



The implementation of number portability in Colombia

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1 Preamble

1.1 Objectives

This note comments briefly on the papers on the implementation of number portability that have been developed by Comisión de Regulación de Comunicaciones (CRC) and their consultants, Value Partners (VP). We congratulate CRC on instigating the work on these papers and we agree with many of the resulting proposals. Our intention in this note is simply to build on these proposals to help number portability in Colombia to be as successful as possible. To do this we examine ways of increasing its value to users and ways of increasing the co-operation by operators in its implementation (especially by decreasing its cost).

We take the view that the primary objective of regulators is the protection of consumers. The development of competition is a means of fulfilling that objective, not an objective in its own right. Number portability, like any other regulatory intervention, is assessed and developed accordingly. Unless it is valued by users and accepted by operators it will not be successful.

The note does not address many specific details of the situation in Colombia but is based on the knowledge and experience of Antelope Consulting elsewhere. (Antelope Consulting is a small consultancy that works with regulators in many countries, often on matters concerned with technology and consumer protection.)

To meet the deadline for submission, the note is written in English, considers only some points and provides only some evidence. It summarises some suggestions (in Section 1.2) which it expands based on by considering:

- Influences on the success of number portability (in Section 2.1).
- Alternative network implementations of number portability (in Section 2.2).
- Cost-benefit analyses for number portability (in Section 2.3).

The note refers to the CRC and VP papers as 'the papers' in general and occasionally cites in particular *Análisis para la Implementación de la Portabilidad Numérica en Colombia* (December 2009).

1.2 Suggestions

As we have already indicated, we agree with much that is in the papers, which are well developed. We are confining our comments to suggestions that build on the papers, with the aims of increasing the value of number portability to users and increasing the acceptability of number portability to operators. Because CRC has a legal obligation to consider various topics in the introduction of number portability, we list our suggestions against these topics below.

- **‘Los demás aspectos y medidas regulatorias que considere indispensables para que la Portabilidad Numérica se haga efectiva’:**
 - Encouraging the entry of Mobile Virtual Network Operators (MVNOs) with fair wholesale contract terms.
 - Banning retail contract terms that penalise users for changing their operators after one year.
 - Reducing the price differences between on-net calls and off-net calls, preferably through lightweight intervention such as requiring “bill and keep” interconnection rates.
 - Obtaining evidence about the demand by users to change their operators, with or without number portability.
 - Setting up a continuing programme of publicity for number portability.
 - Protecting users from unwanted changes of network (by recipients) as well as unwanted interference in changes of network (by donors).
- **Mecanismos y formas de implementación de la Portabilidad Numérica para los sistemas de telefonía fija, móvil e intramodal’:**
 - Examining the option of Call Forward (CF) without an evolution to All Call Query (ACQ), as well as the options of ACQ and of CF with an evolution to ACQ, for mobile and fixed number portability.
- **‘El proceso público de consultas a los operadores y la conformación de una instancia permanente de carácter consultivo, que promueva la cooperación entre agentes’:**
 - Requiring the industry to select the network implementations of mobile and fixed number portability, subject to adherence to dates for their availability.
- **‘Dimensionar los costos fijos por operador para la activación de la Portabilidad Numérica’:**
 - Ensuring that the use of the Signalling Relay Function (SRF) is taken into account in costing the network implementations of mobile and fixed number portability.
 - Reconsidering the viability of mobile and fixed number portability in the light of more varied estimates of the costs and more modest estimates of the “type 1” and “type 3” benefits
- **‘Alternativas técnicas que beneficien al usuario y al servicio mismo’:**
 - Considering alternatives to number portability if it is not self-evidently viable, such as cheap forwarding services, changed number announcements in calls and changed number messages to the contact lists of users changing operators.
 - Encouraging the provision of services that in effect offer email address portability, through new second level domain names (such as ‘yo.co’ or ‘me.co’) or otherwise.

2 Supporting analyses

2.1 Influences on the success of number portability

If porting numbers is no more inconvenient or expensive than changing operators then users that change operators have no obvious reason not to port. One measure of “success” for number portability is, therefore, that a high proportion of users port their numbers when they change their operators. Some other measures of “success” are dubious; in particular, the data is too incomplete or inconsistent to justify clear correlations, let alone causal connections, between the introduction of number portability and changes in churn, prices or market shares.

We are also unable to demonstrate causal connections between the “success” of number portability and the factors discussed below. However, each of these factors appears to have been relevant in one or more of the countries that we have studied. This does not say definitively what will be relevant in Colombia but it indicates points for the attention of CRC. Some of these points are discussed in the papers, but others are not. In many countries they receive less attention than the choice of network implementation, but when taken together they probably have more influence on the “success” of number portability.

