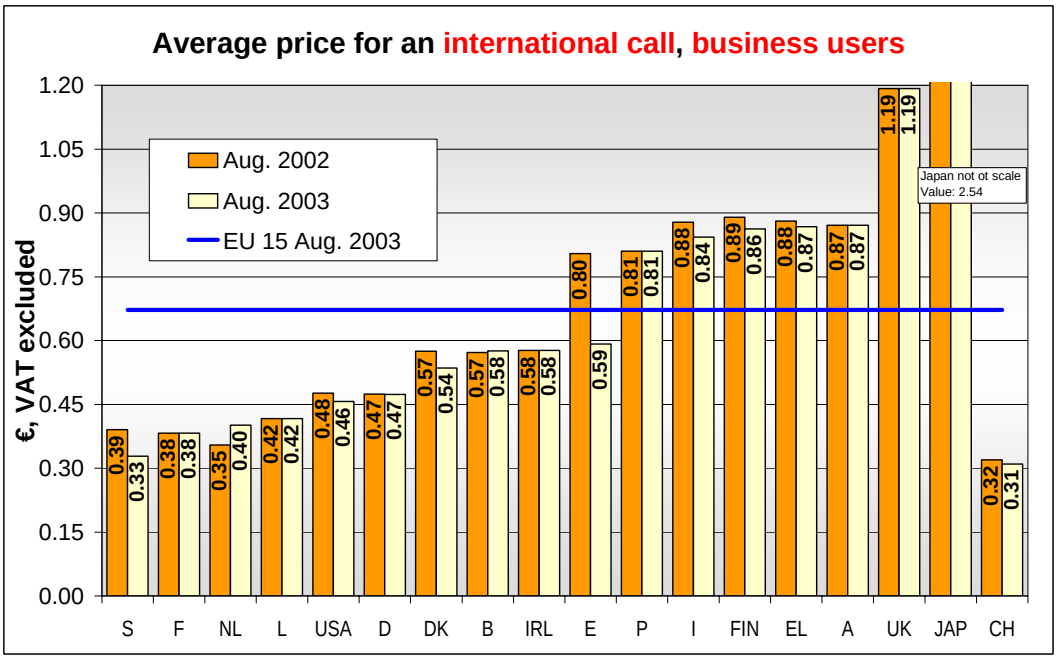
With regard to the price of international calls, Switzerland is in an exceptional position since it is impossible to find a country in which prices are more attractive, either for residential users (Figure 88) or for business (Figure 89). Moreover, the prices charged are well below the weighted European average. For a country such as Switzerland, which is traditionally orientated towards exporting, this situation is encouraging. Japan, with prices which literally go through the roof, is at the other end of the league table.

Figure 88



Source for Switzerland: Teligen T-Basket; OFCOM Switzerland computation.

Figure 89



Source for Switzerland: Teligen T-Basket, OFCOM Switzerland computation.

Figures 90 and 90a display the evolution, between 1998 and 2003, of the price of an international call in the European Union countries and Switzerland, respectively. In the Union countries, prices fell constantly and progressively. In Switzerland, on the other hand, the competitive pressure exerted by the new entrants had some very rapid and marked

effects, since prices fell by almost 80% between 1998 and 2000, regardless of the type of user (business or residential). Since then, the recorded fall has been negligible.

Figure 90

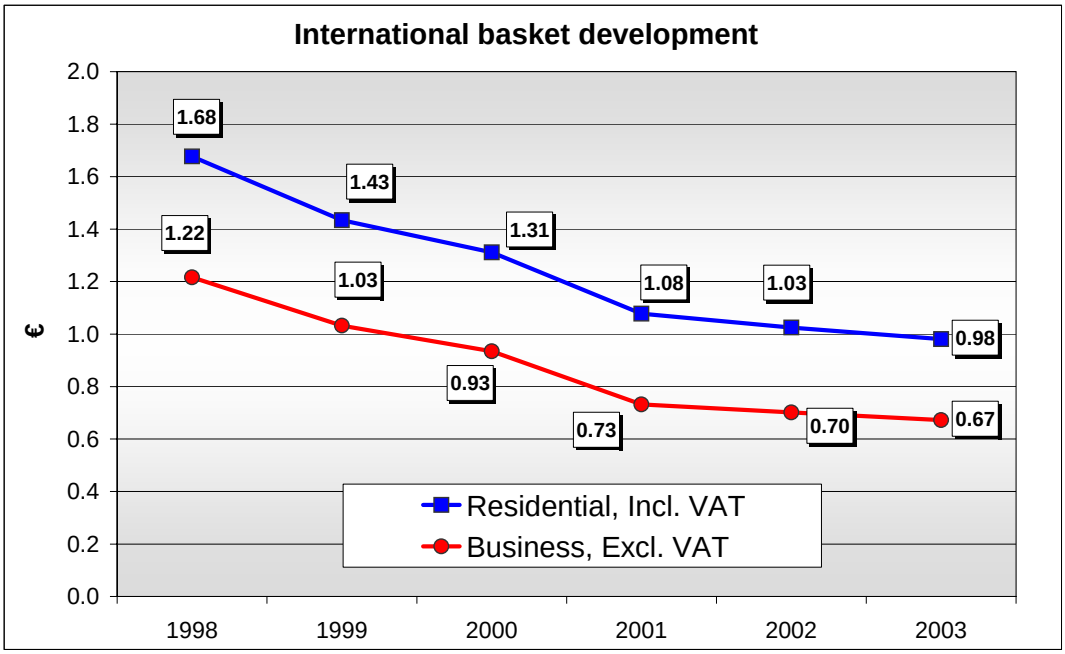
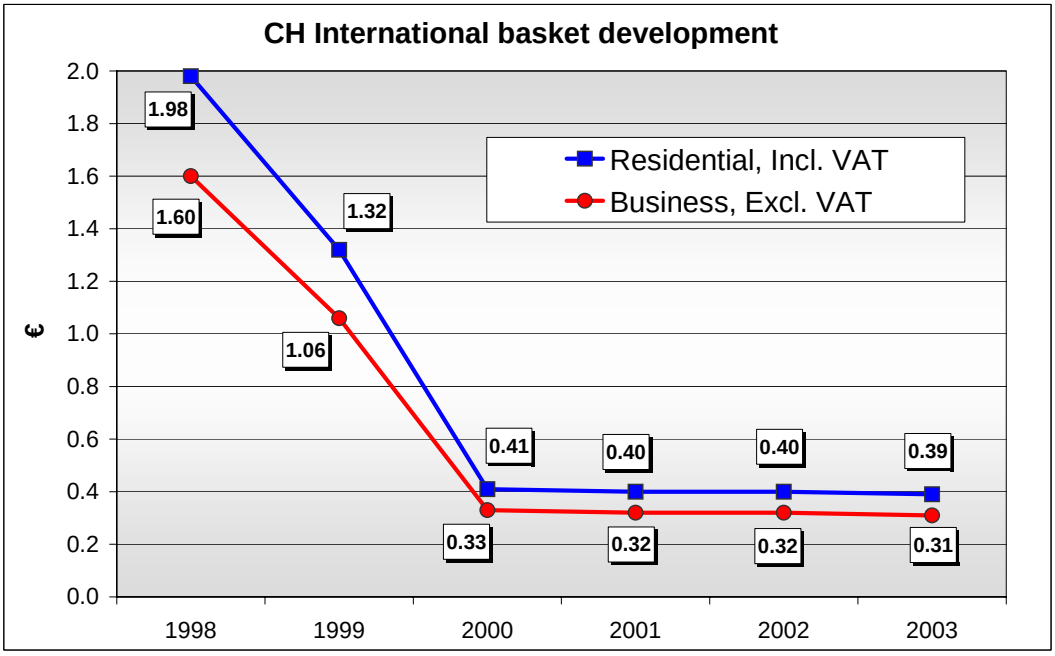


Figure 90a



Source for Switzerland: Teligen T-Basket; OFCOM Switzerland computation.

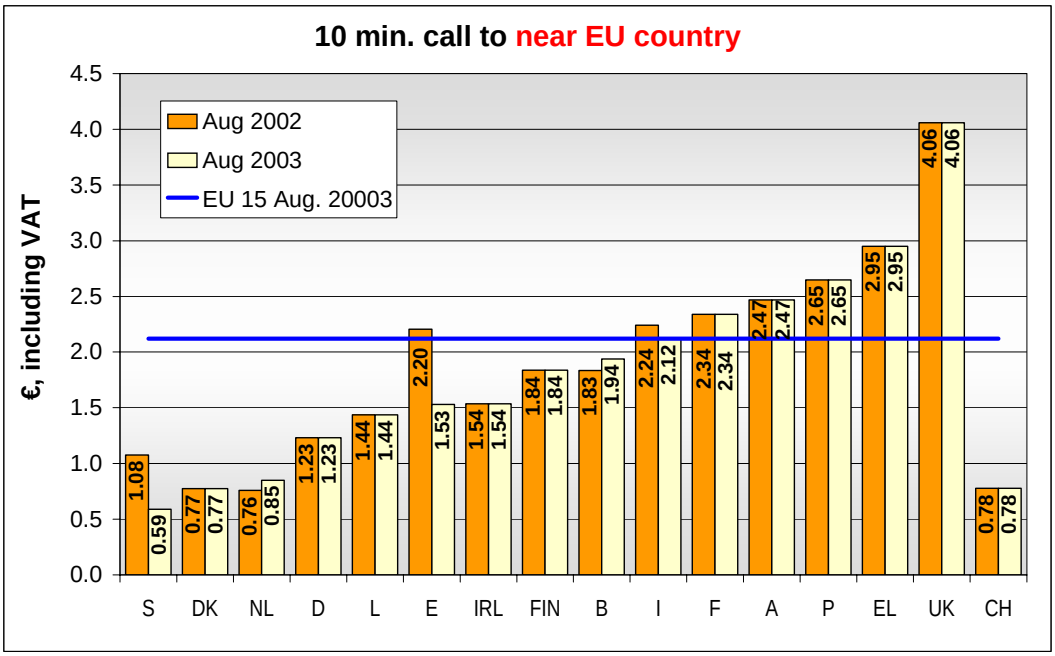
6.8. *PRICE OF CALLS TO EU, JAPAN, USA*

The following charts **(91-94)** *show the prices of a 10-minute international call (including VAT) during peak hours (weekday 11.00) to four different destinations: neighbouring country*[31] *(near EU), more distant country*[32] *(far EU), Japan and the USA.*

Figures are expressed in € at August 2003 values and they refer to the European incumbent operators and the EU weighted average.

As far as calls to its direct neighbours (Figure 91) are concerned, it was assumed that Germany was the closest country to Switzerland. It is apparent that in the international comparison a Swiss user pays relatively very little to make a ten-minute call to his German counterpart. Only Swedish and Danish users enjoy more attractive conditions. Furthermore, the cost in Switzerland is very well below the weighted European average.

Figure 91



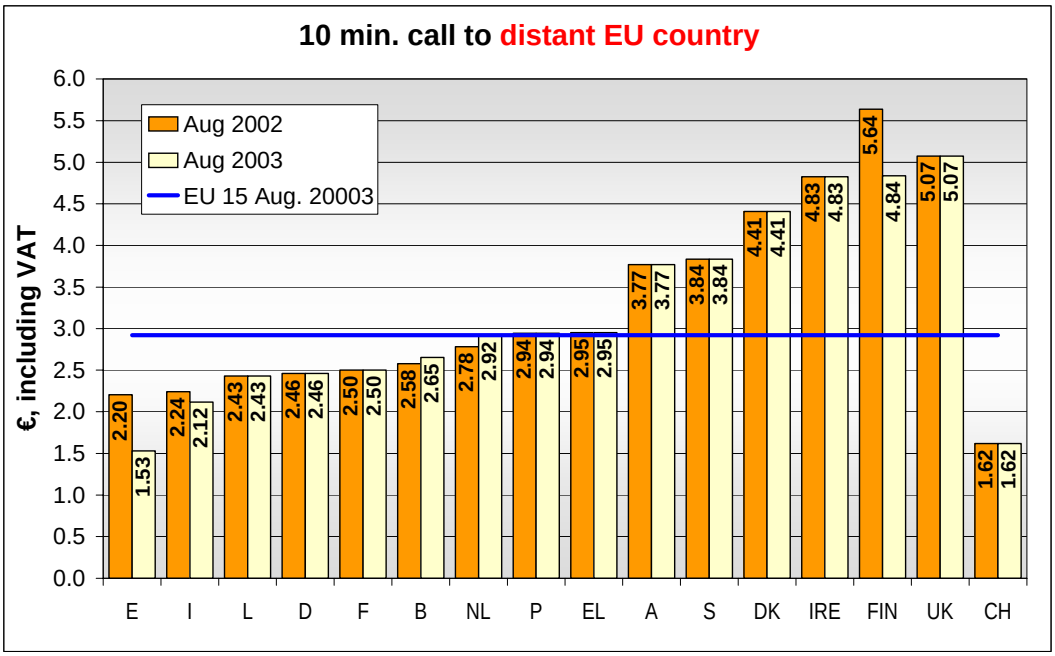
Source for Switzerland: OFCOM Switzerland.

Figure 92 shows the price of a ten-minute call made between each country examined and its most distant neighbour. For Switzerland, this was deemed to be Sweden. Once again, the situation turns out to be extremely favourable in Switzerland, since it is in second place, just behind Spain, in the list of least expensive countries.

[31] *The neighbouring countries are defined as: France for Belgium (and vice-versa), Germany and the United Kingdom; Sweden for Denmark and Finland; Italy for Greece (and vice-versa); Portugal for Spain (and vice-versa); the United Kingdom for Ireland, the USA and Japan; Germany for Luxembourg, the Netherlands and Austria.*

[32] *The more distant countries are defined as: Greece for Belgium, Denmark, Germany, France, Ireland, Luxembourg, the Netherlands, Austria, Finland, Sweden, the United Kingdom, the USA and Japan; Denmark for Greece, Spain, Italy and Portugal.*

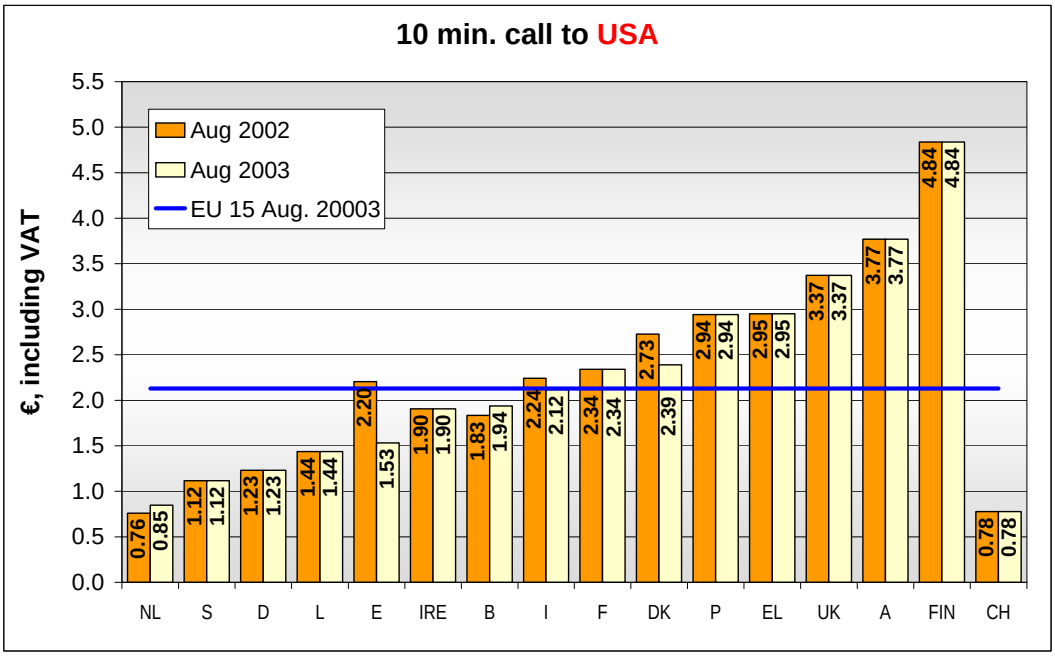
Figure 92



Source for Switzerland: OFCOM Switzerland.

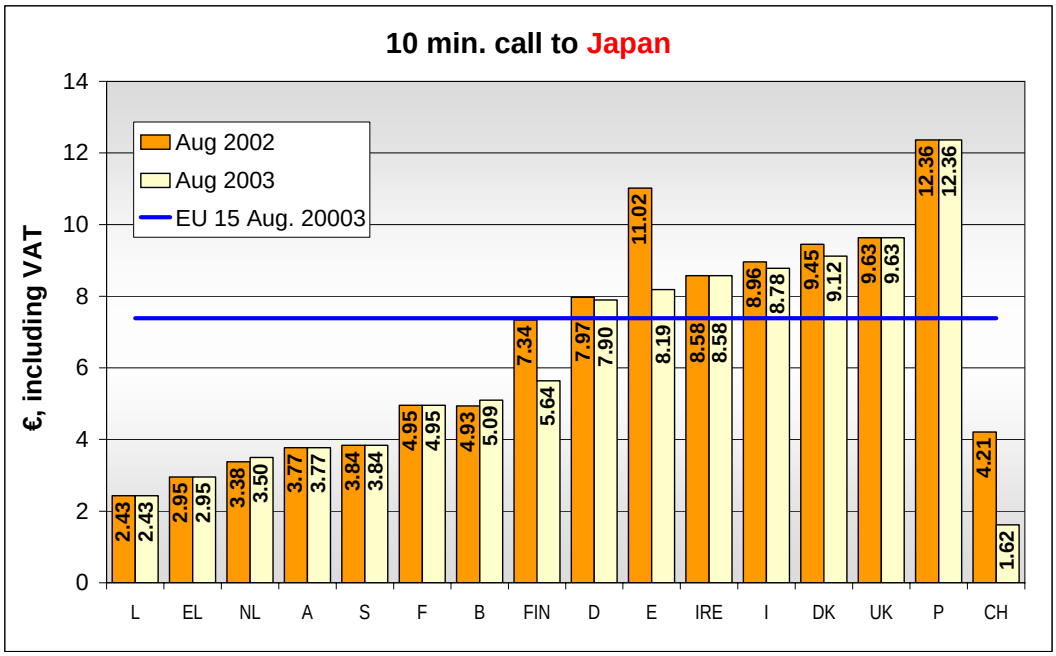
Figures 93 and 94 show the cost of a ten-minute call to the USA and Japan, respectively. In both cases, it is impossible to find conditions more favourable than those which prevail in Switzerland.

Figure 93



Source for Switzerland: OFCOM Switzerland.

Figure 94



Source for Switzerland: OFCOM Switzerland.

6.9. *ALTERNATIVE OPERATORS. TARIFFS FOR INTERNATIONAL CALLS*

The equivalent prices for competitor providers in the EU countries are shown in the charts below. One competitor per country has been analysed. The prices are shown for a 10 minute call, at peak time weekdays.

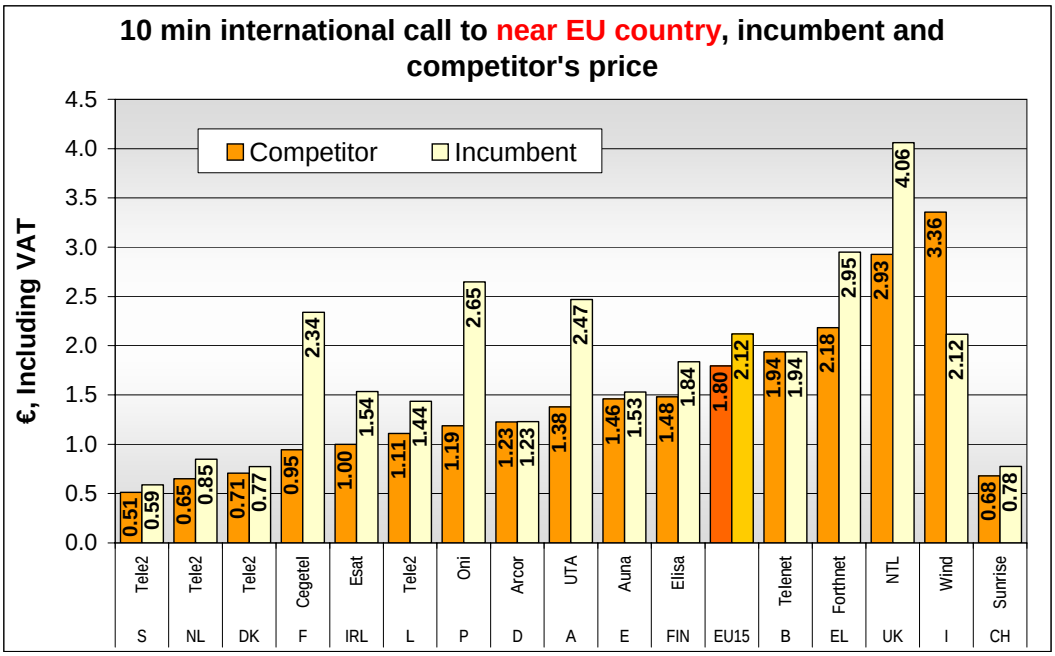
Prices include VAT and are applicable for August 2003.

For Switzerland, the comparison was made with the prices charged by Sunrise, Swisscom's main competitor, which does not necessarily mean that they are the cheapest solutions available on the market.

