Number Portability Consultation Document

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1   Background and Purpose

The Telecommunications Commission (the "Commission") was formed following the enactment of the Telecommunications Ordinance in 2004 which is now superseded by the Telecommunications Ordinance 2018 (the "Ordinance"), based on the Government's liberalization agenda pursuant to its Telecommunications Policy published in 2003 (the "Policy"). All reference to the Ordinance is based on the 2018 version thereof.

Under Part II, section 4 of the Ordinance, the defined functions of the Commission include:-

(d) to facilitate, maintain and promote effective and sustainable competition in telecommunications;
(e) to set standards for the quality of telecommunications services to be delivered to the public;
(f) to promote the interests of consumers and to encourage licensees to operate efficiently;

With a view to proceeding with its planned liberalization agenda, the Government signed an agreement with Cable & Wireless (C&W) that resulted, inter alia, in the issuance of a new non-exclusive licence to C&W and the subsequent issuance of licences to two new mobile telephone operators, Digicel and Islandcom. Islandcom has subsequently withdrawn from the TCI market and ceased its operations.

Despite issuance of additional telephone operator licences and the subsequent establishment of competition, the inability for consumers to retain their number when moving to a new telecommunications provider is seen as a disincentive to switch providers and thus a constraint to progressing competition in the TCI telecommunications market.

Regulation 14 of the Telecommunications Numbering Regulations 2005 ("Numbering Regulations") outline the provisions and process the Commission should consider to assess the feasibility of introducing Number Portability ("NP") into the TCI market.

The Commission consulted the TCI market stakeholders in 2012 and 2016 on the proposed introduction of NP into the TCI telecommunications market but decided not to proceed since the Commission concluded that the regulatory priorities and market dynamics were not appropriate at the time.

The Commission have subsequently determined that strategic direction and operational/ technology developments and consolidation between service providers across the Caribbean region have radically changed market competitive dynamics. The Commission believes that the TCI telecommunications market could benefit from the introduction of NP across both mobile and fixed sectors since the freedom provided to TCI consumers to move their service to the service provider which best meets their needs could act as positive catalyst to change competitive dynamics and enhance value to TCI consumers.

The Commission wishes to consult with interested parties on the technical feasibility and functional NP features which are appropriate for the specific context of the TCI telecommunications market

with a view to proceed with the implementation and introduction of mobile and fixed NP services into the TCI telecommunications market.

The purpose of this consultation is to set out the broad parameters, functional requirements and proposed timeframe that the Commission believes could guide the potential development, implementation and launch of the mobile and fixed NP service into the TCI telecommunications market.

1.1 Consultation

Pursuant to the Ordinance and Numbering Regulations, the Commission is initiating the present consultation process to assess the appropriateness and feasibility of introducing NP into the TCI market.

The Commission's proposal is to introduce NP into the TCI telecommunications market to enable consumers to retain their mobile or fixed telephone number when they change to a new service provider, (the "Proposal"), the details of which are set out in Chapter 4.

In line with the provisions of regulation 14 of the Numbering Regulations, this Consultation Document identifies the issues and aspects to assess the appropriateness and feasibility of introducing NP into the TCI market, as outlined below.

If the Commission intends to introduce number portability, it shall initiate a proceeding to consult with service providers and the public to determine the technical feasibility, timing, costs, and market impacts of introducing various options for number portability.
Any consultation initiated pursuant to subregulation (1) shall address, among others, the following issues:
- *the most appropriate technical and service arrangements for providing number portability by various types of service providers;*
- *the costs associated with introducing and maintaining number portability, and how such costs should be recovered;*
- *how quickly service providers can introduce both interim and permanent number portability;*
- *whether portability should be required between mobile and fixed services, or only between fixed-to-fixed and mobile-to-mobile services, and the technical and economic questions raised by these options;*
- *the anticipated market impact, in terms of competitive opportunity, customer choice, pricing, and other considerations, of various portability options;*
- *what adjustments, if any, should be made to the National Numbering Plan and/or to these Regulations to accommodate the requirements of number portability; and*
- *any other issues that the Commission or interested parties deem important to consider in devising a national policy and regulations on number portability.*

The Commission notes that it has engaged the services of Consultants to assist it with the consultation process and the design and formulation of the Proposal.

The Commission invites interested parties ("Respondents") to provide their input and comments (the "Responses") with respect to the issues raised in this Consultation Document, including the Proposal and/or any other issues of relevance to the introduction of NP into the TCI market. As part of the public consultation process, the Commission and/or its Consultants may meet with Respondents that have submitted Responses to review and discuss their Responses in greater detail.

At the conclusion of this consultation process, the Commission will issue a decision outlining its assessment of the technical and market feasibility of the proposed NP service and where appropriate detailing the framework, functional requirements and timeframe for the implementation and operation of a potential TCI fixed and mobile NP service. In reaching its decision, the Commission shall take Respondents' input and comments into account. The decision would direct the operators to amend their existing or new interconnection agreements and file same for approval with the Commission.

1.2 Consultation Process

This Consultation Document, along with all referenced Government and Commission documents, is available on the Commission's website at http://www.telecommission.tc

Respondents who wish to express opinions on this Consultation Document are invited to submit their Responses in writing to the Commission. Responses shall also be submitted in electronic form to facilitate further distribution and posting on the Commission's website.

The Consultation Process is structured in two phases. In the first phase, Respondents may submit Initial Responses to comment on this Consultation Document. In the second phase, Respondents may submit Reply Responses to comment on the Initial Responses of other Respondents in whole or part.

The filing deadlines for Initial Responses and Reply Responses are as follows:

- Initial Responses must be received by the Commission no later than 3:30 p.m. local time on **December 15, 2021**.
- Reply Responses must be received by the Commission no later than 3:30 p.m. local time on **January 07, 2022**.

Responses filed in relation to this Consultation Document may be submitted to one or more of the following addresses:

E-mail to: consultations@tcitelecommission.tc
Delivery (paper and electronic copy) by hand or by courier to:

Mr. Kenva Williams,
Director General (DG)
Turks and Caicos Islands Telecommunications Commission

Business Solutions Bldg
872 Leeward Highway
Providenciales
Turks and Caicos Islands

The Commission welcomes all Responses on the Consultation Document. The Commission invites Respondents to provide responses to the specific numbered questions set out in this Consultation Document (the "Consultation Questions") and any other issues Respondents consider relevant.

The Commission encourages Respondents to support all Responses with relevant data, analysis, benchmarking studies and information based on the national situation or on the experience of other countries to support their comments. The Commission may give greater weight to Responses supported by appropriate evidence. In providing their comments, Respondents are requested to indicate the number of the Consultation Question(s) to which each comment relates.

Respondents are not required to comment on all Consultation Questions. The Commission is under no obligation to adopt the comments of any Respondent.

Copies of all comments submitted by Respondents in relation to this Consultation Document will be published on the Commission's website at http://www.telecommission.tc. With a view to having as open public consultation process as practical, the Commission encourages Respondents to structure their Responses not to include any confidential information.

If necessary, Respondents may submit Responses that include claimed confidential information in the form of two Responses:

- Redacted Response - In this document any claimed confidential information would be excluded. The other comments and information, not claimed as confidential, would be included in this version. This is the public version document that would be posted on the Commission's website;
- Confidential Response – This document would be identical to the Redacted Response, except that this version would also include the claimed confidential information for the use of the Commission. This document would not be posted on the Commission's website.

Claims of confidentiality will be determined by the Commission on a case-by-case basis, and in compliance with the requirements set out in regulation 19 of the Telecommunications Administrative Procedure Regulations 2008 ("Administrative Regulations").

1.3   Overall Timeline

The table below summarizes the timeline for this consultation process and the subsequent decision-making and implementation process.

Event	Date
Commission issues Consultation Document	**December 08, 2021**
Deadline for Respondent Questions on the Consultation	**December 17, 2021**
Workshop to Discuss Respondent Questions	**December 20, 2021**
Initial Responses from Respondents	**January 07, 2021.**
Commission Assessment of Responses	**January 21, 2022**
Reply Responses from Respondents	**February 18, 2022**
Commission Decision	**March 04, 2022 (estimated)**

2. Summary of Legal Framework

This Chapter provides a summary of the relevant legal and regulatory provisions in relation to the assessment and introduction of NP into the TCI market.

2.1 The Policy

The Policy under Section 14 of the Telecommunications Numbering Regulations 2009, make a clear and explicit provision for the introduction of NP where this is assessed to facilitate fair competition into the TCI market.

