

10 years of regulation

| | | |
|----|---|----|
| 1. | The first phase, 1997-2001: liberalisation and opening markets up to competition | 37 |
| | A. ARCEP roadmap and state of the market in 1997 | 37 |
| | B. Competition in the calling market | 39 |
| | C. Competition in the local loop | 43 |
| 2. | Second phase: turning point in 2001-2004 | 45 |
| | A. Initial assessment: the market in 2000-2001 | 45 |
| | B. Broadband access and unbundling | 47 |
| 3. | Developing competition by making spectrum available to operators, and associated obligations | 51 |
| | A. Wireless local loop | 51 |
| | B. Rise of mobile telephony with GSM | 53 |
| | C. Third generation mobile | 55 |
| 4. | New regulation | 59 |
| | A. The market in 2006 | 59 |
| | B. The new regulatory provisions | 60 |



Having reached its 10th anniversary, the Authority felt the time had come to take a look back at the principal tasks it had undertaken since 1 January 1997. Although necessarily incomplete, this retrospective makes it possible to distinguish several key stages and orientations:

- ◆ an “historic” phase, covering primarily the first four years and devoted to the implementation of regulation for “narrow band”. Despite having been carefully prepared and planned, this “clear way forward” involved a number of surprises, not the least of which was the stunning development of narrowband Internet;
- ◆ a period (2000-2004) marked by unbundling and broadband regulation: unlike the previous years, there was more trial and error involved in this period, due to the novelty of the landscape, the uncertainties at the time over the chances of significant development of alternative access infrastructure, and to the situation created by the burst of the Internet bubble in early 2000. These years nevertheless proved a fruitful time, as revealed by the current success of the broadband sector;
- ◆ ongoing efforts to make radio spectrum available to operators to be able to satisfy the new and growing person-to-person communication needs of mobile and roaming customers, and to provide users with greater convenience. One of the high points was the introduction of third generation mobile. The essential role that frequencies have had in enabling competition and innovation in the sector is now patently clear;
- ◆ and, finally, the “modern” era resulting from the implementation of the new Community Framework adopted in 2002, and transposed into French Law by the legislation of 9 July 2004, whose most visible manifestation has been the implementation of market analysis procedures. Beyond all the jargon, the new framework has made it possible to extend (and expand or extinguish when justified) ARCEP actions, according to more appropriate, more flexible and, ultimately, more efficient means of intervention. Something which has proven very satisfactory.

Documentary activities were concentrated to a large extent in the earliest period.

In hindsight, we may be struck by how slow the effects of regulation have been on the market: it generally takes four or five years from the first regulatory acts to achieve an acceptable state of market operation.

Successful regulation requires the regulator to very focused and to have qualities that can be summed up by the acronym “PTT”: *pugnacity, technicality, tenacity*. On the other hand, the regulation itself plays no small part: an initial mechanism, essential when introduced, can become obsolete as the market evolves and the players develop.

The development of competition in France since 1998 is a perfect illustration of the “ladder of investment” theory. Newcomers to the fixed market have managed to achieve their current positions only by building their business gradually, starting with the segments that are the easiest to conquer, which allow them to develop their customer base and brand, and thereby to accrue the capacity to invest further up the value chain.

The microeconomic expertise that the regulator has acquired and maintained – through operators’ regulatory accounts and open modelling, along with international benchmarks – has made it possible, to a great extent, to prevent competition from developing artificially by encouraging operators to act in an economically rational manner. The new regulatory framework, which has been in place since 2004, in turn encourages the regulator to ‘saw off the bottom rungs of the ladder’ when its appears justified.

This increased competition has led to lower prices and, as a correlation, to an increase in usage: the mass market, which includes fixed telephony, Internet, broadband and mobiles, went from 19 billion in 1998 to €31.4 billion in 2005, in other words an increase of around 66% in seven years. At the same time, consumer prices in this market have decreased by just over 30% on average, while consumption has risen by close to two and a half times. This translates into a consumer surplus of more than €10 billion over that period¹.

¹ - The method used and detailed calculations are provided in the annex.

The new operators that have come on the scene since 1998 and which are still operating in the market appear to have achieved lasting viability thanks to the positions they have managed to acquire, and to the investments they have made. This, in turn, will create a more balanced market over the long term and, as a result, allow for a shift to symmetrical regulation when appropriate. In other words the application of the same rules to all players, such as those now applied to number portability and the sale of subscriber lists. The development of an all-IP environment could further fuel this shift.

The first phase, 1997-2001: liberalisation and opening markets up to competition

A. ARCEP roadmap and state of the market in 1997

The model used for opening the market up to competition, which was adopted in 1996, provided for both competition over mobile services and the end of all monopolies, particularly in the fixed telephony sector. The Law of July 1996² also defines the universal service and the provisions for ensuring its funding. At the institutional level, it provided for the creation, on 1 January 1997, of the national frequency agency, ANFR (*Agence nationale des fréquences*), in charge of managing the radio spectrum, and of the telecom regulator, ART (*Autorité de régulation des télécommunications*), responsible for implementing regulation. Lastly, the Law of 1996 introduced a mechanism of reciprocal referral between the regulatory authority and the competition authority (*Conseil de la concurrence*).

² - *Telecommunications regulation Law No 96-659 of 26 July 1996, JO of 27 July 1996.*

The implications for France of opening the market up to competition were the topic of in-depth discussions held by an economic expert group in 1996. Composed of economists, both French and foreign, this group provided crucial clarification on the principles for assessing the cost of universal service and for setting interconnection tariffs.

More specifically, drawing a distinction between the calling segment (the portion of the network dedicated to traffic, referred to then as the “main network”) and access (the subscriber line), the group excluded having interconnection tariffs contribute to the access economy and allowed a contribution to the “access deficit” only for the purposes of universal service, and only in a limited and temporary manner. It was also recommended that fixed calling tariffs continue to be rebalanced (in 1996, the average price of a long distance call was roughly 0.20, excl VAT, a minute, while a phone subscription was 6.68, excl. VAT, a month), based in part on accounting references

and on comparisons with the situation in foreign markets where competition was more mature. This rebalancing process was deemed necessary to enable:

- ◆ the development of efficient competition in the calling market – this required the implementation of a carrier selection mechanism, which was introduced on 1 January 1998 and became the chief means of opening the market up to competition at that time;
- ◆ competition in the access segment. The number portability mechanism, provided for in the Law of July 1996, is viewed as an accompanying measure, allowing France Telecom subscribers to switch operators without having to change their number.

