

Chapter 2

Universal Service Obligations in the Postal Sector

*Economic Learnings from Cross-Country Comparisons**

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1. INTRODUCTION

The 2nd European Postal Directive requires an assessment of the scope and sustainability of the universal service obligation (USO) under full market opening. The requirements for each of these, the scope of the USO and the market opening, as well as the incumbent's sustainability under alternative scenarios may well differ across countries as a number of previous contributions to the postal debate have pointed out.¹ Universal service is a set of measures aiming to grant permanently all users in all points of a territory a sufficient level of service. These obligations take the

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¹ See Crew and Kleindorfer (2005), Cohen et al. (2004), Bernard et al. (2002), and Gallet and Toledano (1997).

form of constraints, and apply to a range of products or services. They involve quality, in the broad sense, and price controls. The existence of obligations means that, in their absence, the market may not provide a sufficient level of service, or whole scope of products, or at least not at an affordable price level for all users. The loss of degree of freedom created by the existence of constraints creates an opportunity cost.

According to Cremer et al (2000), the cost of the USO is the difference between the profits the universal service provider could obtain if the obligations were not imposed and the actual profit realized under USO. This approach is similar to Panzar's (2001) loss of potential profits, and Choné et al.'s (2002) competitive neutrality.

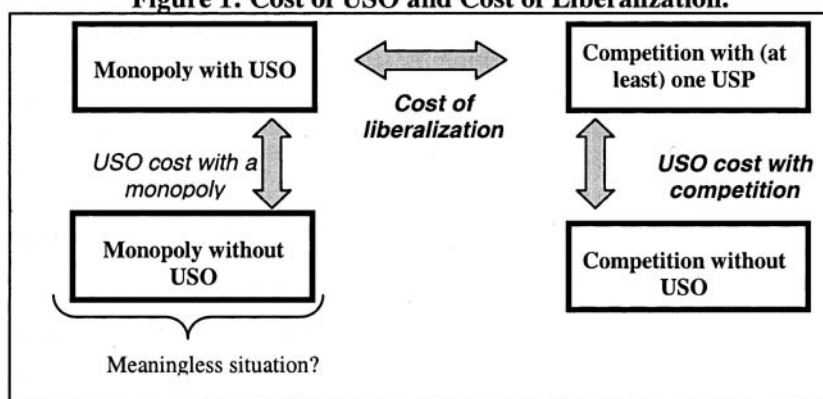
Calculating when the incumbent faces a break-even rule, or when the profits are bound, is clearly problematic. This is why in the 'potential profits' approach, in a regulated monopoly situation, the question of the (net) cost of universal service is irrelevant.

In a competitive environment, the calculation of the cost of universal service is crucial, for evaluating the competitive handicaps of the incumbent, and for finding the appropriate mechanisms for its financing (e.g., compensation funds or state subsidies.).

As most postal operators in the world enjoy a protected monopoly for financing their USO, cost projection in a liberalized environment may be misleading. The losses due to liberalization must not be confused with the cost of USO.

Nicolas Curien, at the postal conference organized by the Institut D'Economie Industrielle (2001),² has drawn a very clear picture (see Figure 1) that summarizes well the different methods proposed to derive the cost of USO.

Figure 1: Cost of USO and Cost of Liberalization.



² Second Conference on "Competition and Universal Service in the Postal Sector", December 2001, Toulouse, France.

Currently, there is no consensus over how to cost universal service in the postal sector. Although the “profit differential” approach is often considered in literature, the cost of universal service could be the direct loss (revenue minus cost) occurred by the services. In this case, the question of cost allocation must be solved, i.e., incremental costs or fully-distributed costs. This paper will not deal with any costing method, but instead with the first step, which is the definition of universal service constraints. This question will be examined using a survey instrument distributed to 19 postal operators. As expected, our survey findings show significant differences across countries in the current scope of the USO.

