

Syniverse Response to TRAI Consultation Paper on Review of Mobile Number Portability Process

Response to:



3 May 2018

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1 Executive Summary

Syniverse is pleased to present Telecom Regulatory Authority of India (TRAI) with our response for the Consultation Paper on Review of Mobile Number Portability (MNP) process dated 6 April 2018. However, before giving its question wise response, Syniverse wishes to submit that overall, in this consultation paper, TRAI has suggested a far bigger role of MNPS in the porting process. For implementing the suggested methodology, both the MNPSs will have to spend considerable amount of CAPEX and OPEX and time in installation and testing of required infrastructure. This may also require amendment to the MNPS Licence and reviewing the charges which the MNPS will get for carrying out the additional activities. Syniverse has already requested TRAI vide its letter dated April 24, 2018 for keeping in abeyance its recent tariff order till renewal of our licence. It is submitted that the new regulation because of this consultation paper should also come into effect from the renewal date. Therefore, our response is conditioned on the following:

- 1) That TRAI and the MNPSs shall agree to a price that fairly compensates the MNPS for the greatly expanded role requested in this consultation paper according to the final regulations.
- 2) That price shall be guaranteed for a specific number of years agreed to between TRAI and the MNPSs and that any future price adjustments must be negotiated in good faith and/or further conditioned on objective and public milestones that allow prediction and estimation of future business plans
- 3) TRAI will need to enforce the rules with the operators so that the proposed regulatory changes documented herein below can be implemented effectively. Without compelling operators to support the process fully some of the proposed process improvements cannot be implemented successfully.

Our question wise response is as follows:

1.1 Question 1

Would it be appropriate that MNPS be assigned the task of generating and communicating the Unique Porting Code (UPC) to the subscriber intending to port his mobile number as proposed in the consultation paper?

Presently, all MNPS functions involve only Business to Business (B2B) communication for which inter-operator connectivity through MNP gateways is already established. However, the consultation paper envisages that the MNPS are also assigned the task of receiving the request for UPC from consumers, communicating them either the UPC or reasons for rejection and time of port to the consumers. This will involve Business to Consumer (B2C) communication for which Syniverse will have to invest substantial amount of CAPEX in building the required infrastructure and also huge operating costs to maintain this role. Moreover, this functionality will need to be supported in various languages and will also require a call centre to handle questions, complaints and issues from the consumers. The telcos are already having the required infrastructure and are already in the business of B2C & C2C communication. Therefore, it is respectfully submitted that B2C communication should continue with the telcos and an alternate solution (see reply to Q.3) should be adopted. However, in case TRAI decides to adopt its suggested methodology, the MNPS would require substantial compensation to support this messaging and customer communications infrastructure. The compensation for this must also be worked out (see question 6)



1.2 Question 2

If you agree to assign the task of UPC generation to MNPSPs, whether the revised process outlined in the consultation paper is appropriate to address the relevant issues being faced in the existing MNP process?

As detailed in 1.3 below, addressing the issues raised in section B (2.7 – 2.16) can be entirely addressed by having the DO and RO continue to handle subscriber/end user communications and having the MNPSP generate the UPC.

1.3 Question 3

Do you suggest any other methodology which can address the issues being faced in the existing MNP process? Elaborate your answer.

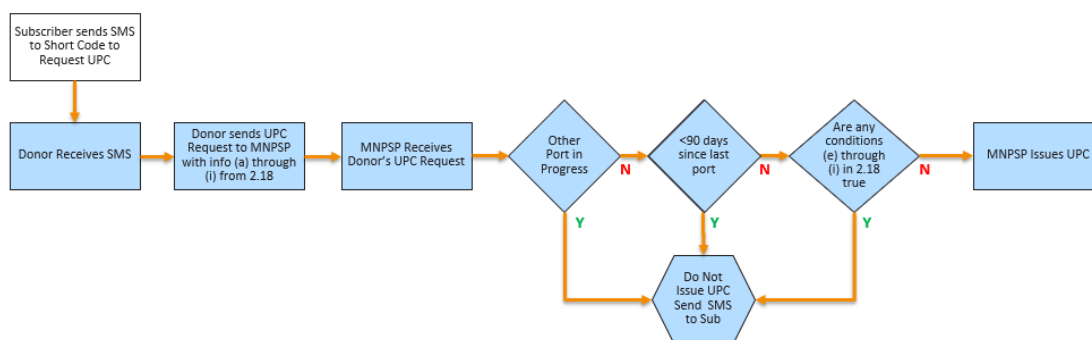
Alternatively, this function could also be retained by the Donor Operator (DO) – as it is today – but with the addition of a regulation requiring the DO to send a message communicating a subscriber wants a UPC as well as the information specified in (a) through (i) in section 2.18. The MNPSP could immediately respond with the UPC if there is:

- not another port in progress
- that the number has not ported in the previous 90 days
- None of the conditions in letters (e) through (i) in section 2.18 are true

Otherwise it would reply with an error code indicating the reason for rejection.

However, in the case of prior porting in the ninety days, the DO network would have been involved in such a port, so it should be able to determine this itself. Likewise, if one of the conditions of letters (e) through (i) in section 2.18 was applicable the DO would know this information itself. However, communicating the UPC request to the MNPSP provides a single point of control and auditability for TRAI to investigate allegations of issues by a DO.