The distinguishing features of the sector on 1 January 1997 can be described as follows:

- ◆ pre-eminence of the fixed market: the market as a whole is worth €20.5 billion, of which the fixed market accounts for €18 billion, generated essentially by telephony (15 billion);
- ◆ a promising mobile market, but still in the early stages of development: 2.5 million mobile subscribers as of 1 January 1997, or a penetration rate of around 4%;
- ◆ a fledgling Internet market: at the end of 1997, France is home to around 500,000 residential Internet subscribers, which generate 4 billion minutes a year and calling revenue of roughly €90 million. Access conditions are archaic: from a technical standpoint, access takes place over the dial-up network at speeds of no more than 56 kbps (a peak rate that will only really be exceeded by ADSL). From an economic standpoint, consumers access their ISP (Internet service provider) through a phone call which, in the best-case scenarios, is billed at the price of a local call (i.e. around €1.20 per hour, excl. VAT, in off-peak hours and double that in the daytime), in addition to paying for a subscription to their ISP. Meanwhile, ISPs are working to build points of presence across the country to allow subscribers to access their service at the price of a local call. They begin to rely more and more on operators to develop this collection network.

The Law of 26 July 1996 opened the telecommunications market up to competition, while requiring prior authorisation to be obtained to establish and operate a network open to the public, and to provide a telephone service to the public.

The first act of market liberalisation was therefore the award of operator authorisations. Their number grew swiftly as more and more players entered the market: there were 54 authorised operators in France on 31 December 1998, 92 on 31 December 1999 and 120 on 31 December 2000.

B. Competition in the calling market

1. Technical mechanisms

The essential mechanism for opening the fixed calling market up to competition is carrier selection. It draws its inspiration from the North American experience by allowing consumers to select the operator that will route their calls, either by dialling a prefix each time (call-by-call selection) or on a permanent basis (preselection).

On 1 January 1998, only call-by-call selection was available, either by using a one-digit prefix (E) or four-digit prefix (16XY). The E prefix constitutes a relatively scarce resource as only the numbers 2, 4, 5, 6, 7, 8 and 9 are available; its assignment modalities were defined in the Decision of 16 July 1997³: operators that have been assigned an E prefix digit were required to commit to deploying a national network equipped with several interconnection points per region. The assignment of carrier selection prefixes, which some operators used as a brand identity, thus created competition in the long distance calling market.

*3 - ART Decision
No 97-0196
of 16 July 1997.*

In addition to having to provide a direct interconnection offer for call termination on its network, France Telecom was required to establish an indirect interconnection offer for collecting calls made by subscribers using carrier selection: France Telecom routes these calls to the long distance operator selected by the subscriber, and the operator pays France Telecom for collection. In practice, the call collection tariff (indirect interconnection) is the same as the call termination tariff (for an identical service). These terms were set in the first interconnection catalogue, applicable in 1998, which was ratified by the Decision of 9 April 1997⁴.

*4 - ART Decision
No 97-0088
of 9 April 1997.*

The "local sorting zone" was implemented to avoid local calls from being handed over to a long distance operator. This mechanism was put in place at the request of the operators, arguing that their network was not extensive enough to route local calls, which generate little income, under satisfactory economic conditions. After discussions over how to segment the country into sorting zones, it was decided to break it down by *département*⁵ – made official by the Decision of 17 October 1997⁶.

*5 - With two special cases:
- in the Ile-de-France region, the zones included are the city of Paris and its immediate vicinity (75, 92, 93, 94) whereas the other départements are segmented individually;
- Corsica constitutes a single local sorting zone.*

The carrier selection mechanism gradually expanded, incorporating preselection on 17 January 2000, carrier selection for calls to mobiles⁷ on 1 November 2000 and, finally, on 1 January 2002, carrier selection for local calls by eradicating the local sorting zones⁸.

*6 - ART Decision
No 97-0345
of 17 October 1997.*

*7 - ART Decision
No 99-1077
of 8 December 1999.*

*8 - ART Decision
No 01-0691
of 18 July 2001.*

2. Interconnection

Prior approval of the France Telecom interconnection catalogue, which sets the technical and financial terms for alternative operator access to the incumbent's switched network, constitutes a particularly crucial area of intervention for the Authority. The instruments of regulation are much broader in purview, however: they also include the process of issuing a public opinion on the majority of France Telecom retail tariffs, and the powers that the Authority has to settle disputes.

The Authority applies three guiding principles when assessing interconnection tariffs:

- ◆ costs stated by the operator;
- ◆ international benchmarks;
- ◆ compatibility of interconnection tariffs with third-party market entry.

Taking the incumbent's costs into account is essential to ensuring the operator is fairly compensated and to obtaining a benchmark, while international benchmarks provide the Authority with references in terms of best practices. But it is the third criterion which is the most important: it enables the development of price squeeze tests to ensure that the terms of interconnection allow for true entry into the market under current conditions, in other words that they are compatible with retail market tariff structures and levels.

Having the ability to issue prior opinions on changes to France Telecom retail tariffs, the Authority is in a position to assess their consistency and, in turn, to oppose changes to tariffs when justified or, more constructively, to encourage the operator to lower its interconnection tariffs. This form of control is not absolute as it can only be applied when a tariff is altered. It was put into place at the outset and has formed the basis of efficient cooperation between the telecom regulator and the competition authority (*Conseil de la concurrence*) when the latter is called upon to settle tariff disputes. Cooperation between the two bodies has led the Authority to develop classic analyses based on common competition law, and provides the competition authority with valuable knowledge of the sector. In the short term, it enabled a steady improvement of interconnection for narrowband Internet access – something which will grow in scale with the introduction of broadband.