2. UNIVERSAL SERVICE OBLIGATIONS: A CROSS COUNTRY COMPARISON

The overview is broken up into three axes: First, the scope of products under USO; second, the quality, in its multiple aspects, such as accessibility, number of deliveries, and door deliveries; and thirdly, the way the price constraints are set on the universal service products, e.g., through uniform pricing, price caps, and break-even rules). The countries are then ranked according to the strength of the constraint in “absolute value.”

It is important to note that consideration of how difficult it is to satisfy the criteria is not taken into account. Indeed, the satisfaction of the same constraint in different countries can be more or less costly according to geographical aspects, the degree of competition, the number of items per capita, etc. This question is outside the purview of this paper.

2.1 The Variations of the Scope of Products Subject to Universal Service Constraints.

Quite surprisingly, the detailed list of products in the field of universal service is not always precisely defined. In Europe, the scope is first of all defined by directive 1997, which uses categories of product and a weight limit (0-2 kg for mail and 0-10/20kg for packets). It also includes particular services, namely registered mail and declared value services. Some countries, such as France, have a publicly-available detailed list of all universal service products. In the United Kingdom, Postcomm, the regulator, recently published such a list. In the Netherlands, the list can be considered *de facto*, as the non-USO products are defined. In Ireland, the regulator also publishes a list. In these latter three countries, regulators underline the importance of adaptability of universal service to the needs of users.

Therefore, they regularly evolve the content of the list, as well as the related constraints.

Concerning the scope *stricto sensu*, the items concerned are quite homogeneous: mail less than 2kg, including all kinds of bulk/direct mail; international mail; newspapers; registered letters; and a portion of the parcels. Nevertheless, our inquiries reveal some quite large differences: from a single piece at a retail outlet to the whole scope of products. This remains true even in the subset of European countries to which the European directive applies.³

The Netherlands excludes a part of bulk mail (direct mail) from universal service. The Dutch regulator believes that, under complete liberalization, universal service should be limited to single-piece items. However, as long as competition is undeveloped, all mail weighing less than 50g must be included in the ambit of universal service. The Netherlands case is an exception: as a general matter, direct mail is a universal product for the large majority of countries, even those in non-European directive countries. There are discussions in Finland to exclude 2nd class mail from the scope of universal service. The delivery of periodicals is already outside the scope. In the United Kingdom, Postcomm has differentiated single and bulk products in its analysis. Only one category of bulk mail would fall into the universal service scope, under the assumption that large mailers do not need the protection of universal service.

Important to note is that the scope of universal service can be extended or varied over time. In some countries, governments have included in their definition of universal service some products that one would expect to be outside of the scope. For instance, *poste restante* in the UK, cash on delivery in Germany, special rates for Northern Food Delivery (by air) in Canada, the revenues issued from the rent of post office boxes in the Netherlands are unusual extensions.

Additionally, the consideration of the relative size of the scope of universal service with relation to what the universal service provider offers on the whole is important. Indeed, differences exist in the cost of universal service constraints and its compensation between countries that have the same scope but different relative size. For instance, some operators provide financial services, while others do not. All the operators provide products outside the scope of the universal service (e.g., express services in Japan, unaddressed mail in France). However, the USA is one exception: all USPS products are included in the scope of the universal service.

³ Also, although there are significant differences in the “universal service parcels,” lack of information on this lead us to not develop the topic.

To summarize, countries fall under three categories (see Table 1): those with a reduced scope, those with a large one, and the particular case of the USPS.

Table 1: Ranking according to the scope (number of products) of the universal service

Reduced scope	Large scope	All the products
New Zealand (NZ), Netherlands (NL), Finland (FI), United Kingdom (UK).	Australia (AT), Canada (CA), Switzerland (CH), Germany (DE), Denmark (DK), France (FR), Ireland (IE), Italy (IT), Japan (JP), Norway (NO), Portugal (PT), Slovenia (SI), Spain (SP), Sweden (SW).	United States (US).

