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FULL MARKET OPENING IN THE POSTAL SERVICES FACING THE SOCIAL AND TERRITORIAL COHESION GOAL IN FRANCE

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Résumé : L'article s'intéresse aux conséquences pour la cohésion territoriale et rurale d'une ouverture totale à la concurrence dans les services postaux. Dans un premier temps elle rappelle les caractéristiques particulières du secteur ainsi que le processus de déréglementation déjà engagé. Elle souligne les raisons des inquiétudes quant à la cohésion territoriale. Dans un deuxième temps elle analyse l'importance que la question territoriale prend en France. Le réseau actuel participe largement à l'animation des zones rurales. Sa protection a fait l'objet d'une loi particulière qui donne des garanties pour les ruraux, toutefois le financement des mesures n'est pas pleinement assuré.

Abstract: The paper focuses on the impact of the Full Market Opening in postal services on the territorial cohesion. In the first section the paper recalls the specificities of the sector and the distance so far covered by deregulation. It underlines the reasons that raise worries. In the second section the paper analyses the territorial stake in France. Actual outlet network is notably extended and actively supports rural cohesion. It has been mostly preserved since WWII. A special law has introduced specific territorial obligations; however their funding is not entirely set.

Keywords: postal services, deregulation, rural and territorial cohesion

JEL codes : L87, R11, L43

FULL MARKET OPENING IN THE POSTAL SERVICES FACING THE SOCIAL AND TERRITORIAL COHESION GOAL IN FRANCE

> ***(13a) The rural postal network in, inter alia, mountain and island regions, plays an essential role in integrating businesses into the national/global economy and in maintaining cohesion in social and employment terms (…)***
> (14) They must take appropriate regulatory measures, (…) to ensure that accessibility to postal services continues to satisfy the needs of users including, by ensuring, where appropriate, a minimum number of services at the same access point ***and, in particular, that there is no decline in the density of access points to postal services in rural and remote regions.***
> Excerpts of the recital of the new postal directive as amended by the Euro Parliament on 11/07/07.

The postal services are gradually being opened to standard competition and a new directive has planned to bring about full market opening for 2009 (COM 2006). As acknowledged by European directives, postal services play a great role in territorial and social cohesion. Until now, this cohesion has relied on cross-subsidisation between different users, but the entry of new competitors for standard mail should end this long-standing arrangement. Fears are growing that quality of delivery could might decline–especially in remote areas–, while prices for individual mail rise up.

The paper first addresses the sources of concern. It explains the industrial specificities of the sector and prompts the main aspects of the European deregulation process in the postal services, with a special interest for France. Several goals defined by the directives seem contradictory, especially when competitors are skimming profitable clients. Second, the paper analyses the territorial issue and examines the caring measures envisioned for rural network. The paper particularly focuses on the French case where special territorial obligations have been set by law.

I. THE NEW FRAMEWORK OPENS NEW PROBLEMS

OVERVIEW OF THE PROCESS IMPLEMENTED SO FAR

Sector specificities

Postal service is a network as well as a labour industry, with, for instance, in France 280 000 employees[1] generating 85% of total operational costs.

Properly speaking, the postal network combines two parallel networks, one dedicated to collecting the mail (upstream network), the other one devoted to its delivery (downstream network). The first one has already been partially opened to competition with activities such as concentrators, sorters or routers. The second, which encompasses most of the charges and especially the fixed costs, will be confronted with full market opening in a close future. Postal services show most of the characteristics of a natural monopoly. Indeed, as long as the maximum capacity of delivery has not been reached, average costs are decreasing while traffic increases and marginal costs are null or close to zero. Not surprisingly, many researches since Panzar (1991) have confirmed economies of scale in the postal distribution activity (see Cazals 2004).

However, differing from the typical natural monopoly, the postal market is highly debatable (Toledano 2004 p. 234). This situation stems from two sources. First it derives from the fact that fixed costs are neither technical nor physical, but labour costs. As a consequence, contrary to the classic natural monopoly case, most network costs need to be paid recurrently (every month) and not once for all, therefore fixed costs are operative costs not investments. A defeated competitor who would be driven out of the market would not lose the high long-term charges he would have invested to arrange his network, but only the expenses that were required to operate its former activity. Hence sunk costs are minimal and entry is easy. Second, the scope of the network is easily adaptable; addressing the whole market is not the only option. Profitable niches can be created by reducing the frequency and the extent of the delivery: not all the mail needs to be delivered as quickly as possible, every working day and everywhere across a given territory.

Postal activity is harmed by modern technological changes, as for example fax and e-mail, its future prospects are unclear. For instance in France since 1998, the growth rate of mail traffic has been below the GNP growth rate, traffic went even down for several years.

Correspondence as a whole may be divided in bulk mail, generated by firms with advertisements, invoices, banking statements…, and separated (including individuals) mail. In France, bulk mail amounted in 2005 to a 58 % of overall correspondence, but firms as a whole generated more than

[1] Universal Postal Union 2005 data, corresponding full time workers.

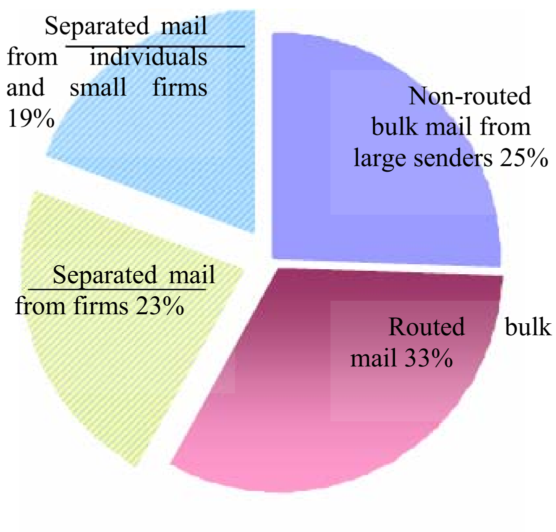
80 % of the traffic (Arcep 2006, see graph n°1). Considering turnover, the weight of the firms' mail is even more significant, since they engender more than 90 % of the mail income (Larcher 2003 p.23). Demand is highly concentrated as 40 % of the letters turnover comes from only 80 companies (Hérisson 2007 p. 241).

Finally, though individuals are still essential to postal service while being receivers, as senders they no more are. It is especially true since in the postal industry senders pay the bills, not receivers.

GRAPH N°1

Shares of volume correspondence in France

(domestic and imports in 2005)



Arcep 2006 p.11

Deregulation process

Deregulation in the postal services was launched by the European Commission in 1997 (box n°1). The process gradually reduces the share of postal activities that is covered by monopoly restraint. The most recent step in January 2006 dropped the reserved area to correspondence to 50 g. This evolution greatly alters the traditional organisational scheme.