The first interconnection catalogue established by France Telecom was for 1998. It was on 1 January of that year that the calling market was opened up to competition. The bulk of the process was approved on 9 April 1997⁹, based on forecast costs for 1998 which were established based on accounts for 1994. The catalogue concerns chiefly call routing services (call termination and collection).

9 - ART Decision
No 97-0088
of 19 April 1997.

While it would be tedious to detail all of the successive changes to the interconnection catalogue, it is worth remarking on the logic used in its establishment:

- ◆ from a functional standpoint, the Authority sought to ensure that the services offered to new entrants in the interconnection catalogue would allow them to compete effectively with France Telecom retail services. Aside from narrowband Internet access, the successive catalogues incorporated a series of additions, such as extending call collection to special numbers and calls from public payphones (1999 catalogue), the preselection mechanism (2000 catalogue) and partial leased lines (2002 catalogue); this exercise nevertheless suffered from legal limitations given the relatively narrow concept of interconnection and, at times, involved a form of bartering;
- ◆ from a pricing standpoint, a number of improvements were brought to bear – the first notable one being the implementation of per-call billing (2000 catalogue). In terms of principles and methods, in the short term the Authority relied on the operator's forecast costs, subject to conditions of relevance (causality) and efficiency. ART then sought additional points of reference to complement

those obtained from the operators' analytical accounting: namely, bottom-up models and international cost benchmarks. Over the medium-term, the Authority also sought to establish the economists' Valhalla: LRAIC (long-run average incremental costs) – a method applied in 2002 by approving the 2003 catalogue based on “replacement costs”. Finally worth noting is the incorporation of flat-rate Internet interconnection (IFI) in the 2002 catalogue which can be viewed, in hindsight, as a form of diversification of interconnection tariffs.

3. Narrowband Internet: an unexpected by-product

Starting in 1997, the Authority took the development of the Internet into account by dedicating the 0860PQMCDU number block to narrowband access, “whose price for the caller is to be lower or equal to the tariff for a local call”¹⁰.

10 - ART Decision
No 97-0365
of 23 October 1997.

In 1998, France Telecom's offer for schools led the Authority to analyse the state of competition in the different Internet access segments, as a result of which it recommended the creation of an interconnection offer for the segment over which France Telecom had a virtual monopoly (local network), so as to ensure competition in the transport segment (collection) and the segment corresponding to ISPs (Internet connectivity). The negative opinion the Authority issued on the France Telecom tariff decision led to a dispute with the incumbent and, ultimately, to an injunction to the competition authority (*Conseil de la concurrence*) which agreed with the ART analyses.

The players were keenly aware of the Internet's potential: in 1998 and 1999, it was the subject of intense discussions between the Authority and operators, of tariff opinions issued by the Authority on France Telecom retail prices, and of disputes whose outcome formed the basis of jurisprudence. Building on these foundations, interconnection modalities were diversified and improved. They were based on indirect interconnection – initially applicable only to 0860 and 0868 numbers which were free for callers (1999 catalogue), then extended to calling-party-pays numbers (2001 catalogue) – combined with a billing and collection offer for third-parties. The 2002 interconnection catalogue contains an ultimate evolution with the definition of an interconnection flat rate for the Internet (*IFI*).

The market began taking shape in 1999, with the introduction of pay-as-you-go subscriptions and the first “all inclusive” flat rates (Internet access + connection time): in September 1999 ISP Club-Internet became the first to market a subscription that included 20 hours of Internet connection a month for roughly €27, incl. VAT. This price was halved three years later.

4. Standardising mobile network interconnection

In 1997, mobile operators interconnected with the France Telecom network on the basis of historical arrangements: it was the mobile operator that set the retail tariff for calls to its network that originated on the France Telecom network. France Telecom billed for calls based on these tariffs and, of the corresponding sum collected, kept a portion for use of its network plus a percentage of the balance for the billing and collection services provided to the third-party operator.

This situation gradually became standardised:

*11 - ART Decision
No 99-0197
of 1 March 1999.*

- ◆ first, through the Decision of 1 March 1999¹¹, resolving a dispute between SFR and France Telecom, in which ART expressed the view that it was up to SFR to establish an interconnection offer for termination on its own network of calls originating on the France Telecom network. The parties were required to adjust their interconnection agreements accordingly, as of 1 July 1999;
- ◆ by the return to common law (France Telecom sets the price of calls originating on its network), as of 1 November 2000, concurrent with the extension of carrier selection to fixed-to-mobile calls.

The first decrease in fixed-to-mobile calls occurred on 1 July 1999, following a roundtable discussion organised by the Authority earlier in the year, which was attended by fixed and mobile operators. The decrease was 20%.

Consequence of the dispute settlement of 1 March 1999: mobile operators become involved in the national market for interconnection – a market on which Orange and SFR were designated as having SMP in 2000, and consequently required to charge cost-oriented prices for interconnection. On 1 August 2000, ART was called upon to settle a dispute brought about by operator MFS Worldcom which had accused Orange of charging excessively high call termination tariffs, and not cost-oriented as per its obligation. Faced with a lack of accounting data, which Orange had refused to supply to help resolve the dispute, the Authority relied on international benchmarks and required Orange to cut its interconnection tariffs by 20%, starting on 1 November 2000. Operators SFR and, to a lesser extent, Bouygues followed suit.

Having become aware of the limitations of dispute resolution procedures, the Authority set up an annual cost reporting system that applies to mobile operators. This mechanism was adopted on 11 May 2001 in the form of guidelines, and led to the release of a statement of costs from Orange and SFR in autumn 2001. Using these statements as its starting point, the Authority decided, through two separate decisions, on a price evolution for call termination tariffs over three years (2002, 2003, 2004), with the price to be set on 1 January of each year¹².

12 - On 1 March for 2002.

C. Competition in the local loop

From the outset, opening the local loop up to effective and lasting competition has been a major issue for the Authority.

