

CONSIDERING NUMBER PORTABILITY IN THE CARIBBEAN

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Abstract

Number portability allows a subscriber to keep their telephone number when they change operators. The ability to transport a number is thought to break down a barrier to switching – which if left in place would inhibit competition.

In effect, this transfers the “ownership” of a given number from the operator to the subscriber. In certain jurisdictions, including the European Union, number portability is regarded as a user right. Elsewhere, a careful analysis of its probable cost and benefits may be conducted taking account of both the impact on competition and the concept of user rights.

Subscribers tend to favour number portability; however, the cost associated with the provision of number portability is often hidden. The cost of implementing number portability does not drop in relation to the number of subscribers, whereas the benefit rises in relation to the number of subscribers. As such, market size does play a part in assessing the overall likely net benefit.

Number portability has been introduced into certain Caribbean markets, and others are actively considering it as a regulatory implement. If it is determined that number portability is a user right and there is adequate legal provision allowing for its implementation, then the question of whether to implement it or not gives way to how to implement properly. Otherwise, in addition to understanding the theoretical arguments for or against number portability and learning from previous experiences with implementation, it befits a regulator to conduct an analysis and impact assessment on a country-by-country basis.

Sharing of approaches, rationales, requirements, specifications, and perhaps even costs should be encouraged across the Caribbean region.

1 ANYONE FOR NUMBER PORTABILITY?

Number portability allows a subscriber to retain a phone number when changing operators, regardless of how many times they switch. Where number portability is simple, easy to use and reliable, it should lead to operators competing more actively by reducing prices, and providing innovative and improved services to retain and expand their subscriber base.

Despite these apparent benefits, the implementation of a number portability process remains a contentious regulatory issue, whether it involves mobile (wireline), fixed (local) or both. In part, this is due to the very mixed history of implementation successes and failures to date. Also, academic studies have not provided a clear indication of the expected (net) benefits attributable to number portability – either directly or indirectly. A further consideration is the organizational capacity that is required for its implementation, including efforts required by the regulator. So perhaps the one uncontested reality is that number portability is not a low-hanging fruit on the regulatory tree.

When facing the prospect of number portability regulation, there tends to be one camp of operators desperate to introduce it and another camp equally desperate to avoid it. Typically, we see certain profiles of operator sitting in either camp, with issues such as market share, time spent in the market, competitiveness, and network and systems readiness being determining factors for or against. A dominant operator is less likely to be enthused about the idea of number portability¹. Still other operators may be unsure of the business possibilities (or implications) of number portability and will sit on the fence or commit to dragging the process out; often there are other regulatory battles to fight.

Consumers, on the face of it, tend to like the idea of number portability. Often there is a belief that it is a free add-on – which it may well appear to be at first glance. However, there usually are significant costs involved with its implementation and so consumers may just end up paying for number portability when these costs are passed down to them in one manner or other. A minority of countries in fact have a separate and clear charge for porting.

The take-up of number portability will be influenced by subscriber costs and the time to port, neither of which will be zero. So, the absence of these constraints in a consumer survey will lead to over-estimates of the attractiveness of portability to survey respondents.² The value of such surveys is therefore questionable.

So where does that leave the Caribbean? Number portability has commenced in the region, and there are several countries who are also considering its adoption. Where it is practical, there may be lessons to follow and processes to borrow from; there may even be the possibility of cost sharing. However, each country (or organisation of states) should start by conducting their own analysis to determine if number portability is possible, if it is in fact a legal or policy requirement, or if it is both desirable and justifiable.

¹ This is based on operator responses to number portability consultations in various countries; oddly, there is evidence that the dominant operator may have the most to gain.

² Hibbard Consulting, Australia 2008

2 WHAT SHOULD REGULATORS DO?

As is often the case, regulators are left to consider what to ultimately do; alas, which camp of operators to disappoint? Will number portability become a net benefit to consumers or will its take-up be pathetic in the face of relatively high implementation costs? Will it in fact have the desired effect on competition? Is it suitable to small markets such as those found in the Caribbean? Is there a possibility to share costs and processes?

Sometimes, the answers may in fact be simple, for number portability can only be used where there is a competing access network or if there is local loop unbundling. In certain cases, there are also limitations to number transfers due to coverage and the technologies used.