Postal operators often provide an equal service with a single price over an entire territory, even though costs fluctuate. Operators use their monopolistic situation to cross subsidise non profitable activities (mainly separated delivery in rural areas) by profitable ones (bulk mail delivery in urban regions). Even though tariffs are already partly adjusted for bulk mail, the end of monopoly would imply the end of cross subsidisation as the contestable market theory teaches it. Therefore, with the new market framework pushing to match costs and prices, incumbents should be driven to reduce the quality of their service in costly areas, which often happens to be deprived areas as well.

Box n°1: brief market opening timetable

1989	Postal and telecommunication council invites the European Commission to prepare measures to develop postal services. Deregulation policy for speed delivery postal services was already opened.
1992	Green Paper single market for postal services (COM/91/476).
1997	1st Postal Directive (97/67/EC) launches the deregulation process, market opening for mail above 350 g scheduled for 1999.
2002	2nd Postal Directive (2002/39/EC).
2003	2nd reduction of the "reserved area" (100 g).
2006	3rd reduction of the "reserved area" (50 g).
2006	Commission proposes the 3rd directive Com (2006) 594 with Full Market Opening (FMO) for 2009.
2007	(07/11) European Parliament votes to postpone the FMO to 2011.
2007	(10/02) Final agreement sets FMO to January 2011 for EU 14 and 2013 for New Member States and Greece.

In Sweden, where deregulation began in the early 90's, prices for individuals underwent a sharp rise[2], but slightly decreased for firms (Andersson 2007 p. 11; Falkenhall & Kolmodin 2005 p. 23). At the same time, the number of post offices owned by Posten AB significantly decreased, especially in rural areas (PTS 2007, Falkenhall & Kolmodin 2005). In addition, between 1993 and 2006, employment declined by 33.5 % (PTS 2007 p.9).

Universal Service Obligations

One main fear is that social and territorial cohesion may be impaired by the opening. Aware of these worries the directives since 1997 have announced several principles (box n°2) and scheduled protective mechanisms. Indeed in addition to efficiency enhancement and orientation towards costs, they proclaim the necessity to preserve an undemanding access to all users with affordable prices. The 2002 directive in its recital 6 refers to preservation of the rural network and its role in social cohesion. Likewise preoccupations are to be found in the 2006 proposition. The impact report (SEC 2006 p.20) also recalls that, "Postal services play an important role in underpinning territorial and social cohesion". These objectives are included in the Universal Service Obligations (USO).

Box n°2: excerpts of the 1997 directive recital

n°11 Whereas it is essential to guarantee at Community level a universal postal service encompassing a minimum range of services of specified quality to be provided in all Member States at an affordable price for the benefit of all users, irrespective of their geographical location in the Community;
n°12 Whereas the aim of the universal services is to offer all users easy access to the postal network through the provision, in particular, of a sufficient number of access points and by

[2] From 35 to 43 % in real term depending on the type of mail. This increase is partly due to the introduction of VAT to mail and to a transitory failure of the regulation authority to monitor prices.

ensuring satisfactory conditions with regard to the frequency of collections and deliveries; whereas the provision of the universal service must meet the fundamental need to ensure continuity of operation, whilst at the same time remaining adaptable to the needs of users as well as guaranteeing them fair and non-discriminatory treatment;

Universal Service is a service that should be available for all users, especially designed for individuals and Small and Medium Enterprises. This service includes quantified speed delivery goals (for d+1), affordable price, and coverage of all places on the territory at least five days a week. It applies to correspondence up to 2 kg, parcels at least up to 10 kg and registered mail. Directives do not impose the single pricing scheme, but should one country choose it, the Universal Service Provider (USP) should remain free to negotiate special discount tariffs for specific customers (art. 12 al. 3, 1997th directive). So as to say that, after all, the single price pertains only to separate mail or likely to the bulk mail routes where no competitors entered. For the moment most historical operators are still protected by a partial monopoly.

In France until the end of 2005, deregulation (down to 100 g correspondence) only affected a small share of the correspondence, only 8.4 % of the traffic was concerned (graph I in annex). The consequence on income was more significant as it amounted to 17.6 %. Considering overall mail traffic, the share opened to competition in France, estimated to 39 % in 2003, went up to 46 % in January 2006 (La Poste activity reports). Nevertheless, after January 2006 the actual reserved area (under 50 g.) still covers 83.5 % of the letters amount and 73.4 % of its turnover (Arcep 2007).

WHAT WILL HAPPEN WITH FULL MARKET OPENING?

Skimming: price competition facing Universal Service Obligations (USO)

When new competitors enter the market, they skim the cream by mainly addressing bulk mail in densely populated areas. They may set a light network since this type of mail does not always need to be delivered every day and immediately. In consequence, entry does not imply high costs and even if the new entrant is less efficient that the incumbent it may propose lower prices (Bernard and alii 2004). In these circumstances, it is worth noticing that the incumbent still roughly faces the same network costs, but collects fewer resources. The incumbent is therefore prone to lower its prices where competitors entered and raise them anywhere else; at the same time he is also prone to reduce its operating costs. The pressure on its costs may result in more mechanisation and greater efficiency, but also diminish network in rural areas, with fewer postal offices, fewer delivery days and higher prices. For instance, as quoted by Cazalda (2005) "outlying areas might receive service three days a week instead of the typical five or six currently. In other areas, Saturday service might be eliminated".

The evolving structure of prices actually transfers a definite share of the network costs borne by firms through bulk mail, towards individuals and separated mail. Yet this kind of response may in turn reduce again incumbent's resources, if some customers progressively leave its network considering prices are too high or access is too restricted. They may turn to phone, internet… a damaging spiral could be triggered off, with less traffic generating fewer resources and higher relative costs, inducing higher prices...This process is akin to the adverse selection scheme described by Akerloff (1970), for the second hand car market, and might initiate what Crew and Kleindorfer (2000) have named a "graveyard spiral".

Nevertheless, since for some destinations or types of mail, there are no substitutes (a significant amount of mail is unavoidable), minimal traffic should remain. Finally, theoretically competitive pressure tends to raise the price towards the cost of the most expensive routes (Cremer 2004 p. 13) and, taken as a whole, network and service shrink to a new lower quality/ price equilibrium.

However, this process should not be allowed to go too far. Network is a club good, its utility rises with the number of connected costumers for a given period, which, from a postal point of view, derives from the combination of the total number of costumers, quickness and frequency of delivery. Let us remember that bulk and separated mail mainly use the same distribution network. Thus, if the network shrinks too severely, it could also disturb the delivery of a fraction of bulk mail (Cremer and alii 2007), and overall efficiency might decline.