In addition to the first rollouts of fibre optic networks in the local loop, chiefly in business districts, the development of telecommunications services over cable networks and the introduction of the wireless local loop have constituted two major areas of focus.

1. Cable networks

The Authority was called on to resolve disputes in 1997 and 1998 concerning the provision of telephone services and broadband Internet access over cable networks: these dispute settlements did not concern all cable networks, only those that were part of the “cable plan” (*plan câble*).

Construction of these networks – which represented over four million homes passed, or roughly two-thirds of the total marketable base in France in 1997 – had begun in 1982 as part of a vast national plan to equip the country with cable infrastructure. The ownership of these networks, which was initially awarded to the State, was transferred by the Law of 2 July 1990¹³ to France Telecom, with their commercial operation being ensured by cable operators.

13 - Law No 90-568 of 2 July 1990 concerning the organisation of the public postal service and of France Telecom, JO of 8 July 1990.

This situation of separate ownership and commercial operation of the cable plan networks was the source of a series of disputes between France Telecom and cable operators (two dispute settlements in 1997 and six in 1998), concerning the technical and financial terms of providing broadband Internet access and phone services over these networks.

The goal of the settlement rulings handed down by the Authority was to help establish effective competition that would allow several million French households to have a broadband cable connection to the Internet.

The capital structure of the cable sector at the time made it impossible, however, to take full and immediate advantage of this potential.

2. Wireless local loop

In the late 1990s, the wireless local loop began to be viewed as an attractive alternative to wireline solutions for providing telephony offers and broadband Internet access.

This led to a selection process that ran from 31 January 2000 to 11 July 2000 and resulted in the award of 54 licences, or two licences for the whole of Metropolitan France in the 3.5 GHz and 26 GHz bands, two operator licences in each of the 22 regions in Metropolitan France in the 26 GHz band and two licences in each of the overseas *départements* in the 3.5 GHz¹⁴ band.

14 - See chapter 3.

At the time, the hope was that this new technology and the new players that were awarded licences would spur the development of an infrastructure to compete with the copper pair. Unfortunately, the lack of technological maturity dashed these hopes.

Second phase: turning point in 2001-2004

A. Initial assessment: the market in 2000-2001

It can be considered that, by the end of 2001, an essential portion of the regulatory missions that were expected of the Authority had been achieved:

- ◆ the competition mechanism for fixed telephone calls has been fully deployed: at the end of 2001, 6 million users were subscribing to carrier selection and, in 2002, new entrants had captured a roughly 20% share of calling market revenue. Competition is enabling the arrival of new operators which have gradually deployed increasingly extensive backbone networks;
- ◆ the incumbent carrier's interconnection catalogue can be considered acceptable from both the technical and tariff perspective; mobile call termination regulation has begun to be implemented through the introduction, first, of a reporting mechanism and, second, through a tariff plan for 2002 to 2004 – with call termination being brought down to €0.15 a minute in 2004;
- ◆ efficient regulation enforced for narrowband access conditions, allowing healthy competition to develop between ISPs, and leading to a significant decrease in prices and a high uptake in demand. At the end of 2002, there were 7.5 million narrowband subscribers in France, representing 66 billion minutes (the record high of 72 billion minutes was reached in 2003). Prices have decreased dramatically: for a monthly consumption of 20 hours, they have dropped from €50, incl. VAT, in 1997 to roughly €15, incl. VAT, over the course of 2002;

- ◆ mobile has become a mass-market service, with 38.6 million subscribers at the end of 2002, generating subscriber revenue of around 12 billion. The creation of this new market in less than a decade constitutes one of the most remarkable success stories for the telecommunications sector. In October 2001, the mobile line subscriber base outnumbered the fixed line base for the first time. In terms of turnover, the segment is closing the gap with fixed telephony which, at €14 billion, has been decreasing steadily since 1997. Mobile will eventually overtake fixed in 2004. Text messaging is become a market phenomenon, with 5.5 billion messages sent in 2002.

Nevertheless, competition as it was designed in 1996 remains somewhat fragile: as concerns the fixed telephony market, valued at €15 billion in 2002 (including narrowband) the portion of the market that has been opened up to competition remains confined to the calling segment, which represents around €9 billion – a market share that is bound to shrink as mobiles and broadband become increasingly ubiquitous, and as France Telecom continues to rebalance the tariffs it set in early 1997 (the average price of a long distance call dropped to 8 eurocents in 2002, while the price of a residential subscription increased to €10.87, excl. VAT, a month, after 1 July 2002).

At the same time, the growth potential of fixed broadband is becoming clear: by the end of 2002 it had begun its inexorable rise, representing a base of 1.4 million lines.

The early part of the 2000s nevertheless revealed the difficulties in achieving effective competition on the local loop, as alternative infrastructures remained in their infancy:

- ◆ despite the Authority's dispute settlement ruling in July 1997, cable operators have not managed to develop a significant, alternative telephony offer (with the number of cable telephone subscriptions stagnating at around 60,000) or broadband access offer (280,000 broadband cable subscribers at the end of December 2002, shared by four operators). Despite a regular increase in the subscriber base, for both pay-TV and Internet access, the weight of cable in the economic equation remains modest, despite having 6 million homes passed;
- ◆ the wireless local loop licences awarded in July 2000 did not lead to large-scale development, for either telephony (some 1,000 WLL phone connections) or Internet access.

Parallel to these issues were the troubles of mid-2000, due essentially to over-investment by ICT sector players which was fuelled by overblown market expectations. This led to the burst of the Internet speculative bubble in the spring of that year, as the market lost faith in certain models, particularly those of the New Economy.

To this was added the over €100 billion that national governments in Europe charged for UMTS licences. Operators, and consequently equipment suppliers, suffered the after-effects of the burst TMT bubble in the spring of 2000 and the drastic drop in share prices – at a time when operations were slowing across the

board. This brutal drop in market activity was keenly felt by the players and stepped-up the concentration trend. Operators cut back their investments and refocused on their core business area, or took refuge in niche markets. Meanwhile, equipment manufacturers were having to contend with an unprecedented drop in demand, and a drastic decline in investments.