As was shown in the preceding section (6.8), the prices charged in Switzerland are well below the European average and it is extremely rare to find more advantageous conditions. In spite of the very low level of the prices billed by the dominant operator, it is possible for a Swiss user to benefit from the substantial advantages available from the competition. Thus the difference for a ten-minute telephone call with the main alternative operator is:

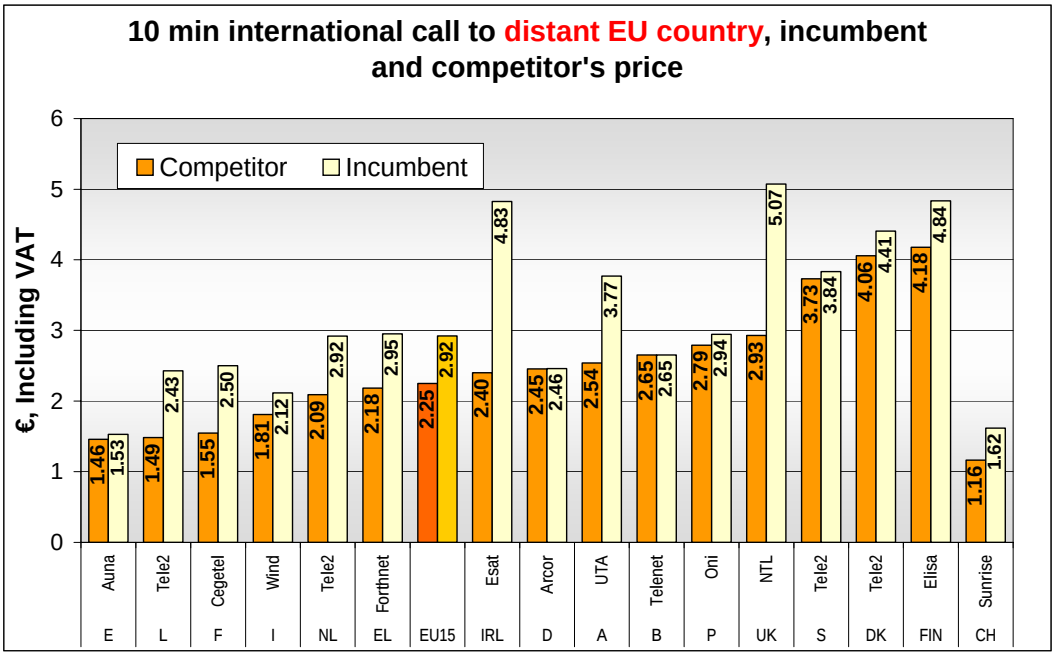
- **-12.8% for a call to the nearest neighbour country (Figure 95);**
- **-28.4 % for a call to the most distant EU member country (Figure 96);**
- **-16.7% for a call to the USA (Figure 97);**
- **and finally, -20.4% for a telephone call to Japan (Figure 98).**

Figure 95



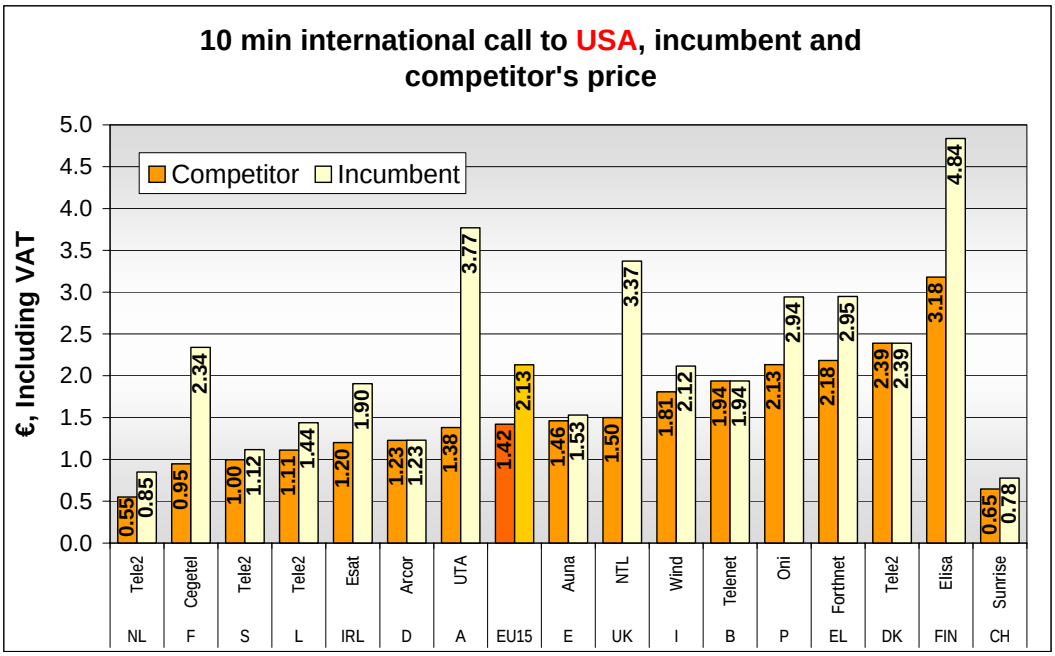
Source for Switzerland: OFCOM Switzerland.

Figure 96



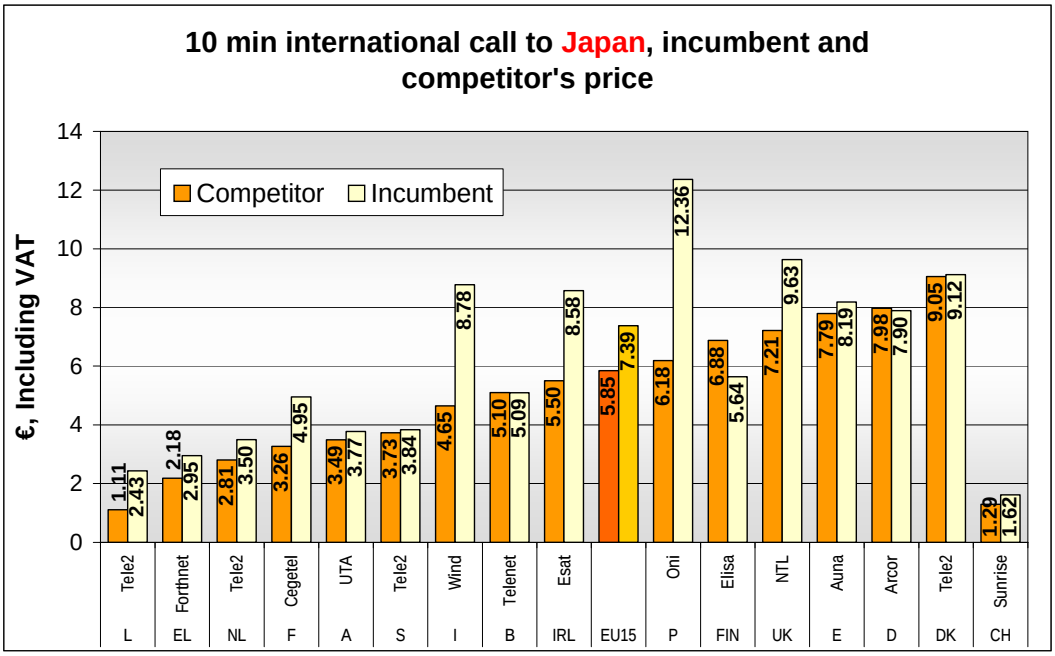
Source for Switzerland: OFCOM Switzerland.

Figure 97



Source for Switzerland: OFCOM Switzerland.

Figure 98



Source for Switzerland: OFCOM Switzerland.

7 *LEASED LINES RETAIL TARIFFS*

This section contains an overview of prices charged by incumbent operators in each Member State **(and in some cases for Switzerland)** *for national and international leased line services as at 1st August 2003 to end users. Figures do not cover wholesale prices. Price developments are also analysed over the period August 1998-2003.*

The figures and the information are taken from a study carried out by Teligen, HI Europe for the Commission. Data on standard retail prices charged by incumbent operators have been collected from the incumbent operators and communicated to the National regulatory Authorities (NRA), which checked the accuracy of these data before this report was produced.

In Switzerland, the retail leased lines market is characterized by opacity with its origin in the small number of players and the competition in which they engage. Charges do not fall with usage. The sole source of information at our disposal is the Teligen T-Basket product. This product, unfortunately, does not include an analysis as detailed as the one presented in this report, which is why certain markets could not be examined (34Mb/s and 155Mb/s, as well as international leased lines). One final point: Teligen obtains information from Swisscom and calls the reader's attention to the fact that the prices charged by the historic operator are negotiated on a case by case basis. Thus Teligen assumes that the notified prices are an objective reflection of the negotiated prices.

7.1. *INCUMBENTS' NATIONAL LEASED LINES*

National leased line data are provided from 1998 onwards. 2 distances are covered: 2 km (local circuits), and 200 km. Tariffs are taken from the incumbent operator in each country. Other operators may offer other prices.

In order to properly reflect the tariff structures used in some countries the circuits may be considered in one of two different ways, depending on tariff structure. The one to apply will differ from carrier to carrier. The principles used in this report for calculating the price of a full circuit are:

	1: When tariff specifies local tail prices separately, in addition to main circuit.		*2: When tariff specifies a single price for the circuit, end to end, including local tails.*	
	Local tail length	*Main circuit length*	*Local tail length*	*Main circuit length*
2 km circuit	*1 km*	*0*	*0*	*2 km*
200 km circuit	*2 km*	*196 km*	*0*	*200 km*

Note: The local tail length is per tail, i.e. there will be 2 such tails with each circuit.

Where several tariff options exist depending on type of location, the criteria for choice is as follows:

- *2 km circuits are always within a major city (usually the Capital)*
- *200 km circuits are between a major city and a "minor" city*

As the definitions vary between countries, the type of tariff option chosen will also vary. The countries where the price may vary with location or other non-distance related definitions, are: Belgium, France, Austria, Finland, Sweden and the UK.

Some operators apply termination charges per local end, without necessarily covering the local tail circuit within that charge.

4 types of circuits are covered: 64 kb/s, 2 Mb/s, 34 Mb/s and 155 Mbit/s. As not all carriers publish tariffs for all these bitrates and all years, there may be some gaps in the information, especially for higher bitrates.

Some carriers offer 2 Mb/s circuits as both structured and unstructured. In this analysis only unstructured circuits are included.

Also, some carriers offer different types of leased lines, often in the form of "basic circuits" and circuits in a managed network. Only "basic circuits" are included in this analysis, as the managed network services are not comparable between carriers.

Lately a few carriers have decided not to publish their prices for some or all types of leased lines. This makes it increasingly difficult to present a full overview of the prices in all 15 EU countries.

For the USA the prices of Verizon intra-LATA circuits for New York state have been used. The bitrates of leased lines offered in some countries may be different from the ones found in most EU member States. Some operators may offer 56 kb/s instead of 64 kb/s, 1.5 Mb/s instead of 2 Mb/s, 45 or 50 Mb/s instead of 34 Mb/s, and 140 or 150 Mb/s instead of 155 Mb/s. Prices shown in the tables and graphs in this section of the report have been adjusted according to the difference in capacity.

All prices are presented in EURO per month, excluding VAT.

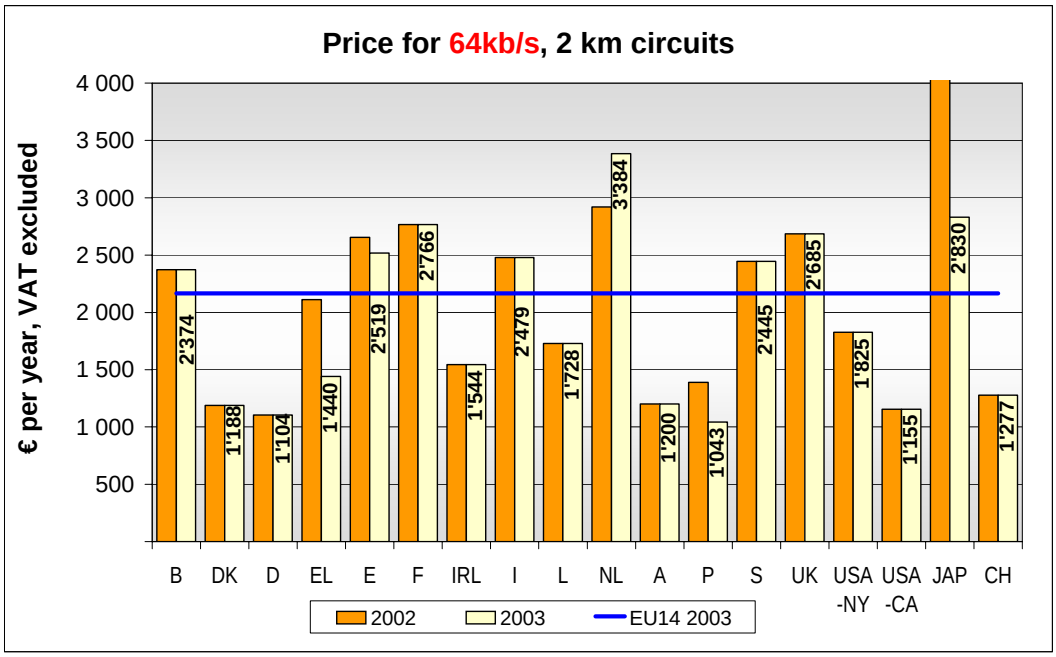
The validity dates of the tariffs used in this section are:

Austria	*01/09-01*
Belgium	*01/07-01*
Denmark	*01/01-03*
Finland	
France	*01/07-03*
Germany	*17/04-02*
Greece	*01/04-03*
Ireland	*18/06-03*
Italy	*01/11-00*
Luxembourg	*01/01-02*
Netherlands	*01/05-03*
Portugal	*01/03-03*
Spain	*01/01-03*
Sweden	*01/04-00*
UK	*01/12-02*
USA, Verizon	*13/05-02*
USA, PacBell	*08/08-02*

7.1.1. 64 Kbit/s

In 2003, Switzerland was below the European average in terms of the prices charged for 2 km and 200 km 64 kb/s leased lines, that is to say 41% and 12% below it in each case. Portugal and Denmark are the only countries to offer cheaper prices in both cases. The spread of proposed prices is considerable at European level. In certain cases, the prices vary by 100%.

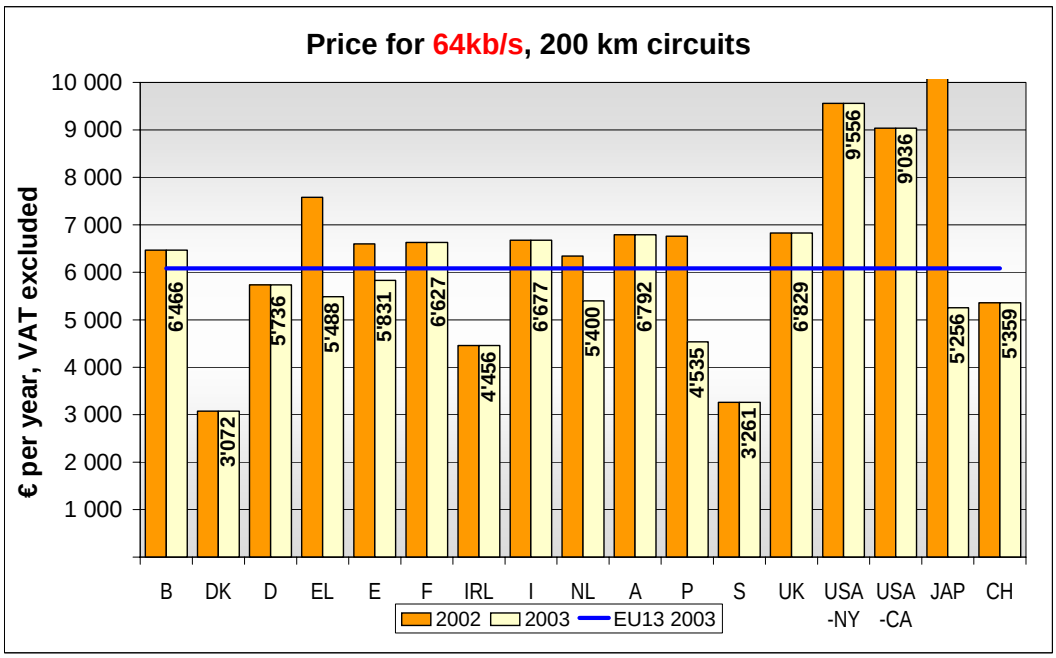
Figure 99



- Data for Finland not available.

Source for Switzerland: Teligen T-Basket; OFCOM computation.

Figure 100



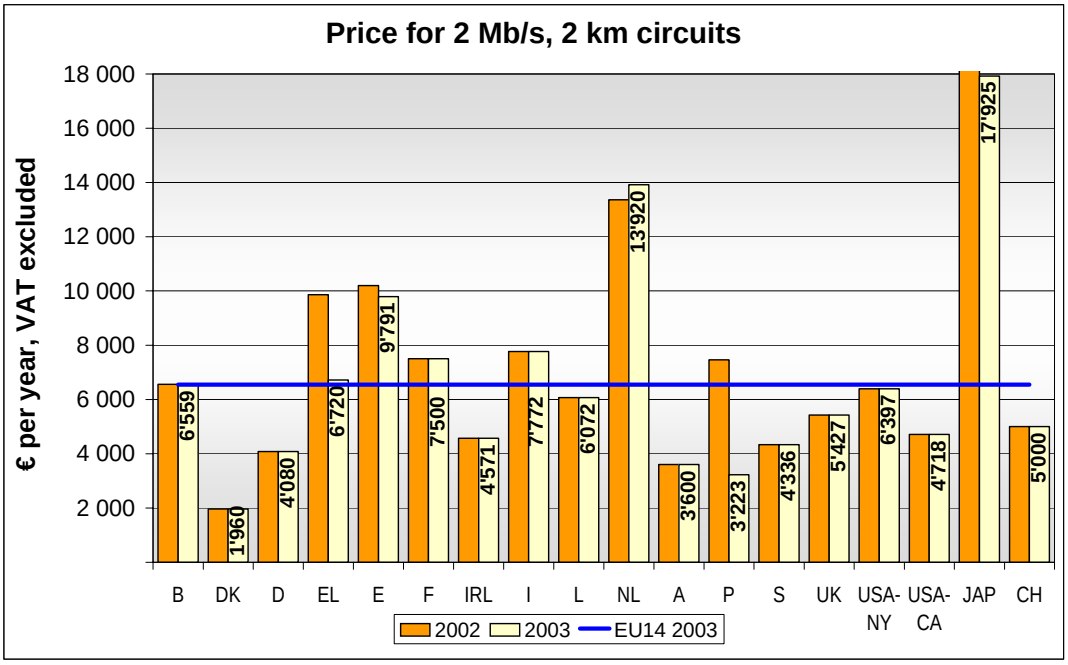
- Data for Finland not available.
- Distances at 200 Km not possible in Luxembourg.

Source for Switzerland: Teligen T-Basket; OFCOM computation.

7.1.2. 2 Mbit/s

In the international comparison, the Swiss position is satisfactory since it is 24% below the European average for the two distances analysed for 2Mb/s. Seven countries, excluding the USA, offer a cheaper price for the 2 km distance and only three countries are cheaper than Switzerland for the 200 km distance (Sweden, Denmark and the Netherlands). Here too, the spread of prices among the European countries is significant.

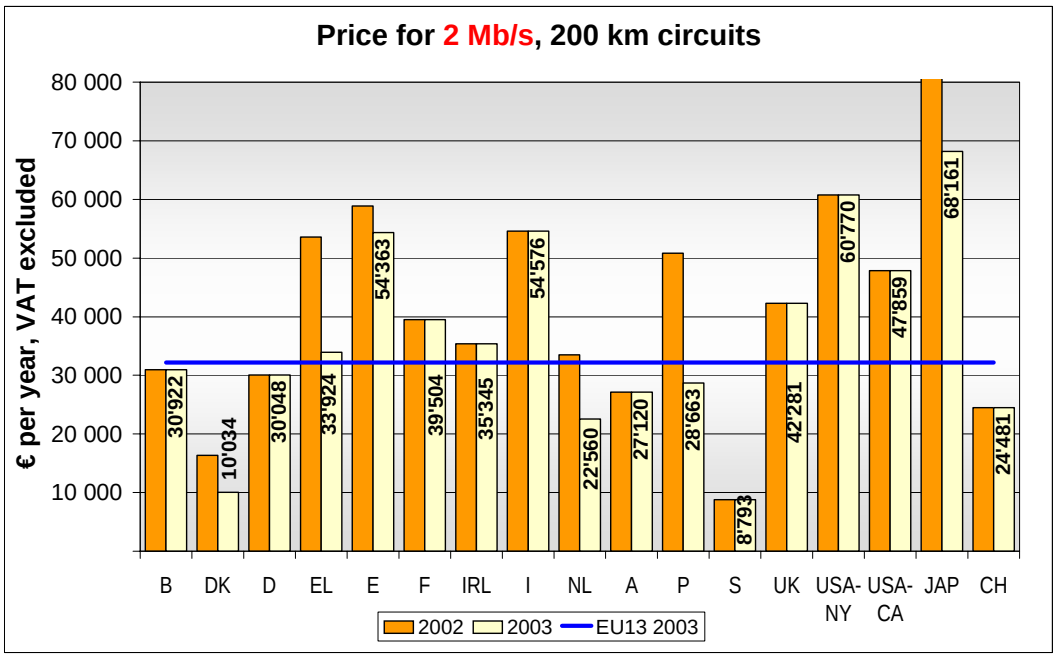
Figure 101



- Data for Finland not available.