The above withdrawal spiral is nonetheless barred by the USO commitments.

Since USO restricts the historical operator's capacity of response to competition, its extent appears clearly a major concern for him. Depending on the level of obligations, the incumbent will or will not be able to freely downsize its network costs and conversely raise its prices. But its resources are to be reduced in any case. The universal service could thus induce an unfair financial load for the USP. Thus, all things being equal, USO should call for specific compensation[3]. There is more to say, unexpectedly some USO constraints may have ambiguous effects or even counterfactual ones, namely the combination of single pricing and other requirements (PTS 2000).

On the one hand, single price protects costumers from being overpriced when there is no competitor facing the USP; it also prevents him from subsidising predatory prices where competitors are. But on the other hand, as the single price must address all the territory, especially costly areas or routes, its level is indeed too high for low cost areas and routes. It therefore gives a true opportunity for competitors to enter the market. Moreover, it provides also the maximum price new entrants may charge and simultaneously determines their profit. As PTS summarises it: the single price « (…) prevents or at least makes it more difficult for Posten AB to cut prices only in areas where there is a local competitor » (PTS 2007 p. 9). Not surprisingly, Cremer & alii (2001 p. 116) find that: "Entry is

[3] Though essential, this paper is not addressing the compensation calculation debate (for a recent survey see Oxera 2007).

viable at all the considered scales when the incumbent has to price uniformly. When non-uniform pricing is allowed, on the other hand, only large scale entry is profitable".

What price increase for separated mail?

Since separated mail price is to rise to compensate the fall of bulk mail volume & price, the question becomes: will the increase be affordable? If not, the USP will have to strongly squeeze its costs and possibly shrink its services in remote routes and areas. A very simple model may give a hint.

Assume an efficient USP whose total turnover is:

$(P_{ob} \,.\, a_o \,.\, V_{ob}) + (P_{os} \,.\, b_o \,.\, V_{os})$ 1st period (monopoly) (1)

$(P_{1b} \,.\, a_1 \,.\, V_{1b}) + (P_{1s} \,.\, b_1 \,.\, V_{1s})$ 2nd period (competition) (2)

With P for price, V for volume of mail; $_b$ designate bulk mail $_s$ separated mail; a and b stand for the market shares for bulk and separated mail owned by the USP.

$V_{ob} + V_{os}$ is the total volume of mail, normalised to 1 for the first period.

Let us also consider first period price P_{ob}, P_{os} being equal to 1.

First period, the incumbent is a monopoly

$$\begin{cases} a_o + b_o = 2 & \text{total market shares} \\ (a_o \,.V_{ob}) + (b_o \,.\, V_{os}) = 1 & \text{total volume mail} \\ (P_{ob} \,.\, a_o \,.\, V_{ob}) + (P_{os} \,.\, b_o \,.\, V_{os}) = 1 & \text{total turnover} \end{cases}$$

Second period, opening to competition

$$\begin{cases} a_1 + b_1 \leq 2 & \text{incumbent market shares} \\ (a_1 \,.\, V_{1b}) + (b_1 \,.\, V_{1s}) & \text{total incumbent volume mail} \\ (P_{1b} \,.\, a_1 \,.\, V_{1b}) + (P_{1s} \,.\, b_1 \,.\, V_{1s}) & \text{total incumbent turnover} \end{cases}$$

$a_1 < a_o$ expresses that a portion of the bulk mail is diverted by new entrants.

$P_{1b} < P_{ob}$ and $P_{1s} > P_{os}$ expresses the change in the price structure.

The financial equilibrium constraint for the incumbent is (1) = (2):

$$(P_{1b} \,.\, a_1 \,.V_{1b}) + (P_{1s} \,.\, b_1 \,.\, V_{1s}) = (P_{ob} \,.\, a_o \,.\, V_{ob}) + (P_{os} \,.\, b_o \,.\, V_{os}) \quad (3)$$

Let us find the value of P_{1s}

$$(P_{1b} \,.\, a_1 \,.V_{1b}) + (P_{1s} \,.b_1 \,.\, V_{1s}) = 1 \quad (4)$$

$(P_{1s} \,.\, b_1 \,.\, V_{1s}) = 1 - (P_{1b} \,.\, a_1 \,.V_{1b})$

$$P_{1s} = \frac{1 - (P_{1b} \,.\, a_1 \,.V_{1b})}{b_1 .\, V_{1s}} \qquad (5)$$

Not surprisingly, the compensating price for separated mail depends on the turnover generated by bulk mail and the evolution of the volume of separated mail.

Let us assume newcomers are only interested in bulk mail so that $b_o = b_1 = 1$. We may compute an estimate of P_{1s} based on actual figures.

⇨ As a first step, let us suppose that the demand elasticity for separated mail is inelastic ($V_{1s} = V_{os}$), hence $V_{1s} \,.\, b_1 = V_{os} \,.\, b_o$

$$P_{1s} = \frac{1 - (P_{1b} \,.\, a_1 \,.V_{1b})}{b_o \,.\, V_{os}} \qquad (6)$$

Considering the French case [4] $(b_o \,.\, V_{os}) = 0{,}4$;

$$P_{1s} = \frac{1 - (P_{1b} \,.\, a_1 \,.V_{1b})}{0{,}4} \qquad (7)$$

Let us set boundaries for $P_{1b} \,.\, a_1$

The actual Swedish case tells us that after 14 years, the newcomer has gained 13 % of the bulk mail market (PTS 2007 p. 4). This latter figure may thus be taken as a bottom hypothesis. On the other hand, new entrants may at best be supposed to capture one third of the market. Senders are highly concentrated, thus a defection of a few senders may represent a large share of traffic. Besides, Cohen (2005) sees one third as an upper bound for Sweden. The bulk mail share left to incumbent therefore varies between 70 % and 87 % so that $a_1 \in [0{,}7;\, 0{,}87]$.

Price for bulk mail may decrease by 30 to 10 % (Andersson 2007), so let $P_{1b} \in [0{,}7;\, 0{,}9]$.

Hence altogether $(P_{1b} \,.\, a_1) \in [0{,}49;\, 0{,}78]$

Results are displayed in table nb 1 and commented below.

⇨ As a second step, let us take into account the demand elasticity. Since most actual computed demand elasticity ($\varepsilon_{d/p}$) is negative (Cazals Florens 2004), separated volume owned by incumbent should be adversely affected.