Against this backdrop, the first discussions on unbundling in 1999, on its regulatory implementation in 2000 and the first regulatory actions undertaken in 2001 and 2002 helped invigorate fixed market competition, and to pave the way for lasting success.

B. Broadband access and unbundling

By launching ADSL Internet access services in summer 1999, with ambitious rollout objectives, France Telecom marked the first step in the development of a promising market, based on its exclusive control over the local loop. Contrary to the situation with phone communications, no mechanism for opening this infrastructure up to competition for delivering high-speed access to the Internet had been examined in any depth.

As a result, there was a real danger that the virtual monopoly France Telecom had over the local loop would extend to downstream markets: broadband access services, the corresponding collection networks and all of the new services enabled by the permanent availability of high-speed access.

The line of conduct adopted by the Authority was thus:

- ◆ first, to ensure that alternative players could quickly forge themselves a position on the value chain. This was a top-down approach, aimed first at ISPs to allow them to take part in the development of broadband under viable conditions, and then at intermediate operators (deploying collection networks), so that they might act as alternatives to France Telecom for supplying ISPs;
- ◆ and, second, to instil conditions that would ensure lasting competition over the long term, by providing alternative operators with access to the local loop, i.e. unbundling.

These two lines of action complement one another from both an economic and temporal perspective: if they are unable to swiftly forge themselves a position in the market and build a customer base, operators would be unable to achieve the critical mass needed to engage in unbundling. Furthermore, the time needed to properly resolve the technical and operational issues involved in unbundling opened up the danger of having the downstream market largely pre-empted by the time unbundling became operationally available.

1. Options 3 and 5

When France Telecom introduced its first commercial broadband access offers over ADSL, in 1999, followed by its geographical expansion at the end of that year, it was required by the competition authority (*Conseil de la concurrence*) to develop an offer for ISPs ("Option 5") that would allow them to market their own broadband offer to compete with the offer marketed by Wanadoo.

This offer involved a tariff approval procedure that was in force at that time (prior public opinion from the Authority before approval by the ministries) while ART, through the tariff control measures it exercised at the time, sought to ensure the viable development of alternative ISPs and, at the same time, that collection operators might also be present in the market using an intermediate France Telecom offer ("Option 3").

The control of these different offers, which are governed by different legal frameworks, in the years that followed led to tariff opinions, dispute settlements and complaints lodged with the competition authority: the process of reciprocal referral between the competition authority and the telecommunications regulator nonetheless ensured good overall clarity and consistency.

2. Local loop unbundling

The competition mechanism designed in 1996, and the Community framework for that matter, said nothing on the legitimacy of imposing unbundling on the incumbent carrier, in other words the sale of subscriber lines to the competition. In 1999, however, ART launched a public consultation on the development of competition in the local market in France, of which it published a summary in October 1999. Unbundling was retained as one of the means to achieve this. It obtained consensus from all operators to discuss – in a working group chaired by Alain Bravo, that was set up in early 2000 – the technical and tariff conditions that would allow for unbundling trials.

The evolution of the fixed market towards broadband, the lack of facilities-based competition (even if not yet clearly established), the complexity of regulations pertaining to Options 5 and 3 made unbundling all the more appealing, and capable of ensuring the development of competition under less complex regulatory conditions. But a long time was needed to fine-tune the process:

- ◆ 2000 was a year of intense discussions inside the group chaired by Alain Bravo, over the technical and tariff modalities for the trials, along with debates over the regulatory principles and methods, particularly in the area of tariffs. At the same time, the legal framework for unbundling began to take shape, with a European recommendation requesting that Member States take all the legislative and regulatory measures to implement unbundling by the end of the year and, in France, the publication on 12 September 2000 of a decree concerning access to the local loop. Community regulation was adopted on 18 December, giving regulators the necessary powers to implement unbundling;
- ◆ in 2001 and 2002 a substantial portion of unbundling regulation was put into place. After France Telecom published its first reference offer for local loop unbundling on 22 November 2000, the Authority, while actively continuing its discussion with the sector, committed to a series of actions to be carried out over a period of just over 18 months: different versions of the reference offer, three requests for amendments, four notices and a dispute settlement which would lead, ultimately, to the reference offer established by France Telecom on 14 June 2002. This offer appeared sufficiently well adapted that certain operators immediately engaged in unbundling to a considerable extent and, in autumn 2002, consumer broadband offers based on shared access were launched – marking the onset of unbundling;

- ◆ operator rollouts and the widespread take-up of unbundling truly began in 2003 (273,000 unbundled lines by the end of the year), and carried on throughout 2004. As of 1 March 2004, France Telecom had made 573 MDFs available to operators and, on 1 October 2004, the one million unbundled lines mark was reached, for a total 808 unbundled MDFs. At the same time, the expert committee mandated by ART expressed itself in favour of introducing ADSL2+. By the end of the year, 1.6 million lines had been unbundled in France, or more than 25% of the 6.1 million ADSL that were in service at the time. Retail broadband access tariffs decreased substantially in 2004, and were among the lowest in Europe.

Developing competition by making spectrum available to operators, and associated obligations

A. Wireless local loop

1. First licences awarded in 2000

By the end of the 1990s, the wireless local loop had come to be viewed as an attractive alternative to wireline solutions for providing telephone and broadband Internet access services.

The introduction of these new systems was prepared by ART, based on a pragmatic and gradual approach, in tandem with the players. A trial phase was launched in 1998, which was used as the basis for the subsequent call for candidates.

The call for candidates was issued on 30 November 1999, for the award of 54 licences, or two licences for the whole of Metropolitan France in the 3.5 GHz and 26 GHz bands, two operator licences in each of the 22 regions in Metropolitan France in the 26 GHz band and two licences in each of the overseas *départements* in the 3.5 GHz band.

The selection procedure lasted from 31 January 2000 (the deadline for filing applications) to 11 July 2000, when the results were published. Candidates were judged on seven criteria, the three main ones being their capacity to stimulate competition that would benefit consumers, the scale and speed of deployment, and the coherence and credibility of their project. In all, 218 applications were filed and examined.