Section 7. 2. "*Facilitation of effective competition. All telecommunications providers will receive fair and non-discriminatory treatment in the allocation of numbers. Number portability will be introduced where appropriate*."

Furthermore, the Policy requires that Numbering Framework should be designed and managed to support effective competition, with specific requirement for the TCI numbering arrangements to support the future introduction of NP. The Policy specifically forbids the branding of numbers since such branding could constrain the benefits attributed from NP by restricting competition and increasing consumer confusion. The Policy clearly requires that TCI numbers belong to the Commission and are not the property of either consumers or operators.

"*All new numbering arrangements will be required to support effective competition. The companies that have rights to the numbering resource should receive fair and equal treatment with respect to access and allocation to numbers. Additionally, number portability should be supported by any numbering arrangements. Branding of numbers by operators will be forbidden, as this can be an impediment to competition and lead to customer confusion.*"

Finally, the Policy requires the Commission in its role of Numbering Administrator to ensure that it makes available adequate numbering ranges for the operators in the TCI market, with the specific objective to facilitate the future introduction of NP.

"*Make available adequate numbering ranges for all publicly accessible telecommunication services, and facilitate number portability. Number portability is the transfer of a number from one operator to another which allows a customer to change operators while retaining their number, this removes the single most important barrier to competition.*"

To conclude, the Policy makes specific provisions for the potential introduction of NP in the future to facilitate further competition into the TCI market, but also provides for fundamental numbering foundations to enable and support the operation of NP in TCI.

2.2 The Ordinance

Part II, section 4 of the Ordinance sets out the defined functions and responsibilities of the Commission related to safeguarding consumer interests and promoting competition in the TCI market, including:-

(d) to facilitate, maintain and promote effective and sustainable competition in telecommunications;
(e) to set standards for the quality of telecommunications services to be delivered to the public;
(f) to promote the interests of consumers and to encourage licensees to operate efficiently;

The Policy and Numbering Regulations clearly identify the influence of NP in facilitating and supporting competition in the TCI market and thus align and support the core principles and obligations defined in the Ordinance.

2.3   The Numbering Regulations 2005

Regulation 14 sets out the provisions and approach the Commission should consider when assessing the feasibility of introducing NP into the TCI market:

Number portability

14. (1) If the Commission intends to introduce number portability, it shall initiate a proceeding to consult with service providers and the public to determine the technical feasibility, timing, costs, and market impacts of introducing various options for number portability.

(2) Any consultation initiated pursuant to subregulation (1) shall address, among others, the following issues:

- *the most appropriate technical and service arrangements for providing number portability by various types of service providers;*
- *the costs associated with introducing and maintaining number portability, and how such costs should be recovered;*
- *how quickly service providers can introduce both interim and permanent number portability;*
- *whether portability should be required between mobile and fixed services, or only between fixed-to-fixed and mobile-to-mobile services, and the technical and economic questions raised by these options;*
- *the anticipated market impact, in terms of competitive opportunity, customer choice, pricing, and other considerations, of various portability options;*
- *what adjustments, if any, should be made to the National Numbering Plan and/or to these Regulations to accommodate the requirements of number portability; and*
- *any other issues that the Commission or interested parties deem important to consider in devising a national policy and regulations on number portability.*

This consultation document is structured to ensure the provisions and approach set out in the Numbering Regulations are fulfilled and followed.

2.4 The Operator Licences

Section 27 (4) of the Ordinance sets out the provisions and powers enacted to the Governor to ensure telecommunications numbering is managed to safeguard the needs and interests of TCI consumers;

The Governor may make regulations with respect to –
- *numbers available for use;*
- *the demand and likely future demand for numbers;.*
- *the need to promote efficient use of the numbers and competition in the provision of*
- *telecommunications services; and*
- *the likely economic benefits available for users of the numbers concerned.*

Clause 15 of the Operator Network Licences sets out the obligations of Operators to prohibit anti-competitive and competition constraining behaviours and the rights of the Commission to issue from time to time Guidelines and directives to maintain and enhance competition in the TCI market;

15.4 The Licensee shall not engage in anti-competitive pricing and other similar practices or any other activities, whether by act or omission, which have, or are intended to or likely to have, the effect of unfairly preventing, restricting or distorting competition in any market for the Licensed Services.

15.5 Without limiting the generality of Clause 15.4, any act of omission which leads, or is likely to lead, to a substantial lessening of competition in the market for any telecommunications network or telecommunications service is prohibited. The Competition Guidelines set out the methodology and procedures the Commission will follow to address concerns or complaints relating to potential abuse of dominance and other anti-competitive practices.

Clause 22 of the Operator Licences sets out the obligations and powers enacted in the Minister and the Commission to deal with operators who have violated any provision of the Ordinance or the Regulations, including the explicit and implied provisions relating to NP;

22. COMPLIANCE AND DISPUTE RESOLUTION

22.1 The Minister and the Commission may, where the Licensee has violated any provision of the Telecommunications Ordinance or the Regulations, or breached any provision of this Licence, take any action authorised by law.

22.2 If the Licensee disputes any action taken or not taken by the Minister or the Commission with respect to this Licence, the Licensee may pursue such rights as it has under sections 54 and 55 of the Telecommunications Ordinance, the Regulations or any other law.

3.   Overview of Number Portability

3.1   Number Portability

Number Portability (NP) is a service that enables consumers of telecommunication products to retain their telephone numbers whenever they decide to change operators or service providers. It is considered to be a key factor in enhancing competition in a multi-operator environment. NP enables customers who wish to take advantage of benefits offered by other network operators in the market to migrate their service and number without the inconvenience of having to notify business associates, friends, family, etc.

The introduction of competition in the telecommunications market is accompanied by the ability of consumers of telecommunications services to access new and/or existing services or to change the operator from whom they obtain services, which is intended to result in operators providing more and better services at cost reflective prices as they compete to attract customers. The Commission recognises that the need to change telephone numbers when changing provider, location or service (and losing the identification and any goodwill invested in their existing number) presents a potential inconvenience and barrier to enabling persons to take advantage of the benefits of growing competition in electronic communication services. Those issues may be addressed by the introduction of NP.

NP can deliver the following benefits for markets and consumers, since NP:

- eliminates the cost and inconvenience of informing others of a number change;
- eliminates the need for callers to consult directory enquiries and/or change entries in their address books;
- lowers the cost of switching operator or service provider;
- results in more efficient allocation of limited numbering resources; and,
- results in a more level competitive environment with lowered barriers to entry and competition.

3.2   Turks & Caicos Market Readiness for NP

The TCI mobile sector can be considered to be mature with a penetration rate of around 150%. Whilst competition exists between the existing TCI mobile operators, the market share for Flow (formerly Lime/ C&W) and Digicel are effectively balanced. In such a market, competition can become stagnant due to the status quo in market share between dominant providers stifling innovation and value propositions. Additionally, the attractiveness of duopolistic highly saturated markets to new entrants can be limited since new entrants can only gain market share by attracting customers away from the dominant operators through radical price or service differentiation or both. In the circumstances, the fact that the customer may have to change telephone number on moving to a different service provider can act as a significant disincentive to switching operators. For business use in particular, the administrative inconvenience and costs of changing telephone numbers to gain this price or service advantage would be a major disincentive and work in favour of

the dominant operators. Thus to attract the segment of users in such markets NP becomes even more important.

Whilst service penetration in the fixed line sector in TCI is lower than the TCI mobile sector at around 20%, there is increasing competition across different operators providing fixed line services to both business and residential customers using different technologies. NP can be a key factor in driving increased competition in the fixed line sector, especially as networks evolve towards Next Generation Networks (NGN) based on broadband technologies. It is likely to become necessary for users to port their fixed line numbers onto Internet Protocol (IP) networks whose presence is likely to expand into the TCI fixed market sector to enable existing providers and new entrants to offer increasingly innovative and converging voice, broadband and value added services. Consequently, NP could play an important role in enabling existing fixed line operators and new entrants to increase their market share encouraging further innovation and enhanced value in the TCI business and residential fixed line sector.

The Commission regards telephone numbers as a national public resource, notwithstanding their assignment to operators for commercial use. Consequently, the Commission regards numbers as being allocated to subscribers for their benefit and use.

Benchmark evidence from across the world suggests that for developed markets such as TCI, with high levels of telecommunications service penetration and established competition within the telecommunications sectors, the demand for NP services is typically between 3% and 5% of the TCI subscriber base per annum. Establishing demand for NP depends on a number of different factors, including consumer porting costs, porting timeframes, availability of porting services and simplicity and reliability of porting process.