Source for Switzerland: Teligen T-Basket; OFCOM computation.

Figure 102

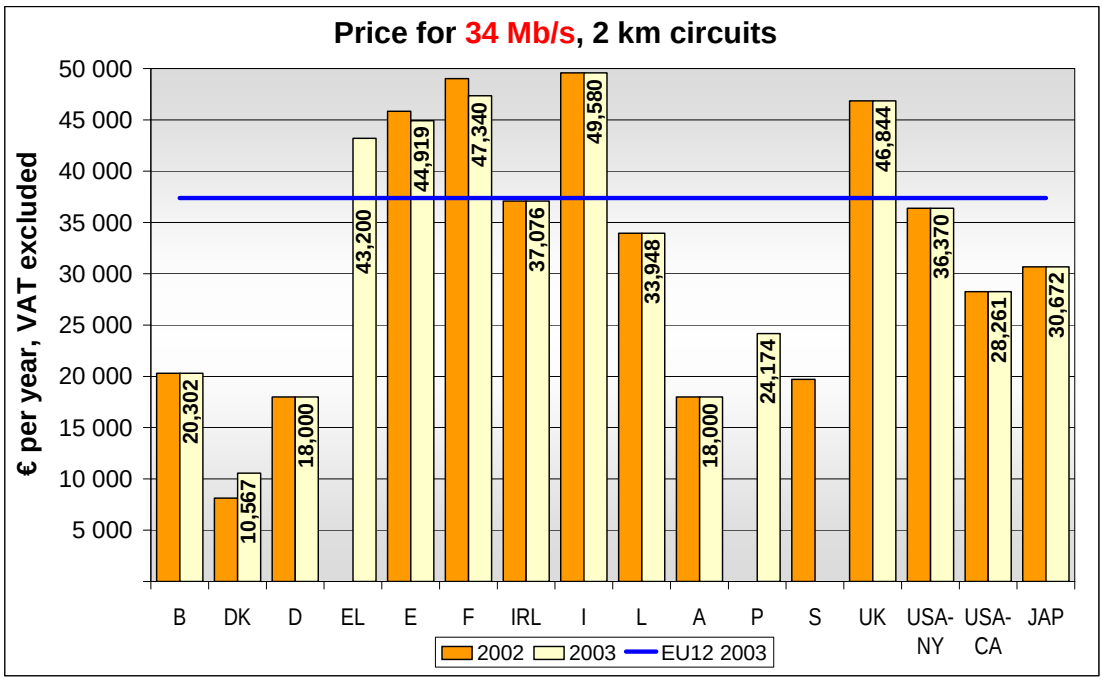


- Data for Finland not available.
- Distances at 200 Km not possible in Luxembourg.

Source for Switzerland: Teligen T-Basket; OFCOM computation.

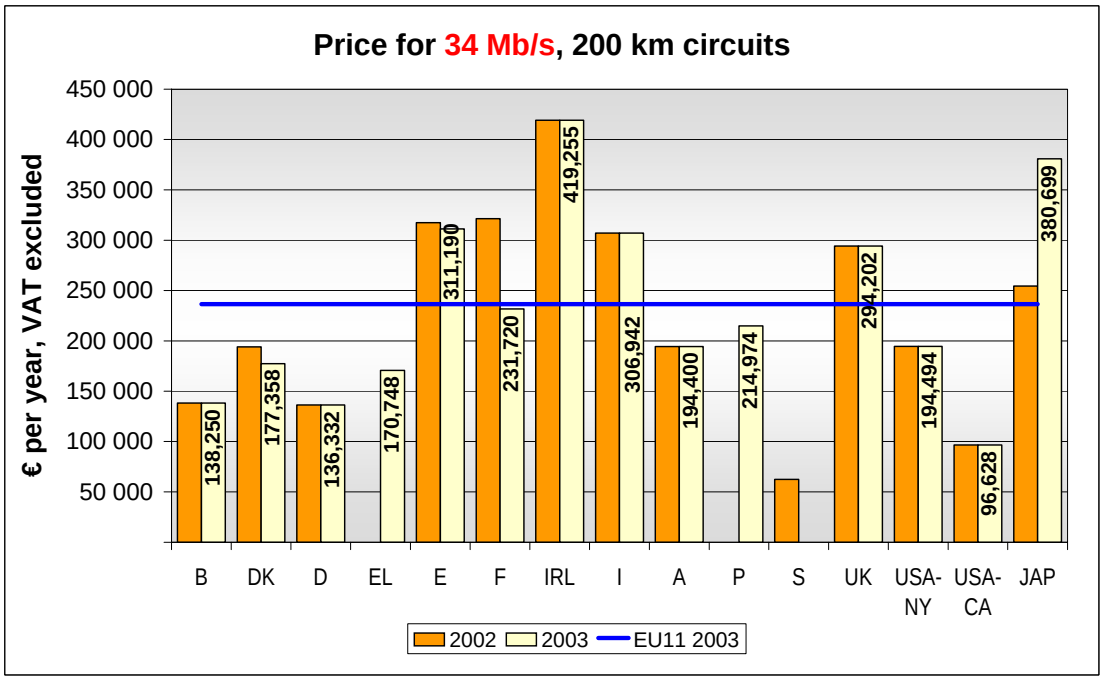
7.1.3. 34 Mbit/s

Figure 103



- Data for NL, S and FIN not available.

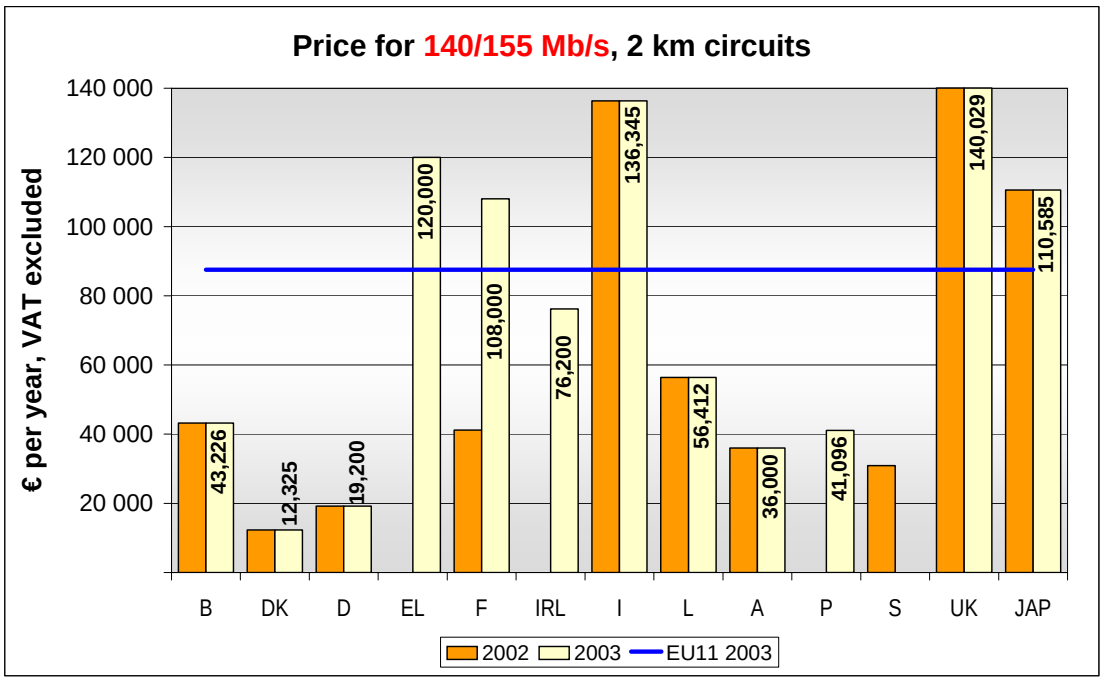
Figure 104



- Data for NL, S and FIN not available.
- Distances at 200 Km not possible in Luxembourg.

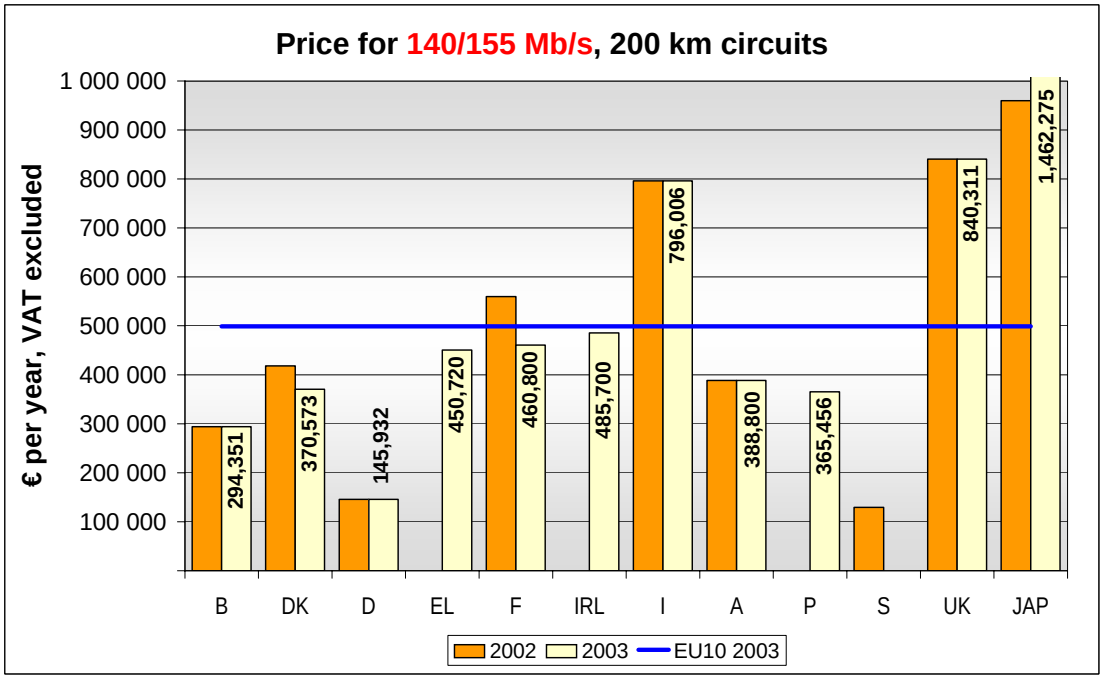
7.1.4. 155 Mbit/s

Figure 105



- Data for E, NL, FIN and S not available.

Figure 106

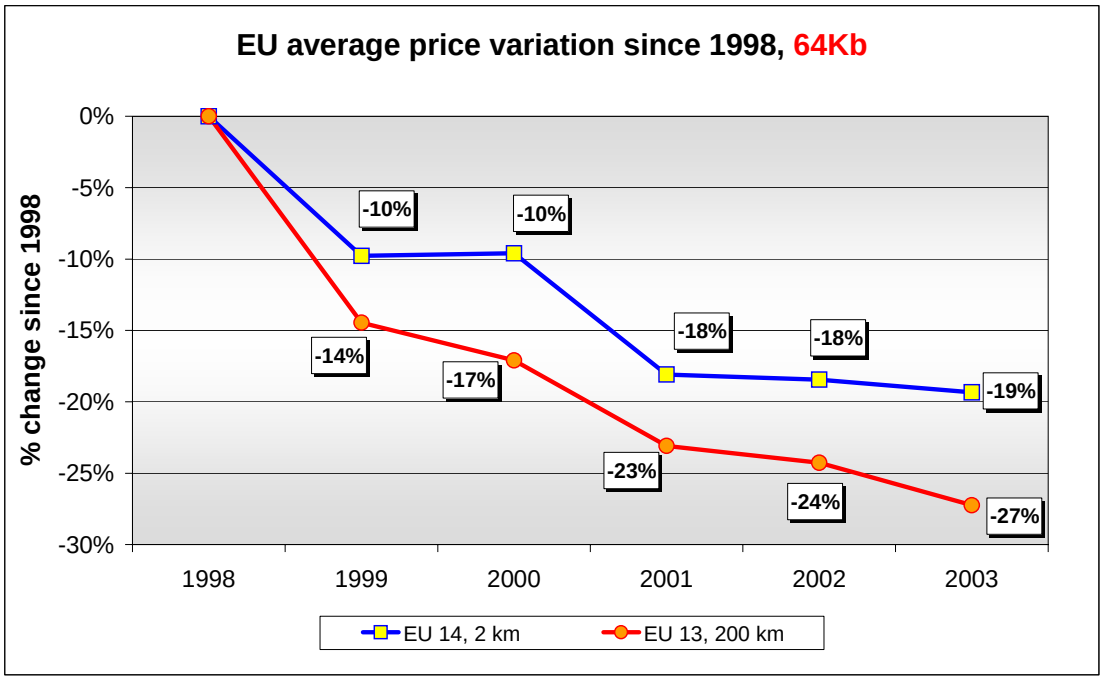


- Data for E, NL, FIN and S not available.
- Distances at 200 Km not possible in Luxembourg.

7.2. *NATIONAL LEASED LINES PRICE TRENDS (1 AUGUST 1998 - 1 AUGUST 2003)*

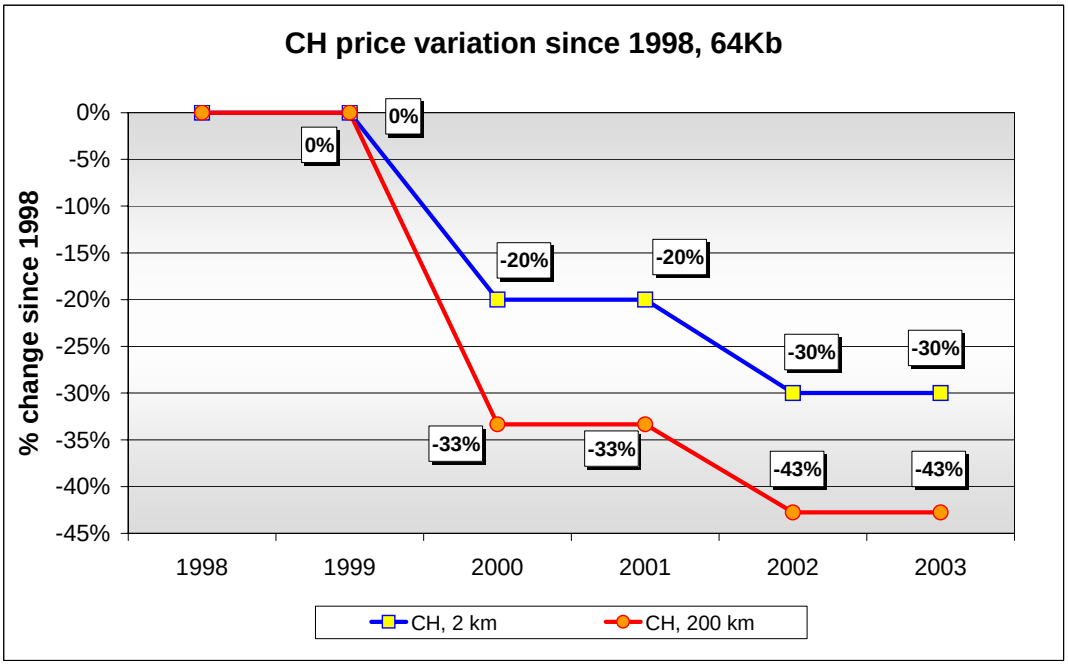
Between August 1999 and August 2000, the historic operator Swisscom drastically reduced its prices for leased lines. For 2 km 64 kb/s lines, the reduction was 20% and for 200 km 33%. A second wave of price reductions took place between August 2001 and August 2002. Finally, prices dropped by 30% for 2 km 64 kb/s leased lines and 43% for 200 km 64 kb/s leased lines; this represents a very big drop in comparison with the European Union's average rates.

Figure 107



Source for Switzerland: Teligen T-Basket; OFCOM computation.

Figure 107a

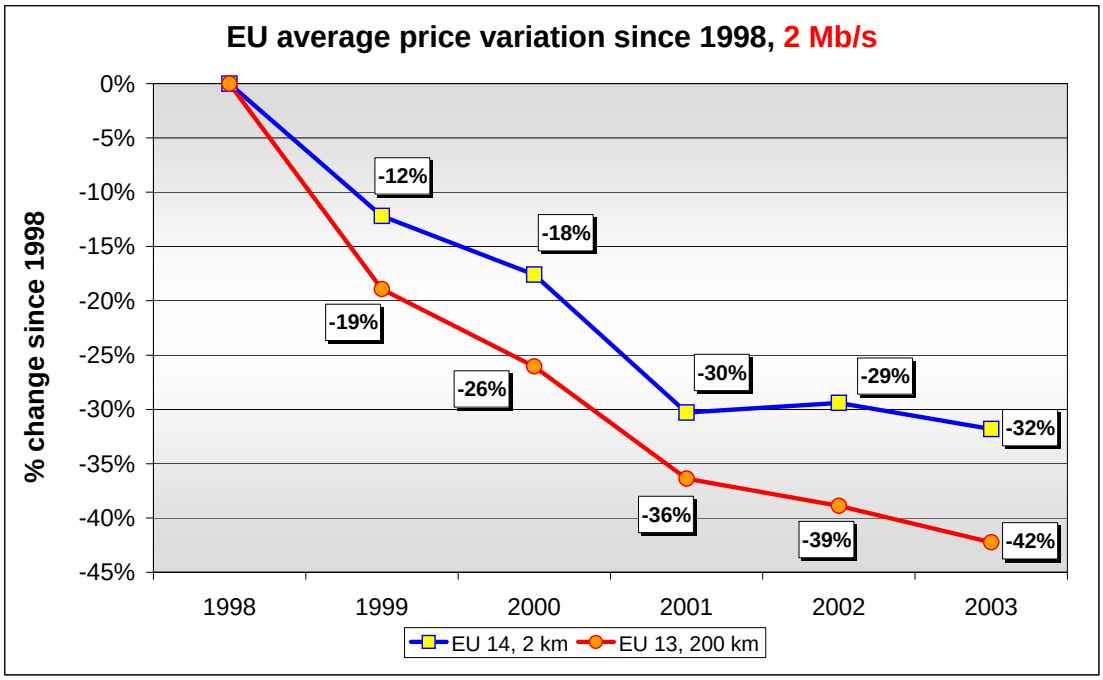


Source for Switzerland: Teligen T-Basket; OFCOM computation.

As with 64 kb/s leased lines, the prices for 2 Mb/s leased lines underwent two major reductions between 1998 and 2003 (Figure 108a). The first and most significant was between August 1999 and August 2000, during which prices fell by 33% for the 200 km distance and by almost 84% for the 2 km distance. The second, between August 2001 and August 2002, related almost exclusively to the 200 km distance (a fall of 10%); the 2 km distance fell by only 2%.

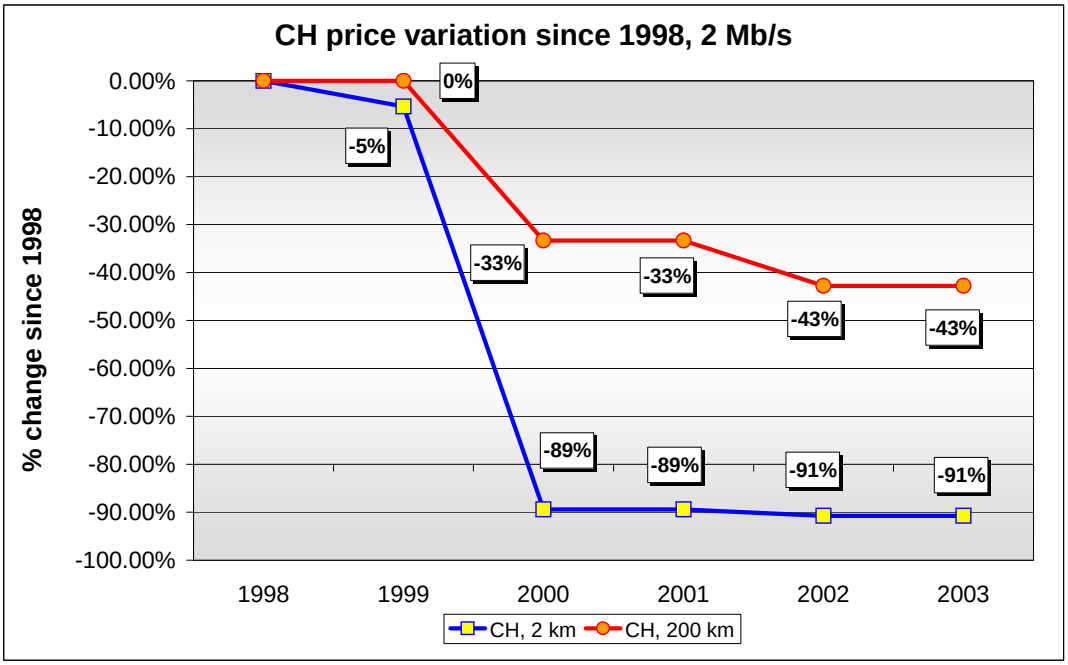
In comparison with the average European rates of decrease (Figure 108), the Swiss rates were higher, particularly for the 2 km distance. However, in order to be able to evaluate the situation in a more detailed way, it would be useful to examine the level of prices originally in force, i.e. in 1998.

Figure 108



Source for Switzerland: Teligen T-Basket; OFCOM computation.

Figure 108a



Source for Switzerland: Teligen T-Basket; OFCOM computation.