2. WiMAX

The award of new local loop licences in the 3.5 GHz band in 2006 was proof of revived momentum and innovation in the telecommunications sector, and of the Authority's adaptation of spectrum management methods to the new market environment.

Over the course of 2004, electronic communications sector players expressed their interest in gaining access to the 3.4-3.6 GHz frequency bands. This renewed interest appeared to be tied to the emergence of the IEEE 802.16 standard (WiMAX), and to the broader challenges of developing competition over broadband services and of regional digital development.

Awarding new licences in this band enabled more dynamic spectrum management by the Authority, which committed to quickly taking back the unused frequencies following the failure of the first generation of WLL in the early 2000s. In addition, when market needs were specified, ART worked in concert with the current occupants of these frequencies to identify a greater quantity of available resources.

It was thanks to a method based on pragmatism, transparency and consultation that the Authority prepared, with the market players, the modalities for awarding these new wireless local loop licences.

This resulted in the creation of an innovative award process by ART.

First, the procedure consisted of several steps which aimed to open the selection procedure up to only those zones where spectrum scarcity had been proven. Selection was then performed using a mixed procedure that judged candidates on three criteria: contribution to regional broadband development, the project's capacity to stimulate broadband market competition, and the sum that the candidate was willing to pay up front, in addition to the annual fee for having access to and using WLL frequencies.

Second, the flexible mechanisms allowed for flexible frequency allocation, as provided for by the code governing French postal activities and electronic communications, CPCE (Code des postes et des communications électroniques): they allowed licence-holders to sublet or resell their licences on a secondary frequency market, and are an integral part of the frequency allocation scheme for the 3.4-3.6 GHz band. This flexibility also allowed players that were not awarded licences during the initial awards to gain access to these frequencies.

Finally, for the first time in France, local authorities were able to take part in the allocation procedures for scarce resources, in accordance with the new powers assigned to them, by law, in the area of telecommunications.

This procedure was launched on 6 August 2005 and elicited a very large number of applications from existing operators, local authorities and new entrants.

The licence awards in 2006, and the implementation of flexible resource allocation mechanisms allowed a great many players to make concrete their projects devoted to digital regional development and to providing innovative broadband services, including roaming solutions.

The Authority will keep a close watch over the future development of this second generation of WLL services, which has given players the hope of achieving the success that escaped them the first time around in the early 2000s.

B. Rise of mobile telephony with GSM

1. Development of GSM between 1997 and 2001

a. The path to a mass market

The years 1997 to 2001 were marked by the stunning growth of the mobile market – increasing from 5.8 million customers (or 10% penetration of the population) on 31 December 1997, to 37 million (i.e. more than the number of fixed lines) on 31 December 2001.

The Authority accompanied this development by progressively allocating mobile operators the new frequency resources needed to route traffic. Starting in 1998, ART worked in concert with the three mobile operators to define the terms under which these players could take advantage of additional spectrum. On 22 April, the Authority issued a public call for input on a system whereby each of the three mobile operators would be authorised to become a GSM 900/1800 MHz dual-band operator. Their licences were amended accordingly in November 1998.

These additional allocations carried reinforced coverage and quality of service obligations: coverage obligations increased to 90% of the population. ART also continued its efforts to improve consumer information, notably through the development and reinforcement of annual surveys on the quality of mobile services and, starting in 2001, the performance of coverage surveys.

b. Introduction of competition in the overseas départements

It was not until late 1999 that GSM operators took advantage of the possibility provided for by the terms of their licences to launch services in the overseas *départements*, and even then it was only SFR which introduced services in Reunion, and Orange in the Antilles. This *de facto* monopoly is due only to operator strategies and not to a regulatory decision.

The growing size of overseas markets led to the emergence of local GSM network rollout projects and at last attracted the interest of operators in Metropolitan France that were not yet present in certain overseas *départements*. As the offers became increasingly numerous, the Authority published a call for input in 2000 on the development of mobile telephony projects in the overseas *départements*. After analysing all of the operator requests, ART came to the conclusion that the available resources were enough to satisfy all requests, and that a selection process was thus not necessary. It was the Authority's view that, because there was no scarcity of resources, it was entirely up to the players in the liberalised overseas markets to manage the risks encountered, and that the situation did not call for the regulator to rule on the optimal number of players.

As a result, ART began a process of gradually awarding new licences, with the goal of allowing the different projects to be completed within equal timeframes, in accordance with the requests. This action on the part of the regulator thus enabled the emergence of new projects, and allowed the residents of the overseas *départements* to take advantage of competition in their mobile market.

2. Renewal of GSM licences and mobile coverage in 2006.

France was the first country in the European Union to notify the terms for GSM licence renewals. Because the GSM licences awarded to Orange France and SFR for a 15-year period expired on 25 March 2006, the terms for renewing these licences had to be notified two years earlier, i.e. on 25 March 2004. A similar procedure will be conducted in due time for Bouygues Telecom, whose licence expires in 2009.

The Authority began working on this issue back in 2003, using a transparent method and through consultation with the sector. It launched a public consultation on the subject in July 2003, whose summary was published in January 2004. It emerged that no new player had plans to request GSM frequencies in Metropolitan France.

For operators that had expressed their desire to continue to provide GSM services in the 900/1800 MHz frequency bands, the Authority proposed renewing their licences under the same terms as before, albeit adding new obligations. These obligations concerned chiefly coverage – increased to 99% of the population of Metropolitan France and the major roadways of each *département*, including completion of the second phase of the programme devoted to covering dead zones.

Formulating the modalities for completing nationwide GSM coverage was one of the major challenges of this era. Completion of the programme for eradicating dead zones, conducted under the aegis of the government and to which the Authority made an active contribution, made it possible to provide a concrete response to the expectations of the public and of elected officials, as mobile communications steadily became a mass market.

