ITSPA

Internet Telephony Services Providers' Association

ITSPA Response to Ofcom consultation on Promoting Trust in Telephone Numbers

About ITSPA

The Internet Telephony Services Providers' Association ("**ITSPA**") represents over 100 UK businesses involved with the supply of next generation communication services over data networks to industry and residential customers within the UK. Our traditional core members are VoIP providers. ITSPA pays close attention to both market and regulatory framework developments on a worldwide basis in order to ensure that the UK internet telephony industry is as competitive as it can be within both national and international markets.

Please note that certain aspects of the ITSPA response may not necessarily be supported by all ITSPA members. Individual members may respond separately to this consultation where a position differs. However, the ITSPA Council is confident that this response reflects the views of the overwhelming majority of ITSPA members.

A full list of ITSPA members can be found at http://www.itspa.org.uk/.

Response

ITSPA recognises that this first consultation on *Promoting Trust in Telephone Numbers* represents Ofcom's initial view, and with that in mind, we have provided only high-level answers to the consultation questions.

As Ofcom's view matures, we will welcome the opportunity to provide more granular responses.

As a general point, some ITSPA members consider that the project regarding blockchain, or centralized database, may be slightly unambitious. It has the potential of replacing a number of processes or systems, such as 999 location information, subscriber information requests under RIPA and we note that the Australian model may be worthy of review. That said, obviously, there is broad support for any intervention that may address harms seen in CLI spoof and number portability.

Calling Line Identification authentication

Consultation questions

Question 3.1: *Do you have further views about the implementation of STIR?*

ITSPA members welcome the consideration of implementing UK STIR, and agree with Ofcom that the need for a solution is increasing. However, we question whether or not CLI authentication as opposed to number portability are the main priority; our members and their end user customers experience daily harm as a result of the failings in switching, but we see less harm in relation to spoofing.

An early implementation would, most probably, be restricted to the attestation and signing of the Network Number ("**NN**") and, certainly, not Type 3/4/5 Presentation Numbers. This would provide

surety of which Originating CP ("**OCP**") admitted the call into the public network, and that the OCP is permitted to use that NN. However, it would have limited ability to provide confirmation that the Presentation Number ("**PN**") meets the requirements of General Condition of Entitlement ("**GC**") C6.4.

In addition, the costs involved in implementing UK STIR, at an early stage, would be significant, and potentially onerous to the smaller Communication Providers ("**CPs**"). Taking cognisance of that fact, it may be prudent to invite 'volume' CPs to act as vanguards (*à la* AT&T and Comcast in the U.S. with the implementation of SHAKEN), and to work closely with the NICC[1].

Although the implementation of UK STIR would be helpful, it's certainly not a 'silver bullet' for resolving the loss of trust in CLI – and, can only have minimal effect in preventing nuisance calls. After all, a nuisance call with a verified CLI is still a nuisance call. Therefore, as phases of evolution will be required, over the long-term, before the benefits of UK STIR can be realised, work should commence as soon as possible.

Question 3.2: *Are there any other approaches we should consider for addressing CLI authentication?*

The new requirements that came into effect on 1 October 2018 can be of much assistance in tackling spoofing, but further work is required in order to increase that effectiveness.

The role of the OCP is crucial with regard to the PN that is used when a call is admitted into the public network. ITSPA members have afforded much effort in this respect – whether in the role of OCP, Terminating CP ("**TCP**"), or acting as a transit carrier. However, our members are still receiving many calls with invalid PNs; and, there appears to be room for some improvement by OCPs regarding checking that the PN is part of a valid number range.

In addition, enforcement action is required of the regulator, to ensure that OCPs are held accountable for the PNs that they allow into the public network; particularly, where their customers have entered into '*Type 1 through Type 5 Presentation Number*' agreements, and the PN(s) are *not* numbers which the OCP, themselves, have been allocated.

Taking cognisance of the volume of unsolicited calls that are received from non-UK call centres, international liaison and collaboration between NRAs and law-enforcement agencies has an important contribution to make.

Question 3.3: *Do you agree a common database would be required to support the implementation of STIR?*

The early implementation of UK STIR would *not* require a common database; as the initial phase would, probably, mainly focus on the NN. As the OCPs have full control of the Network Numbers that they are permitted to use (allocated number ranges, imported numbers, and sub-allocated numbers), no reference to a common database would be required.