7.3. *INTERNATIONAL LEASED LINES PRICES*

This section examines the standard retail prices (annual rental) for international leased line services (half-circuits in each country) charged by the incumbent operators in each Member State. The corresponding half-circuit into the other country has not been taken into account, as it would severely distort the comparison.

An analysis of the price development over the period from August 1998 to August 2003 is also included.

Three destinations are covered: international half circuits to the nearest EU country (hereafter "near EU"), to the most distant EU country ("far EU") and to the USA.

Three types of circuits are considered: digital 64 Kbit/s, 2 Mbit/s and 34 Mbit/s. Given that price information on 155 Mbit/s international lines is only available for a few Member States, the analysis of these circuits is omitted.

The data is presented with the following parameters:

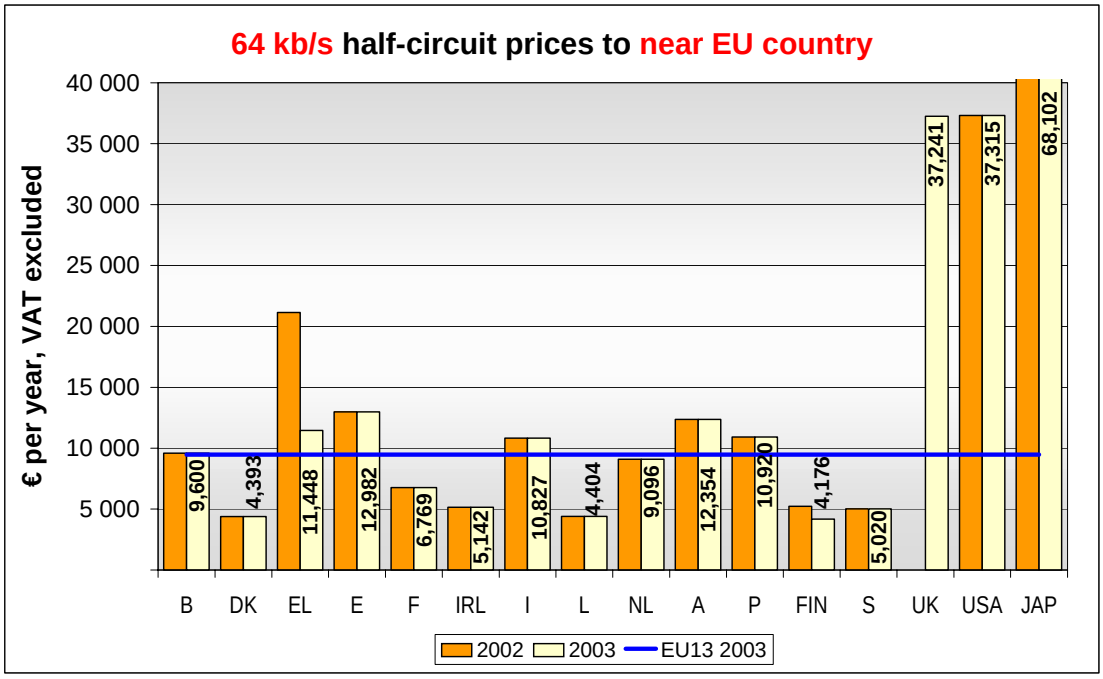
- *All charges in Euro per month*
- *Excluding VAT*
- *Germany is not included in the analysis because Deutsche Telekom does not publish prices for international half circuits.*
- *The years from 1998 are covered*
- *Variable / 1 year contract (shortest term available).*
- *AT&T prices are used for USA*

The validity of the tariffs is summarised below:

	Valid date	***Confirmed***
Belgium	*01/04/2002*	*08/08/2003*
Denmark	*01/01/2003*	*08/08/2003*
Germany	*01/01/2000*	*-*
Greece	*31/03/2003*	*08/08/2003*
Spain	*01/01/2003*	*08/08/2003*
France	*01/10/2002*	*08/08/2003*
Ireland	*29/12/2001*	*08/08/2003*
Italy	*01/11/2001*	*08/08/2003*
Luxembourg	*01/01/2002*	*08/08/2003*
Netherlands	*01/01/2001*	*08/08/2003*
Austria	*01/07/1999*	*08/08/2003*
Portugal	*02/06/2002*	*08/08/2003*
Finland	*01/02/2003*	*01/08/2003*
Sweden	*01/01/1999*	*08/08/2003*
UK	*18/11/2002*	*08/08/2003*
Japan	*01/10/2000*	*08/08/2003*

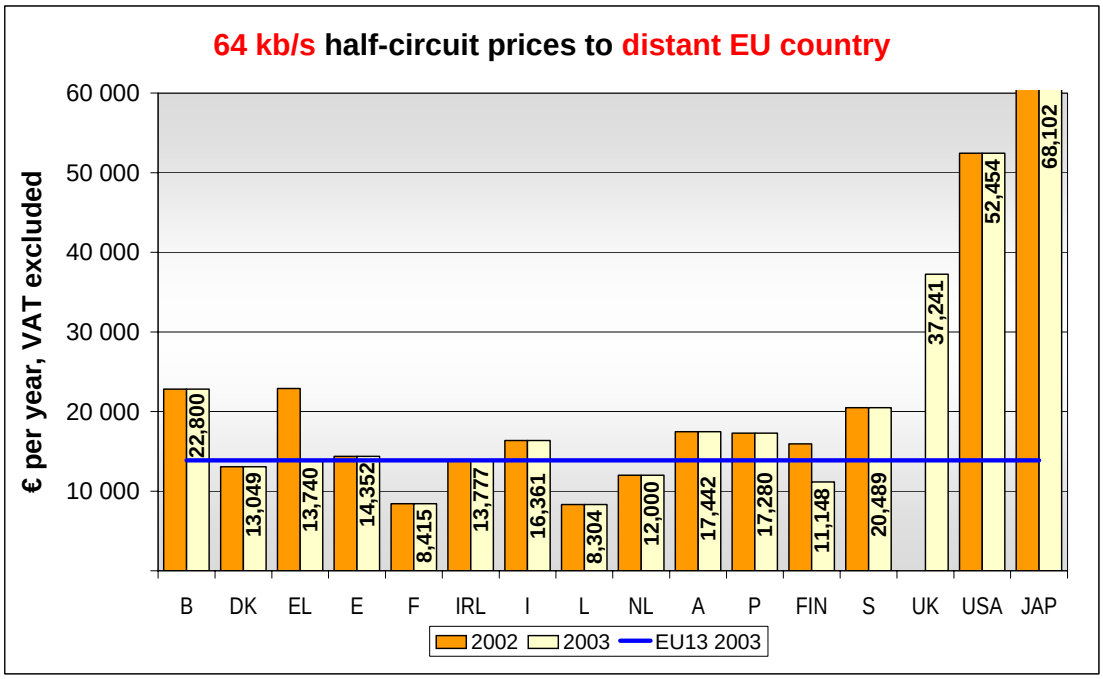
7.3.1. 64 Kbit/s

Figure 109



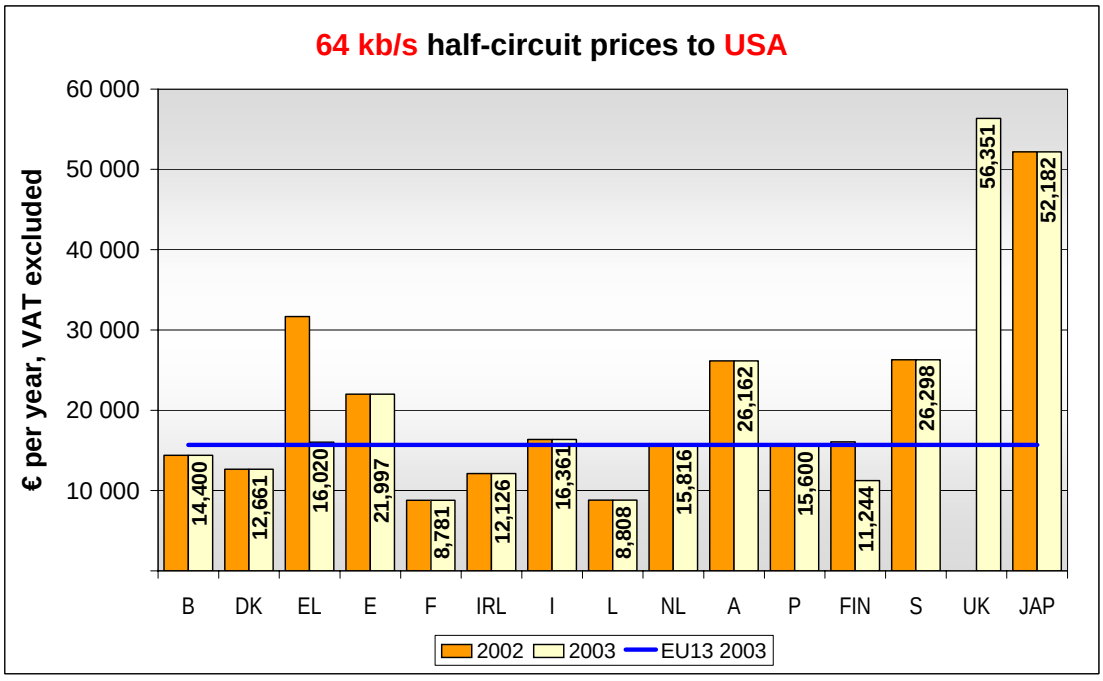
- Data for Germany not available.
- BT in the UK has stopped providing actual prices, and instead publishes the so-called "Baseline prices", which are used as a basis for any discounts applied. This is the reason for the seemingly sharp increase in 2003. 2002 prices are therefore not displayed.

Figure 110



- Data for Germany not available.
- BT in the UK has stopped providing actual prices, and instead publishes the so-called "Baseline prices", which are used as a basis for any discounts applied. This is the reason for the seemingly sharp increase in 2003. 2002 prices are therefore not displayed.

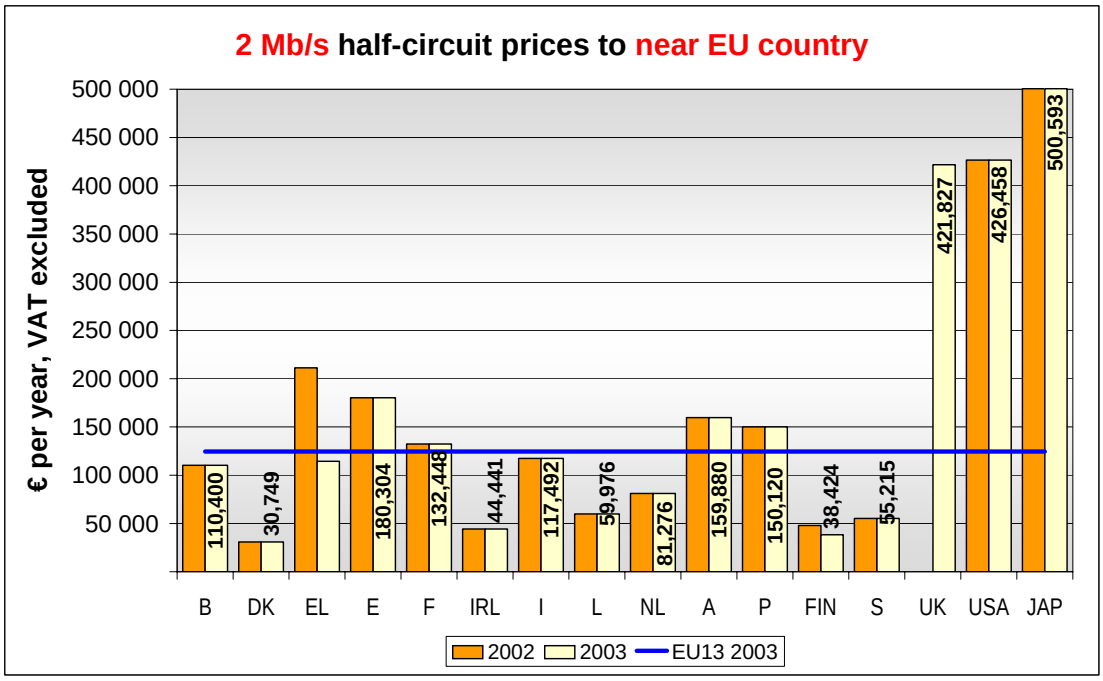
Figure 111



- Data for Germany not available.
- BT in the UK has stopped providing actual prices, and instead publishes the so-called "Baseline prices", which are used as a basis for any discounts applied. This is the reason for the seemingly sharp increase in 2003. 2002 prices are therefore not displayed.

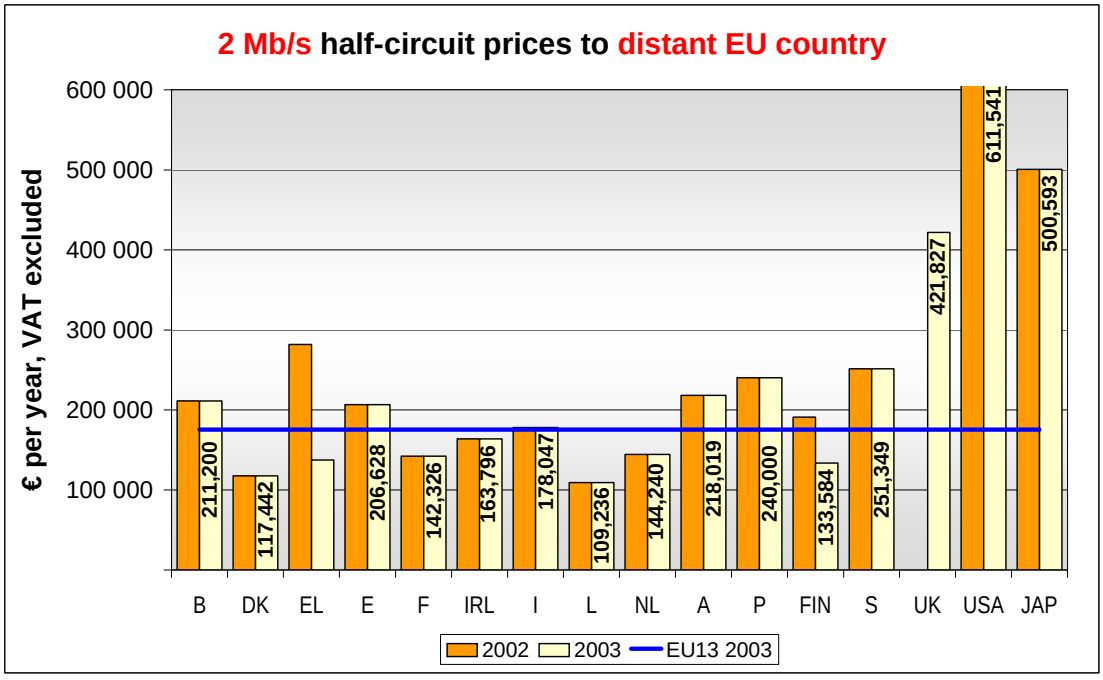
7.3.2. 2 Mbit/s

Figure 112



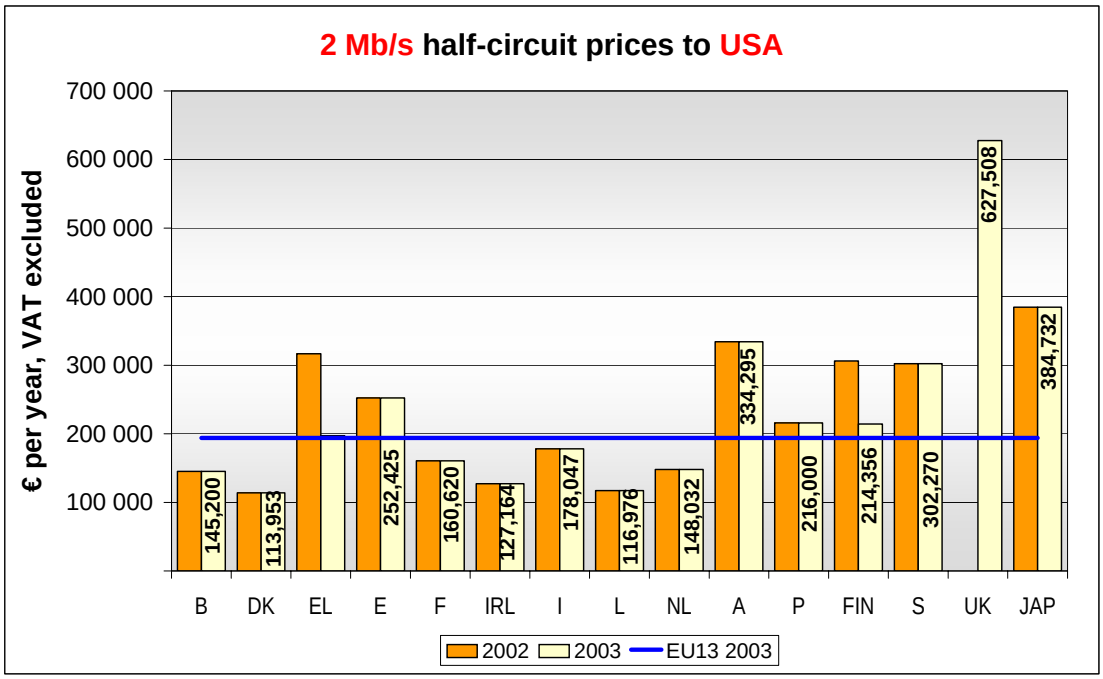
- Data for Germany not available.
- BT in the UK has stopped providing actual prices, and instead publishes the so-called "Baseline prices", which are used as a basis for any discounts applied. This is the reason for the seemingly sharp increase in 2003. 2002 prices are therefore not displayed.

Figure 113



- Data for Germany not available.
- BT in the UK has stopped providing actual prices, and instead publishes the so-called "Baseline prices", which are used as a basis for any discounts applied. This is the reason for the seemingly sharp increase in 2003. 2002 prices are therefore not displayed.

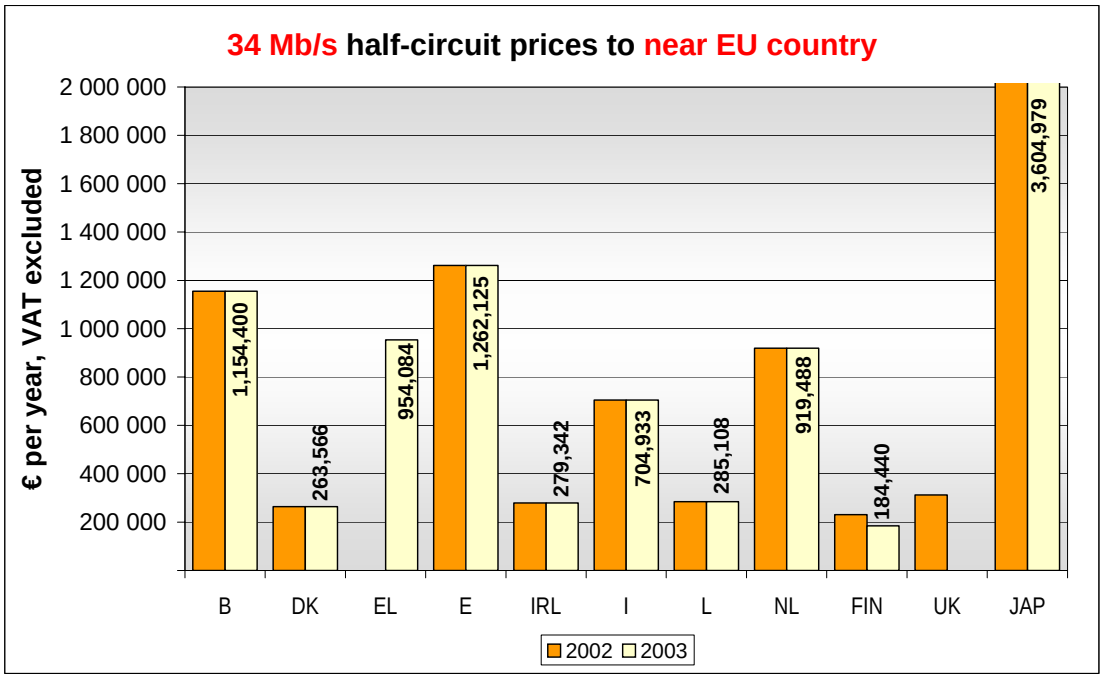
Figure 114



- Data for Germany not available.
- BT in the UK has stopped providing actual prices, and instead publishes the so-called "Baseline prices", which are used as a basis for any discounts applied. This is the reason for the seemingly sharp increase in 2003. 2002 prices are therefore not displayed.