- **Market state.** If market shares are maintained by a cartel (as happened in France at one stage), number portability has no effect. Also, an oligopoly tends to limit the effect of number portability, while the entry of new operators into a mature market tends to enhance it. (The success of mobile number portability on Hong Kong is widely attributed to the presence of six operators.) The regulator might need to ensure that Mobile Virtual Network Operators (MVNOs) can enter the market and obtain fair contract terms for interconnection and access.
- **Contractual discouragement of switching.** Operators frequently introduce loyalty programmes to discourage changes of operators. These sometimes require very long term contracts, locked Subscriber Identity Modules (SIMs) and handset purchase. (In Finland, which had perhaps the most frequently cited success in introducing mobile number portability, handset subsidies were not allowed.) In some countries regulators counter these by requiring that users be offered contractual terms that are no worse over one year than they would be over two, that contracts can be terminated for low fees after one year and that SIMs can be unlocked very cheaply and easily.

Other loyalty programmes that might be controlled include any supplying “free” minutes or messages that can be carried over from one subscription period to the next but which disappear if the subscription ends.

If users have email addresses provided by their operators then number portability has limited value to them. The regulator can endeavour to ensure that there is sufficient availability and take-up of independent email service providers and personal domain names (ending in ‘yo.co’ or ‘me.co’, say) with email relay functions.

- **Treatment of on-net and off-net traffic.** There appear to be some large price differences between on-net calls and off-net calls in Colombia. (For example, Comcel postpaid tariffs are 220% as high for off-net calls as for on-net calls.) In countries such as Portugal they encourage people to choose the same network as their most frequent contacts. Number portability can therefore make the leading operator expand at the expense of its competitors.

The papers discuss various techniques for informing users about the price differences for calls to ported numbers and favour the use of a tone. (Incidentally, in Portugal there is an announcement, not a tone, contrary to ‘Gráfico 6. Mecanismos de transparencia tarifaria’.) Such techniques are useful. However, they are not substitutes for determined attempts to reduce the price differences between on-net calls and off-net calls, which are unlikely to be based on costs. Reducing mobile termination rates could be a first step to reducing the price differences but might not go far enough; requiring “bill and keep” interconnection rates would probably be more effective, as is now recognised in the EU.

- **Frequency of switching.** Users are not inclined to change operators if they are largely satisfied with their current operators. Number portability will have little effect in these circumstances. The annual surveys of satisfaction levels in Colombia do not currently indicate whether users are dissatisfied enough to want to change operators. If annual churn levels are 36% for mobile users and 12% for fixed users then mobile number portability might be useful when fixed number portability was not. (With annual increases of 4% in mobile users and -2% in fixed users, these annual churn rates, if we understand them properly, lead to annual switching rates of 16% and 7% respectively.)

The degree of user interest in porting numbers might be judged by looking at the take-up of carrier selection: if users do not use carrier selection much they are not likely port numbers just to get price reductions. (They might of course still wish to port numbers to get vastly superior services, such as ones with 3G capabilities as well as 2G capabilities.)

The effects of mobile number portability and fixed number portability can be very different, depending on the extent to which mobile use is seen as a substitute for fixed use. (For instance, in Finland the annual porting rate was very high for mobile numbers and very low for fixed numbers, while in the Czech Republic the opposite holds.)

- **Awareness of porting.** Most operators will not publicise porting any more than they need. Sales staff in shops frequently fail to tell customers about contractual rights such as porting and unlocking SIMs. The burden of publicising number portability falls on the regulator. It is a continuing burden: in the UK, many years after the introduction of number portability, many people still do not know that porting is available, easy to do and in practice free.
- **Ease of porting.** A requirement that porting take most five days, as proposed in the papers, might well be adequate (though the EU now intends to have a requirement for two days). The proposals for restricting the activities of operators also seem appropriate.

The papers observe that processes led by recipients reduce the extent to which donors can impede porting or make attractive offers to users during porting. However, processes led by donors also have advantages, in that they can inhibit “slamming” (in which recipients port numbers without the informed consent of the users). One possibility, related to the system that is now used in France, is for users to initiate porting by contacting specific freephone numbers from their own phones; the use of their own phones prevents “slamming” and the contact through specific freephone numbers verifies their details (possibly through an automated system) without donor attempts to dissuade them from porting. The users thereby receive authorisations to port which they pass to their new operators to complete the porting. This possibility should provide the advantages of both recipient-led and donor-led processes without the need for a centralised customer support system independent of each operator.