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[1] Although we reiterate our concerns in the Future of Interconnection consultation regarding an over-reliance on the NICC, which is potentially more representative of major networks than smaller networks or new entrants.

After much evolution, and *with* the introduction of a common database, ultimate confirmation that the caller is permitted to use a particular PN would become achievable. In fact, the evolution could, eventually, lead to the attestation, signing and verification being undertaken by the User Agents themselves. However, that is a long way off, because there are many legitimate call scenarios where an outbound call from a Subscriber entitled to use an individual telephone number can be presented to the User-Network Interface of a plethora of different OCPs.

Therefore, the early stage(s) of implementation of UK STIR should not be delayed until a common database is available, for a number of reasons:

i. The full implementation of UK STIR will be a long-term task, and as a number of phases will be required, it may be prudent to commence before a common database has been introduced; and

ii. Populating a common database, with accurate data, will be a challenge, as data-integrity issues have developed over the decades, and much time and effort will be required to overcome them.

Question 3.4: *What are your views on using blockchain technology as the basis for a common numbering database to support CLI authentication? What other solutions do you think should be considered and why?*

ITSPA members welcome the proof-of-concept that is underway, and we are supportive of the high-level concept that Distributed Ledger Technology ("**DLT**") could provide the basis for establishing a common numbering database.

As previous attempts at moving towards a 'centralised' database were not welcomed, or trusted, industry-wide, it is hoped that a distributed methodology will be both acceptable and trusted.

Question 3.5: *What are your views on timeframes?*

If the DLT proof-of-concept goes well, and work commences soon after, it is feasible that a common numbering database could be 'live' and usable by some time in 2022. In order to achieve that timescale, however, data-cleansing work needs to begin as soon as possible[2]; and the creation of best-practice guides will also be required in order to steer CPs in how best to maintain its accuracy.

The task of correcting the data-integrity issues could be significant; and much effort will be required before the desired level of CLI authentication could be achieved; along with acceptable levels of Post-dial Delay ("**PDD**"). With that in mind, we believe that, no matter which type of technology is chosen as the basis for a common numbering database, an industry-wide exercise in data cleansing should commence, immediately.

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[2] ITSPA members believe that the example of the Vodafone closure of their 999 Call Handling Authority and the subsequent migration of their customers to BT provides a useful proxy for the amount of work that may be required and that it may be substantial.

Certainly, we believe that it should be possible to have a common numbering database, based upon DLT, in-service and useable for CLI authentication before the PSTN switch-off is complete at, or around, the end of 2025.

Number portability

Consultation questions

Question 4.1: *What are your views on the current implementation of number portability in the fixed and mobile sectors?*

The current implementation of number portability in the fixed sector does, indeed, suffer from significant issues, which can be costly in time and effort to CPs and, more importantly, causes consumer harm. We commend Ofcom for finally acknowledging that, in the business sector, there are significant porting issues, and that these are particularly acute for business customers seeking to switch providers.

Substantial effort is afforded in making (short-term) process improvements, in an attempt to keep the "aged" Geographic Number Portability and Non-geographic Number Portability processes relevant and workable. However, even without the forthcoming transition to All-IP, or the potential for a common numbering database, the fixed sector would greatly benefit from new processes being devised and implemented.

Fundamentally, ITSPA members believe much of the harm that arises, in terms of the games played by more nefarious networks or resellers, are not going to be resolved by a new system in of itself. For example, if a new system still requires contractual privity between the donor and recipient, or gaining and losing providers, then the harm vector will still exist and be perpetuated into the new world order.

ITSPA has previously written to Ofcom regarding these issues[3] and would urge Ofcom to ensure they are addressed prior to a new system being launched that may not address the harm it seeks to solve.

Question 4.2: *What are your views on sharing the functionality of a common numbering database for CLI authentication to also support improvements in UK porting processes?*

We believe that the functionality of a common numbering database in supporting improvements to the UK porting processes is even more critical than that for CLI authentication. We would, therefore, look forward to the first iteration of a common numbering database being designed with UK number portability at the fore.

