

Local loop unbundling: the French case*

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Abstract

In this paper, I shall describe the regulatory processes which led to local loop unbundling in France. I distinguish two different phases. In the first phase, from November 1998 to December 1999, discussions focused on the desirability of local loop unbundling. In the second phase, from December 1999 to December 2000, the terms of unbundling were discussed. The analysis I provide is based on an historical account of the discussions about local loop unbundling in France. I conclude with an account of the implementation of local loop unbundling in France since December 2000.

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1. Introduction

Whereas competition has developed quickly in long distance and international telephony markets since the liberalisation of telecommunications in the European Union, competition in the local loop has developed at a much slower pace.¹ Hence, when broadband Internet access appeared as one of the most promising markets, governments and regulators feared that incumbent operators would be able to pre-empt that market due to their dominant position on the local loop. Unbundling incumbent operators' local loops has been one of the candidate measures to foster competition in the local loop, along with encouraging the deployment of alternative infrastructures.

Unbundling of the local loop refers to a series of regulatory offers. The most fundamental one is raw copper unbundling. With raw copper unbundling, the incumbent provides access to its copper lines. The entrant then co-locates in the incumbent's facilities and installs its own equipment (either for telephony or DSL).² With line sharing or shared access to the local loop, the same local loop is used both by the incumbent and the new entrant. The incumbent leases the high frequency band to the entrant for DSL services, while keeping the low-frequency band for analogue telephony services. Finally, with bitstream access, the incumbent leases access to its high bandwidth architecture. The incumbent chooses the technology and decides on its investment plan.

Discussions about the desirability of local loop unbundling have opposed regulators, new entrants and incumbents in most European countries. The aim of this paper is to provide an analysis of these discussions for one Member State: France. To that end, I will distinguish two different phases. In the first phase, from November 1998 to December 1999, discussions focused on the desirability of local loop unbundling. In the second phase, from December 1999 to December 2000, the terms of unbundling were discussed. The analysis is based on an historical account of the discussions about local loop unbundling in France.

¹ One notable exception is the United Kingdom, where cable operators have gained non negligible market shares.

² DSL stands for Digital Subscriber Line. DSL is the technology used to upgrade copper local loops, so that they can provide high bandwidth services. DSL technologies include asymmetric DSL (ADSL), symmetric DSL (SDSL), high bit rate DSL (HDSL) and very high bit rate DSL (VDSL).

The rest of the paper is organized as follows. In the next section, I give an account of the discussions which led to unbundling of the incumbent's local loop. Then, I provide a synthesis of the different views of the correct methodology to apply to pricing copper loops. Finally, in the last section, I deal with the implementation of local loop unbundling in France, and I conclude.

2. Phase 1: toward unbundling

In this first phase, which started in November 1998 and came to an end in December 1999, the main question was whether it was desirable to unbundle incumbent operator France Telecom's local loop. Although the local market was open to competitors, the 1996 French Telecom Act did not mandate France Telecom to unbundle its local loop.³ In the first phase, both ex ante regulation (i.e. the national regulatory authority, the ART⁴) and ex post regulation (i.e. the competition authority) played a role and forced France Telecom to unbundle its local network.

2.1. Ex ante regulation

2.1.1. The consultation on developing competition in the local loop

On the 25th of November 1998, the head of the ART, Jean-Michel Hubert, announced that two CCRST⁵ (French telecom consulting commission) working groups were going to meet to analyse the desirability and potential impact of local loop unbundling.⁶ These two working groups would deal with technical and economic issues, respectively. In particular, Mr. Hubert raised the following issues:

³ In other European countries – like Germany or Denmark – local loop unbundling has been mandated since the 1998 European liberalisation.

⁴ ART stands for Autorité de Régulation des Télécommunications.

⁵ CCRST stands for Commission Consultative des Réseaux et Services de Télécommunications.

⁶ See: <http://www.art-telecom.fr/communiqués/discours/sircom.htm>.

- How useful is unbundling for a new entrant?
- What is the relation between unbundling and investment in new access infrastructures?
- What is the cost of the local loop?
- How desirable is unbundling for end customers?

The reports of these two working groups gave rise to the ART's consultation document of 2 April, 1999.⁷ the ART's consultation focused on the development of competition in the local loop. The main question raised in the consultation was whether the slow development of competition in the local loop could be interpreted as a "market failure" or whether it was only a transitory issue. If it was a "market failure," the ART asked what kind of regulatory remedies could foster the development of competition on local markets; it proposed five resale and unbundling options.