3.3 NP and Caribbean Markets

Whilst the larger countries within the extended Caribbean region, for instance, Mexico and the United States, have operated NP services from years, the availability of NP (both Fixed and Mobile) within the Caribbean has until recently been very limited. However, over the past 4 to 5 years, NP has been available in neighbouring Caribbean territories, such as the Dominican Republic, the Bahamas, ECTEL jurisdictions (MNP only), Trinidad & Tobago (MNP only), Jamaica, Cayman Islands and in some small territories aligned to France. Demand across these markets has been varied being influenced by the type of portability services available, complexity of the porting process and the level of public awareness of the porting services.

More recently, the growth of NP in the Caribbean and Central America has started to accelerate and in the past five years, NP (Fixed and Mobile) has been launched in Colombia, Panama, Costa Rica, Honduras and El Salvador. It is still very early to assess the demand for NP in these territories and the corresponding impact on the local market.

In addition, NP is now being actively considered in most Caribbean territories, including NP initiatives in Haiti, Barbados and Antigua and Barbuda. NP is also being progressed in Guyana and Nicaragua.

3.4   NP and Small Jurisdictions

Implementing and launching NP can be expensive and resource intensive. Traditionally, the journey to introduce NP has been prolonged and complex, often requiring detailed assessment of the costs involved versus the benefits to be realised within the market.

Cost benefit analysis of NP is now widely regarded as no longer appropriate for determining feasibility of introducing NP into specific markets, especially for small jurisdictions. Regulators consider the ability for customers to be able to move their number from one operator to another as being a fundamental consumer right. In addition, since numbering resources are considered to be national assets, then regulators view the effective management and efficient allocation of numbering resources within their markets as being critical to driving competition, value and innovation benefits the economy and consumers. Thus, supporting NP is widely viewed as being a key licensing and operational obligation for operators to be able to operate their businesses within a particular jurisdiction.

Over the past few years, the developing world has successfully streamlined porting processes and timeframes to deliver porting services that are, cheap and reliable. In addition, the cost for operators of implementing NP financially and in terms of resourcing is still significant, but the costs of NP elements and technologies have been reducing.

Consequently, cost is no longer seen as a barrier for the introduction of NP into small jurisdictions. NP has been successfully introduced and managed in a number of small jurisdictions across the world, with market profiles similar to that of TCI, including, Cape Verde (Population 500,000), the Maldives (Population 350,000). the Bahamas (Population – 300,000), Channel Islands (Population – 150,000), Isle of Man (Population – 80,000), Cayman Islands (Population – 60,000) ECTEL jurisdictions (ranging from 53,000 to 183,000) and Gibraltar (Population – 30,000). Evidence suggests that the introduction of NP into the small jurisdictions has had a positive impact in furthering competition and delivering greater value to consumers.

4   Assessment of the suitability and feasibility of NP for the TCI Market – the Proposal

In compliance with the assessment requirements of the Regulations, the Commission is inviting interested parties and stakeholders to provide comments and views on a range of drivers, approaches and issues related to the introduction of NP into the TCI market, including :-

- The types of NP that should be allowed in TCI, i.e. portability between mobile and fixed services, or only between fixed-to-fixed and mobile-to-mobile services;
- The most appropriate technical and service arrangements for providing NP;
- Cost drivers and approaches associated with introducing and maintaining NP, and cost recovery approaches and options;
- Timeframes for introducing and launching NP;
- Functional requirements and features that are appropriate for the TCI market;
- Anticipated market impact of NP in TCI, in terms of competitive opportunity, customer choice, pricing, and other considerations;
- Potential changes to National Numbering Plan and/or to existing TCI telecommunications regulations and licensing to support the introduction of NP; and
- Other issues that the Commission or interested parties consider appropriate in developing a national policy and regulations for NP.

4.1   Types of NP services appropriate for TCI

Generally, there are considered to be three basic types of NP:

- Service provider number portability;
- Service portability; and
- Location portability

Service provider number portability enables users of electronic communications services (particularly their voice, or telephone, service provider) to change their service provider and retain their telephone number. To simplify the assessment, the Commission proposes to restrict discussions to portability of a single element only, and therefore service provider number portability is limited to users changing between providers within the same service type and location, for example from one fixed provider to another fixed provider at the same location.

Typically, a subscriber's identity becomes intrinsically linked with their telephone number, while a business builds up goodwill in a telephone number through the marketing activities performed by the business using that number. Service provider number portability helps to promote consumer choice and market competition by enabling customers to keep their number when changing provider thereby improving the ability of customers to take advantage of the most appropriate telecommunications services and products to meet their needs.

Additionally, by allowing customers to keep their number whilst changing operators means that the new operator does not need to assign the customer with a new number and thus service provider number portability improves the management and usage of TCI numbers, which are a finite resource.

The Commission believes that service provider number portability is likely to have the most significant impact on competition, as it is the only form that is an enabler of competition between different providers.

Service portability allows a subscriber to retain their telephone number without impairment of quality, reliability or convenience when changing from one type of service to another, but without changing service provider, the most significant example being between fixed and mobile services. For example, service portability would enable a subscriber to replace their existing landline telephone number with a mobile service having the same number.

Whilst full-service portability or hybrid portability has been discussed across the world, the Commission's research has been unable to identify any jurisdiction where full-service portability has been successfully launched and operated. The key concern related to service portability is the likelihood for losing clarity of the different levels of charging between fixed and mobile networks and the corresponding consumer confusion and dissatisfaction. For instance:

- In "receiving party pays" mobile call charging regimes, it is important for mobile users to be able to determine whether incoming calls are from lower cost fixed line numbers or higher cost mobile numbers;
- Significant price differentials exist between fixed and mobile service tariffs in TCI which drive different consumer usage of the services and which are likely to discourage demand for porting between the different service types;
- Consumers are very aware of the existing price differentials between TCI mobile and fixed telephone services and thus it is essential for subscribers to be able to differentiate between calls to and from fixed and mobile numbers; and
- There is no evidence that mobile and fixed telephones are direct substitutes for each other, especially since business and retail customer usage of mobile and fixed services have evolved differently.

Location portability enables a subscriber to retain the same (fixed) telephone number when moving from one physical location within TCI to another, without changing service provider.

In view that Flow already as incumbent fixed service provider in TCI provides universal fixed line services across the entire TCI territory domestic fixed network, then discussion's related to location portability are likely to concentrate on the Flow network configuration. The Commission appreciates that other TCI fixed operators may implement different network configurations, with implications for location portability not considered here, though it is expected that new operators would design their networks to implement location portability to align with the capabilities offered by Flow.

Based on the current framework for assignment of numbers in TCI, there are three possible options for location portability of fixed numbers, as follows:

- Portability within the local exchange area – Typically in incumbent operator networks, a local exchange area is delineated by a single local telephone exchange, with one or more switching units, which are directly connected to subscribers. Providing NP whereby subscribers can change their location within the local exchange area without changing their number poses no significant technical or billing issues;
- Local Call Area – Incumbent operator fixed networks such as the Flow TCI network, typically combines local exchange areas situated on a single island into a local call area LCA namely, the local call charge) to all calls that both originate and terminate within that area. The Commission believes that operating NP in such environments is technically and commercially viable;
- Between Local Call Areas (LCAs) - Charging for calls between LCAs is often toll based, depending on the origin and destination locations. Thus, subscribers need to be able to identify the location of the called party before the call is made to determine the charging rate that will apply to the call. Typically, operators allocate "central office" (CO) codes to each LCA, enabling the calling party to identify the called LCA. However, allowing portability between different LCAs will result in numbers having CO Codes which do not correspond to the actual location of the subscriber, which could lead to consumer confusion and dissatisfaction over call charging to ported numbers between LCAs. The Commission does believe this situation is unacceptable and thus, the Commission intends to consider only allowing portability between different LCAs if operators are able to advise callers in advance of the call that the called party is not in the LCA so callers can identify the cost of calls made to a ported number.

> **Question 1 - NP should be restricted to service provider number portability, specifically porting between mobile to mobile and fixed to fixed numbers only. It is not proposed to offer hybrid fixed to mobile and mobile to fixed NP in TCI. In the case of fixed NP, it is intended to allow porting of fixed numbers within the same local exchange and local call areas only. Please provide your comments and views regarding this proposed approach.**

4.2   Recipient Led versus Donor Led NP

The early implementations of NP were designed around a donor process where the customer was required to contact the current or donor operator to request permission to port and then the customer coordinated the porting transaction between the donor and recipient operators. However, the donor led approach is viewed as not delivering a positive customer porting experience since the customer is required to drive the porting transactions, porting timeframes are often extended and donor operators try to dissuade customers from porting or just frustrate the porting process.