In other instances, as is the case in the European Union, there is no choice on whether to adopt number portability as EU Directive 2002/22/EU states that number portability for both fixed and mobile services shall be implemented by each of the 27 member states. As such, number portability is deemed a “user right” and so the argument for or against it is now a bit pointless. This may also extend to overseas territories that fall under the jurisdiction of another regulatory agency (e.g., ARCTEL, or even the FCC).

Despite the sweeping EU approach, it is interesting to note that Canada, Iceland, and the United States are the only countries offering number portability transfers between both fixed lines and mobile phone lines.

Otherwise, the usual regulatory process when looking at adopting number portability in separated fixed and mobile sectors is to determine the net benefit, and to conduct a regulatory impact assessment and public consultation exercise. Inevitably, this involves at least relevant research, case studies, and a cost benefit analysis. This is where the EU decision has caused some difficulty because these regulatory process prerequisites are not entirely needed any longer in Europe; everyone just has to do it and so there are less fresh and relevant studies on hand.

Another challenge is that many of the studies and assessments conducted to date have focussed on mobile number portability only, presumably due to its relative growth and importance for universal service applications. However, in situations where an incumbent fixed line operator retains a position of dominance (as is the case in many parts of the Caribbean), there could well be more impressive competitive gains to be had with number portability being introduced in the fixed line market (particularly with broadband and fixed wireless applications poised to be distributed more widely). Further, it is usually the case that more value is placed on fixed-line business numbers.

2.1 DIFFERENT APPROACHES

The basic objective of number portability and the consequent obligation to provide it can be expressed in two ways:

1. Number portability is a user right, e.g., the approach taken within the EU; or
2. Number portability is a measure to increase competition, e.g., the approach taken initially in the UK.

The choice of approach affects the details of the requirement. If number portability is seen primarily as a user right, then the following apply:

- The requirement pertains to all operators, even new entrants;
- All operators should start at the same time;
- The start time should be set by the regulator;
- All operators must import as well as export numbers; and
- The requirement applies whatever the cost and there is less need for comparing costs and benefits.

In contrast, if number portability is seen primarily as a measure to increase competition, then the following apply:

- The requirement should be focused mainly on established operators (incumbents, or those with dominance);
- Number portability should start when requested by another operator, e.g., a new entrant;
- The regulatory requirement should be to export when requested, while importing is optional (importing is more expensive than exporting);
- If a new entrant requests porting they must also offer porting – reciprocally; and
- The requirement should be justified by a cost benefit analysis.

Generally, number portability should be seen as a pragmatic measure that combines some elements of the two because in practice it produces both types of benefit. It can be argued that the pure formulation as a user right is wrong because account should be taken of costs (particularly if there is a requirement to not impose an unfair burden); if portability was a pure user right then it would be required irrespective of costs and this is a questionable approach at best.³

In the Caribbean region, those countries which have already implemented or have decided to implement number portability for both fixed and mobile services include the Cayman Islands, Dominican Republic, French Antilles, and Puerto Rico. The latter two fall under the regulatory umbrella of France (ARCTEL) and the USA (FCC) respectively. Those places where number portability is currently under consideration include the British Virgin Islands, OECS, Haiti, Jamaica, and Trinidad & Tobago. Many Central American countries are also considering implementation – including Costa Rica, El Salvador, Honduras, Guatemala, and Panama.

³ Adopted from John Horrocks, Horrocks Technology Ltd.

3 EXPECTED BENEFITS

Number portability has been viewed as essential for competition and for the entry into the market by new players. It reduces a user's fear that they may not be reached by a contact because of the number change; as such it can effectively deal with a perceived or real barrier to switching. By eliminating the worry and the (perceived or real) hassle that would otherwise be incurred by each subscriber in informing contacts of their new number (and in the case of a business, by eliminating the need to reproduce business contact details such as on advertising or stationery products), subscribers will be more free to explore other service offerings.

That said, it is important to note that implementing number portability does not automatically increase competition. Number portability is *one of the tools* available to a regulator to increase competitiveness in a market that is characterised by quality of service issues, customer service problems and high prices.