Hard facts

As noted by the ART, competition in the local loop had developed at a much slower pace on local markets compared to long distance and international markets. Table 1 below shows that, in most developed countries, competitors had gained substantial market shares for long distance and international services but that the local loop continued to be a bottleneck.

Country	Market Segment			Data from	Market opened in
	Long distance	International	Local		
Japan	32%	32%	<1%	1997	
US	56.9%	46.6%	3.5%	1998	1984
Sweden	30%	37%	<1%	1998	1993
France	10.5%	18%	<1%	1999	1998
UK	33.8%	48.9%	11.6%	1999	1991

Table 1: New entrants' market share in three market segments⁸

Added to this, prospects for broadband services were considerable. EMarketer⁹, for instance, estimated in 2000 that there would be 152 million Internet users in the United States in 2003,

⁷ The consultation is available online (in French) at <http://www.art-telecom.fr/publications/index-d-consult.htm>.

⁸ Source: Bourreau (2001).

of which 32 million would be using broadband access. Since new entrants had little access to the local market, they would remain absent from the broadband market.

France Telecom's interpretation

In its response to the ART's consultation,¹⁰ France Telecom argued that the slow development of competition in the local loop was not due to any "market failures," but only to transitory factors. In particular, it claimed that new entrants had focused on international and long distance markets thus far, but would enter local markets in their next phase of development. New access infrastructures were developing (e.g. cable networks, wireless local loops, satellite networks). However, since entering local markets required heavy investment, the pace of entry would be necessarily low. Finally, France Telecom argued that there were negligible economies of scale in local markets.

France Telecom further claimed that a distinction had to be made between low bandwidth services and high bandwidth services.¹¹ Competition for low bandwidth services (e.g., telephone services or dial-up Internet access) was already intense, thanks to fixed mobile substitution and the use of interconnection services by new entrants to provide retail services. As for high bandwidth services, it was a new and emerging market. The incumbent had no first-mover advantage in this new market. Indeed, broadband cable operator Cybercâble had been the first-mover, launching its broadband cable service in 1998¹². Finally, a high degree of uncertainty remained, both with respect to the demand for high bandwidth services and the technologies to provide these services. Therefore, France Telecom asked for light regulation to let this new market develop without any regulatory distortion.

⁹ Source: www.emarketer.com.

¹⁰ The ART's summary of the responses to the consultation is available online at <http://www.art-telecom.fr/publications/index-syntbl.htm>.

¹¹ See Bourreau and Debroeck (1999) on this issue.

¹² Cybercâble had 28,000 broadband subscribers in October 1999, at the time when France Telecom launched its ADSL offer (cf. <http://www.journaldunet.com/dossiers/cable/comparatif.shtml>).

New entrants' interpretation

In their response to the ART's consultation, some players argued that there were transitory barriers to entry, but most new entrants indicated that there were also persistent barriers to entry. Some barriers to entry were viewed as transitory, because new access infrastructures were gradually improving and would allow (at least in the long term) new entrants to enter local markets. However, persistent barriers to entry would remain and allow the incumbent to maintain its dominant position. New entrants cited three competitive advantages for the incumbent. First, due to the large number of lines it operates, the incumbent benefited from large economies of scale. Therefore, any new entrant entering a local market on a small scale would be at a disadvantage in terms of cost. Second, because it had been dealing with consumers for a long time, the incumbent had substantial information about customer needs and profiles, whereas new entrants had none. Third, new entrants recalled that France Telecom benefited from attractive terms for right of way.

Finally, new entrants feared that without any regulatory intervention France Telecom could pre-empt the market for high bandwidth services. Hence, they requested unbundled access to France Telecom's copper local loops as soon as possible.

The ART's interpretation

The ART argued that infrastructure-based competition in the local loop would develop slowly.¹³ Hence, the question was whether a regulatory intervention in the meantime was desirable or not. Besides, according to the ART, new access infrastructures would not necessarily allow new entrants to target similar market segments as DSL technologies (e.g., residential customers).

Finally, interconnection-based local services had low levels of profitability, whereas subscription-based services were provided *only* by France Telecom. In addition,

¹³ In its consultation document, the ART states: "Despite the prospects enjoyed by cable and radio technologies, this situation appears to have evolved only slightly, which could run counter to the rapid emergence of a viable and diversified offer of new services."

interconnection-based Internet access provided only limited bandwidth compared to DSL services. Therefore, the regulatory authority was looking for ways to allow new entrants to provide *access* services (and not only *traffic* services). Hence, it favoured the introduction of unbundling schemes.