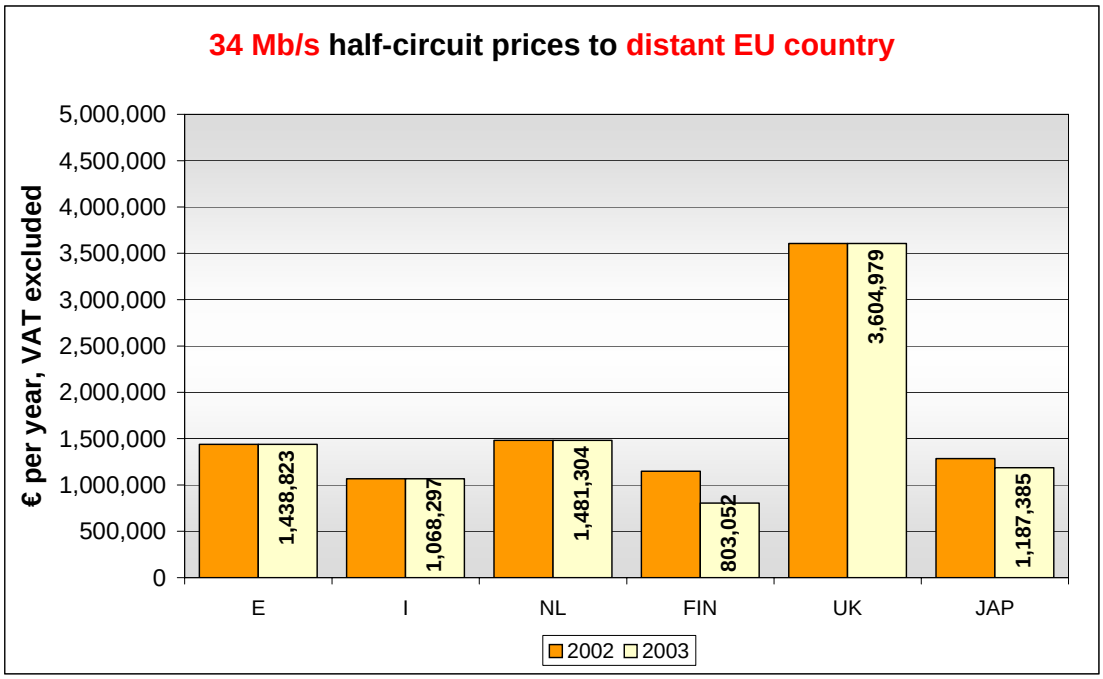
7.3.3. 34 Mbit/s

Figure 115



- Data for D, EL, F, A, P and S not available.

Figure 116


34 Mb/s half-circuit prices to distant EU country
€ per year, VAT excluded
5,000,000
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
1,438,823
1,068,297
1,481,304
803,052
3,604,979
1,187,385
E
I
NL
FIN
UK
JAP
2002
2003

7.4. *INTERNATIONAL LEASED LINES PRICE TRENDS (1 AUGUST 1998 - 1 AUGUST 2003)*

Figure 117

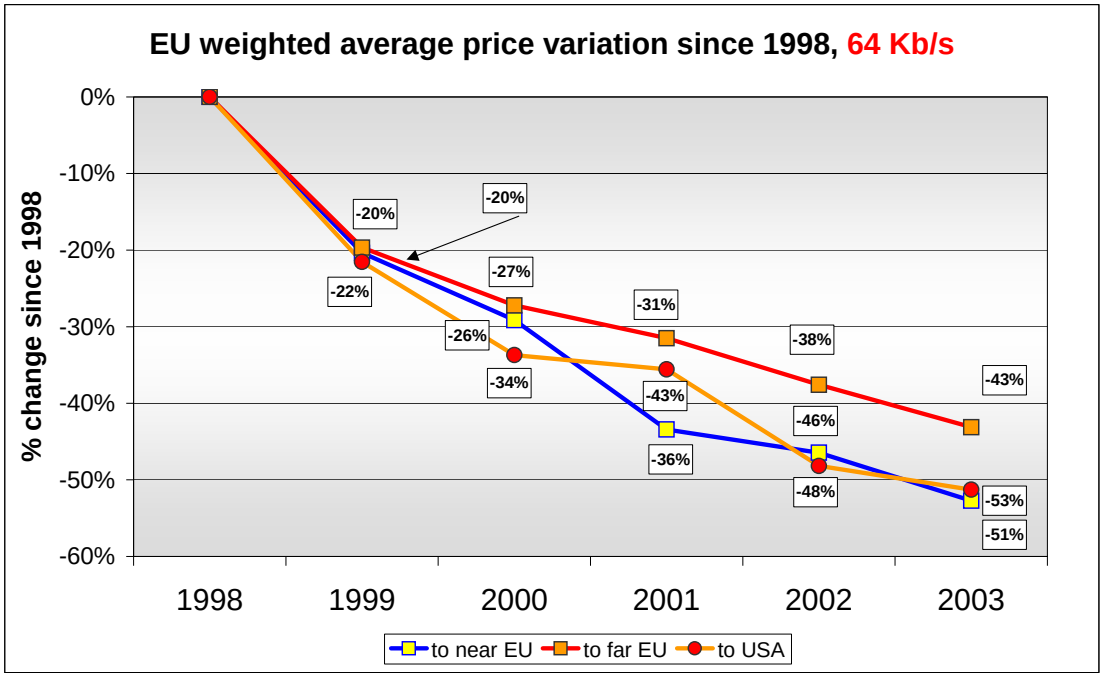
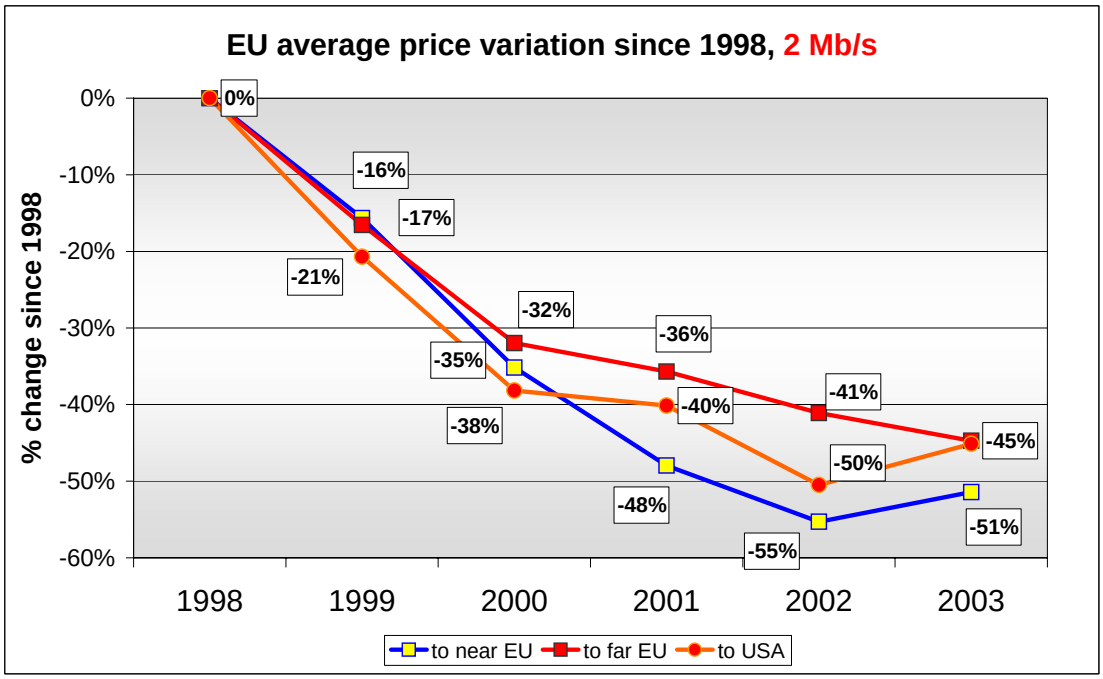


Figure 118



8 *DIGITAL TELEVISION*

This chapter provides information on the EU **and CH** *market for digital television. The following areas are covered:*

Market penetration.
Operators and interactive TV services.
DTV equipment.

As it was the case last year, the services of the European Commission sent a questionnaire to Member States requesting relevant information. The quality of the replies received varies, for instance, whereas three MS did not reply, some others provided detailed information. In addition, information from different MS is not always consistent, so that data provided in reply to one particular question may reflect different assumptions and timing. It was therefore difficult to present data received in reply to the questionnaire in a standard format that would facilitate comparison between MS.

As a result of these statistical shortcomings, the EC services decided to prepare certain of the tables and charts on the basis of data from another source.[33] *Data received from MS, which in some cases diverge from those in the tables and charts, are reported in footnotes.* **The source used for the Swiss data is "prognos mediareports". However, due to the lack of information at our disposal, it was not possible to examine certain markets (in particular interactive TV services and DTV equipment).**

The following abbreviations are used in this chapter: digital television (DTV), European Commission (EC), free-to-air (FTA) or "free-to-view" (FTV)[34]*, households (HH), integrated digital television receiver (iDTV), interactive television (iTV), Member States (MS), set-top-box (STB), digital subscriber line (DSL).*

8.1. *EU DIGITAL TELEVISION MARKET PENETRATION*

General considerations

No consistent information was obtained as to the market share of premium digital pay TV, received against payment of a subscription fee, and FTA DTV. Consequently, market penetration data presented here cover both pay and FTV services and comments are provided where additional information is available. In general, it can be assumed that pay-TV operators still account for most

[33] *Namely data from a report by independent consultant Strategy Analytics: "Digital TV Devices: European Market Forecast, July 2003". Whereas 2003 figures provided by MS reflect the market status when those data were collected, 2003 figures by Strategy Analytics are an estimation for the whole year. In addition, information from Strategy Analytics does not cover Luxembourg, where data provided by the Member State have been used.*

[34] *Whereas the two concepts FTA/FTV are used here interchangeably, that is not always the case in other contexts, where they are understood as follows: free-to-view services are normally on satellite and encrypted for rights purposes, but there is no subscription payment, only a once-off payment for the card. Free-to-air services are normally terrestrial, non-encrypted, non-pay.*

of EU DTV penetration.[35] This being said, some MS provided data on the share between pay and FTV DTV for the different delivery networks.[36]
In addition, some MS provided data on the number of households within TV networks coverage.[37]

Unless otherwise specified, percentages of DTV HH are expressed as a percentage of TV HH.

Market penetration data are broken down by TV delivery mechanism (cable, satellite, terrestrial).[38] There should be no overlaps in the market data if the statistics provided correspond to one single TV set (the main TV set in the home). However, this approach may not always have been respected so that there may be some overlapping corresponding to those HH which receive services from different TV networks on secondary TV sets.[39]

[35] *It was indicated in the 7th implementation report that consultancy firm 'IDATE' estimated that in 2000 only 5% of DTV households received exclusively FTA services. However, in many cases, DTV subscribers receive certain FTA channels in addition to pay channels*

[36] *Figures are given in millions of HH.*

***Germany**: cable pay-DTV (1.5), satellite pay-DTV (1.1), satellite FTV DTV (1.0), terrestrial pay-DTV (0), terrestrial FTV DTV (0.12)*
***Italy**: cable pay-DTV (>0.1), satellite pay-DTV (3.2), satellite FTV DTV (0),*
***Netherlands**: cable pay-DTV (0.1), cable FTV DTV (0), satellite pay-DTV (0.4), satellite FTV DTV (0.07).*
***Spain**: satellite pay-DTV (2.2).*
***Sweden**: cable pay-DTV (0.16), satellite pay-DTV (0.475), terrestrial pay-DTV (0.17).*
***UK**: cable pay-DTV (2.1), satellite pay-DTV (6.4), satellite FTV DTV (0.6), terrestrial FTV DTV (1.6), DSL pay-DTV (0.012)*
***France**: cable pay-DTV (0.82), satellite pay-DTV (3.2).*
***Greece**: satellite pay-DTV (0.2), satellite FTV DTV (0.5)*

[37] *Figures are given in millions of HH.*

***Denmark**: satellite DTV (2.3), terrestrial DTV (0.23).*
***Finland**: cable DTV (0.9), satellite DTV (2.32), terrestrial DTV (1.7).*
***France**: cable DTV (7.5), satellite DTV (25.2).*
***Germany**: cable DTV (20.6), satellite DTV (37.0), DSL (4.0).*
***Greece**: satellite DTV (3.8).*
***Italy**: cable DTV (1.3), satellite DTV (22.2), DSL (1.2).*
***Netherlands**: cable DTV (5.73).*
***Portugal**: satellite DTV (5.02).*
***Spain**: cable DTV (3.83), satellite DTV (7.46), terrestrial DTV (1.79).*
***Sweden**: cable DTV (1.9), satellite DTV (4.0), terrestrial DTV (3.6), DSL (1.1).*
***UK**: cable DTV (12.4), satellite DTV (24.0), terrestrial DTV (18.6).*

[38] *Although satellite, cable and terrestrial are the main platforms for the delivery of digital television, new technologies are evolving, such as digital television over ADSL, which has already been introduced in some Member States. However, the penetration rates for DSL TV are still very low and do not exceed 1% of total EU TV households.*

[39] *It was not possible to obtain reliable data on secondary TV reception in the EU. However some MS indicated the percentage of HH with more then one TV set. For instance in France there are 59.4% of HH with only one TV set, 30.3% HH with two TV sets, 7.9% HH with three TV sets and 2.4% with four or more TV sets.*

1. Market data

Table 1: TV households (analogue and digital) in 2003 (in millions and in percentage of national households)							
	Total TV HH	**Cable TV**		**Satellite TV**		**Terrestrial TV - only**	
		TV HH	%	TV HH	%	TV HH	%
Austria	3,2	1,32	40,8%	1,6	49,6%	0,31	9,6%
Belgium	4,2	3,9	93,0%	0,1	2,0%	0,21	5,0%
Denmark	2,3	1,1	46,4%	0,6	26,5%	0,61	27,1%
Finland	2,3	1,0	43,9%	0,24	10,5%	1,04	45,6%
France	24,4	2,9	11,9%	5,0	20,5%	16,51	67,6%
Germany	36,6	20,6	56,3%	14,0	38,3%	1,96	5,4%
Greece	3,0	0,00	0,0%	0,25	8,6%	2,72	91,4%
Ireland	1,31	0,47	35,8%	0,38	28,7%	0,47	35,5%
Italy	20,9	0,06	0,3%	3,2	15,5%	17,59	84,2%
Luxembourg	0,2	0,16	91,7%	0,01	5,8%	0,00	2,4%
Netherlands	7,1	6,3	89,0%	0,27	3,8%	0,51	7,2%
Portugal	3,1	0,90	28,7%	0,42	13,2%	1,82	58,1%
Spain	12,6	0,9	7,1%	1,8	14,3%	9,89	78,5%
Sweden	4,5	2,10	47,1%	0,8	17,9%	1,56	35,0%
UK	24,4	3,8	15,6%	7,6	31,3%	12,98	53,2%
TOTAL EU	**149,94**	**45,4**	**30,3%**	**36,3**	**24,2%**	**68,2**	**45,5%**
CH	**3.019**	**2.716**	**90%**	**0.299**	**9.9%**	**0.004**	**0.1%**

Figures in this table come from Strategy Analytics: "Digital TV Devices: European Market Forecast, July 2003", except for Luxembourg, where figures provided by national authorities for 2002 were used, **and for Switzerland (source: prognos mediareports).**

No reliable data were available for HH with only terrestrial TV reception. This has been estimated as follows: total TV HH minus satellite and cable HH **(also for Switzerland)**.

Figure 119

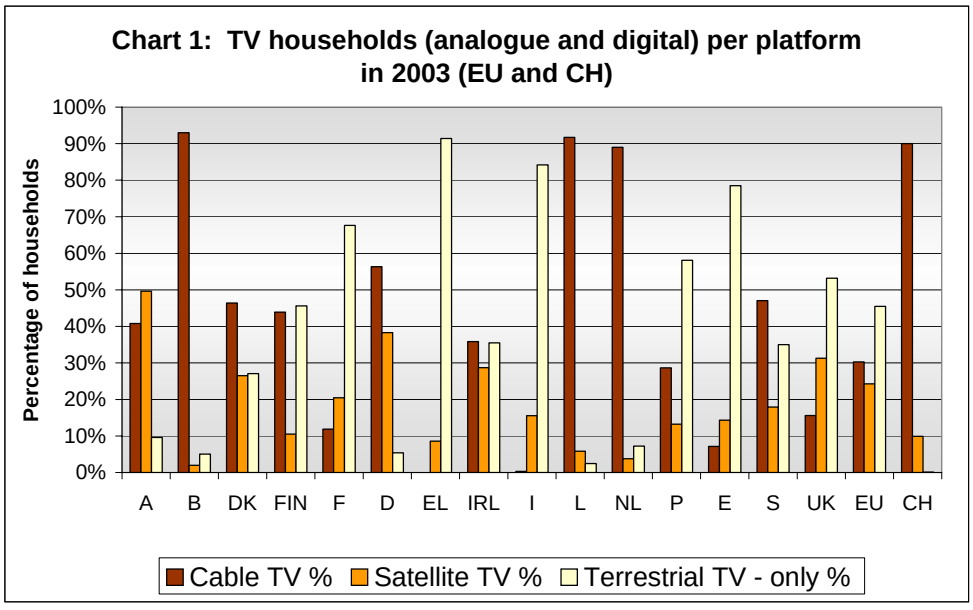


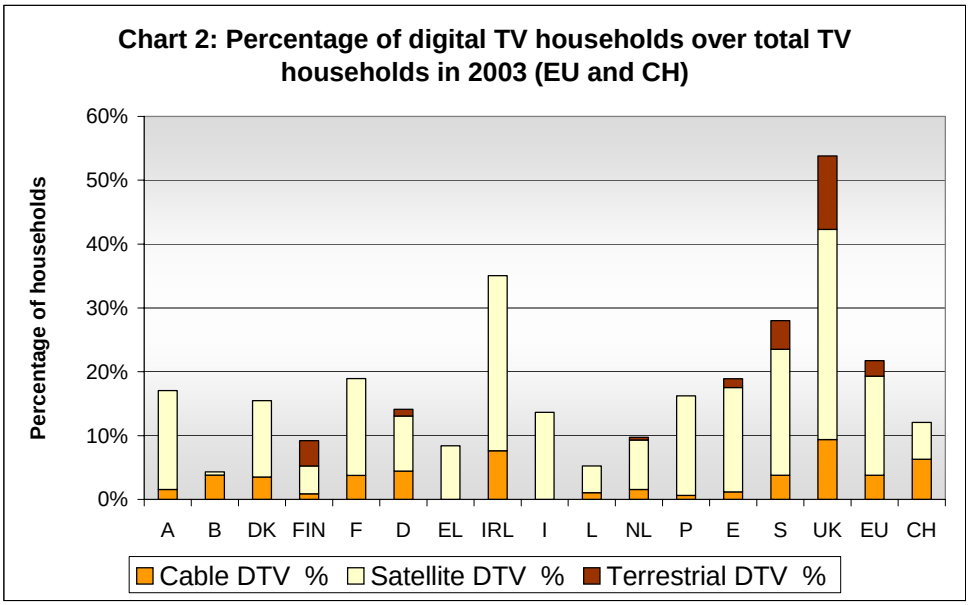
Table 2: Digital TV households in 2003
(in millions and in percentage of national households)

	Total TV HH	Total Digital TV HH		Cable DTV		Satellite DTV		Terrestrial DTV	
		TV HH	%	TV HH	%	TV HH	%	TV HH	%
Austria	3,2	0,55	17,1%	0,05	1,6%	0,50	15,5%	0,00	0,0%
Belgium	4,2	0,18	4,3%	0,16	3,8%	0,02	0,5%	0,00	0,0%
Denmark	2,3	0,35	15,5%	0,08	3,5%	0,27	11,9%	0,00	0,0%
Finland	2,3	0,21	9,2%	0,02	0,9%	0,10	4,4%	0,09	3,9%
France	24,4	4,62	18,9%	0,92	3,8%	3,70	15,2%	0,00	0,0%
Germany	36,6	5,16	14,1%	1,63	4,5%	3,15	8,6%	0,38	1,0%
Greece	3,0	0,25	8,4%	0,00	0,0%	0,25	8,4%	0,00	0,0%
Ireland	1,3	0,46	35,1%	0,10	7,6%	0,36	27,4%	0,00	0,0%
Italy	20,9	2,85	13,6%	0,00	0,0%	2,85	13,6%	0,00	0,0%
Luxembourg	0,2	0,01	5,3%	0,00	1,0%	0,01	4,2%	0,00	0,0%
Netherlands	7,1	0,69	9,7%	0,11	1,6%	0,55	7,8%	0,03	0,4%
Portugal	3,1	0,51	16,2%	0,02	0,6%	0,49	15,6%	0,00	0,0%
Spain	12,6	2,38	18,9%	0,15	1,2%	2,06	16,4%	0,17	1,3%
Sweden	4,5	1,25	28,0%	0,17	3,8%	0,88	19,7%	0,20	4,5%
UK	24,4	13,14	53,8%	2,29	9,4%	8,04	32,9%	2,81	11,5%
TOTAL EU	149,94	32,6	21,7%	5,7	3,8%	23,2	15,5%	3,7	2,5%
CH	**3.019**	**0.36**	**12.1%**	**0.19**	**6.3%**	**0.17**	**5.8%**	**0**	**0%**

Figures in this table come from Strategy Analytics: "Digital TV Devices: European Market Forecast, July 2003", except for Luxembourg, where figures provided by national authorities for 2002 were used. Figures provided by other national authorities are indicated in footnote[40]. **Data for Switzerland have been extracted from the prognos mediareports database.**

[40] *Figures are given in million HH.*
***Finland**: satellite DTV (0.045), cable and terrestrial DTV (0.097).*
***France**: cable DTV (0.82), satellite DTV (3.2).*
***Germany**: cable DTV (1.62), satellite DTV (2.1), terrestrial DTV (0.12).*
***Greece**: satellite DTV (0.7).*
***Italy**: cable DTV (>0.1), satellite DTV (3.2).*
***Netherlands**: cable DTV (0.107), satellite DTV (0.47).*
***Spain**: satellite DTV (2.2).*
***Sweden**: cable DTV (0.16), satellite DTV (0.475), terrestrial DTV (0.17).*
***UK**: cable DTV (2.1), satellite DTV (7.2), terrestrial DTV (1.6), DSL TV (0.012).*

Figure 120



Source for Switzerland: prognos mediareports database.