We will now analyze the constraints upon quality, in a broad sense, imposed on the universal service scope of products.

2.2 Different Levels of Quality Requirement

Quality is at the core of universal service. In this paper, quality must be understood in a broad sense, involving many aspects: the frequency of delivery and collection, the existence of transit time objectives, door deliveries, the accessibility of the retail outlets or the mailboxes, the treatment of complaints, the responsibility over lost or damaged items, and delayed mail. The quality directly impacts the cost function. The universal service grants quality levels upon the scope of items, reducing the degree of freedom universal service providers have, since they would be tempted to reduce quality levels in an unconstrained situation. Indeed, if only price was regulated, monopoly rents would easily be extracted this way.

We now look at the aspects of quality for which we believe impact the cost function the most. It is important to note that the quality should be understood here as the universal service requirements concerning quality, *not* as the level of quality actually provided by the universal service provider.

2.2.1 Delivery and Collection

The number of deliveries per week has a direct impact on the fixed cost of delivery,⁴ and its reduction can allow significant cost savings. Directive 1997 imposes in Europe a minimum of 5 deliveries and collections per week. Generally, this obligation was transposed from the directive to the national laws according to existing practice. Consequently, several countries required delivery 6 days a week for the universal service provider. Some countries requested the European Commission to make exceptions, notably the United

⁴ See Roy (1999).

Kingdom, where geographical areas that are too isolated⁵ are not subject to this obligation.

Table 2: Ranking according to the number of deliveries

No constraint	5 per week	6 per week with exceptions	6 per week
US	CA, IT, PT, SI, SW	AT, NZ, NO, JP	CH, ES, FR, NL, DE, DK, UK, IE, FI

Table 3: Ranking according to the number of collections

No constraint	5 per week	6 per week
AT, JP, NZ, US	CA, IT, PT, SI, SW	CH, DE, DK, ES, FI, FR, IE, NL, NO, UK.

The number of collections and deliveries per week concerns the processing of mail and not directly the supply. Surprisingly, this aspect is rarely linked to the transit times imposed on universal service products. Indeed, imposing a constraint upon industrial organization makes sense only if it is compatible with the characteristics of the products sold. In this case, such a constraint makes sense only with Day+1 objective. This leads us to the time transit dimension of the quality.

2.2.2 Transit Times

The domestic mail of universal service is generally subject to a time transit control (as can be seen in Table 4). Only the United Kingdom and Portugal have set up a complex system to regulate the transit time of universal service items.

Table 4: USO transit time objectives

Australia	No objectives fixed by USO (However, the regulation does fix such objectives).
Canada	Obligations exist, but details were not available.
Denmark	93% D+1 for priority mail, 93% of D+3 for economic mail.
Finland	95% of D+1 for 1st class mail.
France	85% of D+1 and 95% of D+2 for priority mail.
Germany	Letters mailed: at least 80% of D+1 and 95% of D+2.
Ireland	94% of D+1.
Italy	87% of D+1 for priority mail, 93% of D+3 for economic mail.
Japan	Ordinary mail is delivered within 3 days after posting by customers.
Netherlands	95% of D+1 (items of correspondence weighing up to 100g).
New Zealand	No such objectives.
Norway	85% of D+1 for priority letters and at least 97% of D+3, 85% of D+4 for non-priority letters, and at least 97% of D+6.
Portugal	Priority Mail: 94% of D+1.
Slovenia	At least 95% of D+1, and at least 99.5% of D+2 (but not for direct mail).
Spain	Obligations exist, but details were not available.
Sweden	At least 85% of D+1 for the domestic priority items and 97% of D+3.
Switzerland	Obligations exist, but details were not available.
United Kingdom	Obligations (and penalties in case of failure) exist, but details were not available.
United States	No such objectives. ⁶

⁵ Isles not linked by regular sea lines or not inhabited in a permanent way.