2.1.2. The Decree on local loop unbundling

As a means to foster competition in the local loop, the ART proposed five different regulatory options in its consultation document:

1. Full unbundling;
2. Bitstream access from the incumbent's premises (i.e., with collocation);
3. Bitstream access at a point of interconnection outside the incumbent's premises (i.e., without collocation);
4. Resale of local traffic services;
5. Resale of access services.

With full unbundling (option 1), the incumbent is required to lease access to its copper lines to new entrants. New entrants then install their own broadband equipment (i.e., a Digital Subscriber Line Access Multiplexer, or DSLAM) on the incumbent's premises. With bitstream access (options 2 and 3), the incumbent leases access to its broadband network, which means that new entrants do not install DSLAM. Finally, with options 4 and 5, the incumbent is required to sell its retail local services on a wholesale basis to new entrants.

France Telecom's position

In the initial phase, France Telecom was against any unbundling scheme, be it full unbundling, bitstream access or resale. France Telecom's main argument was that unbundling the local loop would undermine incentives for new entrants to build their own access infrastructures as well as its own incentives to maintain and upgrade its local infrastructure. France Telecom's local loop would become an essential facility *ex post* for new entrants, and

infrastructure-based competition would never emerge. Hence, heavy and potentially inefficient regulation would have to be maintained.

France Telecom further argued that, with a single infrastructure and service-based competition, innovation possibilities were limited, whereas consumers had varying needs and technological competition was desirable. Finally, France Telecom stated that unbundling was risky in terms of technological development, as it favoured one technology, DSL, over other candidate broadband technologies (e.g., cable or satellite). This technological bias could lead to an inefficient lock-in effect.¹⁴

Later, France Telecom accepted the idea that unbundling could have some positive effects: it could lower entry barriers on local markets or be complementary with an infrastructure-based entry strategy. However, France Telecom maintained its opposition to unbundling schemes that could be detrimental to investment, e.g. bitstream access.¹⁵

New entrants' position

New entrants answered that unbundling did not undermine investment incentives, as they would have to invest substantially to connect to local exchanges and to install DSLAM.¹⁶ They also argued that France Telecom would have a lasting dominant position on the local loop, even after new entrants had installed their own infrastructures. They stressed that the incumbent operator should not be allowed to launch its ADSL services before an unbundling scheme was available. They needed access to the local loop now to compete with France Telecom for high bandwidth services. Finally, they argued that unbundling was consistent with regional development – a very sensitive topic in France.

¹⁴ If ever DSL technologies eventually proved inferior technologies.

¹⁵ See Bourreau and Debroeck (1999).

¹⁶ France Telecom replied that incentives to connect to local exchanges were high even without unbundling, as a long distance operator with a 10% market share would find it profitable to connect to all local exchanges (see: “L'impossible dégroupage ! Même ADSL ?” (*Impossible unbundling! Even ADSL?*), Réseaux et Télécoms, 1999).

New entrants favoured option 1 (full unbundling) over other options, as the option that provided the greatest flexibility for them. They also stated that option 3 (bitstream access without collocation) would be complementary with option 1. First, option 3 would allow new entrants to launch DSL offers faster than option 1, because option 1 would require new entrants to invest in local exchanges. Second, option 3 would provide new entrants with national coverage for their DSL offers, as France Telecom had already covered many cities.

Option 2 (bitstream access with collocation) was rejected by new entrants. Options 4 and 5 were viewed as transitory solutions to enter local markets, but some new entrants stressed that they should be available only to new entrants that would also invest in local infrastructures, to avoid cream-skimming strategies.

The ART's position

The ART was in favour of unbundling. First, local loop unbundling was meant to prevent France Telecom from pre-empting the market for high bandwidth services. Second, the ART was willing to encourage the development of DSL services because it viewed this technology as the most mature for delivering high speed Internet access. And, finally, the ART thought that new entrants should be allowed get a foot in the market, to begin their learning curve.

The government's position

Since unbundling was not mandatory under the French legal system, the government's position was crucial. The Ministry in charge of telecommunications was opposed to unbundling¹⁷... up until 8 September, 1999, when he announced that he was in favour of unbundling for data services only.¹⁸ He also stated that unbundling conditions should provide new entrants with incentives to invest.