The porting process, especially for fixed number portability, might need to take account of product bundling: a user that is changing his fixed network operator could easily be changing his internet service provider and mobile network operator at the same time. The possibility above could obviously be extended to do this.

- **Price of porting.** Any charges to users for porting numbers are likely to reduce the degree of porting. Even very small charges might have this effect, even when the savings to users from porting numbers would rapidly exceed the charges. The regulator should stay firmly with the principle that no costs of porting numbers are transferred to users by any operators in any situations.

Staying with this principle becomes easier when the costs of implementing number portability are lower. We turn to this point next.

2.2 Alternative network implementations of number portability

The papers mention off-switch and on-switch network implementations but offer only two options for detailed examination: All Call Query (ACQ) and Call Forward (CF) with an evolution to ACQ. These two seem to be considered because ACQ is the implementation most widely adopted in the world. Though ACQ is indeed probably the most widely adopted implementation, the evidence is not quite so telling as the papers might suggest. (For example, in Australia CF is adopted by the leading operator, contrary to 'Gráfico 4. Modelo de portabilidad numérica ACQ es el mas adoptado en el mundo'.)

The description of ACQ in the papers seems to imply that the originating network queries a database on every call, typically through the use of Intelligent Networking (IN). However, for mobile networks, there is an alternative, in which the range-holding network uses its Signalling Relay Function (SRF) but the originating network sends the voice traffic direct to the terminating network. This alternative is typically less expensive than the use of IN. (It is also more general, as it supports number portability for messages as well as calls, in a standardised manner.) We are not clear whether this alternative is regarded in the papers as a form of ACQ. The question is crucial to the cost of implementing fixed number portability alongside mobile number portability, as if the use of the SRF is envisaged then the additional cost of IN will fall on fixed number portability alone.

ACQ has much higher initial cost but lower cost per transaction than CF; it pays off only when there are high levels of porting and has probably not done so in several countries that have adopted it. (Also, as networks move towards Next Generation Networks (NGNs), ACQ will be adopted naturally, but implementations using IN will become obsolete.) As examples:

- Even ten years after the introduction of MNP in the United Kingdom (UK) the business case for ACQ is fairly weak or at least uncertain. The current estimate gives a net benefit of GBP 26M; the sensitivity analysis turns this into somewhere between GBP 90M and GBP -15M, which shows how uncertain it is.
- Costs of implementing MNP in the United States (US) are rumoured to have been USD 1000M, with ACQ a very significant part of this. (The figure comes from the operators, who were not enthusiastic about portability; also, it includes porting fixed numbers to mobile networks.)
- Costs of implementing fixed number portability in Australia amounted to AUD 100M for one operator and AUD 70M for another operator. The one that used ACQ paid more though it was much smaller than the other.

2.3 Cost-benefit analyses for number portability

The papers take the view that there is very little likelihood that cumulative mobile porting rate will be less than 11% after seven years or that initial investments will be underestimated by 95%. We are not so optimistic. For instance:

- The cumulative mobile porting rate in twenty-five countries of the European Union (EU) was 10.3% by late in 2008. At that time mobile number portability had been available for between four and nine years in most countries.
- The net benefit of introducing ACQ for mobile number portability was estimated in 2009 to be GBP 26M over ten years (or at least somewhere between GBP 90M and GBP - 15M). It was estimated to be GBP 189M in 2006.

The papers provide a value of USD 130 M for the “type 3” benefits but do not say how it is derived. (The “type 3” benefits are the benefits to users that make calls or send messages to ported numbers.) This is unfortunate, as the value affects the business case greatly. Modern handsets, with their contact lists, have probably made “type 3” benefits less significant than they once were. We suspect that the value of “type 3” benefits is easy to overestimate, because most calls and messages are to very limited sets of people. (For instance, in Australia a survey found that 75% of calls were to family members or friends.)

Some of the “type 1” benefits, especially those relating to saving time (which amount to a further USD 130 M) are also difficult to calculate. (The “type 1” benefits are the benefits to users that port numbers.)

Also though the papers estimate the “type 1” benefits from changing operator they do not estimate the “type 3” costs: users have to make off-net calls when they did not do so before. Of course, some calls become on-net when they would have been off-net before; however if users choose their operators to minimise off-net calls these “type 3” costs could be very significant. Because of them, number portability could increase the market shares of dominant operators. (This appears to have happened in Portugal, for example.)

Altogether, then, the cost-benefit analysis might both underestimate the costs and overestimate the benefits.