The United Kingdom is the only country to apply different quality of service objectives to single pieces (1st and 2nd Class) and bulk mail (the *Mailsort* range). In the Netherlands, priority, single-piece and bulk mail are subject to the same quality of service objective (95%). Nevertheless, by transmitting the yearly results to the Dutch regulator, TNT must differentiate between mail deposited in the general public points of contact and mail beyond 100g deposited in sorting center.

2.2.3 Delivery to the Door

There are also often different requirements concerning delivery to the door. In the USA, this is not an obligation. Instead, the use of cluster boxes is common in rural areas. As we showed in Bernard et al. (2002), this partially explains relatively higher unit costs in the French rural areas compared to the ones in the USA rural areas.

In Slovenia, the universal service provider (USP) is bound to deliver to the door. But if users have housing units or business premises located outside a concentrated settlement, and are simultaneously more than 200 meters from the postal route, items can be delivered to attached boxes.

In Sweden, delivery is traditionally provided to the door on each floor, which implies that the postman must climb the stairs. It is not strictly a constraint of universal service; nevertheless, in practice, this modality of delivery was kept. By contrast, all the packets, even those subject to universal service constraints, are delivered to the post office.

Generally, delivery location is very important. Delivery to each floor in buildings, to mailboxes located in a hallway, to the border of a property, or the border to the nearest public way or to the home, all have a large impact on delivery costs. This is particularly the case in rural areas.

2.2.4 Accessibility

The universal service obligation of geographical accessibility envisaged by European Directive 1997 was applied, by country, according to the distance between the users and “points of access” (i.e., post offices and mailboxes) or by the presence of a retail point in a geographical zone (defined by its area or by the local administrative unit).

In Germany, the accessibility constraint requires at least 12,000 retail points, of which are 5,000 post offices, which must be company-owned and staffed. Cities of more than 2,000 citizens must have access to at least one

⁶ Concerning the USA, the USO does not fix service standards. However, USPS has some relatively high time transit objectives. One could argue that as these standards are relatively high, there is no need to have an explicit regulation.

retail point. For cities of more than 4,000 citizens, distance between the point of contact and each citizen must be less than 2 km. And there must also be a retail point in each area of 80 km².

The fact that the network is oversized in Ireland is part of the “postal common knowledge.” Nevertheless, this oversize is not qualified as universal service constraint. Accessibility for bulk mail is also treated, but in a specific way. The Irish regulator recently ruled that An Post, the Irish USP, has at least one access point per county for bulk mail.

In the Netherlands, for urban areas of more than 5,000 citizens, at least one mailbox within 500m radius and a point of contact within a 5 km radius must be available. For other areas, the requirement is at least one mailbox within a 2,500m radius. Finally, for the urban zones of more than 50,000 citizens, TNT must provide at least one point of contact per 50,000 citizens.

New Zealand Post has to maintain at least 240 full service outlets and a minimum of 880 partial service outlets, which excludes businesses that simply sell stamps.

In Japan, each municipality must have at least one post office and one letter box. Moreover, the number of post offices must be at least 24,700, while the number of mailboxes should be no less than 186,000.

In the United States, the only constraints are those of the Postal Rate Commission when the USPS chooses to close a post office.

Finally, and notably, the regulator, not the USO, defines Australia’s quality requirements.

In summary, the countries are ranked according to level of universal service constraints on quality as shown in Table 5. One has to note that this ranking reflects the universal service requirements concerning quality. The ranking is not based on the level of quality actually provided by the universal service provider.

Table 5: Ranking according to the quality dimension

Almost no constraint	Low level of constraints	Intermediate	High level of constraints
AT, US	CA, ES, IT, SW	CH, DK, FR, IE, JP, NO, NZ, PT, SI	DE, FI, NL, UK

The last element of universal service obligation deals with the degree of freedom that networks in charge of universal service have concerning their prices or pricing schemes.