¹⁷ Cf. his interview for La Tribune, 12 July 1999.

¹⁸ In the meantime, France Telecom had committed to launch its ADSL services.

Outcome

In December 1999, France Telecom's Director of Public Affairs (Gérard Moine) announced at a meeting at the ART, attended by new entrants and ART staff members, that he agreed to launch discussions about local loop unbundling before a legal framework was established. The working group on local loop unbundling first met on the 10th of February, 2000.

In April 2000, the government prepared a text that would mandate France Telecom to unbundle its local loop. As a compensation for France Telecom, the tariff approval procedures would be lifted.¹⁹ The text was debated in Parliament on the 27 April but eventually rejected, under pressure from the Communist Party.

The day before, on the 26th of April 2000, the European Commission adopted a Recommendation which stated that:²⁰

“In Member States where full unbundled access is not yet available, appropriate legal and regulatory measures be adopted to mandate, by 31 December, 2000, full unbundled access to the copper loop of notified operators under transparent, fair, and non-discriminatory conditions.”

In the Annex of the Recommendation, the Commission states that unbundled access means both “full unbundled access” and “shared access.” Bitstream access is not mentioned. The rationale behind the Recommendation is that competition for broadband services is called for,²¹ but it can only be achieved through unbundled access to the copper local loop, as

¹⁹ In France, the incumbent operator, France Telecom must present new retail tariffs if they belong to the Universal Service Obligation category (e.g. connection fees, monthly rates, tariffs for traffic, tariffs for payphones, etc.) or whenever there is no competition in the relevant market.

²⁰ “Commission Recommendation On Unbundled Access to the Local Loop: Enabling the competitive provision of a full range of electronic communications services including broadband multimedia and high-speed Internet,” Commission of the European Communities, Brussels, 26 April, 2000. See also Buigues (2001) for a description of the European legal framework on local loop unbundling.

²¹ The Commission (op. cit.) states that incumbent operators “are already rolling out their own broadband high speed bit stream services for internet access in their copper loops, but may delay the introduction of some types of Digital Subscriber Loop (DSL) technologies and services in the local loop, where these could substitute for

alternative access technologies will take time to be deployed and will not provide as large a coverage as the copper local loop.²²

On the 3rd of July 2000, local loop unbundling experiments started in France, though no legal framework was yet available. Twenty-seven operators participated to these first experiments to test ADSL, ADSL lite, HDSL, SDSL and VDSL technologies. Seven sites were opened for the experiment.²³

At last, on the 12th of September 2000, the French Decree on local loop unbundling was published.²⁴ It mandated France Telecom to provide both raw copper unbundling and shared access to its loops. Neither bitstream access nor resale were mentioned.²⁵

2.2. Ex post regulation

Parallel to the discussions between the ART, France Telecom and new entrants, which led to the Decree on local loop unbundling, complaints were made to the French competition authority.

ISPs' complaint

their current offerings; any such delays would be at the expense of users; therefore it is appropriate to allow third parties to have unbundled access to the local loop.”

²² The Commission states (op. cit.) that “it would not be economically viable to new entrants to duplicate the incumbent’s copper local loop access infrastructure in its entirety and in a reasonable time period, and alternative infrastructures (e.g. cable TB, satellite, wireless local loops) do not generally offer the same functionality or ubiquity.”

²³ In July 2002, only nine network operators had signed an unbundling contract with France Telecom, out of which only eight had ordered collocation rooms. There were 756 unbundled lines in 124 sites.

²⁴ An English version of the Decree is available at <http://www.art-telecom.fr/textes/decrets/index-unbundling-decree.htm>.

²⁵ The Regulation allows Member States to introduce regulatory measures that comply with the Regulation or which contain more detailed provisions.

In 1999, France Telecom was about to launch its ADSL retail service, Netissimo, reacting to the swift development of broadband cable in and around Paris.²⁶ Subscribers to “Netissimo,” obtained access to an ADSL access line but they also had to subscribe to an ISP – either France Telecom’s own ISP, Wanadoo, or another ISP – to enjoy full ADSL Internet access. To provide ADSL offers to end customers, ISPs had to connect to France Telecom’s Netissimo service, by subscribing to a wholesale service, “Turbo IP.”²⁷ France Telecom submitted its service to the Ministry in charge of telecommunications for approval.