[4] Note that the Swedish case is close with bulk = 0,7 (PTS 2007 p.9)

Let us calculate an estimate for $b_1 . V_{1s}$. using the lower figure of $\varepsilon_{d/p} = - 0,2$ (Cazals Florens 2004). Since a great deal of actual separated mail responds to unavoidable needs, let us assume that only the first 10 % price rise has an impact on demand. Hence $b_1 . V_{1s} = 0,392$ [5] and equation (5) becomes (8).

$$P_{1s} = \frac{1 - (P_{1b} . a_1 . V_{1b})}{0,392} \qquad (8)$$

The dissimilarity between (7) and (8) is not large enough to produce large discrepancies on P_{1s} prices. However, P_{1s} increases more, fuelling the potential "graveyard spiral".

TABLE N° 1

Necessary P_{1s} separated price level compensating entry,

given various options ($P_{os} = 1$)

Bulk mail volume second period, V_{1b}; (first period = 100 %)	$b_1 . V_{1s} = b_o . V_{os}$				$b_1 . V_{1s} < b_o . V_{os}$	
	(A) P_{1b} down by 30% and 33% market share a_1 loss. (first period = 1)	(B) P_{1b} down by 10% and 13% market share a_1 loss. (first period = 1)	*(A) Total final volume owned by incumbent,* ($a_1 . V_{1b}$) + ($b_1 . V_{1s}$) *(first period = 1)*	*(B) Total final volume owned by incumbent,* ($a_1 . V_{1b}$) + ($b_1 . V_{1s}$) *(first period = 1)*	P_{1b} down by 30% and 33% market share a_1 loss	P_{1b} down by 10% and 13% market share a_1 loss
100 %	1,80	1,32	*0,80*	*0,92*	1,83	1,35
105 %	1,76	1,27	*0,82*	*0,95*	1,79	1,29
110 %	1,73	1,21	*0,84*	*0,97*	1,76	1,23
115 %	1,69	1,15	*0,86*	*1,0*	1,72	1,17
120 %	1,65	1,09	*0,88*	*1,03*	1,68	1,11

Our rough estimate shows that in a country like France, where bulk mail represents 60 % of total mail, a drop of 13 % in the bulk market owned by the historical operator associated with a drop of 10 % of bulk mail prices, would call, everything being equal, for an increase of 32 % in separated mail prices. With an optimistic rise of bulk mail volume by 20 %, prices of separated mail should still need to increase by 9 %.
In the worst hypothetic case, a drop of one third in the price and the share of the bulk mail of the incumbent would request an increase of more than 60 % for separated mail price.

These figures are harsh. They stem from a joint fall in market share and price of bulk mail, which in turn influences the incumbent's remaining volume. The cumulated phenomenon dramatically

[5] 1*(0,4 * (1-0,02))

amplifies the consequence of a sole market loss. The data are nonetheless consistent with the 30 % increase Posten AB introduced in 1996 on separated letters, a few years after Full Market Opening. Even if it was due to a loophole in price monitoring; this rise was alleged to be a response to growing costs (PTS 2007 p. 8).
Sure enough, these estimates do not take into account several important parameters as for instance, productivity gains; employment downsizing, restructuring of the network… that could ease the shock. Nonetheless, we may interpret the figures as an upper approximation of the productivity gains constraint that will spur from market opening.

Finally, the combination of competition opening with USO and single pricing tends to dramatically affect USP and confirms fears for territorial cohesion. As Cazalda (2005 p.19) puts it: "This implies that some high-cost regions could only be served in a profitable way by reducing the quality of the service".

II. The territorial issue in France

The new competition framework will put a strain on the USP. However its true impact depends on many factors, the importance of which varies from one country to another (Oxera 2007, PWC 2006).

Let us summarise and classify these factors in three clusters (box n°3). Obviously, consequences of the full market opening depend on the magnitude of entries. Consequently, the first cluster deals with attractiveness. The second one is the capacity of reaction of the incumbent and the third one the potential unbalance created by the confrontation of the new framework and territorial heterogeneity.

It is not of our intent to address all of the three clusters since the concern of this paper is the shock that will face the USP pertaining to territorial cohesion, not his ability to overcome it. Therefore, the paper does not take into account factors as structure of the employment or share of mechanised sorting… (see PWC 2006, table p. 38). This paper merely focuses on the attractiveness of the country and the potential unbalance. Attractiveness raises the intensity of competition and the more contrasted the costs are, the more harmful cream skimming is.

Box n°3: Key impact parameters to assess FMO

Attractiveness
Size of the national market and potential growth (number of mail per inhabitant, total turnover),
Relative importance of letter mail vs. bulk
Postal scale urbanisation (percentage of urban population)

Capacity of reaction of the incumbent
Labour and legacy costs,
Innovation capacities (automation) and network costs (incl. franchising of counters)
Actual prices and efficiency (profit)
Size of scale economy
Demand elasticity, switching elasticity

Potential unbalance
Type and extent of the USO (single pricing, level of quality requirements)
Network delivery costs: extent of the network, surface of the country, range of costs between rural and urban routes
Evenness of the density of population
Potential specific territorial constraints

ATTRACTIVENESS

Attractiveness comes from the combination of a huge overall market, a rather high volume of mail per inhabitant and a high share of urban clients easily addressable. Considering Union Postale Universelle and Eurostat data, France is fairly attractive for entry (table n°2). The country appears to be the third European postal market, far above the fourth one; with a rather high level of correspondence per inhabitant and urban population ratio. As a matter of fact in spring 2007, 14 competitors were already registered by the regulation authority. The area of Ile de France, with more than 20 millions contiguous people and a high purchasing power, is one of the most attractive in Europe, with a population well above greater London's (one). A fierce competition may be forecast enforcing the new price structure.

TABLE N°2
Postal market data for EU 15

	Letters/ inhabitant per year	Total mail/ inhabitant per year	Urban population %	Total internal mail turnover*
Germany	259,25	389,77	88,00	14 076
Great Britain	348,43	349,65	91,30	11 847
France	**289,99**	**475,12**	**76,30**	**11 300**
Italy	117,63	118,89	85,90	3 973
Sweden	331,32	331,32	33,20	2 753
Netherlands	315,30	359,65	96,90	2 660
Spain	120,24	146,60	75,60	1 854
Austria	121,44	458,83	65,40	1 701
Denmark	194,86	511,42	67,60	1 482
Finland	158,51	332,25	49,40	1 035
Portugal	96,27	96,27	78,80	648
Ireland	120,30	558,05	56,90	515
Greece	50,43	63,66	69,20	401
Luxembourg	226,02	226,02	80,70	146
USA	667,31	1 005,66	*79,00*	n/a

UPU data 2005 except turnover Eurostat 2004, due to paucity of data for some countries, total mail is not always detached from letters. * Millions of Euros.

POTENTIAL UNBALANCE

Concerning potential unbalance, French laws (2005, 2007) implemented an enhanced version of USO, with a special interest for rural protection that creates strong constraints on USP.