C. Third generation mobile

1. Preparing the future – 3G mobile communications: call for candidates launched on 18 August 2000

The introduction of the third generation (3G) of mobile communication systems is a new and major stage in the development of mobile markets, which the Authority began preparing in 1998 in concert with the sector's players.

Based on the work performed by the radiocommunications consultative committee, CCR (*Commission consultative des radiocommunications*) in 1998 and on a public consultation conducted in 1999, it was in 2000 that ART established the terms and methods for awarding the corresponding licences. By law, the Authority is responsible for proposing the terms for UMTS licence awards to the Minister responsible for telecommunications.

Drawing on in-depth discussions with the players, in early 2000 ART elected to use a beauty contest process rather than an auction, for three reasons in particular which are worth reiterating:

- ◆ virtually all of the players consulted (operators, equipment manufacturers, experts, analysts, economists) were in favour of employing this procedure;
- ◆ unlike auctions, a beauty contest has the advantage of offering the players better control, and so of offering them greater visibility;
- ◆ in the past, beauty contests had proven more apt to stimulate market competition than auctions, which reduced the candidate selection process to only a financial criterion and did not take other major considerations into account: a particularly important factor in this case given the considerable uncertainties that still weighed on the market.

There were several objectives bound up with this mechanism: to encourage the development of the multimedia mobile market; to contribute to regional development and coverage in order to satisfy the needs of the largest possible number; to encourage investment and employment which would, in turn, stimulate growth; to ensure compatibility with existing mobile systems and to enable optimised use of the available spectrum resource.

The call for candidates also included provisions that favoured 3G new entrants, including roaming on the 2G network of a 2G/3G operator, and sharing 2G sites that were reused for 3G.

This mechanism, which the government completed with licensing fee provisions, was published on 18 August 2000 – thus preparing the launch of a call for candidates for the award of four 3G licences.

2. Actions to stimulate the development of 3G

The results of the first call for candidates for the award of 3G licences were made public by the Authority on 31 May 2001. The two candidates, Orange and SFR, were awarded a licence.

ART took this opportunity to deliver its analysis of the situation, resulting from the new economic situation and experiences in foreign markets. It suggested a decrease in the financial terms for obtaining a 3G licence in France, and issued an opinion in favour of infrastructure sharing.

Following a government review on 16 October 2001 of the financial terms (€619 million instead of €2.4 billion), a second call for candidates was launched, which resulted in the award of a licence to Bouygues Telecom on 3 December 2002. No other new entrant submitted an application this time around, which means that the fourth 3G licence has yet to be awarded.

In addition, ART was quick to state that the timetable that had been set for UMTS service launches was far too optimistic to take into account all links in the chain represented by the UMTS calling standard and necessary for the creation and development of a veritable market. It was thus led to conclude, when examining the procedures for verifying the three operators' rollout obligations, that the objective technical-economic circumstances that existed across Europe with respect to UMTS had not allowed operators to meet their deployment obligations.

As a result, ART undertook a review of the three mobile operators' deployment obligations, while restating the goal of covering the largest possible percentage of the population with high-speed mobile services.

3. The fourth 3G mobile licence

In late 2006, at the initiative of the market players, the question of awarding a fourth 3G licence was put back on the table. This comes at a crucial time in the development of the mobile sector, rife with issues concerning competition, the development of 3G services, regional development and coverage.

It was, in fact, during the public consultation launched in late 2006 – on the reuse by 3G of the 900 and 1800 MHz frequency bands currently employed by 2G – that ARCEP polled the players on their interest in obtaining the fourth 3G licence which is still available.

Reusing these frequencies is a necessary step for ensuring coverage of third generation mobile networks beyond the deployments that are underway in the 2.1 GHz band. As permitted by their licences, in spring 2006 Orange France and SFR had requested that this mechanism be put into place as quickly as possible.

As a result, the sector's players needed to be consulted on their interest in the fourth 3G licence that had yet to be awarded, to be able to determine whether to take three or four operators into account when devising the system for sharing the 900 and 1800 MHz frequency bands to be reused by 3G.

The public consultation ended on 17 November, with several players having expressed their interest in being a candidate for the award of the fourth licence in 2007. A request was also made for the award procedure to be launched as quickly as possible.

This creates a new situation in the mobile communications market: up until that point, no real interest had been expressed in obtaining the fourth 3G licence that had remained available after the two earlier calls for candidates, which had resulted in the award of the three other licences: to Orange France and SFR in 2001, then to Bouygues Telecom in 2002.

The Authority thus proposed that the minister launch a call for candidates for the award of this fourth 3G licence. The call was published on 8 March 2007.

In addition, in late 2006 ARCEP began working on the modalities for the reuse by 3G of the frequencies currently being employed by 2G – the aim being to allow all of the mobile operators to expand their national 3G coverage as soon as possible. Two plans were drafted: one based on sharing between four operators, should the fourth licence be awarded, and one based on three-way sharing.

The award of this fourth licence at the outcome of the call for candidates, which is currently underway, could intensify competition in the mobile communications market and spur the development of third generation mobile, which would benefit consumers.

New regulation

A. The market in 2006

By 2006 the market had changed considerably, not only compared to the market in 1997 but even to the one that existed four years earlier, in 2002:

- ◆ the traditional fixed telephony market, comprised of national calls, has shrunk to roughly €3 billion: a 30% decrease compared to 2002. New entrants accounted for close to 40% of the market volume in 2005, but for only just over 20% of revenue. While this last figure does illustrate the limitations of the historic model for opening the market up to competition, it is also due to the growing use of IP telephony. VoIP subscriptions, which numbered 6.6 million at the end of 2006, generated close to 20% of the volume of calls originating on fixed lines;
- ◆ mobile continues to grow at a steady pace, accounting for 52 million subscribers at the end of 2006 and reporting a more than 40% rise in direct revenue compared to 2002. The gap between the volume of voice calls made over mobile phones and those originating on fixed lines is tending to narrow: 94 billion minutes for calls originating on mobile lines, compared to 103 million minutes for fixed line calls. There has also been a decrease in the volume of mobile-to-fixed calls: totalling 19 billion minutes, they accounted for only 20% of the volume of calls made from mobiles in 2006;
- ◆ and, of course, one outstanding feature of the current market is the massive popularity of broadband, with a base of 12.7 million subscriptions at the end of 2006, of which 12 million xDSL. With a base of four million unbundled lines now in operation, this success story can be attributed to the competition model that was inaugurated in 2000. As was the case with narrowband access, albeit in a more lasting way and which is more propitious to innovation, the competition enabled by unbundling has clearly been instrumental in the development of the market – having helped bring down prices and stimulate innovation. Also noteworthy is that, although the number of narrowband subscribers had shrunk to 2.6 million by the end of 2006 – after having reached a peak of 7.5 million at the end of 2002 – users migration to high-speed access accounts for less than half of the increase in the broadband base.