2.3 The Pricing Rules for Universal Service Products

Requiring an “affordable price” is a way of preventing a monopoly from extracting rents from the consumers. In particular, the quality constraints

imply a price regulation. In liberalized markets, the prices decrease by competitive pressure. Consequently, in competitive markets, price regulation is less needed. However, in the fields where the incumbent is the only provider in practice (e.g., single-piece deliveries in rural areas), prices will always tend to be high.

Listed below are several kinds of constraints over prices. Price controls are the most obvious one, covering, for example, price caps and the individual rating of products. Profit objectives create another constraint, e.g., an operator under a break-even rule faces a higher constraint than those authorized to make unlimited profits. We also look at “preferential tariffs”, i.e., the practice of low tariffs for some subsets of products (e.g., newspapers) or the population (e.g., mail free of charge for the blind). Finally, we explore uniform price constraints.

2.3.1 Price Controls

The four main types of price controls, from the least constraining to the most, are:

1. *Laissez-faire*, wherein prices are only subject to competition laws and competitive pressure
2. *Ex post*, wherein controls are by regulator or government
3. *Ex ante*, wherein control by the regulator or the government takes the form of, for example, a price cap
4. Direct control, price increase subject to approval of a public authority (regulator, government...)

Of course, one country could impose a mixture of the above controls (see Table 6). For example, a product in a reserved area could be subject to tougher price controls than products offered in the liberalized markets.

Price caps can apply to the whole set of products, or to separate baskets of goods. In the United Kingdom, all the universal products are subject to a global price cap. But in Germany, while all universal service products are subjected to a price cap, three baskets differentiate services (products under monopoly conditions, products under competitive conditions and products related to access), and each basket has its own price cap. Independent of the level of the cap or its scope, the price cap in Germany is more constraining than that of the United Kingdom's.

Another particularity is in the choice of the reference index. In the Netherlands, the cap is not based on the retail price index but on the wages of the merchant area index. The postal regulator and the Ministry of Economic Affairs plan to base the price cap on the inflation index. On this subject, France also shows originality by using the price index of services.

2.3.2 Profit Objectives

The USPS faces a budget constraint (applied over time rather than every year). But most operators seek to have positive profits, or at least do not face a break-even rule. This difference has an impact on the level of prices: a budget constraint automatically reduces the degree of freedom of the universal service provider.

Table 6: Price controls in the different countries

Australia	Price cap.
Canada	Price cap for basic letters.
Denmark	Price cap for products of the reserved area, no constraint for universal service products outside the reserved area.
Finland	<i>Ex-post</i> controls
France	Global price cap for universal service products, possible split of the cap between single and bulk, price control for each product in the reserved area, notification to the regulator for the others universal service products.
Germany	Three baskets of price caps for letter mail items up to 1000 grams, other USO-products are subject to an <i>ex post</i> control (if prices are not in line with the principles of the Postal Act).
Ireland	Price control by the regulator for products in the reserved area.
Italy	Price cap for reserved products. The price cap system is applied every three years. The prices of universal non-reserved products are set "consistent" with the prices of reserved products.
Japan	Direct control for ordinary, special handling, and international mail.
Netherlands	Price increases for domestic universal services must not exceed the Dutch national wage index. Two price baskets for postal services: all domestic universal postal services and a small users' basket.
New Zealand	No controls (competition laws and market forces are seen as sufficient)
Norway	For assessing whether the tariffs are cost-based, and for detecting unlawful cross-subsidization, Norway Post keeps a product account. The regulator examines the product account.
Portugal	Price cap for products in the reserved area, <i>ex post</i> control for universal service products outside the reserved area.
Slovenia	The USP is obliged to receive price approval from the Post and Electronic Communications of the Republic of Slovenia.
Spain	Global price caps can be set (and are actually in place) by the government.
Sweden	Price cap for domestic priority mail up to 500 grams
Switzerland	Subject to the control of the federal government.
United Kingdom	Global price cap for all products where competition is not effective. Monitoring of access prices.
United States	To change rates, the USPS is required to request a recommended decision from the Postal Rate Commission.