The main positive effects include the following:

- Lower prices through heightened competition;
- Better quality of services;
- An increase in additional services and/or features including better consumer retention; and,
- Prevention of market stagnation because it increases pressure for service providers to continue offering competitive and compelling services.

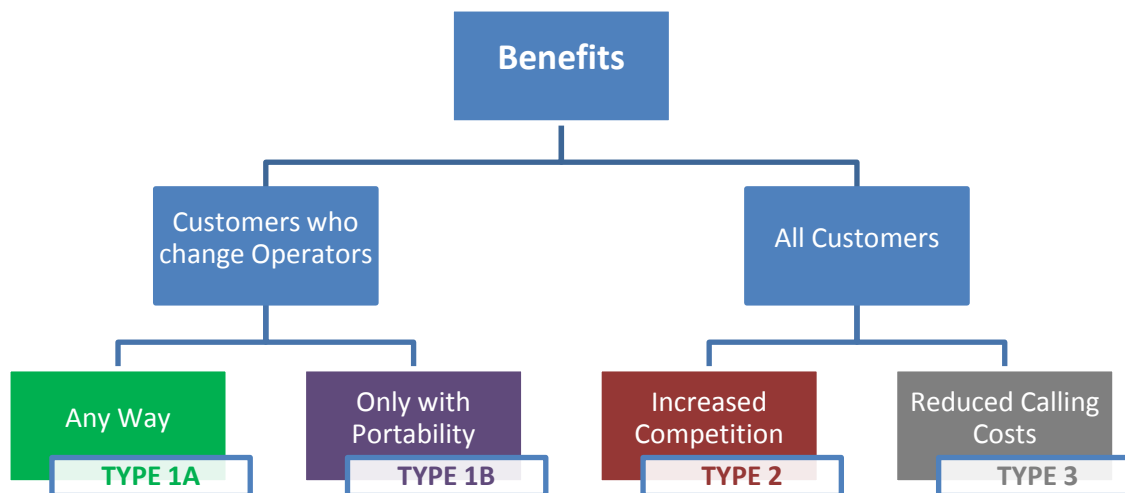
3.1 TYPES OF BENEFITS

Number portability can reduce the costs of changing operator for subscribers. This both benefits the subscriber and increases competition. So the benefits of number portability can be classified as follows:

- Direct benefits to customers who change operator of which some would change anyway and others would change only if there is number portability; and
- Indirect benefits to all customers in terms of increased competition and reduced costs in changing entries in address books or finding new numbers for people whose numbers have changed.

The benefits are roughly proportional to the number of subscribers who port. The breakdown of these is illustrated in Figure 1.⁴

⁴ Adopted from Oftel/Ovum, 1997.

Figure 1: Benefits of Number Portability***Type 1A: Benefits to Those Who Change Operators***

These are the benefits accrued to those people who would change operator even without portability but who would use portability if it were available. Not all those who change operator will use portability even if it is available; for example, some people may want a new number and others will not bother to port.

The benefits are the avoidance of costs concerned with changing number. They include primarily the following avoided costs:

- Telling correspondents about the change of number;
- The cost of providing for some form of call assistance where incoming calls to the old number receive a message that the number has changed;
- The risk of lost calls that could mean lost business, e.g., lost new orders;
- The costs of having cards and stationery that display the number reprinted; and
- The costs of having signs or decals that display the number repainted or replaced.

These benefits apply only to those subscribers who were changing operator without portability.

Type 1B: Benefits to Those Who Change Operators only with Number Portability

These are the benefits that a subscriber will receive, from changing operator, in terms of lower prices, better quality, more options, etc. They are realised only if there is number portability, otherwise the subscriber will not change operator.

These benefits apply only to those subscribers who change operator as a result of portability being introduced.

Type 2: Benefits to All Subscribers in Terms of Increased Competition

These are the benefits to the whole country of increased competition resulting from number portability. They arise for example because those operators that think they will lose subscribers from portability will tend to improve their services or lower their prices. The estimation of these benefits can be tricky and are often contentious as there may be other competitive factors in play.

Type 3: Benefits to Callers to People Who Have Ported their Numbers

These benefits are the following avoided costs:

- Having to update address books; and
- Making “wasted” calls to old numbers that have changed, and spending time finding the new number.