Figure 121

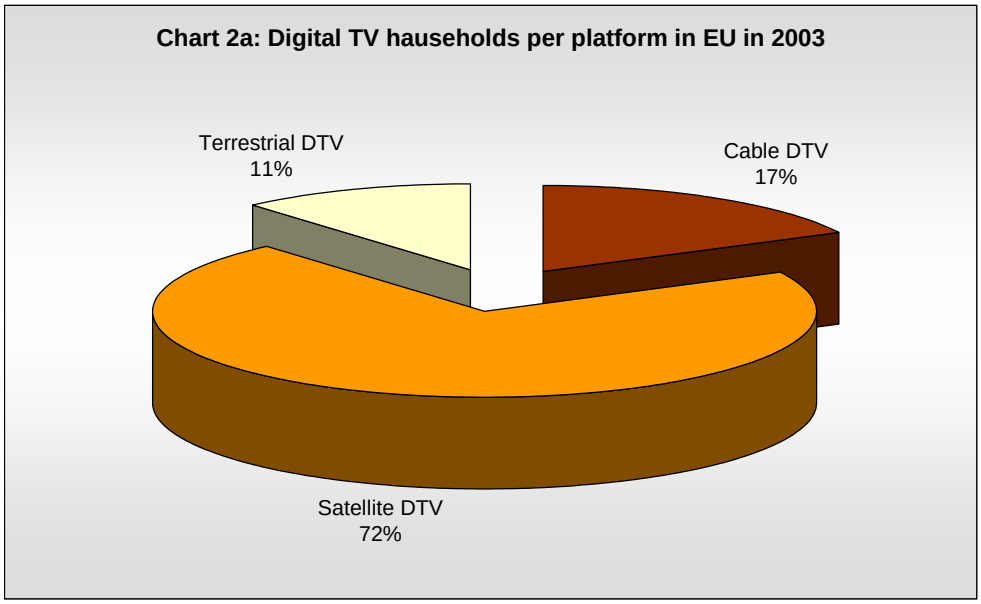
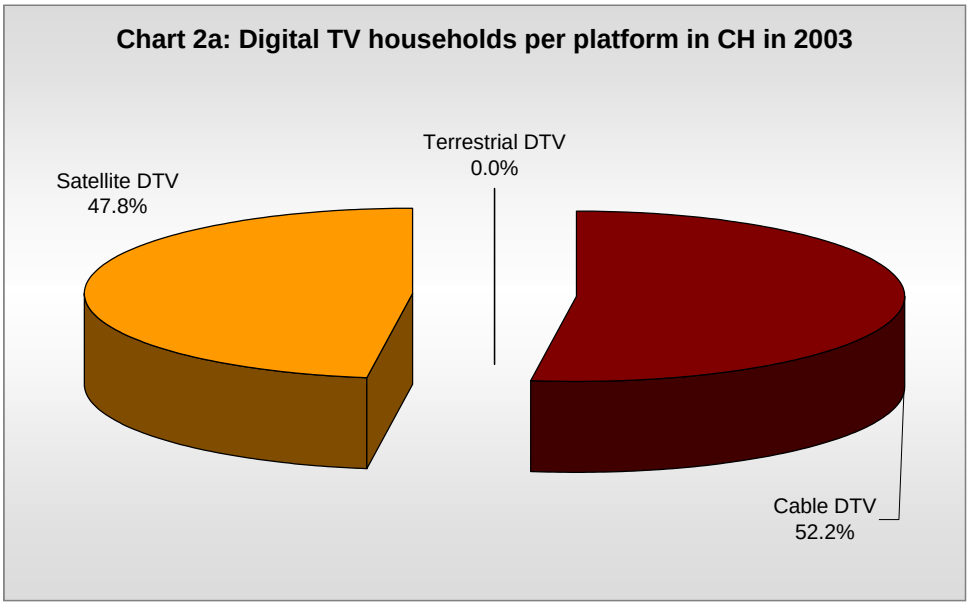


Figure 121a



Source for Switzerland: prognos mediareports database.

2003 charts were calculated with data from tables 1 and 2. 2003 charts were calculated using data from Strategy Analytics: "Digital TV Devices: European Market Forecast, July 2003"

Data for Switzerland for Figures 120a to 129a have been extracted from the prognos mediareports database.

Figure 122

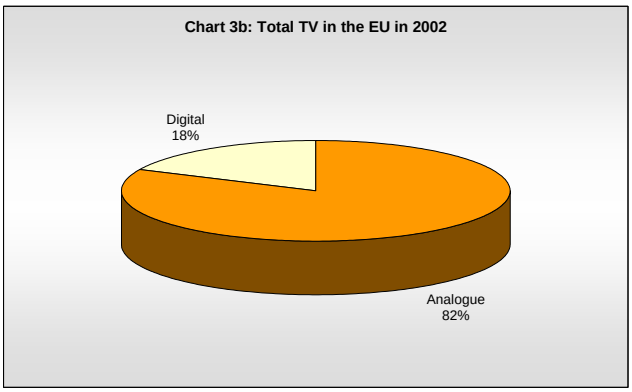


Figure 123

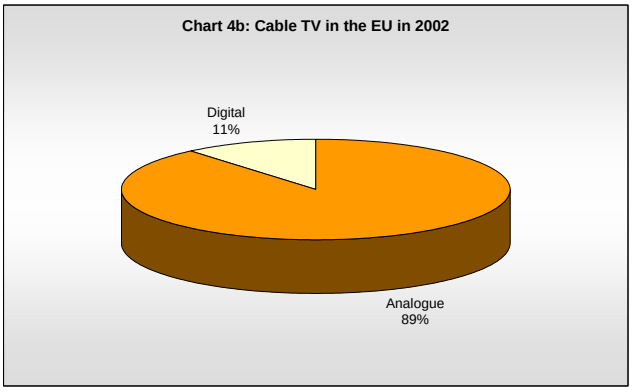


Figure 122a

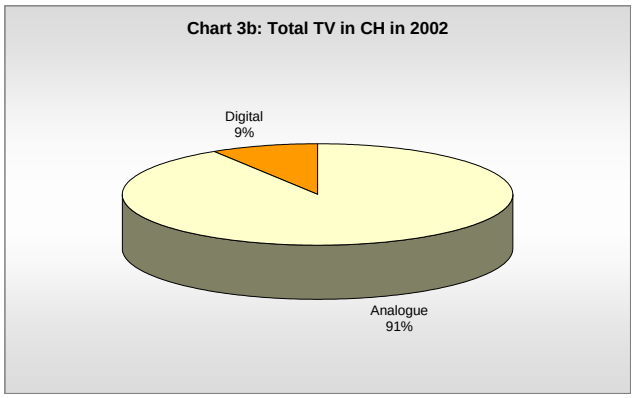


Figure 123a

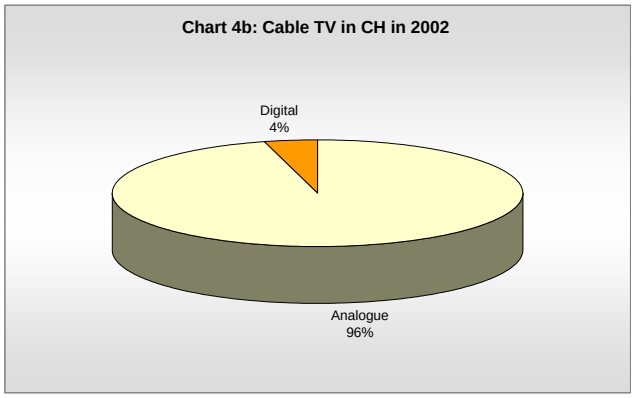


Figure 124

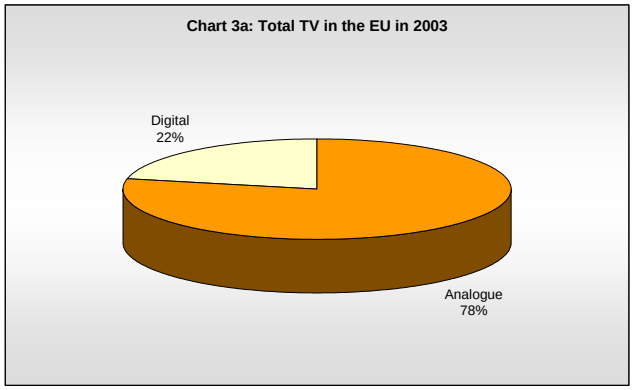


Figure 125

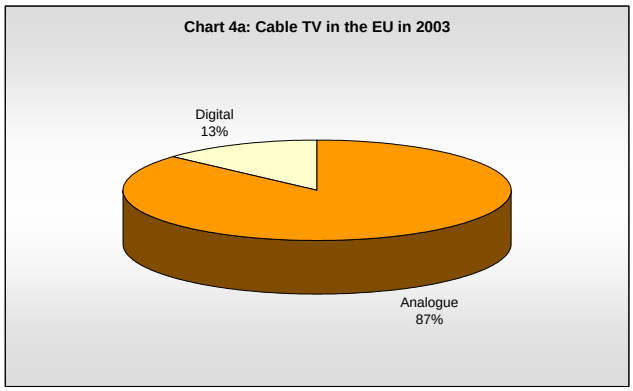


Figure 124a

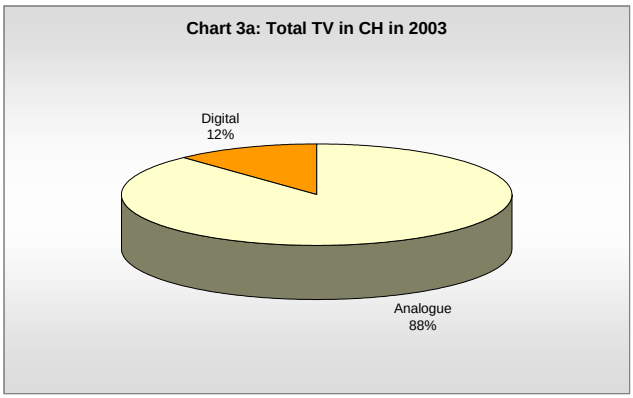


Figure 125a

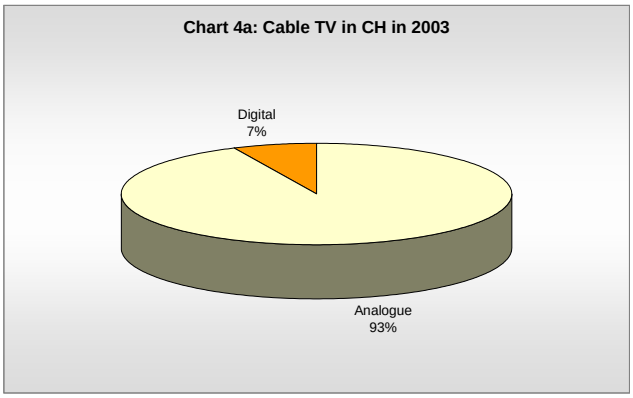


Figure 126

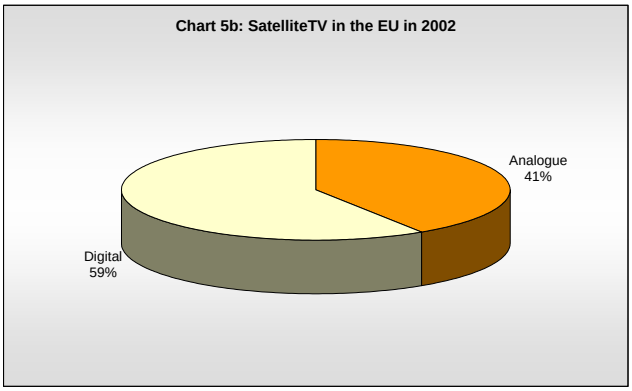


Figure 127

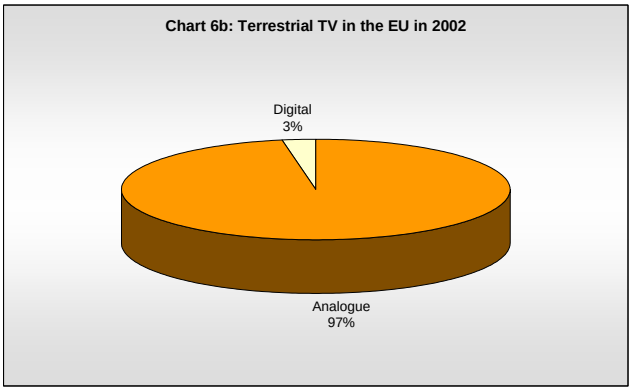


Figure 126a

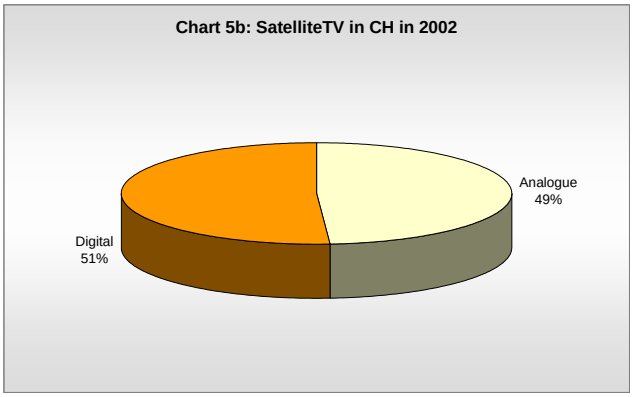


Figure 127a

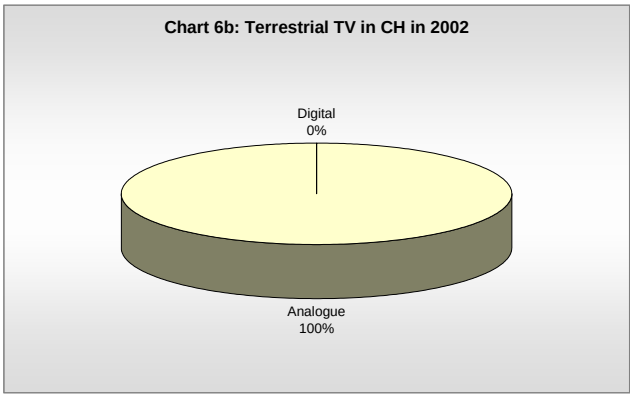


Figure 128

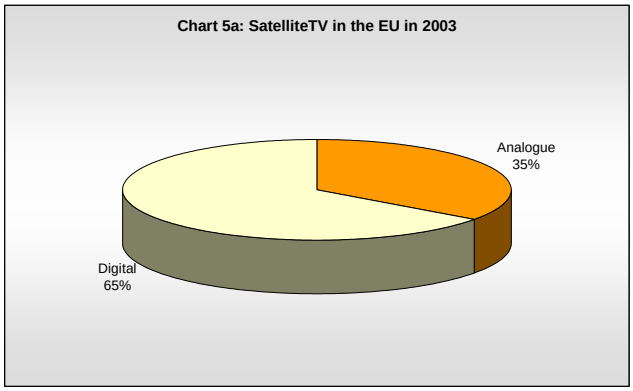


Figure 129

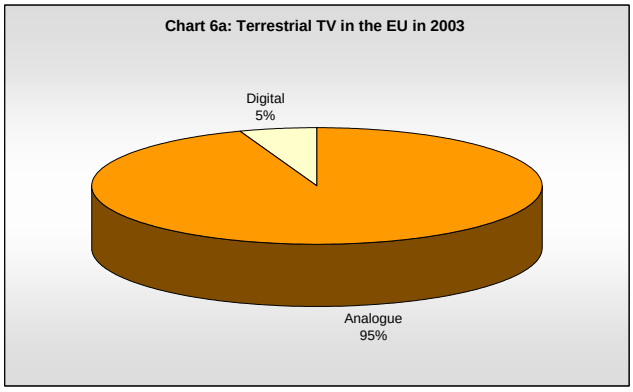


Figure 128a

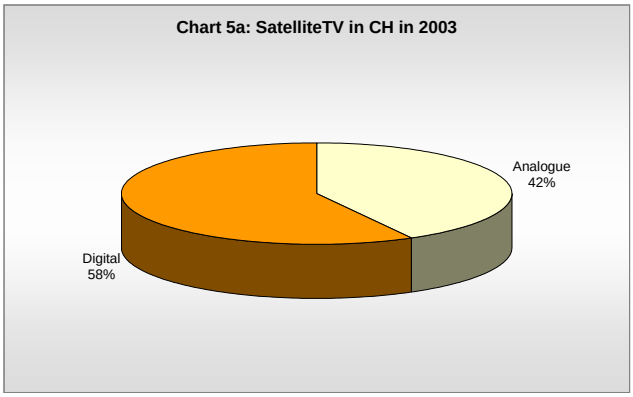
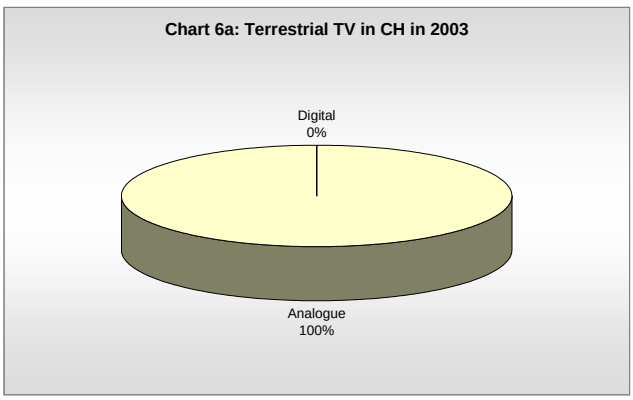


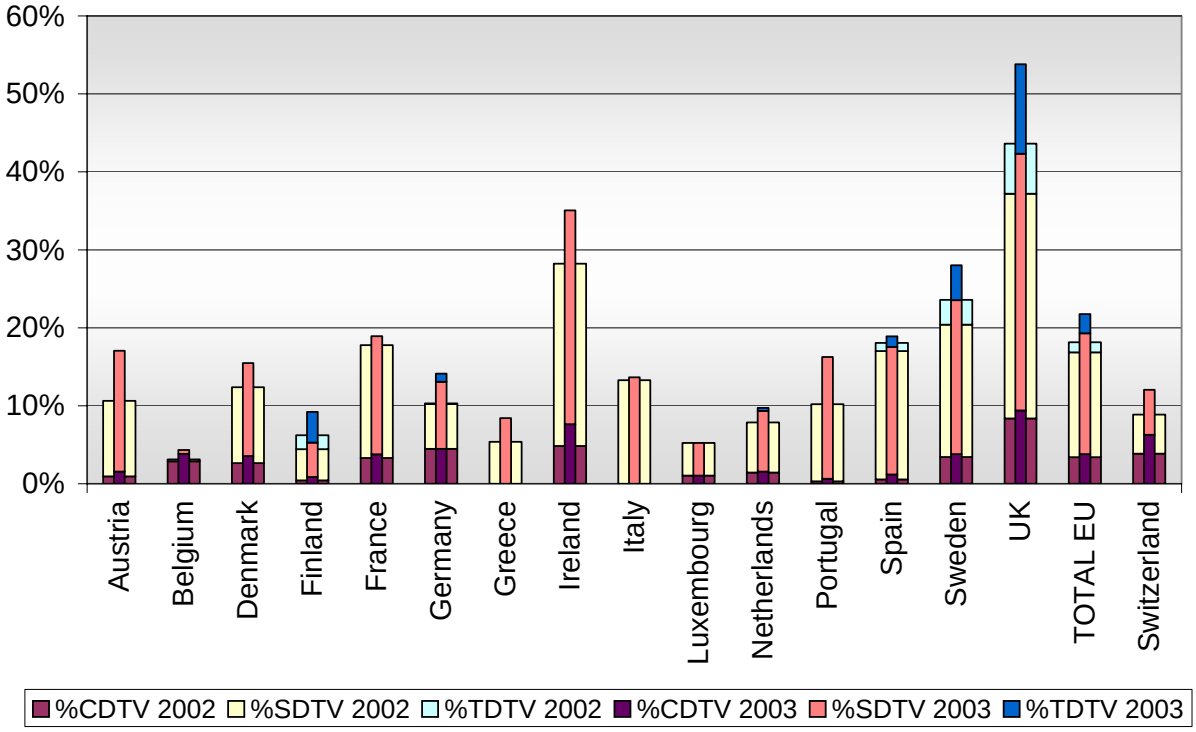
Figure 129a



(in millions and in percentage of national HH)																		
			Total Digital TV HH				**Cable DTV**				**Satellite DTV**				**Terrestrial DTV**			
	Total HH		**TV HH**		**%**		**TV HH**		**%**		**TV HH**		**%**		**TV HH**		**%**	
	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003
Austria	3,2	3,2	0,34	0,55	10,628%	17,060%	0,03	0,05	0,938%	1,551%	0,31	0,50	9,691%	15,509%	0,00	0,00	0,000%	0,000%
Belgium	4,2	4,2	0,13	0,18	3,118%	4,317%	0,12	0,16	2,878%	3,837%	0,01	0,02	0,240%	0,480%	0,00	0,00	0,000%	0,000%
Denmark	2,3	2,3	0,28	0,35	12,385%	15,468%	0,06	0,08	2,654%	3,536%	0,22	0,27	9,731%	11,933%	0,00	0,00	0,000%	0,000%
Finland	2,3	2,3	0,14	0,21	6,208%	9,216%	0,01	0,02	0,443%	0,878%	0,09	0,10	3,991%	4,389%	0,04	0,09	1,774%	3,950%
France	24,1	24,4	4,29	4,62	17,777%	18,928%	0,80	0,92	3,315%	3,769%	3,49	3,70	14,462%	15,159%	0,00	0,00	0,000%	0,000%
Germany	36,4	36,6	3,75	5,16	10,311%	14,114%	1,62	1,63	4,455%	4,458%	2,10	3,15	5,774%	8,616%	0,03	0,38	0,082%	1,039%
Greece	3,0	3,0	0,16	0,25	5,387%	8,418%	0,00	0,00	0,000%	0,000%	0,16	0,25	5,387%	8,418%	0,00	0,00	0,000%	0,000%
Ireland	1,2	1,3	0,35	0,46	28,226%	35,068%	0,06	0,10	4,839%	7,623%	0,29	0,36	23,387%	27,444%	0,00	0,00	0,000%	0,000%
Italy	20,8	20,9	2,76	2,85	13,276%	13,644%	0,00	0,00	0,000%	0,000%	2,76	2,85	13,276%	13,644%	0,00	0,00	0,000%	0,000%
Luxembourg	0,2	0,2	0,01	0,01	5,256%	5,256%	0,00	0,00	1,048%	1,048%	0,01	0,01	4,208%	4,208%	0,00	0,00	0,000%	0,000%
Netherlands	7,0	7,1	0,55	0,69	7,871%	9,748%	0,10	0,11	1,431%	1,554%	0,45	0,55	6,440%	7,770%	0,00	0,03	0,000%	0,424%
Portugal	3,1	3,1	0,32	0,51	10,191%	16,242%	0,01	0,02	0,318%	0,637%	0,31	0,49	9,873%	15,605%	0,00	0,00	0,000%	0,000%
Spain	12,5	12,6	2,26	2,38	18,074%	18,894%	0,07	0,15	0,560%	1,191%	2,06	2,06	16,475%	16,353%	0,13	0,17	1,040%	1,350%
Sweden	4,4	4,5	1,03	1,25	23,597%	28,014%	0,15	0,17	3,436%	3,810%	0,74	0,88	16,953%	19,722%	0,14	0,20	3,207%	4,482%
UK	24,4	24,4	10,65	13,14	43,612%	53,808%	2,05	2,29	8,395%	9,378%	7,03	8,04	28,788%	32,924%	1,57	2,81	6,429%	11,507%
TOTAL EU	148,97	149,94	27,02	32,61	18,137%	21,748%	5,08	5,70	3,411%	3,803%	20,0	23,23	13,444%	15,491%	1,91	3,68	1,282%	2,454%
CH	**3.0**	**3.02**	**0.266**	**0.364**	**8.87%**	**12.06%**	**0.116**	**0.190**	**3.87%**	**6.29%**	**0.15**	**0.174**	**5.00%**	**5.76%**	**0**	**0**	**0%**	**0%**

Figures in this table come from Strategy Analytics: "Digital TV Devices: European Market Forecast, July 2003", except for Luxembourg, where figures provided by national authorities for 2002 were used. In some cases data from both sources differ. However, it has to be remembered that the period covered by both sets of data is different. [41]

Figure 130: Evolution in the percentage of digital TV households from 2002 to 2003



Source for Switzerland: prognos mediareports database.