2.3.3 Preferential Tariffs

In some countries, the universal service provider is bound by universal service constraints to deliver products without charge or at preferential/social prices:

1. Materials for the blind in many countries.
2. *Poste restante* in the UK.
3. Mail from victims in devastated areas (due to natural catastrophes) are free in Japan.
4. Special prices for specific agricultural items in Canada.
5. Newspapers benefit from special prices in Denmark and Portugal.
6. Non-profit organizations have specific tariffs in the USA.

The existence of such tariffs reinforces the constraints on prices.

2.3.4 Uniform Pricing

Although EU directive 1997 does not impose any uniform price constraint, most countries practice uniform pricing, even in the absence of a formal constraint. Here, though, we only examine regulatory constraints regardless of the practice. One difference in uniform pricing among countries is the existence of a reserved area.

Table 7: Ranking according to the existence of uniform price constraint for the reserved area

No constraints	Constraints for some products	Constraints for all the products
IE, IT	AT, US	CA, CH, DE, DK, FR, NL, NO, SI, SP, UK

Table 8: Ranking according to the existence of uniform price constraint for the products outside the reserved area

No constraints	Constraints for some products	Constraints for all the products
CA, CH, DE, FR, IE, IT, NO, NZ, PT, SP.	AT, FI, JP, SW, US	DK, NL, SI, UK

Combining the previous elements, we summarize the strength of price constraints over universal service.

Table 9: Ranking according to the strength of price constraints over universal service

Very light	Light/intermediate	Intermediate/high	Strong
NZ	CA, FI, IT, SP	AT, CH, DE, DK, FR, IE, LP, NL, NO, PT, SI, SW	USA, UK

3. A CONCEPTUAL FRAMEWORK TO ANALYZE UNIVERSAL SERVICE OBLIGATIONS AND THEIR COSTS

Following the three-dimensional analysis, the universal constraints could now be represented by a box (as shown in Figure 3 below). A high level of constraints means a lesser degree of freedom, and, therefore, a bigger box. To derive the net cost generated by universal service, we compare the situations with and without the set of USO constraints, using the Cremer et al. (2000) or Panzar (2001) approach. The question asked is: what would the incumbent's profit be without the box? The quantitative link between the size and the costs is not the purview of this paper. It is clear, though, that within a country, the bigger the box, the higher is the cost.

We nevertheless must be careful with cross-country comparisons. Although it is interesting to compare the size and shape of the boxes between different countries, as an indicator of the differences of the strength of regulation, we must bear in mind that if a country has a bigger box than another one, this does not necessarily imply higher USO costs for the former. For example, as recent postal literature broadly pointed out, the geography of the country, or the amount of traffic per addressee carried by the operator, affects directly the costs incurred by constraints. The intensity of actual competition will also have an effect on the USO costs.

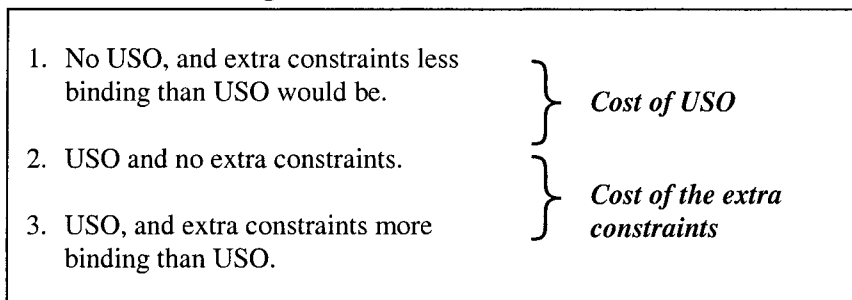
To complete the analysis, we must now turn to the existence, in some cases, of other constraints, imposed by national authorities that go beyond the USO. In other words, the governments may impose additional services of general economic interest that are more binding than the USO, but which do not qualify as USO. It is therefore necessary to clearly differentiate between USO costs and those linked to other constraints.