France Telecom had been running ADSL trials since 15 February, 1998.²⁸ This is why Grolier Interactive, the company which controlled French ISP Club Internet, filed a complaint with the competition authority on the 26th of May, 1999. Club Internet alleged that France Telecom’s own ISP, Wanadoo, benefited from a first-mover advantage since it had been testing ADSL for some two years. One month later, on the 23rd of June, 1999, the competition authority published its decision, mandating France Telecom to stop the launch of its ADSL retail offer from the 15th of July for a period of 15 weeks.²⁹ The competition authority also stated that its decision would be lifted if a competing ISP began marketing an ADSL retail offer in the meantime.

On the 7th of July, 1999, the ART proposed to approve France Telecom’s offer.³⁰ In its notice, the ART raised a few competitive issues, with regards to ISPs and network operator. However, it stated:

²⁶ Broadband cable network “Cybercâble” (which became later “Noos”) had 28,000 broadband Internet subscribers in October 1999.

²⁷ A sliding scale rate is currently offered, proportionate to bandwidth. For instance, if the bandwidth is between 2 and 4 Mbit/s, the monthly fee is 820 EUR per Mbit/s. If the bandwidth is above 256 Mbit/s, the monthly fee falls to 480 EUR per Mbit/s.

²⁸ During the trial phase, the ADSL service was entitled “Netissimo” and consumers had France Telecom’s Wanadoo as their ISP.

²⁹ The competition authority’s decision is available in French at http://www.finances.gouv.fr/DGCCRF/boccrf/99_18/a0180012.htm.

³⁰ The ART provides an opinion to the Ministry in charge of telecommunications which makes the final decision. An English version of the ART’s recommendation is available at <http://www.art-telecom.fr/textes/avis/adsl-ang.htm>.

“In view of the innovative nature of these services, the ART considers that it is preferable to permit a market launch now under strictly controlled conditions, rather than to wait until a complete regulatory framework has been established.”

Nevertheless, the ART stressed that the Netissimo retail service together with “Turbo IP” wholesale service left no room for network operators.³¹

Network operators’ complaint

On the 30th of October, 1999, France Telecom began marketing its ADSL service, Netissimo. On the 10th of November, 1999, France Telecom also announced a resale offer for Netissimo, which would be available for network operators and ISPs.³² On the 30th of November, 1999, 9Télécom filed a complaint with the competition authority, saying that there was no room for network operators to compete with France Telecom for the provision of ADSL access lines to ISPs. Indeed, as the ART had already noted, France Telecom was the sole provider of ADSL lines (through its ADSL service, Netissimo).

On the 18th of February, following 9Télécom’s complaint, the competition authority issued its decision. It required France Telecom to provide a bitstream access offer to new entrants within eight weeks. The competition authority argued that France Telecom’s resale offer did not leave enough room for network competitors. France Telecom’s subsequent appeal to the Paris Court of Appeals was rejected on 30 March, 2000. France Telecom therefore presented its two offers on the 17th of April. The first offer, “Connect IP,” allowed ISPs to connect to Netissimo. Hence, it was just a re-labelling of former “Turbo IP.” The second offer, “Connect

³¹ The ART noted: “The ART believes that it is essential for operators to be able to offer services equivalent to the combination of Netissimo and Turbo IP without having to buy the IP services layer from France Telecom. Opening up the market in this way is equivalent to an IP carrier being able to access the Internet by buying an indirect interconnection service from France Telecom. At the present time, the ART has no knowledge of any intention on the part of France Telecom to offer services enabling such open access to the Internet via ADSL.”

³² This resale offer provided a discount of 15% on the retail price. As of July 2002, the minimum billed amount was 125,000 EUR.

ATM,” was not yet available; it would provide ISPs or network operators with some flexibility with regards to users’ bandwidth specification.

2.3. Conclusion

In the span of a year, France Telecom has been required to offer four types of unbundling schemes: full unbundling, line sharing, bitstream access and resale. The first two unbundling schemes were mandated by ex ante regulation (both the ART, the government and Parliament), and are currently regulated. The two last schemes were required by ex post regulation (the competition authority), and are currently subject to the tariff approval procedure.

This example suggests that there could be some complementarities between ex ante and ex post regulation. Although it is often stated that ex post regulation is slower than ex ante regulation, in this example it was not the case.