When transposing the directives, France chose to take the wider conception of the USO (box n°3). As a consequence the Universal Service covers parcels up to 20 kg; delivery every working day, mail should also be brought to the home of individual or collective costumers. Single pricing appeared as part of the USO in 2007, not for bulk mail.

Box n°3: Universal Service Obligations in France (05/01/2007 decree)

Extent: universal service pertains to letters up to 2kg and parcels up to 20 kg.

Delivery: delivery is effective at home for each individual or firm. Except extraordinary circumstances, the service runs every working day.

Accessibility: at least 99% of the national population and 95% of the population of each district (“département”) should be less than 10 kilometres from a postal contact point. Every city with more than 10 000 inhabitants gets at least one postal contact outlet, plus one by segment of 20 000 inhabitants.

Prices: except for bulk mail, a single price applies for all the metropolitan territory.

Press delivery: newspapers and press documents recognised by the Press Parity Commission are delivered complying USO. The tariff structure should support pluralism.

Territorial concerns

France is one of the largest countries of EU in surface and in population with 551 000 km² and more than 60 millions inhabitants, however its population density is rather modest (table n°3). Moreover, even if the population is not as sparsely distributed as Finland or Sweden, France has still a comparatively significant share of its population living in rural areas –well over EUR 15 average– as well as a great number of independent communes (table n°3). As a consequence the territorial concern is a major one; its magnitude may be observed on the two levels of postal heterogeneity and distribution of outlets.

TABLE N°3

Postal services and geographical data

	Average population density (inhb./km²)	**% pop. rural areas ***	**Number of communes**	**Postal outlets**	**Change 1998-2003 % ****
Sweden	20	67	290	1 980	n/a
Finland	16	51	446	1 276	-54%
Ireland	60	43	3 440	1 570	-21%
Austria	98	35	2 381	1 947	-25%
Denmark	125	32	271	945	-20%
Greece	84	31	6 130	2 093	71%
Spain	90	24	8 108	3 291	-48%
France	**98**	**24**	**36 678**	**17 008**	**0%**
Portugal	115	21	4 257	2 889	-51%
Luxembourg	193	19	118	107	2%
Italy	196	14	8 100	13 831	-4%
Germany	231	12	13 176	12 671	-22%
Great Britain	247	9	10 679	14 376	-25%
Belgium	344	5	589	1 409	-29%
Netherland	402	3	489	3 191	-2%
USA ***	*31*	*21*	/	37 579**	-6%

Source UPU, * Eurostat (Boscacci 1999) Population of local communities with density below 100 inhabitants/km2 (EUR 15 = 17,5 %). *** Various sources not comparable with other data. ** Cohen 2006.

Postal heterogeneity

Due to a combination of spatial centralisation and partial rural exodus, the population is fairly unequally distributed on the territory as compared to other similar countries in Europe (see map in annex), thus postal market is uneven. Barthélémy & Toledano (2004 p. 99) have partitioned the French postal market in three categories: dynamic areas, medium areas and rural or unprivileged areas. The third cluster encompasses 43,5 % of receivers with only an average of 189 letters per person per year, on the opposite side, in the dynamic group (20 % of receivers) nearly 2,6 times more letters (489) are delivered. Overall traffic rises with the size of towns from a factor 1 in rural areas to 1.5 in the Paris region, and the number of letters rises from 1 to 2.1.

Large unevenness among clients strongly affects distribution costs. A study by Roy (2004 p. 168) underlines that delivery costs may vary from a factor 1 to 32, depending on the particular population density and the postal traffic of a given area. In fact, actual average delivery costs are estimated to range from 1 to 3 between urban and rural areas in France. The obligation to deliver mail at home has also a great impact on rural costs. According to Bernard (2004 p. 187) this kind of delivery contributes to noticeably lessening rural postal density. For instance, even if in the USA overall population density is lower than in France, postal density is higher. This phenomenon stems from the fact that mail is delivered along roads in the USA; postmen may distribute letters without leaving their car. Consequently: "delivery costs are more heterogeneous in France than in the U.S. *Ceteris paribus*, France is more vulnerable to inefficient entry than the U.S" (Bernard 2004 p. 197).

A large and diverse outlet network

As part of a historic legacy and of political requirements, the total number of outlets has not much evolved since the Second World War. The French government even demanded to postpone any postal outlet closure in 1993. As Senator Larcher's 1997 report recalls: "postal presence on the territory is above all a social obligation". France is the only European country where the number of outlets remained still during the market opening period (table n°3).

The French postal network is certainly among the very few that in EU devotes as much importance to rural areas. It encompasses approximately 17 000 outlets covering 12 000 towns, over a total number of 36 000. Nearly 60 % of outlets are in towns with less than 2 000 inhabitants (table n°4). On the opposite only 17 % are found in towns of more than 10 000 inhabitants.

For the moment, the network is amply covering rural areas. The average access distance to a postal outlet in rural areas is 6.5 kilometres and very few inhabitants are out of a 20 minutes drive reach from a postal outlet. The network is clearly shaped to support territorial cohesion, thus cross subsidisation is still essential. Indeed, on one end, two third of the outlets generates only 10 % of the total turnover of La Poste, while on the other end the last third generates 90 % (Comptes 2003 p.123).

TABLE N°4

Population and postal outlets distribution in France

Categories of town / inhabitants	Number of towns	Total population (1999)	Population %	La Poste market share %	Distribution of postal outlets %
< 1000	28 004	9 388 854	16,04	8	39
1000 to 1999	4 052	5 645 132	9,65	10	21
2 000 to 9 999	3 657	14 836 376	25,35	28	23
> 10 000	852	28 650 326	48,96	54	17
	36 565	58 520 688	100,00	100	100

Cour des comptes 2003 p.126 & Larcher 2003 p. 69;

To preserve this situation, the USO imposes the USP to comply with accessibility criteria, which as compared to several countries in Europe are quite high, given district ("départements") requirements (annex). Moreover a 2005 law, pertaining to territorial cohesion, states (art. n°2) that: "La Poste contributes, through its network, to territorial cohesion and development in addition to its USO", It demands La Poste to maintain more offices than should be necessary for efficient business purpose (box n°5) and adds several requirements to USO. The accessibility criterion rises to: "10% of the population of a district ("départment") may not be beyond 5 kilometres or 20 minutes reach from a postal contact point". As it can easily be understood, the aim of the law is more or less to preserve the actual accessibility of the network. Nonetheless, the type of outlet (franchised…) may of course be adapted.

Box n°5: Special territorial cohesion regulation, (20/05/2005 act)

Excepted in special circumstances, 10 % of the population of a district ("départment") may not be beyond 5 kilometres or 20 minutes reach from a postal contact point.
A special "departement" council for postal territorial localisation gives advices on the location of postal contact points.