Whether the common numbering database is employed for number portability, direct routing or number management, appropriate measures need to be built-in to ensure that data protection is incorporated by design. In addition, safeguards will be required to ensure that no commercial advantage is gained by any particular CP(s).

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[3] ITSPA Letter to Huw Saunders, 29th October 2018

Question 4.3: *We are currently supporting a blockchain pilot. Do you have any views on using this technology for port transactions and a routing database? Are there other alternatives that should be considered?*

ITSPA members are supportive of the blockchain proof-of-concept, and have a desire to be as fully involved as possible. Should the proof-of-concept prove successful, we would work closely with stakeholders to define the Functional Specification required for the actual solution to handle port transactions and the onward routing functionality.

Question 4.4: *What are your views on implementation timeframes and the importance of a common database solution being available to support the migration of telephony services to IP?*

The migration of telephony services to All-IP can be achieved without the introduction of a common numbering database. However, the magnitude of how difficult that would prove can be attributed to a number of factors; with one, in particular, being dependent upon whether the End-Users only require to *transfer* their PSTN number to their current service provider's VoIP solution, or whether they require to *port*[4] their PSTN number to a new service provider's VoIP solution. We do not believe that this distinction is properly understood at the appropriate levels within BT.

No matter which of the above scenarios end-up being the predominant, the availability of a common numbering database would surely facilitate a much smoother migration path, and a better experience for the End-Users.

If, as Ofcom expect, that a common numbering database could be available by 2022, as long as the new porting processes are in a state-of-readiness, it is possible that the benefits might emerge in time for the bulk of the migrations; and, in addition, for all future porting orders.

It is our expectation that the common numbering database could be implemented and populated, by 2022, for the above. However, there is a potential that the population of the existing data, which has amassed over a number of decades, may require a little longer to be checked, verified and populated.

Number management

Consultation questions

Question 5.1: *What are your views on the potential for a common database solution to also provide shared functionality to support number management?*

The current solution, NMS, only provides confirmation of allocation at 'block' level. The potential for a common database solution to provide granularity at individual telephone number level would be a game-changer, and provide multiple benefits, encouraging efficiency in allocation, but also in identifying which CP is the actual service provider for imported and sub-allocated numbers.

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[4] And in any event, this wouldn't be number portability in the legal definition, which requires a change of the End User's Public Electronic Communications Service provider.

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The concept of providing shared functionality between number portability and number management makes logical sense; as does the objective of employing that common database for both onward routing and CLI authentication.

Question 5.2: *What do you see as the benefits or disbenefits of changes to number management post PSTN retirement?*

The benefits include transparency, efficiency and effective management designed to reduce the likelihood of number exhaustion.

Initial views on establishing a common numbering database and next steps

Consultation questions

Question 6.1: *Do you agree, in principle, with the need to develop and adopt a common numbering database? If not, why not?*

ITSPA members *do* agree, in principle, that the development and adoption of a common numbering database has the potential to provide numerous benefits, and that as the solution evolved, further benefits and improvements would emerge.

Question 6.2: *If you do not agree with the need to develop and adopt a common numbering database, do you have any suggestions on how the issues we have set out in this consultation could be addressed?*

N/A

Question 6.3: *Do you agree that in the first instance industry should lead the implementation of a common numbering database, with Ofcom providing support to convene and coordinate key activities? If not, what are your views on how implementation should be taken forward?*

Taking cognisance of lessons learnt from the decision in 2007[5], we believe that it will require the regulator to take the lead, in the initial stages, to ensure that timeous traction is attained. As there has been a measureable increase in the number of 'players' since 2007, it's unlikely that industry, itself, would be able to reach an agreed position, and drive the implementation effectively. Indeed, if the industry were able to solve these problems without regulatory intervention, then surely industry already would have done?

Ofcom have stated that they will facilitate the process, and will work closely with stakeholders and industry to convene and coordinate activities. Certainly, industry will, eventually, take 'ownership' of the journey towards implementation, but in the first instance, it will require the regulator to initiate and steer the development and not least specify the desired outcome in terms of end user experience – in other words, address the fundamental process issues that ITSPA say give rise to much of the harm seen today.

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[5] ITSPA notes that there have been a number of attempts by the industry to implement a revised system, or that vested interests within the industry have seen to the regulator's attempt being overturned in court.