3. Terms of unbundling

3.1. Discussions

When it was decided that France Telecom’s local loops would be unbundled, the *terms* of unbundling had yet to be specified. Indeed, unattractive conditions for unbundling would have been tantamount to no unbundling. In this section, I will focus on the discussions surrounding the tariff applied to fully unbundled loops.

The problem faced by regulatory authority was finding the right method to determine the price of the copper loops. On one hand, too high a price would hinder new entrants from leasing lines. On the other hand, too low a price would be unduly detrimental to France Telecom³³ and undermine new entrants’ and incumbent’s investment incentives.

³³ Which would provide France Telecom with incentives to deter unbundling.

The pricing of copper lines can be viewed as a “standard” one-way access pricing problem. Hence, “standard” pricing methods were proposed: retail minus (i.e., ECPR³⁴), historical costs and Long Run Incremental Cost (LRIC). The retail minus method means that the price of the copper loops is based on the monthly subscription fee less any avoided cost (e.g., commercial costs). With the historical costs method, the price of the loops is based on the historical cost of the loop. As for the LRIC method, it has two main characteristics:

- First, the LRIC method calculates the “incremental cost” of a service. For instance, assume that there are two services, S1 and S2, which share some common costs. Then, the incremental cost of service, say, S2, is equal to the marginal cost from providing S2 when S1 is already provided (see figure 1 below).

- Second, the LRIC method calculates long term (marginal) costs, which means that replacement costs should be used and that the network whose cost is to be calculated can be optimised to some extent.

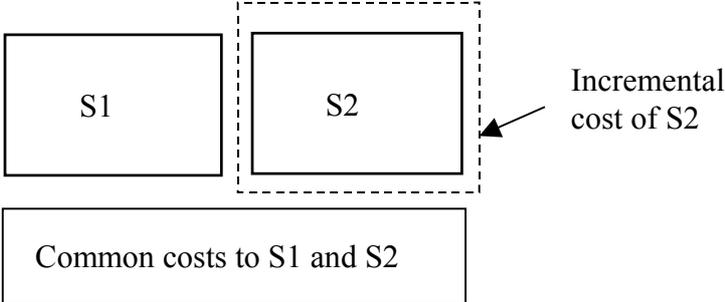


Figure 1: Calculation of incremental cost for LRIC

Since the network can be “optimised” in a LRIC model, LRIC models will often differ with respect to the degree of optimisation they allow. There are typically two types of LRIC models:

- So called “bottom-up” models are based on a hypothetical network. This network is optimised (i.e., total cost is minimised), under the constraint that it can deliver a given

³⁴ ECPR stands for Efficient Component Pricing Rule.

level of output. In “scorched node” models, an additional constraint is added: the network planner maintains all current network nodes. In “scorched earth” models, this constraint is lifted: the network planner can choose different nodes.

- On the contrary, so called “top down” models are based on the incumbent’s existing network. Hence, the “network” is not “optimised,” but it is a real network.

France Telecom advocated “top down” LRIC pricing of its loops. It claimed that LRIC pricing would provide the right balance to new entrants between “build” and “buy” incentives. This meant that the price of the loops had to provide new entrants with the right trade off between building a new access infrastructure and leasing lines from the incumbent.³⁵ Besides, France Telecom stressed that LRIC pricing was already used in the US, the UK and in Germany, Finland and Austria.

Most new entrants favoured historical costs, because they assumed that the price of the loops would be lower with historical costs than with LRIC. They argued that the two pricing methods used for interconnection and unbundling, respectively, had to be consistent. Since interconnection rates were based on historical costs, the price of copper loops had to be based on historical costs as well.³⁶ They also stressed that historical costs models were more robust than LRIC models. Only one new entrant advocated for the retail minus method, as the only method that could avoid squeeze effects.

The ART seemed to be in favour of historical costs, at least in the short run. First, the ART stated that it was not clear that LRIC could be implemented quickly, while historical costs of the local loop were already available and audited. Second, the ART stated that the “build” or “buy” trade off might not be relevant, as the duplication of infrastructures was costly.

However, the ART had no authority to decide on the pricing methodology for local loop unbundling. Therefore, players were waiting for a decision from either the European Commission (through Regulation) or the French government (through a Decree).

³⁵ See Bourreau and Doğan (2002) for a discussion of “build” and “buy” incentives in local markets.

³⁶ France Telecom answered that it also favoured LRIC pricing for interconnection.

3.2. Outcome

The French Decree on local loop unbundling was published on 12 December, 2000. The Decree specifies that the method used to calculate the price of the copper loops is LRIC. the ART is required to specify the LRIC methodology in more detail.