A special territorial compensation fund is set to finance the cost of the territorial cohesion. Its resources come from a discount on local taxes. Universal Service Provider obtains an 85 % rebate on community taxes.

Several estimates have been carried out to assess the impact on number and costs of various sizes of the network (table n°5). Compared to a business-oriented network, USO rises the number of postal outlets by 1 500 to 3 000, and costs by roughly 250 million Euros. The special territorial cohesion requirement adds nearly 8 000 more outlets and 500 million Euros. The total value of territorial obligations amounted approximately to 6,5 % of La Poste 2001 mail income.

TABLE N°5
Universal service and the cost of rural postal presence in France

Networks	**Number of postal outlets**	**Cost in 2001 (Millions of Euros)**
Actual network	13649 offices + 3320 agencies	1 965 (2)
Business oriented (best network optimising turnover and costs)	6000 (3000 offices and 3000 agencies)	1 229 (2)
USO compliant network	7500* to 9000 (6000 offices and 3000 agencies)	1 514 (2)
USO + territorial cohesion compliant network	≈ 17000	Estimated charges: 250 millions € for USO and 500 millions for territorial cohesion (1)

Source : (1) Proriol 2006. p. 15, (2) Cour des Comptes (2003) p.128-130, * Hérisson 2007 p. 247

In accordance with the directives, the law forecasts to set compensation funds for USO and has already planned a special territorial fund. This latter fund is financed by a discount on local taxes. Universal Service Provider obtains an 85 % rebate on community taxes. However this fiscal exemption amounts only to 130 millions as compared to the 500 millions costs estimated. Until now since the reserved domain is maintained for mail up to 50 g. there has been no need to go further on, but the next opening step stirs true uncertainties.

France combines several peculiar features. Its market is attractive, but quite uneven; the structure of costs is heterogeneous. Enhanced USO jointed with special territorial requirements will make it uneasy for the USP to fairly compete with newcomers. A well defined compensation seems necessary.

III. CONCLUSION

Since the previous openings where actually of little significance, the Full Market Opening planned for 2011 will represent a large leap for postal operators. It will bring along a strong strain for the cohesion and territorial goal as well as for universal service obligations, especially when single pricing is chosen. As points Oxera (2007 p. 19) in the new context "the issue of financing the universal service becomes critical". Hence, historical operators will have fierce incentives to find a way to reduce the scope of the Universal Service Obligations and raise prices for individual mail. The paper advocates that entry of new competitors and the corresponding reduction of revenues of the incumbent operator would call for a reduction of the coverage and the quality of the incumbent's service. The strain will especially affect rural and deprived areas. This result is especially true for countries where the density of population is uneven, with significant discrepancies between areas, where postal delivery average per inhabitant is high, and legacy costs significant (PWC 2006). In these circumstances, several competitors will be prone to enter the market, as well as prosperous niches will be available. France is roughly matching these criteria. In addition, compared to similar countries, the French postal service network is over covering rural areas (Larcher 2002 & 2003), and actual USO translated requirements set up a strong burden for the Universal Service Provider (La Poste). The paper didn't address the issue of the designation and securing of the compensation fund for USO, but the rural subsidisation fund is presently expected to be inadequately financed.

REFERENCES

ANDERSSON. P 2007 « Les effets de la réforme des services postaux en Suède, *La vie économique*, mars, pp. 9-11.

ARCEP 2006, *Observatoire statistique des activités postales* : année 2005, décembre 2006.

ARCEP 2007, *Observatoire statistique des activités postales* : année 2006, octobre 2007.

BARTHELEMY. F TOLEDANO. J 2004, « En France le courrier est envoyé vers les zones riches et actives », in Toledano Ed. *Economie postale : les fondements*, Economica p. 88-99.

BERNARD. S, COHEN.R, ROBINSON. M ROY. B, TOLEDANO. J, WALLER. J, XENAKIS. S 2004, Hétérogénéité des coûts de distribution et vulnérabilité à l'entrée », in Toledano ed. *Economie postale : les fondements*, Economica pp. 181-200.

BOSCACCI. F 1999, *A typology of rural areas in Europe indicators on strength and weakness of rural territories and selection of areas nuts III*, Milan, November 1999.

CALZADA J 2005 *Universal Service Obligations in the Postal Sector: Endogenous Quality and Coverage*, Imperial College London and Universitat de Barcelona March 13.

CAZALS. C, DE RYCKE. M, FLORENS. J-P, ROUZAUD. S 2004, "Monopole naturel et économie d'échelle dans la distribution podtale", in Toledano Ed. *Economie postale : les fondements*, Economica pp. 117-132.

CAZALS. C, FLORENS. J-P 2004, “Econométrie de la demande de courier, comparaison entre données en coupe instantanée et données dynamiques” in Toledano ed. *Economie postale : les fondements*, Economica pp. 72-87.

COHEN. R, ROBINSON. M, SHEEHY. R, SHARKEY. T, WALLER. J AND XENAKIS. S, 2006 “The conflict about preserving small rural post offices: difference in the distribution of pharmacies and post offices” Presented at Winton M. Blount Symposium on Postal History November 3-4, Washington, D.C. November.

COM 2006 *Étude prospective concernant l'impact sur le service universel de l'achèvement du marché intérieur des services postaux en 2009* COM (596) final.

COUR DES COMPTES 2003, *Les comptes et la gestion de La Poste (1991-2002)*, Rapport au président de la République, octobre.

CREMER. H 2004, “Concurrence et service public dans le secteur postal”, Toledano Ed. *Economie postale : les fondements*, Economica pp. 7-13.

CREMER. H, DE DONDER. P BOLDRON.F, JORAM. D AND ROY. B 2007, “Social costs and benefits of the universal service obligation in the postal market”, May.

CREMER. H, GRIMAUD. A, MARCY. S, ROY. B, TOLEDANO. J, 2001 “Entry and Competition in the Postal Market: Foundations for the Construction of Entry Scenarios”, *Journal of Regulatory Economics;* Vol.19: N°2 107-121.

CREW, MICHAEL A. AND PAUL R. KLEINDORFER. 2000. “Liberalization and the Universal Service Obligation in Postal Service.” In *Current Directions in Postal Reform,* edited by M.A. Crew and P.R. Kleindorfer. Boston, MA: Kluwer Academic Publishers.

CREW. M A. AND KLEINDORFER. P R 1998, “Efficient Entry, Monopoly, and the Universal Service Obligation in Postal Service,” *Journal of Regulatory Economics*, Vol. 14, N° 2 / September, pp. 103-126.

FALKENHALL. B AND KOLMODIN A 2005, *A Broad Economic Analysis of the Effects of Liberalising the Postal Market Documentation and considerations for the Swedish Postal and Cashier Service Commission*, ITPS Swedish Institute for Growth Policies Studies.