[41] *Whereas Strategy Analytics made estimations for the whole year 2003, MS provided the most up-to-date data available when replying to the questionnaire, i.e. in some cases some months before august 2003. It is therefore normal that the former are bigger than the latter. In addition, as it was mentioned in the last year's report, it seems that data in the 8th Implementation report did not take into account 2002 bankruptcies of terrestrial digital pay-TV operators in the UK and Spain. As a result, the numbers of DTV households have been over-estimated. For that reason the data for 2002 have also been taken from Strategy Analytics and not the last year's report.*

8.2. *OPERATORS AND INTERACTIVE TV SERVICES.*

TABLE 2: DIGITAL TV OPERATORS AND INTERACTIVE SERVICES

	DTV operators	*Transmission starting date*	*Network (cable, satellite, terrestrial, DSL)*	*business model (pay, free-to-air, hybrid)*	*conditional access technology (CAS)*	*application programme interface technology (API)*	*interactive TV services*
Denmark							
Finland	*Yleisradio Oy*	*8/2001*	*Terrestrial*	*Free-to-air*	*Conax*	*MHP*	*EPG, supertext tv (news, weather, etc.) traffic information, games*
	MTV Oy	*8/2001*	*Terrestrial*	*Free-to-air*	*Conax*	*MHP*	*EPG, MTV3 supertext tv, lottery, banking services, special services related to individual programmes*
	Oy Ruutunelonen Ab	*8/2001*	*Terrestrial*	*Free-to-air*	*Conax*	*MHP*	*EPG, supertext tv*
	Sub TV Oy	*8/2001*	*Terrestrial*	*Free-to-air*	*Conax*	*MHP*	*EPG, MTV3 supertext tv, lottery, banking services, special services related to individual programmes*
	Suomen Urheilutelevisio Oy	*8/2001*	*Terrestrial*	*Free-to-air*	*Conax*	*MHP*	*EPG, MTV3 Textchannel, lottery, banking services*
	Canal+ Finland Oy	*4/2004*	*Terrestrial*	*Pay*	*Conax*	*MHP*	
	Janton Oyj	*4/2004*	*Terrestrial*	*Free-to-air*	*Conax*	*MHP*	
	Turun Kaapelitelevisio Oy	*4/2004*	*Terrestrial*	*Free-to-air*	*Conax*	*MHP*	
	Vizor Oy	*4/2004*	*Terrestrial*	*Free-to-air*	*Conax*	*MHP*	

	Digita Oy	*4/2004*	*Terrestrial*	*Free-to-air*	*Conax*	*MHP*	
	Cable operators[42]	-	*Cable*	-	-	-	-
	Satellite operators[43]	-	-	-	-	-	-
France	*TPS*	*1996*	*Satellite*	*Pay*	*Viaccess*	*Open TV*	-
	Canal satellite	*1996*	*Satellite*	*Pay*	*Mediaguard*	*MediaHighway*	*games*
	AB Sat	*1995*	*Satellite*	*Pay*	*Viaccess*	-	
	France Telecom Cable	*1997*	*Cable*	*Pay*	*Viaccess*	*Open TV*	
	NC Numericable	*1996*	*Cable*	*Pay*	*Mediaguard*	*MediaHighway*	
	Noos	-	*Cable*	*Pay*	*Viaccess*	*Open TV*	
	UPC France	-	*Cable*	*Pay*	*Viaccess*		
	Valvision	*1991*	*Cable*	*Pay*	*Viaccess*		
	Vialis	*1998*	*Cable*	*Pay*			
	EST-videocommunication	*1999*	*Cable*	*Pay*	*Viaccess*		
	Terrestrial operators[44]	*2005*	*Terrestrial*	*Pay/free-to-air*			
Germany	*Satellite operators*[45]	*Since 1997*	*Satellite*	*Hybrid*	*None/Beta crypt/ Nagravision*	*None/ MHP/ OpenTV*	*EPG, Online Channel; News Tickers; content related additional information*
	Cable operators[46]	*Since 1994*	*Cable*	*Hybrid*	*None*	*None/ MHP/ Betanova*	*Internet; Betting; F1 Interactive*

[42] *In addition to the authorised dtv operators mentioned above there are about 50 cable tv service and/or network operators and most of them provide also digital tv channels.*

[43] *There are also some satellite tv service operators (DTH 2, SMATV >2) providing foreign digital satellite channels.*

[44] *It is envisaged that 23 terrestrial operators will start transmission in 2005 – 8 FTA (Bollore Media, MCM, NRJ TV, NT1, Tele Monte Carlo, EDI TV, France Television 1, Metropole Television) and 15 pay-TV (Canal +, AB1, Canal J, Cine-Cinema Cable, S.E.C.C., Cuisine.TV, Eurosport France, SESI, La chaine info, Match TV, Paris Premiere, Planete Cable, Sport +, TF6, TPS Star)*

[45] *More than 100 TV channels.*

	Terrestrial operators[47]	*2002/ 2003*	*Terrestrial*	*Free-to-air*	*None*	*MHP*	*EPG; Digitext; News-Ticker*
Greece	*NOVA*	*1999*	*Satellite*	*Pay*	*Irdeto*	*OpenTV*	*Enhanced TV, selection of viewpoint (selection of different coverage cameras), games, teletext, stock market on-line*
Italy	*Sky Italia*[48]	*8/2003*	*Satellite*	*Pay*	*Irdeto, Mediaguard, Videguard*	*OpenTV, MediaHighway*	*PPV (pay-per-view)*
	RTI	*1997*	*Satellite*	*Free-to-air*			
	RAI	*1997*	*Satellite*	*Free-to-air*			
	TV Internazionale	*1997*	*Satellite*	*Free-to-air*			
	Fastweb	*2001*[49]	*Fiber optic, xDSL*	*Pay*	*IP-based*		*PPV, VOD (Video-on-demand), web DVD*
	Other operators		*Satellite, xDSL*	*Free-to-air/Pay*			
Nether-lands	*UPC*	*1999*	*Cable*	*Pay*	*Cryptoworks*	*Liberate*	*Games, enhanced TV*
	Essent TV Home	*1999*	*Cable*	*Pay*	*Viaccess*	*OpenTV*	*Games, enhanced TV*
	Casema	*1999*	*Cable*	*Pay*	*Viaccess*	*OpenTV*	*enhanced TV*
	Multikabel	*1999*	*Cable*	*Pay*	*Viaccess*	*OpenTV*	*Games, enhanced TV*
	Kabelfoon	*11/2003*	*Cable*	*Pay*			
	Digitenne	*4/2003*	*Terrestrial*	*Hybrid*	*Mediaguard*	*MHP*	
	NOS	*4/2003*	*Terrestrial*	*Hybrid*	*Mediaguard*	*MHP*	
	Canal Digital	*1998*	*Satellite*	*Pay*	*Irdeto, Mediaguard*	*Proprietary API*	
Sweden	*Boxer-TV-Access AB*	*1999*	*Terrestrial*	*Hybrid*	*Viaccess*	*OpenTV*	*EPG*
	Viasat	*2000*	*Satellite*	*Pay*	*Viaccess, NDS*	*OpenTV*	*PPV, EPG*

[46] *Up to 50 TV channels.*
[47] *28 TV channels in the Berlin/Potsdam area.*
[48] *Sky Italia is a merger of Telepiu and Stream.*
[49] *Refereed to digital TV services based on fiber optic.*

					Videoguard		
	Canal Digital	*1998*	*Satellite*	*Pay*	*Conax*	*MediaHighway*	*PPV, EPG, games, news, weather*
	UPC	*2001*	*Cable*	*Pay*	*Cryptoworks*	*Liberate*	*No itv services*
	Com heb ab	*1997*	*Cable*	*Pay*	*Conax*	*OpenTV*	*PPV, EPG, games, subscription management, news, etc.*
	Canal Digital (SOL)	*1999*	*Cable*	*Pay*	*Conax*	*MediaHighway*	*PPV, EPG, games, news, weather*
Spain	*TVE*	*4/2002*	*Terrestrial*	*Free-to-air*			
	Antena 3	*4/2002*	*Terrestrial*	*Free-to-air*			
	Telecinco	*4/2002*	*Terrestrial*	*Free-to-air*			
	Canal +	*4/2002*	*Terrestrial*	*Hybrid*	*Mediaguard*		
	Net TV	*6/2002*	*Terrestrial*	*Free-to-air*			
	Veo TV	*6/2002*	*Terrestrial*	*Free-to-air*			
	Quiero TV	*10/2000*	*Terrestrial*	*Free-to-air*			
	Onda Seis TV	*10/2000*	*Terrestrial*	*Free-to-air*			
	Rioja TV	*2004*	*Terrestrial*	*Free-to-air*			
	Cope TV	*2004*	*Terrestrial*	*Free-to-air*			
	Digital +	*1997*	*Satellite*	*Pay*	*Mediguard/ Nagra*	*MediaHighway/ OpenTV*	*Games, assisted navigation, t-commerce, transaction services*
	ONO	*7/2003*	*Cable*	*Pay*	*Motorola Mediacipher*		
	Auna Cable	*12/1999*	*Cable*	*Pay*	*NDS Videguard*	*NDS Core, Open TV, Core V1.0*	
	Telefonica Cable		*DSL*	*Pay*			
Portugal	*CATVP*		*Cable/satellite*				*EPG, VOD, T-commerce, news, selection of different cameras*
	Cabovisao		*Cable*				
	TVTEL Gransde Porto		*Cable*				
	Pluricanal Gondomar		*Cable*				

	Pluricanal santerem		*Cable*				
	Pluricanal Leiria		*Cable*				
UK	*BSkyB*	*10/198*	*Satellite*	*Pay*	*NDS Videguard*	*OpenTV*	*Enhanced TV and interactive*[50]
	NTL	*1999*	*Cable*	*Pay*	*Nagravision*	*Liberate 1.2*	*Enhanced TV and interactive*[51]
	Telewest	*1999*	*Cable*	*Pay*	*Nagravision*	*Liberate 1.2*	*Enhanced TV and interactive*[52]
	BBC	*11/1998*	*Terrestrial*	*Free-to-air*	*N/a*	*MHEG 5.1*	*Enhanced TV*
	Crown Castle	*10/2002*	*Terrestrial*	*Free-to-air*	*N/a*	*MHEG 5.1*	*Enhanced TV*
	D3&4	*11/1998*	*Terrestrial*	*Free-to-air*	*N/a*	*MHEG 5.1*	*Enhanced TV*
	SDN	*11/1998*	*Terrestrial*	*Free-to-air*	*N/a*	*MHEG 5.1*	*Enhanced TV*
	Freeview[53]	*10/2002*					
	Kingston Interactive Television	*9/2000*	*DSL*	*Pay*	*N/k*	*iMagic TV*	*Enhanced TV, interactive and VoD*
	Homechoice	*9/2000*	*DSL*	*Pay*	*N/k*	*N/k*	*None (VOD only)*
	Wightcable	*N/k*	*Cable*	*Pay*	*N/k*	*N/k*	*None*
	Omne	*N/k*	*N/k*	*N/k*	*N/k*	*N/k*	*N/k*

This table contains information provided by certain MS in reply to the questionnaire sent by the EC services, which included a working definition of iTV.[54]

[50] *"red button" services, near VOD, EPG, online games, shopping, banking, e-mail, eGovernment (UK online)*

[51] *"red button" services, near VOD, EPG, online games, shopping, e-mail, limited T-commerce.*

[52] *"red button" services, near VOD, EPG, online games, shopping, e-mail, limited T-commerce.*

[53] *'Freeview' was launched on 30 October 2002, as an umbrella brand for UK DTT. It is promoted by DTV Services Ltd, a joint venture between the BBC, Crown Castle International, and BSkyB. It is not, however, a licensed multiplex operator in its own right.*

[54] *"interactive TV services here refer to services and contents other than traditional linear broadcasting programmes available through the TV set. These services can be either "true" interactive TV services (where the user requests the service through a return channel) or "enhanced" services (where no return channel is involved), and delivered within or outside the main video/audio stream. Examples of these services are: can be online games, enhancements to TV programmes, transactional services, internet services such as web access and e-mail, etc. This definition is indicative and carry no legal value whatsoever. In particular, it does not prejudge in any way the approach of the Commission regarding TV markets segmentation.*

8.3. *DTV EQUIPMENT.*

DTV equipment in 2003 (in millions of units and millions of dollars)									
	Installed base (M)			*Annual sales (M)*			*Retail market value ($M)*		
	STB	*iDTV*	*Total*	*STB*	*iDTV*	*Total*	*STB*	*iDTV*	*Total*
Austria	*0,56*	*0,00*	*0,56*	*0,22*	*0,00*	*0,22*	*48,61*	*0,00*	*48,61*
Belgium	*0,19*	*0,00*	*0,19*	*0,06*	*0,00*	*0,06*	*13,65*	*0,00*	*13,65*
Denmark	*0,38*	*0,00*	*0,38*	*0,11*	*0,00*	*0,11*	*24,45*	*0,00*	*24,45*
Finland	*0,21*	*0,01*	*0,22*	*0,07*	*0,01*	*0,07*	*12,05*	*7,50*	*19,55*
France	*4,92*	*0,00*	*4,92*	*0,81*	*0,00*	*0,81*	*178,10*	*0,00*	*178,10*
Germany	*5,34*	*0,03*	*5,37*	*1,82*	*0,02*	*1,84*	*374,45*	*30,00*	*404,45*
Greece	*0,26*	*0,00*	*0,26*	*0,10*	*0,00*	*0,10*	*22,00*	*0,00*	*22,00*
Ireland	*0,49*	*0,00*	*0,49*	*0,15*	*0,00*	*0,15*	*36,00*	*0,00*	*36,00*
Italy	*3,06*	*0,00*	*3,06*	*0,48*	*0,00*	*0,48*	*105,10*	*0,00*	*105,10*
Luxembourg	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
Netherlands	*0,73*	*0,00*	*0,73*	*0,24*	*0,00*	*0,24*	*49,55*	*0,00*	*49,55*
Portugal	*0,51*	*0,00*	*0,51*	*0,21*	*0,00*	*0,21*	*45,60*	*0,00*	*45,60*
Spain	*2,49*	*0,00*	*2,49*	*0,38*	*0,00*	*0,38*	*79,80*	*0,00*	*79,80*
Sweden	*1,32*	*0,02*	*1,34*	*0,33*	*0,01*	*0,34*	*68,20*	*15,00*	*83,20*
UK	*13,51*	*0,45*	*13,96*	*3,57*	*0,15*	*3,72*	*752,10*	*112,50*	*864,60*
TOTAL EU	***33,98***	***0,51***	***34,49***	***8,53***	***0,19***	***8,71***	***1809,66***	***165***	***1974.66***

All Figures in this table come from Strategy Analytics. [55]

Moreover, some MS provided details on DTV equipment installed in HH. For details see footnote.[56]

[55] *"Digital TV Devices: European Market Forecast, July 2003", and "iDTV (Integrated DTV Receivers): European Market Forecast, July 2003". No data are available on Luxembourg.*

[56] *Figures are given in units.*

***Denmark**: Installed base: STB – n/a, iDTV - 0*

***Finland**: Installed base: STB – 134,000, iDTV – 4,000; Sales over the last months (Jan – June 03) 71,000; Average price: STB – 260 €*

***France**: Installed base: STB – 4,013,555.*

***Germany**: Sales over the last months (2002) – 48,000; Average price: STB – 230 €*

***Greece**: Installed base: STB – 700,000; Sales over the last months (?) 50,000; Average price: STB – 200 € (100 € for FTA, 300 € for Pay-TV)*

***Italy**: Installed base: STB – 3,500,000*

***Netherlands**: n/a*

***Portugal**: n/a*

***Spain**: n/a*

***Sweden**: Sales over the last months – app. 7,000 per month*

***UK**: Installed base: STB – 1.23 million, iDTV – 0.37 million; Sales over the last 12 months (to 31/03/2003) STB - 874,000, iDTV – 103,400; Average price: STB – 92 £, iDTV – 896 £*