These benefits apply only in respect to calls made to the subscribers who changed operator without portability. Generally this is the smallest type of benefit.

What increases the difficulty of assessing number portability for many regulators – and this includes Caribbean regulators – is that number portability has predominantly been tested, analysed, and implemented in larger and more competitive telecommunication markets. As the benefits tend to grow in proportion to the population who might gain from its introduction, the costs do not tend to reduce in a similar linear (but opposite) way. And so the general belief is that markets with smaller populations are not going to gain (as much) from number portability, and that the cost-benefit analysis will produce a negative result.

Indeed, this reality provides a fair argument against the “one size fits all” approach adopted in Europe. It seems to be clumsy policy to have Malta with a population of 400,000 be required to implement much the same policy as Germany with some 82 million people. Not to be outdone, we now have Jersey (90,000) and Guernsey (65,000) recently implementing number portability – each one undertaking this separately.

However, greater precision given to the analysis of the benefits accrued through types 1B and 2 in particular have tended to show that more substantial gains may be expected than previously assumed. A consequence is that smaller markets should not automatically consider themselves too small to justify costs.

3.2 FALLING COSTS AND BENEFITS

As a counterbalance, a new reality is that the costs of implementing number portability have reduced over the years – through a combination of cheaper databases and software being made available (including

those based offshore), improved networks and switching capabilities, and operator knowledge sharing. So it is the case that implementing number portability is cheaper than it once was.

However, there is a paradox in that the benefits have also likely reduced. For example, many of us no longer burden our memory banks with telephone numbers related to our contacts; indeed, some may stretch to recall their partner's telephone number – even if they won't ever admit it. Instead, the telephone or PDA stores the numbers so all that is required is to access the directory by pressing a single digit or by saying a name. It is similarly easy to change numbers in these personal directories. As a result, the value of a personal number has diminished for many as the actual number becomes less important than the original filing of a name into the electronic registry. The relative importance of telephone numbers for businesses – and for fixed lines – remains greater.

Changing numbers has also become easier, and so the benefits are also reducing for the following reasons:

- With e-mail people can easily and cheaply inform all correspondents of a change in number, they no longer need to send letters to do this;
- Many numbers can be found from web sites and these can be changed easily;
- There is less use of pre-printed stationery as many companies print letters and invoices with letterheads from colour printers and the templates can be changed easily; and
- In mobile, operators can send SMS messages to all the numbers on the SIM card to tell them of the change of number.

4 COSTS

The following are the four main elements in the cost of number portability:

- A setup cost that may be significantly larger for a long established operator than for new entrants and that may be significantly greater for importing and exporting numbers than just for exporting them. The setup costs involve both network and IT systems costs and also includes training for retailers;
- Additional annual running costs relating to equipment that is needed specifically for number portability. This includes the annual volume of independent costs of the ordering system;
- A cost for the handling of each porting (i.e., a volume dependent porting cost); and
- Additional conveyance costs, which may be negligible if the networks are capable of performing “all call query”.

The overall costs of setting up and operating number portability will vary considerably between markets, operators in those markets, and given the type of system adopted (i.e. import/export) and the routing solutions. However, the charging arrangements for number portability should be based on the common economic principles listed in Table 1.

Table 1: Six Economic Principles for Recovery of NP Costs

Principle	Charging Rule
Cost causation	The operator that causes the cost bears it
Cost minimisation	The operator who can minimise the cost bears it
Distribution of benefits	The operator who benefits bears the cost
Effective competition	Cost recovery must not frustrate competition
Reciprocity	The rules apply equally to all parties
Practicability	The rules should be easy to apply

The approach most commonly adopted is that the operators all bear their own set-up costs. This reflects the principles of cost minimisation, distribution of benefits, and practicability.

For the porting transaction costs, the theoretical solution (based on cost causation) is that the recipient pays the donor the costs of an efficient transaction. This approach is adopted in many countries but in practice the costs are sometimes waived because the volumes of portings in each direction tend to balance after porting has been running for some time and so it becomes no longer cost effective to charge.⁵

Experience has shown that it is necessary for regulators not only to control the payments between operators but also any charging by the operators to the subscribers for portability. In the UK and Germany, for example, the donor operators have charged the subscriber when they port out, and sometimes this charge has been high (i.e., USD50), and has acted as a barrier to switching operator.