Most recent NP implementations have adopted the recipient led porting approach in which the customer agrees a limited power of attorney with the new or recipient operator authorising the recipient operator to close the customer's account with the donor operator and to arrange the porting or transfer of their number to the new recipient network. Recipient led porting is viewed as being much more customer friendly and efficient, since the recipient as beneficiary in the porting process is responsible for driving the smooth transfer of number to their network. Consequently, recipient led porting is seen to offer faster porting timeframes, much lower porting rejection rates and simpler porting processes. Recipient led porting is now favourite approach for all new NP implementations and many countries with established donor led porting processes are migrating to the more efficient and positive recipient led approach.

> **Question 2 - The NP process of moving a customer's number from one provider to another provider can be achieved by either Recipient Led (the customer requests porting through the new Recipient operator)or Donor Led (the customer porting approaches their current operator to seek permission to leave). Please state your preference and outline your reasoning?**

4.3   NP Administration - Centralised or De-Centralised Porting?

A key element in the operation of NP services is the efficient and reliable administration and processing of porting requests between recipient and donor operators.

- **Peer-to-Peer/ De-Centralised Solutions -** Bilateral peer-to-peer solutions allow operators to enter into individual arrangements for porting. These arrangements may be standardized across the industry or may be unique to each agreement. Although internationally, such peer-to-peer arrangements are fewer given the availability and convenience of centralized solutions, it is nonetheless arguable that the arrangement may be suitable for jurisdictions with small port volumes and a limited number of operators.
- **Centralized Database Solutions** – are the most popular approach to delivering NP services. These solutions are centred around a reference database or number clearing house owned or operated by an independent third party or sometimes maintained by a consortium of providers is established for the purposes of facilitating NP. With these systems, direct routing can be used to determine whether a call is to a ported number and to ensure that the call is then efficiently directed to the destination network. Most recent NP implementations and those involving small jurisdictions have adopted this option, including Channel Islands, Isle of Man, and the Cayman Islands, whose population sizes are comparable to the TCI. These CDBs provide several advantages which make them attractive solutions for regulators.
  - The databases can be operated by third parties with specialized infrastructure for providing such services that is already established. This means that costs can usually be shared by providers both within and in some cases, depending on the route pursued, outside of the TCI. If this option is pursued, the initial start-up costs are

reduced significantly, making it incredibly attractive. Alternatively providers may jointly choose to establish such a centralized reference database.

- o The CDB solution is easily adaptable to different types of services, so that both fixed and mobile, or even other types of portability may be facilitated. A single reference database containing all the numbers issued in a jurisdiction is established. This central database is then assimilated as operational databases in each participating network operator and updated as each porting transaction is completed.

Whilst the set-up costs for peer-to-peer/de-centralised solutions may be lower than those for centralised database solutions, peer-to-peer solutions do not offer a consistent and efficient porting experience for customers and may require increased network capacity investment and long term maintenance and operating costs for operators.

> **Question 3 - It is proposed that NP is to be managed and operated in TCI through a centralised NP system which will track all TCI numbers, manage the porting process between recipient and donor operators and provides some ancillary administration functionality. This approach enables a standardised porting process to be operated across all TCI providers. Please provide your comments and views regarding this proposed approach.**

The Commission's research suggests that there are a number of different licencing and contracting approaches used by different countries across the world to manage the operation of centralised NP systems/ platforms, commonly termed as NP Clearinghouse.

In some countries, the operators jointly create a specific entity to set-up and run the NP Clearinghouse in which the joint venture entity contracts directly with the NP Clearinghouse provider, but this approach is considered unsuitable for small jurisdictions, since it can be expensive and complex to establish and manage.

An alternative approach is for the NP Clearinghouse provider to contract with the local regulator to establish and manage the NP service on behalf of the regulator. The Commission does not believe that this approach is appropriate for the TCI since it unnecessarily complicates the engagement between the Commission and the TCI NP stakeholders.

In many countries, the local regulator licences the NP Clearinghouse provider to establish and manage the NP service for a fixed licence period. Such licencing frameworks are restricted to the provision of NP services, but the terms align closely with the licencing regime applied to operators. This approach requires the NP Clearinghouse provider to contract with the local operators either collectively through a multi-party agreement or on an individual operator basis. The Commission favours the licencing approach since it is efficient and simple to administer for the TCI stakeholders and aligns the provision of NP services with the operator regulatory requirements to support the provision of NP in TCI.

> **Question 4 - By proposing to adopt the centralised driven NP approach, it is proposed that the successful provider of the NP Clearinghouse will be licenced by the TCI Telecommunications Commission to provide NP services and will be required to contract directly with the licenced TCI operators. Please provide your comments and views regarding this proposed approach.**

The main function of the NP clearinghouse is to track and bill for the usage of the centralized database used for storing the routing information for numbers. The NP clearinghouse would also be responsible for the day-to-day running of the centralised database, its operational maintenance and keeping it updated. The NP clearinghouse provider would also provide a Help Desk facility, responsible for, trouble ticketing, problem resolution, logon administration, and training.

The Commission believes there are three options which exist for establishing and operating a NP clearinghouse for the TCI market:

- Locally based in the TCI;
- Externally hosted solution (outsourced to a NP service provider located abroad); and
- Regional (a hosted solution that provided in partnership with other regulated jurisdictions in the Caribbean).

Locally based NP Clearinghouse – The Commission believes this is a feasible solution for TCI, with the following advantages and disadvantages:-

Advantages:-

- Reduces the demand for foreign exchange as it eliminates the need to remit NP clearinghouse charges overseas in a foreign currency;
- Eliminates possible political and economic influence that a foreign entity might exert upon the NP clearinghouse provider; and
- No need to increase the capacity of international off island signalling routes to allow for traffic between the clearinghouse and the local operators.

Disadvantages:-

- Requires increases up front for set up investment;
- Could involve prolonged set-up timeframes whilst local hosting facilities are established and equipment procured and installed;
- Involves the recruitment and training of local support and operational resources to manage the NP clearinghouse.; and
- The increased set-up and operating costs may not be appropriate for a small jurisdiction like TCI.

Externally hosted NP Clearinghouse – This approach is already used successfully by a number of small jurisdictions which have introduced NP, including the Channel Islands, Isle of Man, Gibraltar

and the Cayman Islands. The Commission believes this is a viable solution for TCI, with the following advantages and disadvantages:-

Advantages:-

- Offers lower up-front set-up costs;
- Faster to implement and launch the NP service since the hosting facilities and infrastructure/ equipment are already in place;
- May be more cost effective since operating costs are shared with the NP Clearinghouse provider's other clients; and
- Offers quicker and better set-up for local TCI operators, since the core infrastructure is already in-place and working and configuration is restricted to links between the operators and the hosted NP Clearinghouse facilities.

Disadvantages:-

- Requires increased in capacity of the international signalling routes to accommodate TCI porting transaction traffic;
- NP service availability is reliant on the quality and stability of the international signalling links between TCI operators and the NP clearinghouse provider;
- Increased outflow of foreign exchange to remit NP clearinghouse transaction and service charge payments; ;and
- Potential privacy and security concerns since subscriber and TCI numbering information is managed and held in an overseas location.

Regional Clearinghouse – The Commission is aware that a number of regulators in the Caribbean are seeking to implement NP, and all are presented with similar challenges related to the size of their jurisdictions. The Commission believes this could present an opportunity for regional cooperation between regulators and operators to devise and implement a regional NP clearinghouse, however, this would involve significant pan-region regulator dialogue and is not likely to be a viable option for the short to medium term.

A regional NP clearinghouse would offer many of the advantages of the external solution while still retaining the control and flexibility of a local solution. However, such a solution would also present many of the disadvantages of an external solution (unless it was housed in TCI).

> **Question 5 - It is proposed that the NP Clearinghouse may be either operated from TCI or hosted overseas. Please provide your comments and views regarding this proposed approach.**

4.4   TCI Traffic Routing – Direct or Indirect?

Establishing and operating an efficient and robust mechanism for managing the transfer or porting of numbers between donor and recipient operators is an important requirement for an NP service,

the ability to efficiently and securely deliver or route fixed and mobile traffic to ported and non-ported numbers is of vital importance to ensure NP is successfully provided in TCI.

NP implementations across the world use either direct or indirect routing. Direct routing requires the originating network to route the traffic directly to the terminating network on which the number (ported or non-ported) currently resides, whereas, indirect routing involves the originating network routing the traffic to the block operator to whom the number was originally allocated, if the number has subsequently ported out, then the block operator routes the traffic to the network to which the number was ported.