This can be attributed to the fact that broadband goes well beyond just Internet access. Thanks to all-IP, it allows the network to be the platform of choice for a wide array of services: Internet access, telephony, classic TV and new modes for accessing content.

B. The new regulatory provisions

1. New framework for competition regulation

The new Community framework, the greater portion of which was adopted on 7 March 2002, adapts regulatory methods to a market that is operating in a more competitive manner: regulatory authorities are now called upon to adopt an approach more closely akin to the methods instilled by common competition law: defining the market's scope and relevance for sector-specific regulation, identifying SMP operators and specifying the most appropriate and proportionate remedies.

The aim of this change in approach is to shift the focus of regulation to wholesale markets, while making it more efficient as a result, but also to institute a mechanism whereby this targeted regulation diminishes as a market evolves towards a state of full competition. The mechanism also establishes increased cooperation between the sectoral regulator and the competition authority, working to achieve greater harmonisation at the Community level. Its implementation goes by way of regular market analyses.

Lastly, the modalities for ARCEP intervention espouse a more flexible and efficient logic. Rather than being required to approve a wholesale market offer *ex ante*, the Authority has the power to intervene to impose changes: the new framework thus generalises the regulation mode implemented in the case of unbundling, a mode which provides the players with a certain leeway and makes it possible for regulatory actions to concentrate on the most essential elements.

Back in early 2003, the Authority began laying the foundations. At the same time, the government submitted for consultation the draft bill on transposition, to which ARCEP made an active contribution and which was adopted in July 2004. Meanwhile, the European Commission adopted its recommendations on relevant markets, corresponding to the framework imposed on all regulators.

In late 2004, ARCEP decided on a new organisation more suited to its evolving responsibilities – the first goal being to perform market analyses in an efficient manner: they were carried out between 2004 and 2006 and made it possible to adjust player obligations to the changing market conditions.

These analysis concerned not only the 18 markets listed in the European recommendation, but also markets which it had become necessary to take into account in France, notably SMS call termination.

The performance of these market analyses resulted in:

- ◆ the Decisions of 10 December 2004 concerning call termination on mobile networks in Metropolitan France. They made it possible to broaden mobile call termination tariff regulation by extending it to Bouygues Télécom. A new tariff decrease of 50% was thus set for the period running from 2005 to 2007: between 2001 and 2007, mobile call termination tariffs were divided by three;

the Decision of 27 July 2006 introduced regulation for SMS call termination on mobile networks;

- ◆ the Decisions of 6 June 2005 concerning broadband wholesale markets: the new provisions made it possible to set a clear framework for unbundling and bitstream regulation; more fundamentally, the nature of the obligations applied in these markets enables a reconciliation between creating incentives to deploy unbundling and the necessary use of bitstream offers in sparsely populated areas;
- ◆ the Decisions of 28 September 2005 concerning traditional fixed telephony markets. As it pertains to wholesale markets, the first of these decisions carries over most of the obligations already imposed on France Telecom in the interconnection market, and introduces an obligation to provide wholesale line rental, in addition to amending the mechanism for controlling France Telecom retail tariffs. The second decision introduces a minimum set of obligations for alternative operators with respect to call termination, notably the obligation not to charge excessive prices.

The market analyses also made it possible to begin alleviating regulation of France Telecom retail tariffs, pursuant to Decision No 06-0840 of 10 October 2006.

On the whole, the new regulatory provisions proved entirely satisfactory.

2. Secondary frequency market and flexibility

The creation of a market mechanism for managing spectrum is one of the most significant innovations introduced by the law concerning electronic communications and audiovisual communication services (*loi relative aux communications électroniques et services de communication audiovisuelle*) of 9 July 2004¹⁵. Article L.42-3 of the code governing French postal affairs and electronic communications (*Code des postes et des communications électroniques*) introduced the possibility of selling frequency licences, a mechanism referred to as a secondary frequency market.

The goal in creating this secondary frequency market is to encourage more efficient use of the spectrum by allowing users to alter the allocations resulting from the initial licence awards, and to stimulate innovation by enabling the emergence of new projects that employ the frequencies. Guidelines and incentives are also planned to ensure that the expected benefits of this new mechanism are not tempered by negative consequences, notably on competition in the electronic communications market or the creation of harmful interference.

ARCEP has been very active in implementing these new forms of spectrum management. It thus held in-depth discussions with the players on the frequency bands likely to be made available in the secondary market. This work also led the Authority to transmit a report to the Minister-delegate of industry, on 26 July 2005, in which it proposes that a considerable number of frequency bands be included in this new mechanism. The majority of the proposals made by ARCEP were reiterated in the Ministerial Order of 11 August 2006 which officially introduced the possibility of frequency trading.

¹⁵ - Law No 2004-669 of 9 July 2004 concerning electronic communications and audiovisual communication services (*loi relative aux communications électroniques et services de communication audiovisuelle*).

In this same spirit, ARCEP put the possibility of reselling frequency licences or of making spectrum available to third parties at the heart of the call for candidates procedure for the award of new WLL licences in the 3.5 GHz band, which was conducted in 2006. Since then, several licences and spectrum have been traded, thus confirming the players' interest in this newfound ability to access frequency resources, and the usefulness of the mechanism in enabling more efficient use of the spectrum.