Table 10: Examples of Non-USO obligations

	Non-USO constraints
Finland	Distribution exceptions when the addressee is physically disabled.
France	The post office network must be such that 90% of the population live less than 5 km from a post office. Newspapers benefit from special tariffs in order to promote press diversity. Electoral mail also benefits from special tariffs.
Ireland	Obligation under law to provide financial services in the retail network.
Italy	Preferential prices for periodicals.
Japan	Mergers & Acquisitions by Japan Post are restricted to a few areas that are closely related to postal activities under the ordinance.
Portugal	Several extra obligations concerning newspapers, for instance.
Sweden	Delivery in rural areas for elderly and disabled people. Material for the blind. Electoral mail. Cashier services.
Switzerland	Preferential tariffs in order to promote press variety.

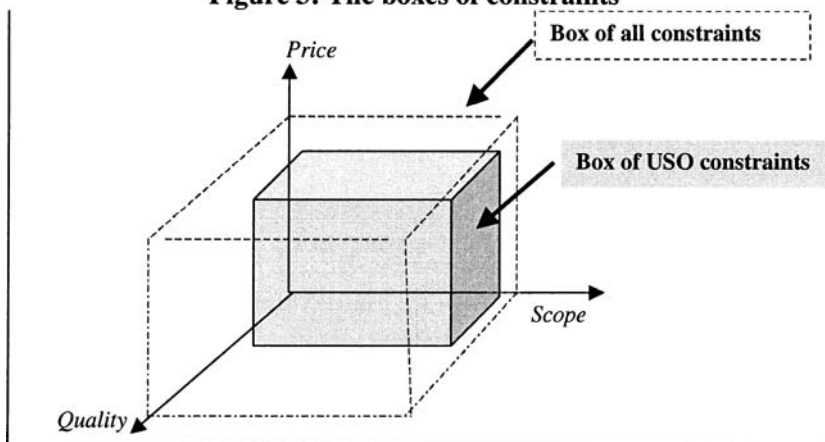
Three situations are then evaluated and compared in order to compute the cost of universal service obligations (see Figure 2 below).

Figure 2: Cost of the constraints



This leads to a general framework for analyzing all constraints, represented in the following diagram.

Figure 3: The boxes of constraints



4. CONCLUSION

Most of the methods for calculating the cost of universal service have been developed in the telecommunication sector, which was liberalized in the early 1980s. But in the postal sector, where monopoly is the most common market structure in each country, there is no consensus over methodology, as its need was not obvious. The massive liberalization movement in the postal sector creates the need for USO cost evaluations

This paper analyzed the strength of universal constraints through three axes: the scope of products subject to universal service constraints, the

quality of service and of course the ways prices are controlled and fixed. Given this framework, we drafted a cross comparison leading to a “constraints box,” such that, the bigger the box, the more important the set of constraints is. Nevertheless, although the size of the box gives a clear idea of the strength of the constraints, another step is needed to go from the size of the box to the cost of universal service. Indeed, we have not dealt with the relative difficulty in satisfying these constraints. Clearly, for example, constraints over delivery are more or less costly to satisfy, according to geographic and demographic considerations, as well as traffic levels. Accessibility of the retail network is another example: setting the same constraint of accessibility to retail points for a highly populated country as for a very low-density country obviously has different cost implications.

Constraints outside the basket of universal service have also been emphasized. Pricing policies, for example, or constraints over retail network density, may fulfil different objectives, leading to additional costs above those borne solely with universal service constraints. In this case, to calculate USO costs, the question of the “initial” situation, the situation without USO constraints, itself will be problematic. Consequently, the debate around the precise “qualification” of constraints, within or without the scope of universal service, promises to be central.

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