Routing solutions can be further categorised as being either using bi-lateral or centralised approaches depending on the method of administering ported number data, for instance:-

- Bilateral routing approach - the administration of ported numbers is the responsibility of the operators, each of whom maintains its own database of ported numbers and routing information. The ported number information is shared among the databases; or
- Centralized routing approach - the administration of the database of ported numbers is performed by a single party, typically a third/ independent party, with operators themselves responsible only for the routing of the calls.

Routing approaches can be defined as follows:-

- Indirect Routing
  - Onward Routing/ Call Forwarding
  - Query on Release/ Call Drop Back
- Direct Routing
  - All Call Query

Onward Routing is an indirect, bilateral, routing approach in which:

- The traffic is routed to the network on which the number originally resided (the block or donor network) since this is the only network the originating network is able to identify;
- The block/ donor networks identifies the dialled number as no longer being in its inventory because it has been ported to another network and checks with an internal network-specific number portability database (NPDB) to identify the network to which the number was ported;
- The block/ donor network's NPDB provides the routing number associated with the dialled number and the block/ donor network uses the routing number to route the traffic to the network to the recipient network to which it ported the number.

Advantages:-

- The NPDB of the donor/ block network can be small since it contains only the routing numbers of its own numbers that have been ported. It does not have to contain all ported numbers;
- As NP is established only a small percentage of traffic is required to be onward routed;
- Signalling impact is minimal; and,
- No increase in call set-up time for non-ported numbers.

Disadvantages:-

- Routing of traffic to ported numbers is not efficient nor optimised since the traffic uses the block/ donor operator's network before being delivered to the recipient/ terminating operator;
- It may be necessary to develop an additional transit/ interconnect charging framework to recompense the block/ donor operator for the transit use of their network;
- Routing quality of onward routed traffic is dependent on the quality of the block/ donor operator's network and operations. If there is a failure within the donor/ block operator's network, then onward routing of traffic to ported numbers will fail or be compromised;
- Increased call set-up time for traffic routed to ported numbers; and
- Potential for donor/ block operators to differentiate the quality of routing for ported and non-ported traffic.

Call forwarding is similar to Onward Routing and has the advantage of being an existing network feature that operators offer to subscribers who wish to have their incoming calls forwarded to another number. Where the Call forwarding approach is used, the recipient operator will issue a shadow or dummy number to which the block/ donor operator forwards traffic for the customer's "ported" number. Call forwarding has similar disadvantages to Onward Routing, but has the advantage that as an existing network feature, it requires less re-configuration and can be implemented quicker.

Onward Routing is an indirect, bilateral, routing approach in which:-

- The originating network routes traffic to the donor/ block Network for completion. If the dialled number is resident on the donor/ block network, the call is completed;
- However if the dialled number has been ported, the donor/ block network releases the traffic back to the originating network with a signalling identifier that the number has been ported;
- The originating network queries its own copy of the centrally administered NPDB , which provides the routing information for the dialled number; and
- The originating network completes the call to the recipient/ terminating network, on which the dialled number currently resides.

Advantages:-

- Reduced routing inefficiency for the donor/ block operator;
- Reduced interconnection capacity requirement since traffic to ported numbers are handed back to the originating operator for direct routing;
- Potentially reduced processor capacity requirements for donor/ block operators, who no longer needs to identify the routing number of the recipient/ terminating operator;
- Donor/ block network is no longer in the terminated traffic path and thus the originating operator is not reliant on the operational quality of the donor/ block network; and,
- No increase in call set-up time for non-ported numbers.

Disadvantages:-

- Traffic to ported numbers is required to be routed twice thereby consuming additional originating operator network resources;
- It may be necessary to develop an additional transit/ interconnect charging framework to recompense the block/ donor operator for the query use of their network;
- Originating operators are required to invest in the set-up and maintain separate local NPDB for the storage of routing data for ported numbers;
- Increased call set-up time for traffic routed to ported numbers; and
- Potential for donor/ block operators to differentiate the quality of routing for ported and non-ported traffic.

Call Drop Back is a similar routing approach to Query on Release, except the Call Drop Back approach requires the donor/ block operator to provide the routing data of the terminating/ recipient network that is hosting the ported number, to the originating network. Call Drop Back offers marginal operational advantages, but requires additional hardware/ software changes to the donor/ block operator's network.

Direct Routing/All Call Query (ACQ) is a direct centralised, routing approach in which:-

- The originating network queries its own local copy of the NPDB for all traffic originated on its network, irrespective of whether the traffic is destined for a ported or no-ported number. Note – Operators' local NPDBs are typically mirrored against the centralized NPDB, provided by the NP clearinghouse provider. The centralised NPDB updates routing data held in the operators' local NPDB each time a porting transaction is completed; and
- The originating network's NPDB provides the location routing number of the recipient/ terminating network on which the dialled number resides which enables the originating network to directly route the traffic to the recipient/ terminating network, irrespective of whether the terminating number has been ported or not.

Advantages:-

- Direct routing eliminates the reliance on the donor/ recipient network, thereby providing the ability to maintain traffic routing to ported numbers in the event that the donor/ block network fails;
- Traffic routing and network utilisation are optimised since "tromboning" of traffic between networks is eliminated;
- Traffic to ported and non-ported numbers are treated equally;
- No additional set-up time for traffic to ported numbers; and
- Potential for network congestion or disruption that may occur on the donor/ block network is eliminated.

Disadvantages:-

- All operators are required to invest in establishing and maintaining their own local copy of the NPDB;

- Significant configuration and infrastructure changes are required within all operators core network and associated systems to support ACQ direct routing. Implementing the necessary network changes can be complex and risky;
- Additional core network processing capacity may be required to support the query activity for all traffic to the local copy of the NPDB;
- Set up time for all traffic may be increased due to the additional ACQ processing activities.

On a global perspective, the Commission understands that different countries use different routing approaches. However, it is widely accepted that the direct ACQ routing approach is the most operationally efficient and consequently direct ACQ routing is the approach adopted in virtually all recent NP implementations. Whilst implementing direct ACQ routing requires significant investment and resourcing for all operators involved, the operational efficiencies and improved traffic routing quality benefits are seen to greatly outweigh the advantages offered by indirect routing approaches.

The Commission is aware that the cost to operators for implementing the direct ACQ routing approach into their networks is falling and the Commission understands that direct ACQ routing approach has been adopted in recent NP implementations in other small jurisdictions, including, Channel Islands, Isle of Man, Gibraltar, Cayman Islands and Panama.

The Commission therefore concludes that the direct ACQ routing approach is the preferred routing approach for supporting NP in TCI.

> **Question 6 - It is proposed that all fixed and mobile traffic to ported and non-ported numbers originated and terminated in the TCI will be directly routed by the originating network to the terminating network using the All Call Query approach. All Call Query direct routing is widely used in NP implementations across the world and is considered to be the most operationally efficient and reliable form of routing in NP jurisdictions. Please provide your comments and views regarding this proposed approach.**

4.5 NP Impact on the TCI Market

The Commission has outlined the broader global view that NP can be an effective enabler for driving and enhancing competition in telecommunications markets and as such NP could be a valuable tool to assist the Commission in meeting its legal obligations to promote and further competition in the TCI market to the benefit of TCI consumers.

The Commission understands that implementing NP can be expensive both financially and in terms of resource and for operators and stakeholders alike. However, the Commission believes the direct and indirect benefits of introducing NP to the TCI market could be significant.

Under the Commission's legal obligations outlined in the Policy, the Ordinance and the Numbering Regulations, the Commission's prime objectives are to promote and further sustainable competition in the TCI market and to ensure that TCI numbering resources are used efficiently. Thus, the

Commission favours globally held view that Subscribers have a fundamental right to move or port their number to the service provider of their choice and consequently, that supporting NP in TCI is a basic obligation for all operators.

It is evident that competition is well established in the TCI market, and yet competition has not fundamentally changed the status quo in TCI telecommunications market. In addition, it is evident that there is strong consumer demand for both fixed and mobile telecommunications services in the TCI market; yet, mobile penetration rates of in excess of 100% indicate that consumers are constrained from being able to freely access the preferred service providers.

The Commission is satisfied that the key prerequisites exist to support the introduction of NP into the TCI market and that as a developed market there will be significant consumer demand for porting services.

The Commission believes that introducing NP will benefit the TCI economy, market and consumers, by:-

- increasing value offered to consumers;
- increasing consumer choice and freedom;
- improving customer and network service and quality;
- driving innovation;
- driving efficiency; and
- encouraging new entrants.