FLORENS. J-P, ROY. B, 2004, « Economie des coûts et secteur postal », in *Economie Postale : les fondements*, Toledano ed. Economica, pp. 103-115.

HERISSON. P 2007, « L’achèvement du marché intérieur des services postaux de la Communauté », *La Gazette* Cahier détaché n°3, 16/04/2007 pp.235-250.

LARCHER. G 1997, *La Poste, opérateur public de service public face à l'évolution technique et à la transformation du paysage postal européen* Commission des Affaires économiques et du Plan - Rapport d'information n° 42, Sénat.

LARCHER. G 2003, *La situation de La Poste dans la perspective du contrat de plan*, Rapport d’information du Sénat 11 juin n°344.

OXERA 2007, *Funding universal service obligations in the postal sector* Report prepared for La Poste, De Post-La Poste, Hellenic Post, Poste Italiane, P&T Luxembourg, Correos, Magyar Posta, Cyprus Post, Poczta Polska January.

Panzar, J. 1991. “Is Postal Service a Natural Monopoly?” In *Competition and Innovation in Postal Services*, edited by M.A. Crew and P.R. Kleindorfer, Boston, MA: Kluwer Academic Publishers.

PRORIOL. J 2006, « L’achèvement du marché intérieur des services postaux de la Communauté », rapport d’information n°3497, Assemblée nationale, 6 décembre.

PTS 2000, *Uniform Tariffs and Prices Geared to Costs? - Swedish Experiences of the Incompatible Demands of the European Postal Directive*, Swedish National Post- and Telecom Agency, doc. 00-15327.

PTS 2007, *The liberalised Swedish postal market the situation 14 years after the abolition of the monopoly*, Swedish National Post- and Telecom agency, March.

PWC 2006, *The Impact on Universal Service of the Full market Accomplishment of the Postal Internal Market in 2009*, Final Report, Price Waterhouse Coopers, May.

ROY. B, 2004 « Analyse technico-économique des couts des travaux extérieurs de la distribution postale » in Toledano Ed. *Economie postale : les fondements*, Economica p. 151- 180.

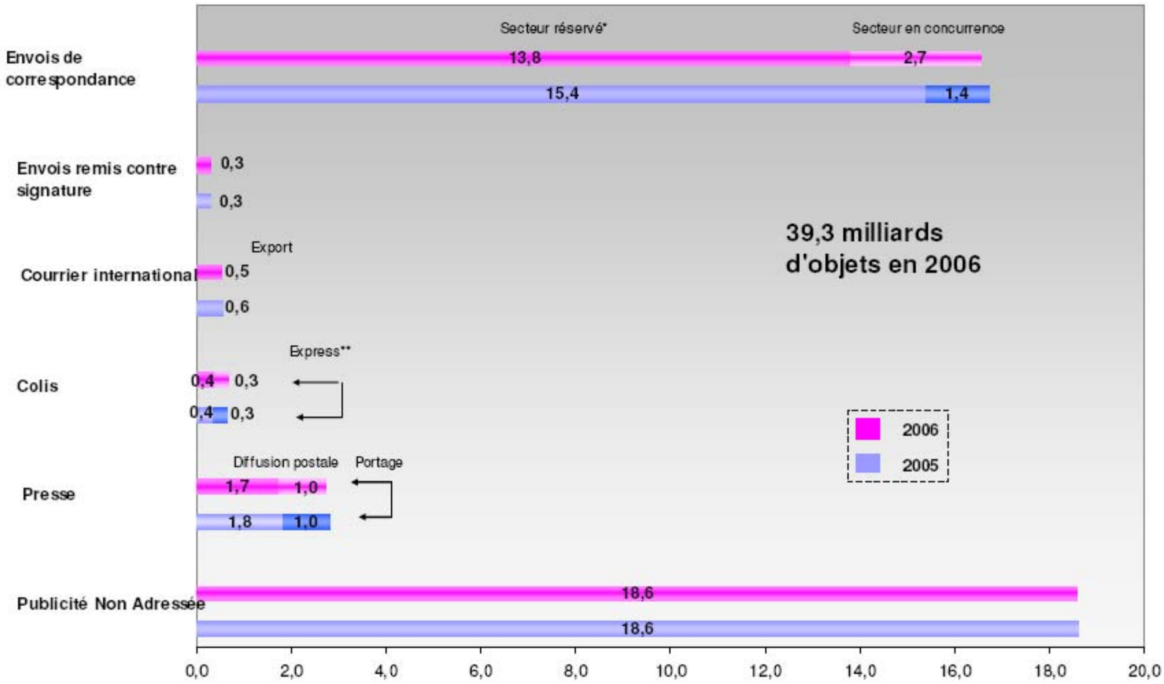
SEC 2006 *Commission staff working document accompanying the proposal of directive, impact assessment*, 18/10/2006, n°1291

TOLEDANO. J 2004 "Royaume Uni, Allemagne, Suède et les autres, des cheminements différents vers l'ouverture », in Toledano ed. *Economie postale : les fondements*, Economica, pp. 219-234.