A few days later, on 18 December, 2000, the European Commission Regulation on local loop unbundling was published.³⁷ The Regulation requires “cost orientation” of the price of copper loops, but does not specify the method. However, national regulatory authorities can intervene to modify the terms of unbundling, and hence the price of the loops.

In other words, the method for pricing the loops in France would be LRIC, but the ART would have the ability to specify it.

In Annex II of its Decision dated 31 October, 2000, the ART provided the precise methodology for calculating the price of the loops for 2001.³⁸ The method chosen by the ART was France Telecom’s “top down” long run average incremental cost (LRAIC) method. However, the ART stressed that, in future, “it would be appropriate to combine the top-down and bottom-up approaches, to set the tariffs for access to the copper pair.” Therefore, the ART developed a bottom-up model for the local market, with a view of confronting the results of this model with France Telecom’s top down model. In its Decision, the ART also specified equipment lifetime and the cost of capital for the local loop.³⁹

4. Implementation and conclusion

In this paper, I have provided a description of regulatory processes that led to local loop unbundling in France. The analysis highlights the complementarities between ex ante

³⁷ Regulation n°2887/2000 of 18 December 2000.

³⁸ An English version of this Annex is available at <http://www.art-telecom.fr/textes/avis/00/00-1171ann2-eng.htm>.

³⁹ The ART chose a cost of capital rate of 12.1%. This value was obtained using a weighted average cost of capital method.

regulation and ex post regulation. It also reveals the delays between regulatory intervention and decisions. Whereas France Telecom launched its ADSL services in October 1999, the resale offer was announced two weeks later (in November 1999), France Telecom's bitstream access offer was announced in April 2000, and full unbundling became available only at the beginning of 2001. Given that France Telecom's ADSL trials started in February 1998 and that full unbundling has been available since January 2000, the incumbent entered the market for DSL services roughly two years before its competitors.

On November 22nd, 2000, France Telecom provided its first reference offer for local loop unbundling, based on a top down LRIC model. Since that date, the ART has been asking France Telecom for lower prices, as EC Regulation allows it to decide on the terms of unbundling. From November 2000 to April 2002, the monthly rental price for a copper line (full unbundling) has decreased by 39%, the price for shared access (i.e., the non voice bandwidth of the line) by 69% and the one-time fee by 52% (see Table 2 below).

<i>In EUR</i>	23 November, 2000	8 February, 2001	16 April, 2002
One time fee	162.66	107.93	78.70
Monthly rental price (full unbundling)	17.07	14.48	10.50
Monthly rental price (shared access)	9.15	6.10	2.86

Table 2: Prices for local loop unbundling⁴⁰

Though the method advocated by France Telecom (LRIC) had been chosen in the French Decree, due to its ability to modify the terms of unbundling the ART has been able to set the rental price at the desired level.

	31 October, 2001	20 December, 2001	20 February, 2002	1 May, 2002	1 July, 2002
Number of LLU sites	83	100	113	116	124
Number of LLU operators ⁴¹	5	8	8	8	9

⁴⁰ Source: ART.

⁴¹ Number of network operators, which have signed a LLU contract with France Telecom.

Number of LLU lines ⁴²	200	398	500	650	756
Number of shared lines	0	2	2	1	8

Table 3: Local competition through local loop unbundling⁴³

However, the development of local loop unbundling has been slow. Moreover, the sharp decrease in local loop unbundling prices seems not to have stimulated the lease of unbundled lines so far. In particular, the number of operators entering into unbundling activities has been small. Though twenty seven companies participated to unbundling trials in 2000, only nine operators have signed unbundling contracts so far, and the number of operators has been stable for about a year. Hence, it is not so surprising to see that less than 800 lines were unbundled as of July 2002 (see Table 3 above). In June 2002, France Telecom's ISP, Wanadoo, had 580,000 ADSL subscribers, which represents an over 90% share of the ADSL market.

Whereas local loop unbundling barely fuelled service-based competition, infrastructure-based competition has performed better, since there were 169,000 broadband subscribers in France in 2001. Hence, it is debatable whether regulatory authorities should try to find ways to foster service-based competition or should instead stimulate infrastructure-based competition.⁴⁴

⁴² Fully unbundled lines.

⁴³ Source: the ART.

⁴⁴ On this issue, see Bourreau and Doğan (2002).

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