Question 7 - Introducing NP is likely to enhance competition and choice in the TCI telecommunications market. Please provide your comments about this statement.

4.6   Optimising the implementation and operating costs related to NP

Regulation 14 of the Numbering Regulations require the Commission to consider within its NP consultation approach the likely costs to be incurred in implementing, introducing and operating NP in TCI.

The Commission sets out below its proposals on NP cost recovery for NP. The Commission does not believe that NP cost recovery should be left solely to commercial negotiations between operators. This view is informed by experience in other countries where reliance on commercial negotiations has served to delay implementation of NP and resulted in high or inappropriate charges, or both.

International studies and experience of NP implementations in other countries suggests that there are two broad categories of costs associated with the provision of NP, namely: (i) establishment / set-up costs and (ii) consumption costs.

Establishment/ Set-up costs - represent the capital costs incurred by operators and NP stakeholders to ensure that customers have the capability to port their telephone numbers. These costs are incurred because of the regulatory policy objectives to reduce the cost and inconvenience of customers switching between operators, and to foster competition amongst operators through the implementation of NP and include:-

- Initial operator network modifications;
- Software modifications in the information systems such as customer accounting and billing system and inter-operator accounting and billing system;
- Set-up of new inter-operator tools and procedures;
- Modification of internal operator processes;
- Training of operator staff to provide NP services; and
- Establishment of NP Clearinghouse.

Consumption costs - represent the additional costs incurred when customers make use of NP services. These costs are typically more easily linked to individual operators'/ stakeholder or customers.

- Per-line administration costs, generated by:-
    - NP service ordering procedures;
    - Modifications of subscribers data in the information systems; and
    - Modification of subscriber data in the network elements.
- Additional conveyance costs, caused by:-
    - Extension of traffic link capacity; and
    - Additional call processing, switching and intelligent network (IN) resources.
- Continuing administrative costs, including:
    - Management and operation of the NP Clearinghouse; and
    - Administration of general NP information.

The Commission understands that the establishment/setup costs are likely to vary between operators and NP stakeholders, since these costs will be driven by different factors, such as network characteristics, organisation structure, business scale, business system types etc. However, the Commission's research of stakeholder costs incurred in other NP implementations suggests that the variation in establishment/setup costs between operators is actually low.

In line with accepted cost recovery practice, the Commission is proposing a set of economic principles (See table below) to ensure that the cost recovery process for NP is fit for purpose. The Commission believes that the cost recovery process should be equitable by ensuring the appropriate allocation of the costs resulting from the implementation of NP between operators and their customers. The Commission believes that its proposals will engender regulatory certainty, and minimise inter-operator disputes, thereby ensuring the mechanism for cost recovery is transparent, non-discriminatory, and reasonable, and reflects the underlying costs of providing NP.

Effective competition	Pressures for effective competition should not be weakened by the mechanism of cost recovery. As such, the cost recovery mechanism should not be used to raise a competitor's cost or weaken their ability to compete.
Distribution of benefits	Cost recovery mechanism should reflect the distribution of benefits that accrue from a customer porting their telephone number. Portability generates both direct and indirect benefits, as everyone benefits from increased competition. Hence, those who benefit from portability indirectly should pay some of the costs.
Cost minimisation	The mechanism for cost recovery should provide strong incentives to minimise costs. Those who are in a position to affect the size of the costs should face strong incentives to minimize costs.
Cost causation	Cost should be borne by those whose actions cause the cost to be incurred.
Relevant costs	Only those costs directly incurred or attributable as a result of the provision of NP should be recovered.
Reciprocity	Where NP is provided on a reciprocal basis it may be appropriate for charges to be reciprocal in each direction.
Practicality	Costs should be recovered in a way that is practicable and does not unduly raise administration costs.

In this consultation document, the Commission has indicated its preference for the introduction of NP to the TCI market and the corresponding direction to operators to support the provision of porting services to TCI consumers as being a fundamental operator obligation and condition to continue to provide telecommunications services in TCI.

The Commission believes the establishment/setup costs of the TCI operators will be relatively similar and from assessment of establishment/setup cost recovery in other NP jurisdictions, the Commission is proposing that each operator and NP stakeholder should be responsible for their own establishment/setup costs and that such costs cannot be recovered from other stakeholders or the consumer.

The recovery of NP clearinghouse setup and consumption costs is a critical element of any NP implementation. In view of the relative small scale of the TCI market, the Commission will focus on ensuring that the tendering process delivers a NP clearinghouse solution that offers excellent value and is effectively benchmarked against the NP clearinghouse costs secured in similar jurisdictions. The Commission is committed to ensuring the NP clearinghouse cost recovery model is appropriate for the TCI market and that costs are allocated between operators based on the principles of "*Distribution of benefits*", "*Cost minimisation*" and "*Practicality*".

> **Question 8 - It is proposed that each operator and the successful provider of the NP Clearinghouse will be responsible for their set-up costs to prepare for the implementation and launch of NP in TCI and that such set-up costs shall not be recoverable from consumers or other stakeholders. Please provide a cost estimate of set-up investment your organisation is likely to incur in preparing for the possible introduction of NP into TCI, and your comments and views regarding this proposed approach.**

Studies of NP implementations from around the world clearly show the strong relationship between consumer demand and the charges levied to customers for using porting services. In many recent NP implementations, the local regulators have specified that porting will be free of charge to customers in order to maximise consumer demand for NP services.

At this stage, the Commission is minded to allow recipient operators to decide whether to charge customers for porting their services, but such charges should be determined in accordance to the principles of "relevant costs", "cost minimisation" and "practicality", as outlined above. By allowing recipient operators to determine whether to charge consumers for porting or not, the Commission is aware that market, competitive forces could minimise or eliminate consumer NP charging, however, the Commission will retain the right to review consumer NP charging and where appropriate set a maximum limit.

In line with best practice from other NP implementations, the Commission will not permit donor operators levying NP related charges to customers who leave their network or services. Donor charging of consumers who port their number or service is viewed to be contrary to the interests of consumers and NP in TCI, since such charges could discourage consumers requesting NP.

> **Question 9 - It is proposed that Recipient operators will be allowed to charge customers for porting their numbers at the discretion of each recipient operator. Consumer charging will be reasonable and the TCI Telecommunications Commission reserves the right to set a maximum limit to consumer porting charges. Donor operators are not permitted to charge customers for porting out numbers from their network. Please provide your comments and views regarding this proposed approach.**

The Commission recognises that donor operators could incur additional incremental costs directly related to the processing of porting requests for customers wishing to leave their network or service. Whilst the Commission has already stated that it will not permit donor operators to levy charges on customers leaving their networks, under the cost recovery principles outlined above, the Commission accepts that it may be appropriate for donor operators to recover from recipient operators, reasonable and directly attributable costs incurred in efficient processing of porting costs.

The Commission believes that there are charges, if or where appropriate, should be set and assess based on the cost recovery principles of "*Effective competition*", "*Cost minimisation*", "*Cost causation*", "*Relevant costs*", "*Reciprocity*" and "*Practicality*". The Commission reserves the right to review and assess donor charges and where appropriate set a maximum limit.

The Commission also recognises that in many countries once NP is established, porting transaction volumes between different operators in the market tend to become balanced. Consequently, there can be an argument that due to the principle of "*Reciprocity*", an operator is likely to be a recipient in equal proportion to being a donor, then charging between operators becomes balanced and there is no need for the levying of donor charges.

Question 10 - It is proposed that donor operators shall be permitted to charge recipient operators for reasonable costs which are directly attributable to the actual efficient processing of porting requests. The TCI Telecommunications Commission reserves the right to set a maximum limit to donor porting charges.

4.7 NP Implementation Approach in TCI

Experience from other NP implementations across the world clearly shows that implementing and launching NP is a complex initiative requiring full and positive cooperation across the different stakeholders, carefully planned and driven using a disciplined approach. Implementing cannot be rushed, yet it is imperative that the Commission as the key consumer stakeholder ensures that NP is delivered effectively and timely.

This section of the consultation document will consider the phasing of the introduction of NP services, the likely timeframes and the implementation approach to be adopted across the TCI NP stakeholders.

The Commission has already identified that NP is suitable for introduction into the TCI fixed and mobile telecommunications sectors. The core process for porting fixed and mobile services between donor and recipient operators is fundamentally the same. However, the porting timeframes, service delivery mechanisms and customer validation approaches may differ for the porting of fixed and mobile numbers.