⁵ from John Horrocks, Horrocks Technology Ltd.

Most regulators allow only the recipient operator to charge the subscriber, but in practice most recipients do not charge at all.

4.1 SHARING COSTS?

The possibility exists that some of the costs associated with number portability could be shared between countries and therefore by more operators. In particular, the acquisition and servicing costs of a central database – which may be a preferred solution to storing, querying and routing numbers – might be lower for individual operators if it were to be shared by many. The database may be based and operated abroad, so long as there is good high-speed connectivity which there is in the Caribbean.

However, given the complexities involved in the timing of implementations; operating in different languages (i.e., three working languages in the Caribbean); the monumental coordination challenges where there are multiple regulators (with their consultants), multiple operators (some of which with pan-Caribbean coverage), and working groups; and where contractual arrangements need to be created (involving lawyers), surely the idea of sharing costs is not practical. At best, it would be extremely time consuming.

Instead, there may well be a better case for learning and sharing processes amongst Caribbean countries so that solutions are more easily found and mistakes can be avoided. A common approach may also assist those operators conducting their business in multiple countries.

5 ACADEMIC ASSESSMENTS

Most of the academic assessments of the effectiveness of number portability have related to mobile portability. In many cases, it has been difficult to isolate the effects of portability on prices from the effects of the entry into the market of new operators, which occurred around the time that portability was introduced.

The main lessons learned are as follows:

- The introduction of number portability can be effective and can cause established operators to improve their services (e.g., reduce prices or add more minutes to bundles and improve coverage). Price reductions will be higher for high ARPU subscribers.
- Number portability does not always benefit the new entrants. In three markets where portability has worked well, Hong Kong, South Korea and Spain, portability benefited the incumbents who increased market share compared to the new entrants.
- New entrants have entered some markets successfully without portability, e.g., Malta (although the high ARPU subscribers tend to stay with the incumbent unless there is portability).
- Since the benefits of number portability are proportional to the number of people who port, it is essential that the porting process should be sufficiently fast, reliable and user friendly otherwise it will not be used.
- A poor porting process leads to a bad reputation with the public and with the retailers and even if improvements are made it takes a long time for the reputation to recover.
- Number portability needs to be publicised adequately – in Spain the regulator eventually paid for advertisements on TV to make people aware that they could keep their numbers.
- Charges to the subscriber by the donor operator are a strong deterrent to porting and should be prohibited by regulation.
- Several regulators have had to require improvements to poor porting processes. Operators cannot be relied on to design process that are user friendly and so close oversight by the regulator of the development of the porting process is important. And,
- Long porting times deter people from porting, but times of up to 5 days do not deter (although there is no good reason why the porting process should take more than a day for mobile services).⁶

⁶ See: Stefan Buehler and Justus Haucap (2004) "Mobile Number Portability" *Journal of Industry, Competition, and Trade*
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6 WHITHER NUMBER PORTABILITY?

The question of whether to adopt number portability regulation is a current topic in the Caribbean (as well as in Central America). A number of countries are considering it as a tool to increase competition, and perhaps also to establish the porting of a number as a user right. For those countries not under an obligation (or directive) to implement number portability, or those that do not have the legal tools simply to declare number portability a user right, there is likely a process ahead that will involve an assessment of feasibility and unfair burden.

Although there are academic studies and case examples on which to draw from, these alone will not offer a clear direction or conclusion. And with recent changes to the expected cost and benefits associated with number portability, it would seem essential to conduct a thorough cost-benefit analysis on a national basis if number portability is to be seriously pursued.

A final consideration for a regulator contemplating the introduction of number portability is to determine if this issue is where resources should best be put to best use. For example, in an environment where high on-network discounts and asymmetric termination rates predominate it may well be worthwhile tackling these anti-competitive topics first. Regulators, and in particular smaller regulators who may have broad remits, often do not have the resources to tackle all issues at once and must prioritise. Number portability, even with a promise of net benefits, may not be first in line for consideration and the efforts surrounding its implementation should not be viewed lightly.

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