Figure 131

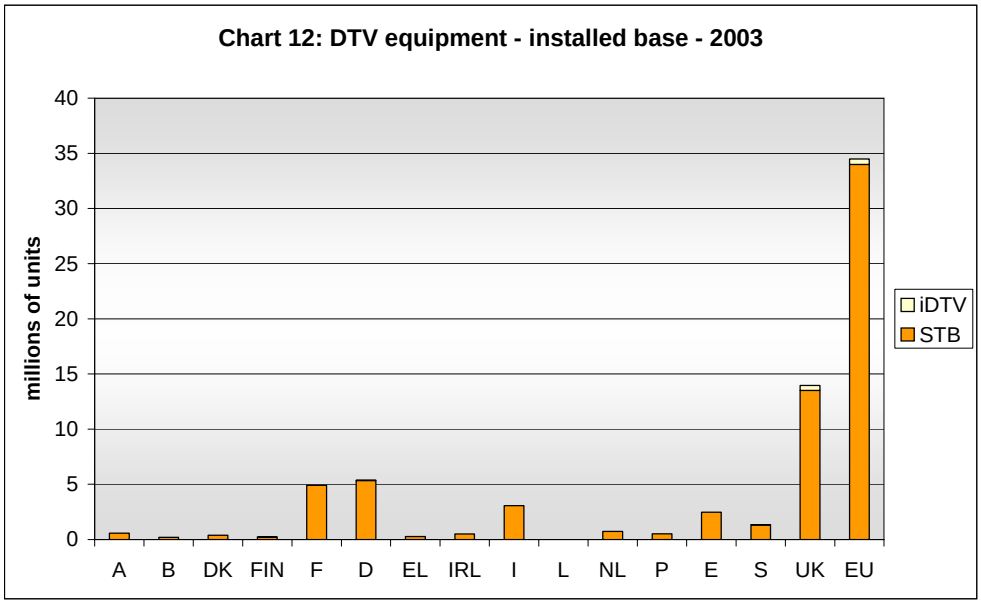


Figure 132

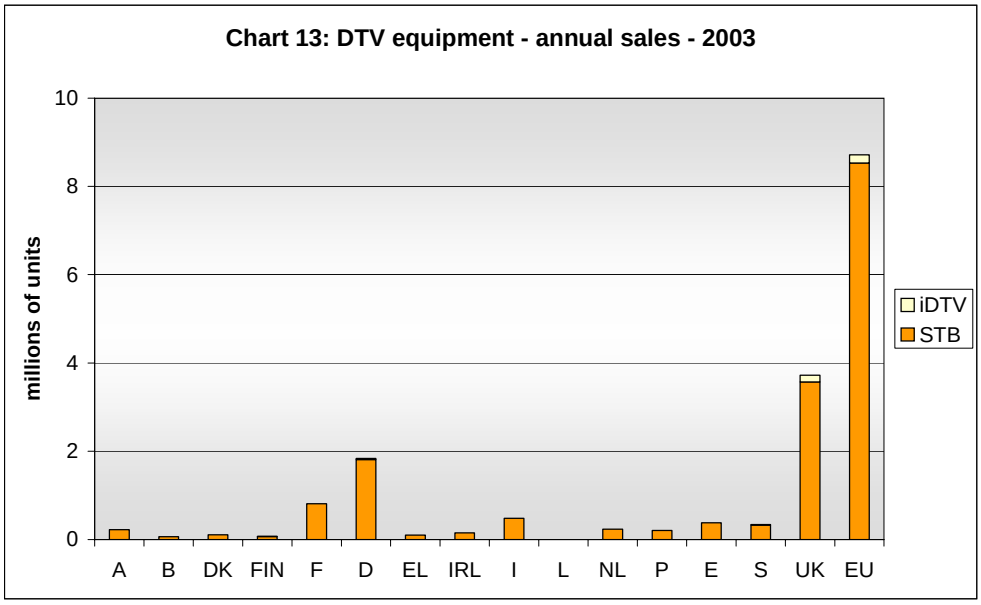


Figure 133

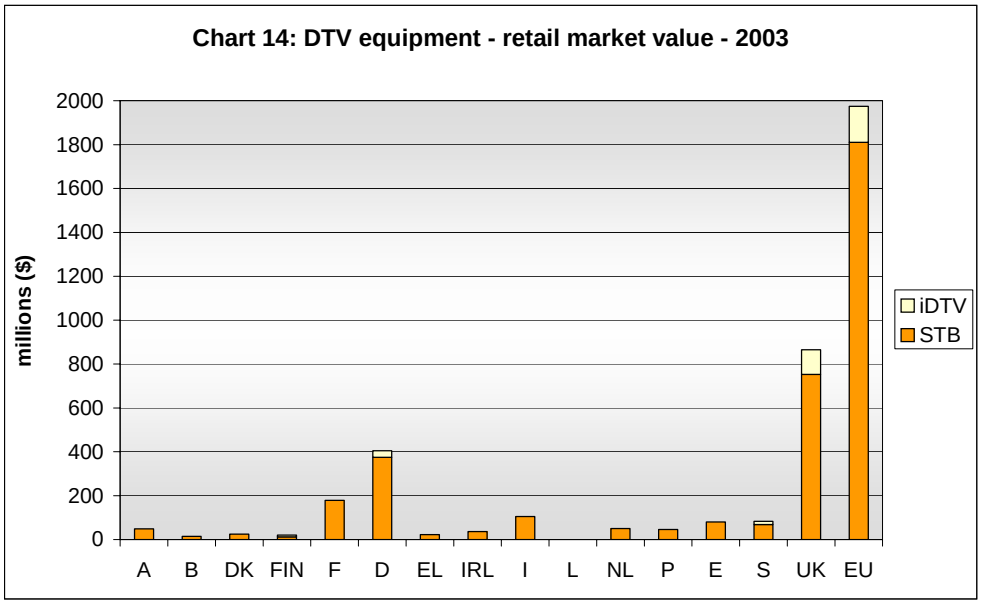


Table 7: DTV equipment (STB + iDTV) – evolution 2001-2003 *(in millions of units and millions of dollars)*						
	2001					
	Installed base		*Annual sales (M)*		*Retail market value ($M)*	
	STB	*iDVT*	*STB*	*iDVT*	*STB*	*iDVT*
	24,2	*0,2*	*6,6*	*0,1*	*2137,3*	*108,0*
Total	***24.47***		***6.67***		***2245.25***	
	2002					
	Installed base		*Annual sales (M)*		*Retail market value ($M)*	
	STB	*iDVT*	*STB*	*iDVT*	*STB*	*iDVT*
	27.6	*0.3*	*4.6*	*0.1*	*1218.4*	*114.0*
Total	*27.93*		*4.76*		*1332.40*	
	2003					
	Installed base		*Annual sales (M)*		*Retail market value ($M)*	
	STB	*iDVT*	*STB*	*iDVT*	*STB*	*iDVT*
	34.0	*0.5*	*8.5*	*0.2*	*1809.7*	*165.0*
Total	*34.49*		*8.71*		*1974.66*	

All figures in this table come from Strategy Analytics. [57]

[57] *"Digital TV Devices: European Market Forecast, July 2003", and "iDTV (Integrated DTV Receivers): European Market Forecast, July 2003". No data are available on Luxembourg.*

Figure 134

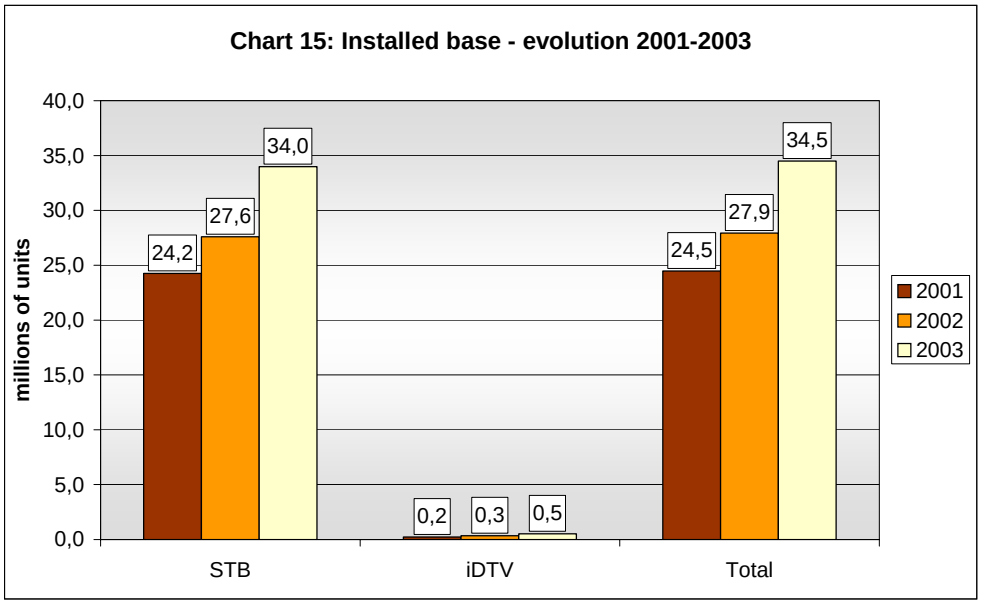


Figure 135

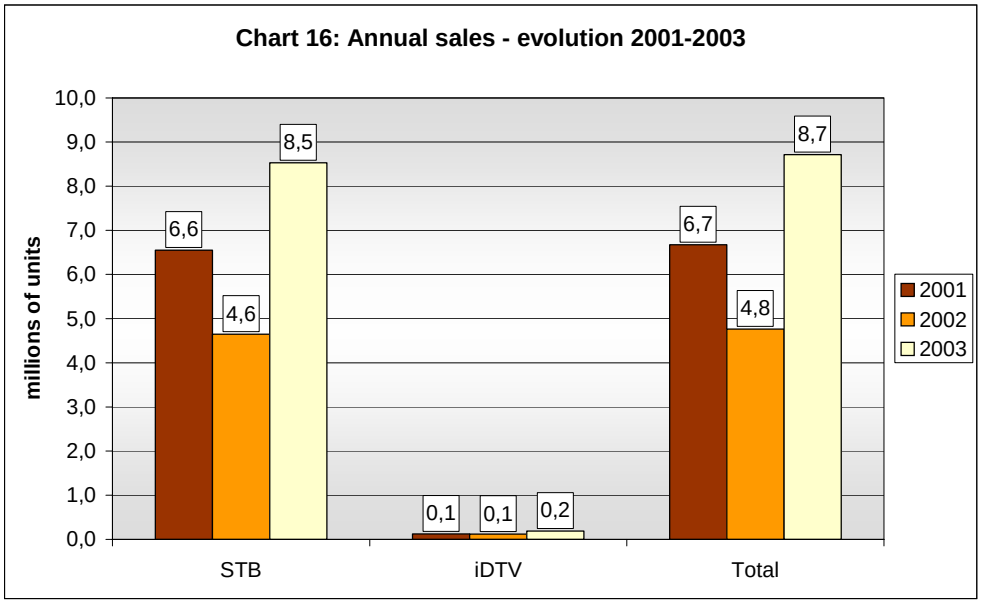
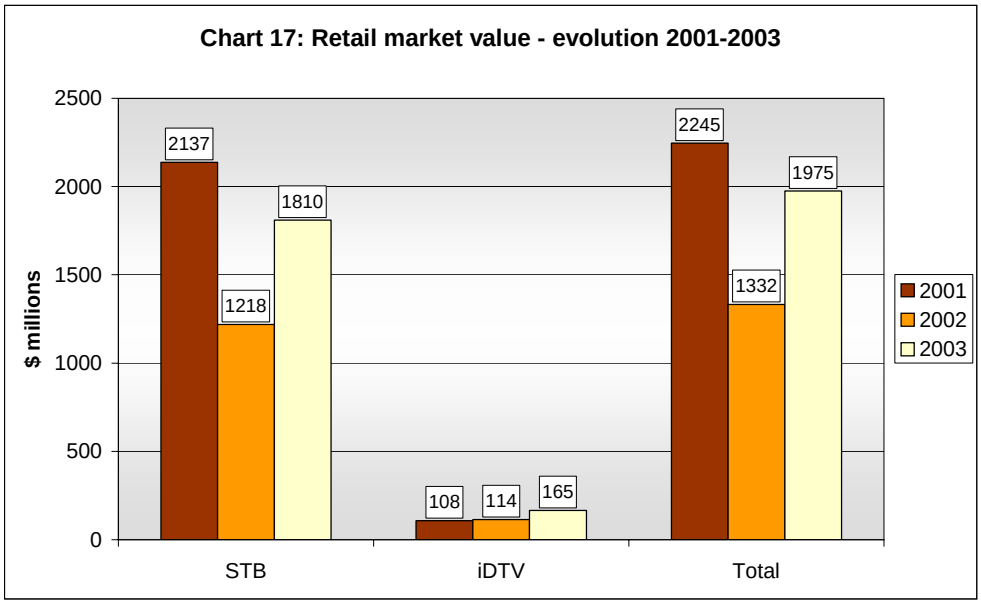


Figure 136



The STB retail market value in year 2003 is smaller than in 2001, although the annual sales in the same period have increased. This indicates the decrease in prices for set-top-boxes in EU.

9 *EXCHANGE RATES*

This section explains the exchange rates used in Annex I.

9.1. *EXCHANGE RATE USED IN SECTION 6 ON PUBLIC VOICE TELEPHONY TARIFFS AND SECTION 7 ON LEASED LINE TARIFFS.*

Exchange rates, national currency to Euro

	Exchange rate to euro <= 2001	*Exchange rate to euro => 2002*
	EURO	*EURO*
Austria	*0.07267*	*1*
Belgium	*0.02479*	*1*
Denmark	*0.13458*	*0.13458*
Finland	*0.16819*	*1*
France	*0.15245*	*1*
Germany	*0.51129*	*1*
Greece	*0.00293*	*1*
Ireland	*1.26974*	*1*
Italy	*0.00052*	*1*
Japan	*0.00737*	*0.00737*
Luxembourg	*0.02479*	*1*
Netherlands	*0.45378*	*1*
Portugal	*0.00499*	*1*
Spain	*0.00601*	*1.00000*
Sweden	*0.10818*	*0.10818*
UK	*1.42816*	*1.42816*
USA	*0.88845*	*0.88845*
CH	**0.64706**	**0.64706**

Source for Switzerland: Teligen T-Basket.

9.2. *EXCHANGE RATE USED IN SECTION 3 ON INTERCONNECTION AND SECTION 5.2 ON PRICES FOR LOCAL LOOP*

The exchange rate to Euro used in section 3 on interconnection and section 5.2 on price for local loop are the same in table 5, except for the following:

	EURO
Denmark	*0.13457*
Sweden	*0.108838*
UK	*1.457433*

10 *OECD TELECOMMUNICATIONS BASKET DEFINITIONS*

10.1. *NATIONAL PSTN BASKET*

Business basket results exclude VAT. Residential basket results include VAT.

The nonrecurring charge is calculated as an average between the charge for a new line installation, and the charge for "same day takeover", i.e. when there is a direct transfer from the previous to the new customer. Valid for both Business and Residential baskets.

Nonrecurring charge calculation	*Weight*
New line connection charge	*50%*
Same day takeover connection charge	*50%*

The nonrecurring charge is depreciated over 5 years. An exception is made for countries where the connection charge has a lifetime value (e.g. Japan, where the connection is a tradable asset). Valid for both Business and Residential baskets.

Nonrecurring charge depreciation	*Weight*
With normal one-off charge	*5*
Where connection is a tradable asset	*20*

Annual rental for the service is included in the basket. Any additional recurring charges (per year) shall also be included (e.g. charges related to the use of specific calling plans).

Where the service (or tariff plan) includes a number of "free" calls or minutes, or any other call-related allowance, the value of this allowance is deducted from the usage. The value of the deducted allowance cannot be higher than the usage. Where the tariff clearly specifies that the allowance is related to specific types of calls (e.g. local, international), the usage in question shall only cover the defined type(s) of calls.

The number of calls to fixed line phones (i.e. excluding calls to mobile phones) is defined as:

Number of national fixed line calls	*Calls per year*
Business basket	*3600*
Residential basket	*1200*

The national usage will have a weighted distribution over 14 distances. Call charges relevant at each of these distances shall be used.

Km	***3***	***7***	***12***	***17***	***22***	***27***	***40***	***75***	***110***	***135***	***175***	***250***	***350***	***490***
Bus	*53*	*11*	*7*	*4*	*2.5*	*3*	*3.5*	*3.5*	*2.5*	*2*	*1.5*	*1.5*	*1*	*4*
Res	*60*	*14*	*5*	*3*	*1.5*	*2.5*	*2.5*	*2.5*	*1.5*	*1.25*	*1*	*1*	*0.75*	*3.5*

Bus = Business basket, Res = Residential basket. All weights in percent of total number of fixed line calls.

The national usage will have a weighted distribution over six time and day points. Call charges relevant at each of these time and day points shall be used.

Day/Time	*We 11:00*	*We 15:00*	*We 20:00*	*We 03:00*	*Sa 11:00*	*Su 15:00*
Bus	*45.4*	*40.6*	*7*	*0.8*	*5.7*	*0.5*
Res	*14.3*	*22.1*	*31.6*	*3*	*13*	*16*

Bus = Business basket, Res = Residential basket. All weights in percent of total number of fixed line calls.
We = Weekdays, Sa = Saturdays, Su = Sundays.

National call duration will vary with distance and time of day. The charge for each call shall reflect the actual charge for the duration in question, as defined by the tariff. Call setup and minimum charges shall be included.

Day/Time	***Weekday daytime***			***Weekday evenings, nights and weekends***		
Distance	*3-12 Km*	*17-40 Km*	*75-490 km*	*3-12 km*	*17-40 Km*	*75-490 Km*
Bus	*3.5*	*3.5*	*3.5*	*3.5*	*3.5*	*3.5*
Res	*2.5*	*3.5*	*3.5*	*3.5*	*6*	*7*

Bus = Business basket, Res = Residential basket. Duration in minutes per call.

Calls to mobile phones may be added to the basket. This is optional, and the presentation of the results must clearly state whether such calls are included or not. The number of calls shall be 10% of the number of national fixed line calls, in addition to the fixed line calls.

Calls to mobile phones	***Calls per year***	***Call duration***
Business basket	*360*	*2*
Residential basket	*120*	*2*

Call duration in minutes per call.

10.2. *INTERNATIONAL PSTN BASKET*

The international PSTN basket, when used separately, shall reflect the cost of a single call, calculated according to the weighting method described below. No fixed charges are included.

Business basket results exclude VAT. Residential basket results include VAT.

Call charges for calls to all other OECD Member States shall be used. Peak and off-peak time call charges are used, defined as the highest (most expensive) charge and the lowest (least expensive) charge.

Call cost is based on average per minute charge. Call setup charges and/or different charges for first and additional minutes are included.

The charges to different destinations are weighted according to the ITU call volume statistics. An average over the latest 5 years of available traffic statistics is used. As there may be gaps in the ITU statistics for certain destinations from some countries, calls on such routes are excluded from the calculation.

Call charges are weighted between peak and off-peak:

	Peak time weight	***Off-peak time weight***
Business basket	*75.0 %*	*25.0 %*
Residential Basket	*25.0 %*	*75.0 %*

Call duration differ between peak and off-peak time:

	Peak time	***Off-peak time***
Business basket	*3 minutes*	*5 minutes*
Residential Basket	*3 minutes*	*5 minutes*

10.3. *COMPOSITE NATIONAL – INTERNATIONAL BASKET*

This basket is based on a combination of the national and international baskets, as described above. The national basket remains unchanged, and the international basket is scaled using a fixed number of international calls.

Business basket results exclude VAT. Residential basket results include VAT.

The international portion of the basket shall have a number of calls equal to 6% of the national fixed line calls, in addition to the calls defined in the national portion of the basket.

	International calls per year
Business basket	*216*
Residential basket	*72*

10.4. *NEW OECD MOBILE BASKETS*

All baskets will include:

- *Registration or installation charges with 1/3 of the charges, i.e. distributed over 3 years.*
- *Monthly rental charges, and any option charges that may apply to the package, or package combination.*

The three new baskets are:

- *Low user basket. The usage level of this basket is low, with a call volume less than half of that in the Medium user basket.*
- *Medium user basket. This basket will have 75 outgoing calls per month.*
- *High user basket. The usage level is about twice the Medium user basket.*

The usage profiles will also include a number of SMS messages per month.

Call and message volumes for each basket are:

	Outgoing calls /month	*SMS per month*
Low user	*25*	*30*
Medium user	*75*	*35*
High user	*150*	*42*

The information received showed that there is little difference between the average pre-paid usage and the low user post-paid usage. The low user basket can therefore be used for both pre- and post-paid tariffs, allowing a simple comparison also between the two types.

Only national calls are included in the profiles, with 4 different destinations:

- *Local area fixed line calls. This is used to accommodate the tariffs that have separate charges for the local area. When such charges are not available, this proportion of calls is included in the National.*
- *National fixed line calls. This covers all fixed line calls outside the local area, except in cases as noted above.*
- *Same network mobile calls (On-net). This includes all calls made to mobiles in the same mobile network as the caller.*

- *Other network mobile calls (Off-net). This includes calls to all other mobile networks in the caller's country. When the charges are different depending on destination network, the market shares based on subscriber numbers are used for weighting the charges. Up to 3 other networks will be considered in each country.*

Distributions per destination for each basket are:

% of total number of calls	*Fixed Local area*	*Fixed National area*	*On-net mobile*	*Off-net mobile*
Low user	*28.0%*	*14.0%*	*40.0%*	*18.0%*
Medium user	*24.0%*	*12.0%*	*43.0%*	*21.0%*
High user	*26.0%*	*14.0%*	*42.0%*	*18.0%*

As the information received produced little evidence on the split between local and national fixed line calls, the assumption has been used that the ratio would be 2:1 for local:national, i.e. 67% local and 33% national. This assumption is taken from the averages in fixed baskets, and the scarce information received.

Instead of splitting time and day into distinct times and days the following approach will be used:

- *Peak time calls at weekdays, most expensive time during daytime.*
- *Off-peak time calls at weekdays, cheapest time before midnight.*
- *Weekend time calls, at daytime Sundays.*

Distributions over time and day for each basket are:

% of total number of calls	*ToD Peak*	*ToD Off-peak*	*ToD Weekend*
Low user	*38.0%*	*35.0%*	*27.0%*
Medium user	*47.0%*	*30.0%*	*23.0%*
High user	*63.0%*	*22.0%*	*15.0%*

There will be 3 separate call durations:

- *Local and national fixed line calls*
- *Same network mobile calls (On-net)*
- *Other network mobile calls (Off-net)*

Call durations for each basket are:

Minutes per call	*Dur Fixed National*	*Dur Mobile On-net*	*Dur Mobile Off-net*
Low user	*1.6*	*1.4*	*1.4*
Medium user	*2.1*	*1.9*	*1.9*
High user	*2.2*	*2.0*	*2.1*

Any call allowance value included in the monthly rental will be deducted from the usage value once the basket is calculated. The deduction cannot be larger than the actual usage value, i.e. negative usage is not allowed. No transfer of unused value to next month is taken into account.

Any inclusive minutes will be deducted from the basket usage before starting the calculation of usage cost. The inclusive minutes are assumed to be used up with the same calling pattern that is described in the basket, i.e. the same peak/off-peak ratio and the same distribution across destinations. Where the inclusive minutes are clearly limited to specific destinations or times of day this will be taken into account. No transfer of unused minutes is taken into account.

Any inclusive SMS-messages will be deducted from the basket before starting the calculation of the SMS message cost, up to the number of messages in the basket.

For each of the operators covered a set of packages shall be included so that the cheapest package offered by that operator can be calculated for each of the 3 baskets.

Multiple operators in each country shall be included, with at least the two operators with highest number of subscribers in each country. The operators included shall have a total market share of at least 50% based on subscriber numbers.

Basket results are calculated for a period of one year.