For instance, the delivery of equivalence in service for mobile operators relies on parity in network coverage across the territory, whereas for fixed operators, delivery of service to customers may be through fundamentally different fixed technologies and maybe impacted by infrastructure and capacity availability. Validation of the customer's right to ported number is a critical aspect of the porting process and thus the validation approach adopted for fixed and mobile NP may differ, for instance, mobile NP can be validated using SMS.

From the Commission's research, it is evident that all NP clearinghouse vendors' solutions are capable of supporting both fixed and mobile NP, as well as accommodating differing porting processes for each type of NP, for instance, timeframes, process steps, validation checks etc.

Recent NP implementations in similar small jurisdictions in Jamaica, the Bahamas, the Cayman Islands, the Isle of Man and Gibraltar have demonstrated that fixed and mobile NP can be implemented and launched successfully at the same time. The Commission appreciate that developing and implementing multiple forms of NP simultaneously can complicate and extend the implementation programme and timeframe, but, the parallel development of fixed and mobile NP can be achieved in an effective and timely manner.

> **Question 11 - Should fixed and mobile NP be implemented and launched at the same time or should the introduction be phased? If you prefer a phased approach, what should the order of the phasing be and why?**

The Commission appreciates that successfully implementing and launching of NP into the TCI market requires detailed planning and disciplined and structured management across the broad range of NP stakeholders. Introducing NP cannot be rushed yet there is urgency driven by the expectations of the TCI public for the Commission to launch NP services in a timely manner.

Subject to the outcome of the consultation process, the Commission believes a reasonable timeframe to progress to the launch of NP in TCI would be 18 months. The Commission's research has assessed the actual development and implementation timeframes experienced in other NP implementations, taken advice from NP consultants and has considered the potential NP stakeholder community in TCI.

The Commission believes that 15-18 month timeframe is reasonable to complete the key activities to enable NP to be launched in TCI, including:-

- Completing the NP consultation;
- Completing the NP Clearinghouse and vendor selection;
- Licencing of the NP Clearinghouse and corresponding NP Stakeholder contractual framework;
- Implementation of the NP Clearinghouse and connection with TCI operators;
- Internal operator technical, operational and commercial NP readiness preparations;
- Developing the TCI Inter-Stakeholder NP framework, including NP process, business rules, legal instruments, consumer code, etc; and
- Building public/ consumer awareness of NP.

> **Question 12 - It is proposed that NP will be implemented and launched to the TCI public within 18 months of the date of this consultation. Please provide your comments and views regarding this proposed approach.**

Preparing for the introduction of NP into the TCI market and progressing the corresponding NP development and implementation activities is a complex undertaking involving a wide range of potential NP stakeholders, including, the Commission, TCI operators, NP clearinghouse provider, other TCI government bodies, the TCI public and other local and external interested parties. The Commission recognises that as the guardian of public/consumer interests within the TCI telecommunications market, the Commission is a key stakeholder in ensuring that NP is introduced and operated in an effective, appropriate and efficient manner.

From the Commission's research, it is evident that successful NP implementations are characterised by strong leadership, clear direction and continuous involvement by the regulator. Thus, the Commission intends to drive the NP implementation and launch process, develop an appropriate and comprehensive NP framework for TCI, set clear and achievable implementation schedule and establish an effective and positive management forum engaging with the key NP TCI stakeholders.

Whilst the Commission will set the agenda for the implementation of NP and will be responsible for all key NP decisions, the Commission proposes to establish a working group (NP working group) comprising the key TCI NP stakeholders.

The NP working group would be responsible for making recommendations to the Commission on detailed matters pertaining to the introduction and operation of NP in TCI. Following the Commission's final determination on NP, the NP working group would be responsible for overseeing the actual implementation and launch of NP in TCI, subject to the Commission's directions.

> **Question 13 - It is proposed that the implementation and preparations for the launch of NP in TCI will be managed by a cross stakeholder working group reporting to the TCI Telecommunications Commission, but the TCI Telecommunications Commission shall be responsible for setting the key NP process and functional details and implementation timeframes etc. Please provide your comments and views regarding this proposed approach.**

4.8   Porting times in TCI

Research shows that consumer demand for NP services is directly linked to the time taken to port a customer's number. In early NP implementations, porting times could be up to one month, but developments in porting process approach have enabled recent NP implementations to reduce porting times to less than two working days. In some countries, porting can be completed consistently in a matter of a few hours. The link between porting time and consumer demand is recognised by regulators across the world as being critical, and in fact, the European Union (EU) has mandated that all EU countries must ensure that number is ported within one working day.

The Commission recognises the importance of minimising porting times in TCI but the Commission appreciate that the timeframes for porting fixed and mobile numbers may differ due to the different approaches used for provisioning fixed and mobile services. The Commission's research indicates that international best practice suggests that mobile numbers to be ported within one working day and fixed numbers ported within five working days. The Commission's proposed timeframes compare favourably with benchmarks timeframes in similar small jurisdictions in which NP is already available.

When determining porting timeframes, the Commission believes it is important to clearly define the starting point of the porting process. On this basis, the Commission proposes to define the starting point of the TCI porting process to be when the customer and the recipient operator have agreed the porting of the customer's number, with the recipient operator confirming it can provide service

to the customer and the customer has completed and signed the necessary porting form/declaration.

Question 14 - It is proposed that all customer porting requests will be completed within; 1 working day for mobile NP and 5 working days of fixed NP, from the date of the customer's validated and signed porting request. Please provide your comments and views regarding this proposed approach.

4.9   Validation of Porting Requests

The Commission recognises that careful and considered NP process design is a critical element in the successful introduction and operation of NP in TCI. It is necessary, particularly in a recipient led process, for the recipient operator to be able to reliably ensure that the person requesting the port is the legitimate owner of the number to be ported and is eligible to request the porting service.

The NP process must balance operational efficiency with adequate security to protect legitimate subscribers from fraudulent or inappropriate porting. Consequently, with recipient led porting, it is necessary for the recipient operator to verify the customer's identification and ownership of the number to be ported.

Various validation methods are used across the world to address these issues, with varying levels of success. In some countries, it is not necessary to transfer a wide range of customer confidential data between the recipient and the donor for verification, which can extend porting timeframes significantly and result in unnecessarily high reject levels of porting requests. The Commission understands that a number of particularly successful NP implementations in which porting timeframes are short and fraud and rejection levels are low, limit the amount of customer data transfer between donor and recipient during the porting process, through the use of additional secure customer validation mechanisms, for instance, requiring the customer to send a dedicated validation SMS to the NP clearinghouse.

The Commission considers it necessary to implement a NP process in TCI that will ensure the highest level of accuracy, without unduly delaying or complicating the porting process, or increasing the costs of portability. However, the Commission believes that the sending of extensive customer confidential information between the recipient and the donor during the porting process is not necessary, because it:-

- Increases the likelihood of data input errors by the recipient and hence unnecessarily increases porting rejection rates;
- Increases the donor operator checking resources;
- Extends the validation process timeframe and hence the overall porting period; and
- Potentially compromises the protection of customer confidential data.

The Commission understands that secondary customer validation mechanisms, such as, parallel customer initiated Short Message Service (SMS) or Interactive Voice Response (IVR) validation, work well in other similar jurisdictions and enable the porting process to be efficient, quick and secure.

The Commission proposes that the data transfer during the porting process between the recipient and donor operators will be minimised to:-

- Mobile Station Integrated Services Digital Network (MSISDN) identification or number to be ported;
- Confirmation by the recipient operator, that the validation process has been completed correctly; and
- Name of the donor operator.

In parallel, the Commission proposes that the TCI porting process will use secondary customer initiated validation/authorisation either by SMS for mobile NP requests or IVR/PIN for fixed NP requests.

> **Question 15 - It is proposed that data transfer during the porting process between the recipient and donor operators is minimised to ensure efficient and robust consumer porting experience with minimal unnecessary porting failures or rejections. It is proposed that porting data transfer will be restricted to MSISDN/ number being ported and donor operator. Porting process security and integrity will be provided by independent customer validation for each porting request, by either SMS (for mobile number porting requests) or Interactive Voice Response or PIN (for fixed number porting requests). Please provide your comments and views regarding this proposed approach.**

NP processes differ widely across the world in complexity. In some cases, NP processes involved multiple steps, offering the option of changing or cancelling porting right up to the point that the number is migrated from the donor to the recipient. The Commission recognises that the greater the complexity and number of steps in a porting process, then porting timeframes become extended and there is great opportunity for confusion and errors.