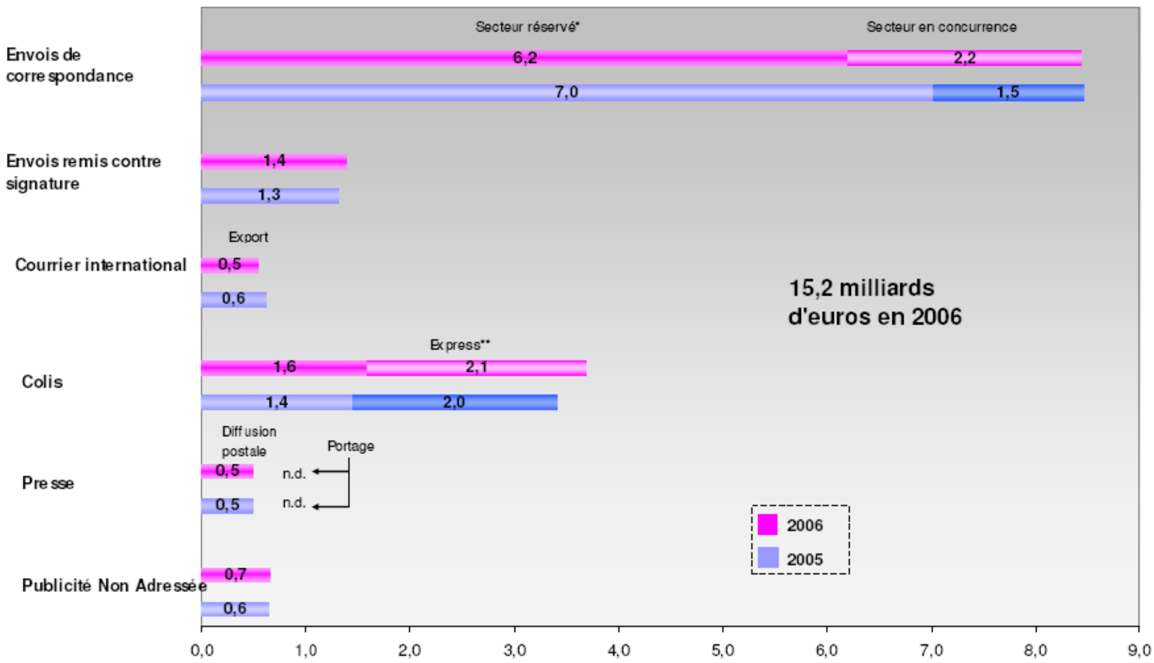
ANNEX

GRAPH N° IA ET IB

French postal market in volume for 2006-2005 (billions)



French postal market turnover in 2006-2005 (billions of Euros)



Source : ARCEP 2007

TABLE N°I

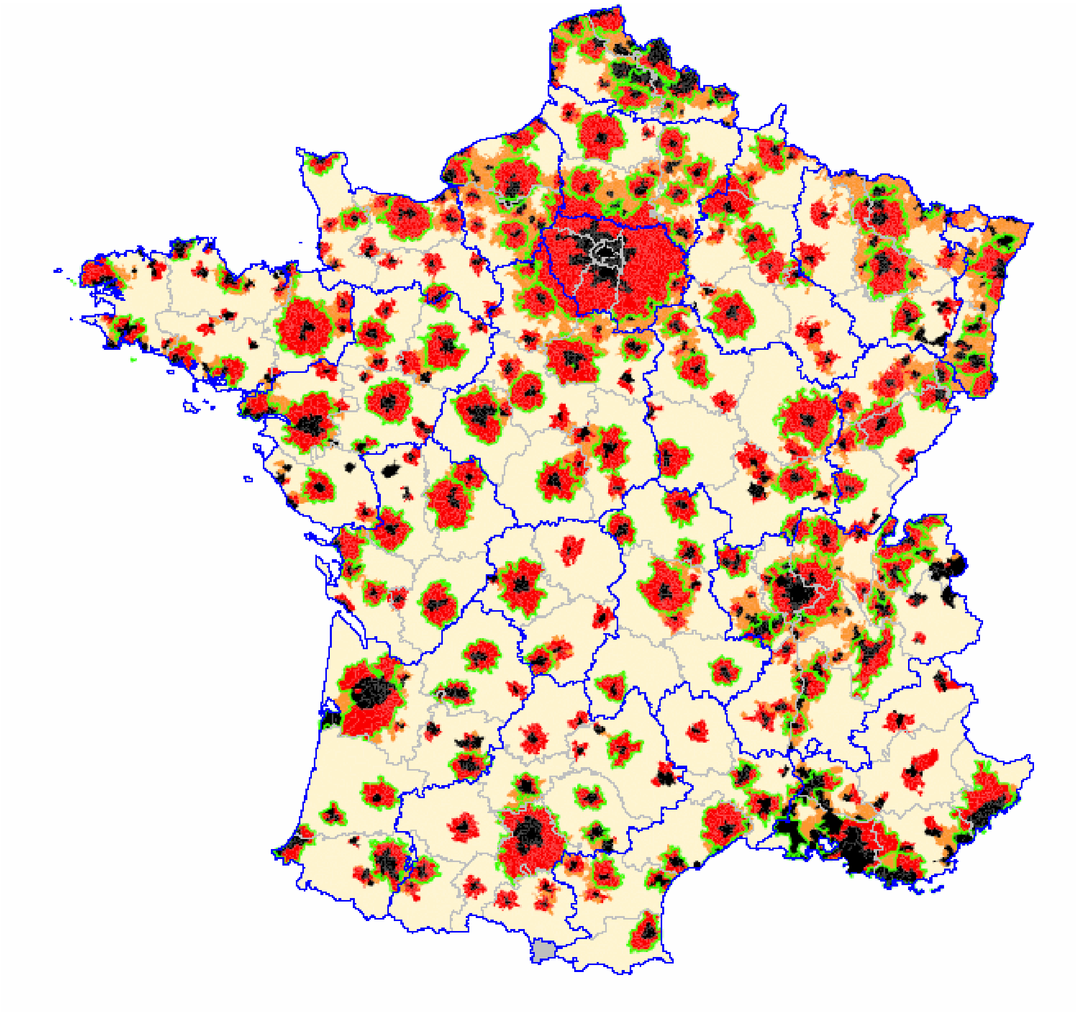
USO ACCESSIBILITY CRITERION FOR POSTAL SERVICES IN SELECTED EUROPEAN COUNTRIES

COUNTRIES	UNITED KINGDOM	GERMANY	NETHERLANDS	FRANCE
NATIONAL ACCESSIBILITY CRITERION	95 % of population should be less than 5 km from a postal contact point on a national level	100 % of population less than 2 km from a contact point in urban areas	100 % population less than 5 km from a contact point in residential settlement (continuous housing)	99 % of population should be less than 10 kilometres from a postal contact point.
LOCAL ACCESSIBILITY CRITERION	95 % of population less than 10 km from a contact point for every 120 postal code zones	At least one contact point for every 2.000 inhabitants zone, one office for 80 km2 in rural areas	At least a contact point for every 50.000 inhabitants for cities over 50.000 inhabitants	95% of the population of each district should be less than 10 kilometres from a postal contact point. Every city with more than 10 000 inhabitants deserves at least one postal contact outlet, plus one by segment of 20 000 inhabitants.
MINIMAL NUMBER OF POSTAL CONTACT OUTLET		At least 12.000 contact points of which 5.000 owned	2.194 office of which 902 with full service	7500 to 9000 contact points*,
PRESENT NUMBER OF POSTAL CONTACT OUTLET	17.500 contact points, 97 % franchised (only 590 owned post offices)	14.000 contact points of which 5.800 owned	2.200 contact points	17 028 contact points, of which 14 000 owned

* Proriol 2006 p.15, Hérisson 2007 p. 247

MAP N°I

Urban areas in France



Ministère de l'intérieur et de l'aménagement du territoire/DGCL Publications : « Les Collectivités locales en chiffres 2007 » p. 16,

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D.R n° 91 “How to solve St Petersburg Paradox in Rank-Dependent Models” ?, M. Pfiffelmann, octobre 2007

D.R. n° 92 “Full market opening in the postal services facing the social and territorial cohesion goal in France”, D. Broussolle, novembre 2007.