The commission proposes that the NP process in TCI will be simplified yet secure, to ensure efficient and robust porting. The Commission is advised that once porting requests have been validated by the NP clearinghouse, and then further revision or cancellation by either the customer or the recipient should not be allowed, the so-called "point of no return". By adopting the secondary customer initiated validation/authorisation approach then the Commission believes that the customer has the final power to validate whether their porting request proceed or not by deciding whether to send the secondary validation message/activity or not.

The Commission believes that prohibiting the cancellation or modification of porting requests once the point of no return has been reached will not only reduce porting transaction errors or failures,

but will also eliminate the opportunity for inappropriate engagement of the customer by the donor operator during the porting process.

> **Question 16 - It is proposed that once a customer's porting request has been authorised by the customer and validated by the NP Clearinghouse and passed to the donor operator for approval, the porting request must proceed to completion unless legitimately rejected by the donor operator in compliance with the rejection reasons determined by the TCI Telecommunications Commission. Once a validated porting request has been passed to the donor operator by the NP Clearinghouse it cannot be amended or cancelled by any party. Please provide your comments and views regarding this proposed approach.**

The Commission recognises that some stakeholders will be concerned about the potential for post-pay customers to port their numbers to avoid settling their debts or liabilities. However, the Commission believes that a key principle of NP is that operators should not discriminate between porting and non-porting customers and thus NP should not be considered an extension of an operator's existing credit management activities or processes.

The Commission believes that operators have an obligation to protect their own business interests by operating effective credit and risk management processes and policies. On this basis, the Commission is proposing that if a customer's account has not been barred or suspended by the donor operator from making outbound calls/SMS, then the customer has the right to port their number at that point in time. Consequently, in such circumstances, the Commission is proposing that donor operators cannot reject porting requests on the basis of outstanding debt, if the customer's has not already been barred or suspended.

The Commission recognises that post-pay customers, by the nature of the services they use will always have a debt accrued with the donor operator at any particular point in time. The Commission accepts that customers are absolutely obliged to settle all outstanding debts and charges with the donor operator, the Commission believes such settlement should be completed outside of the porting process. Consequently, the Commission proposes that key element of the porting process is to ensure customers are aware of their absolute obligation to settle outstanding debts and charges to the donor operator, and that such charges may also include any early termination fees applicable to their service or contract.

The Commission also recognises that the use of the secondary customer initiated validation approach also provides a mechanism to safeguard operators from potential errant customers using porting to avoid their current debts, but the effectiveness of this safeguard depends on the efficiency of the operator's existing credit management processes and policies.

> **Question 16 – It is proposed that Post paid consumers can port their number if the total billed and unbilled account balance is less than the deposit held by their current operator, provided their service is not barred or suspended from making outbound calls at the time the consumer's porting request is processed by the recipient operator. It is proposed that debt cannot be used to prevent pre-paid consumers porting their number. Please provide your comments and views regarding this proposed approach.**

4.10   Winback Protection

Winback is defined as contact initiated by the donor operator to the customer, purpose of which is to either dissuade the customer from porting out their number or to encourage the customer to return to the donor operator's network.

Whilst the Commission believes that the making of winback attempts may in certain circumstances be a legitimate competitive activity, it has the potential to quickly undermine the benefits of NP by acting as a further barrier to switching and compromising the NP process. On this basis, the Commission proposes that winback activity is contrary to the interests of a fair NP service in TCI and should therefore be prohibited for a defined period.

The Commission's research indicates that when winback is permitted in some jurisdictions, it also becomes a source of customer frustration and irritation.

The Commission recognises that it may be appropriate and necessary for the donor operator to engage the customer after the porting process is completed to discuss the settlement of outstanding debts and charges.

The Commission does not advocate prohibiting donor operators from making winback contact to customers over an extended or prolonged period. The Commission believes that former/donor operators should be allowed to contact former customers in the future with the intention of encouraging them to return to their networks, but there should be a reasonable winback prohibition period to enable the customer to form a relationship with and form an opinion of the new recipient operator. The Commission's research to benchmark with other similar NP jurisdictions, suggests that an appropriate winback prohibition period would be 60 days.

The Commission therefore proposes that the donor operator will not be permitted to initiate any contact with the customer once the NP clearinghouse has passed the porting request to the donor operator and for the remaining period until the porting transaction is completed. Furthermore, for a period of 60 days after the customer's number has been ported, the only permitted contact that a donor operator may have with the customer is for the sole purpose of recovering any outstanding payments or debts and will under no circumstances contact the customer for the purpose of soliciting the return to the donor operator's network. The proposed Winback prohibition provisions will only apply to numbers or services that are subject to the porting process and thus the donor operator is permitted to freely contact customers about non-ported numbers or services.

Question 18 - It is proposed that once the customer's validated porting request has been passed to the donor operator by the NP Clearinghouse, the donor operator will not be permitted to contact the customer during the period the porting request is being processed. Once the porting request has been successfully completed, for a period of 60 days, the donor operator will only be permitted to contact the customer for the sole purpose of recovering any outstanding payments or debts and will under no circumstances contact the customer during this period with purpose of soliciting the customer to return to the donor operator's network. Please provide your comments and views regarding this proposed approach.

4.11   Onward Porting Restrictions

NP is intended to enable customers to move their number to the service provider/operator who best meets their needs and requirements and thus NP enables customers to form constructive and meaningful relationships with their new service provider/operator. Providing NP services to the TCI market involves costs to operators and NP should be considered as a finite resource, which must be effectively managed for the best interests of the TCI market and consumers. The Commission recognises that the NP service could be abused by customers frequently switching from one operator to another to merely avail themselves of the latest or best offers or price promotions.

To prevent NP services being abused, many implementations enforce onward porting restriction periods which prevent customers from onward porting their number to another operator for a minimum period from the date of the previous porting transaction. Such onward porting restriction functionality is typically enforced automatically by the NP clearinghouse.

The Commission's research to benchmark with other similar NP jurisdictions, suggests that an appropriate porting restriction period would be 60 days, which also aligns with the corresponding winback prohibition period, outlined in section 4.10 of this consultation document.

Question 19 - It is proposed that customers will not be permitted to port their number to another operator within 60 days of their previous successful porting request. Please provide your comments and views regarding this proposed approach.

4.12   Ancillary Porting Functions

The Commission has already expressed its preference for simple and streamlined NP process for TCI in the interests of efficiency, consistency and to ensure positive customer porting experience. The Commission has proposed that the NP process should be limited to simple and efficient porting numbers between donor and recipient and ancillary functions avoided unless absolutely necessary.

In some NP processes, customers are allowed to nominate a future date for their porting request processed. The Commission recognises that such a deferred porting function may be useful in certain circumstances. However, the Commission's research suggests that such deferred porting functions are seldom used and can result in confusion amongst NP stakeholders resulting in unnecessary porting theories and errors.

The Commission proposes that only real-time porting of numbers should be permitted in the TCI NP process and that deferred or delayed porting should not be allowed.

> **Question 20 - It is proposed that only real-time porting of customer numbers will be allowed and customers will not be able to defer or delay porting requests to later dates. Please provide your comments and views regarding this proposed approach.**

The introduction of NP into the TCI market is intended to benefit all TCI consumers, both retail and business/corporate. The Commission recognises that the porting requirements for retail and business/corporate customers may differ and in particular that business/corporate customers may wish to port multiple numbers in a single transaction.

The Commission understands that successful NP implementations allow multiple numbers to be ported in a single transaction, but this capability may require separate process and/or NP clearinghouse functionality. For instance, if the TCI NP process is to include secondary customer initiated validation of porting requests, there are multiple number porting transactions and require each number to be separately validated by the user or customer which could be cumbersome and complex to manage.

In the interests of efficiency and positive customer porting experience, the Commission proposes that the TCI NP process should allow the porting of multiple numbers within a single porting request, irrespective of whether such number blocks are contiguous or non-contiguous. However, the Commission recognises that to simplify the validation process for donor operators all numbers within a multiple number porting request should come from the same customer account held by the donor operator.

For simplicity and clarity, the Commission proposes that a multiple number porting request is defined as a request that contains two or more numbers. It may be appropriate for such multiple number porting requests to be exempt from the standard timeframe, but the commission will review potential multiple porting process requirements during the post-consultation NP implementation phase.

> **Question 21 - It is proposed that the porting process will allow the porting of multiple customer numbers within a single porting request (where "multiple number" is defined as two or more numbers belong to the same customer account), both contiguous and non-contiguous number ranges, to support the efficient porting of multiple number blocks. Please provide your comments and views regarding this proposed approach.**