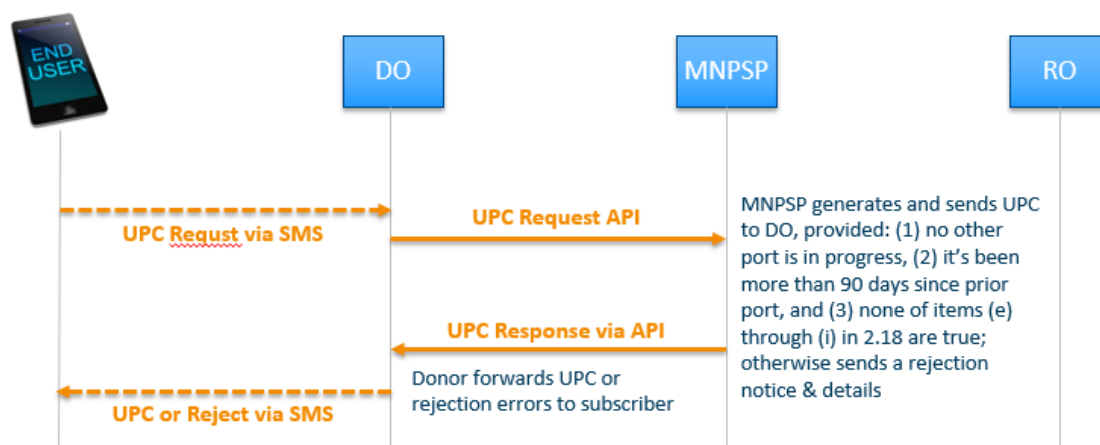
Figure 1-1: Proposed Alternate Logical Flow for UPC Generation



It should be mentioned however, that although the DO would of course know if a UPC had been issued and not yet expired, the DO would not know if a port is in progress until it receives a port out request. Therefore, the MNPSP should still perform the check to see if another port is in progress.

Such an alternate approach could achieve all the same benefits as desired by TRAI at lower overall costs. In this case, the MNPSP could still immediately validate the UPC for expiration and mismatch upon receipt of the port request from the Recipient Operator (RO) as desired by TRAI.

Figure 1-2: Proposed Alternate Messaging Flow for UPC Generation



* UPC Request contains: items (a) through (i) in section 2.18

In the above flow, the DO still controls communications with its subscribers but the MNPSP generates the UPC providing TRAI with enhanced audit capabilities. TRAI could specify a time frame within which the DO must provide a UPC to its subscribers via SMS. Such an approach has been recently required by Ofcom the Telecoms regulator in the United Kingdom, where they are requiring the donor operator to query the UK MNP Clearinghouse to obtain a Port Authorisation Code (PAC) and return it to the requesting subscriber within 60 seconds of receiving the SMS requesting a PAC.

A complaint line may be set up to handle complaints by a 3rd party so that TRAI may know of any allegations of unjustified delays by the DO in sending the UPC Request to the MNPSP or forwarding the UPC Response from the MNPSP to the end user. The API between the DO and MNPSP can be monitored via keep alive messages to ensure the DO can't unfairly claim it was unable to send the UPC request or did not receive the UPC response and reports of the same can be provided to TRAI.

In the case where a donor network has shut down (or is unable to generate UPCs) then the subscriber still needs a UPC to port out. This represents a special challenge which has been examined in 1.9 (Question 9) below.

1.4 Question 4

How can KYC information available with DO be verified during the MNP process to avoid fraudulent porting? Please elaborate.

No Comment.

1.5 Question 5

What are the challenges in implementing the proposed MNP processes / framework on the part of stakeholders' viz. TSP (as DO and RO) and MNPSP? Elaborate your answer.

One of the issues raised by TRAI is that the donor delays or denies the port because it sometimes doesn't generate the UPC or claims that it is not valid or mismatched upon receipt in the request. However, this issue is only partially addressed in TRAI's proposed process. In the proposed process the UPC shall be generated by the MNPSP but only after a query/response between the MNPSP and the DO take place. There may still be times where the DO doesn't or can't respond to the MNPSP's query. Or may have incorrect or inconsistent data in its records. Unless care is taken to ensure that the response to the query is generated

by the same database and system that generates the clearance or denial of a port request there may still be issues with this process.

Further the proposed process states that if no response is received from the donor then the UPC shall be issued and the port shall be scheduled. Since no response was received the MNPSP will not know whether the port is for an individual account or a corporate or contractually obligated account, therefore the MNPSP does not know whether to schedule the port for 2 hours or the next business day. Assuming it is scheduled for two hours the port may later be rejected by the DO because it is a corporate account.

The two-hour limit for prepaid is not a concern at all for the MNPSP, in many countries a high percentage of ports are completed accurately in just a few minutes. For example, in the USA the major operators are all automated and about 85% of ports are completed in about 5 minutes or less. The 15% of ports that do not complete in this time frame are due to errors by the subscriber or RO in submitting the right porting information or because the donor is a small wireless operator without automation or a wireline operator (the USA permits porting of fixed line to mobile and vice versa). The key to this is making this work is to ensure that all parties – especially the DO/RO – are automated at all key functional steps. Without this the MNPSP can easily schedule and order the ports to take place in 2 hours or next business day but if the DO and/or RO cannot execute that port the MNPSPs efforts will be in vain.

Likewise, the move to porting 24 hours a day around the clock is not an issue as many countries have long conducted porting under such conditions (generally, however, there is one standardized window when operators or MNP system operators may shut down the system to make changes. Typically, this is Sunday morning in the appropriate time zones).

However, TRAI must recognize that the expansion of porting to 24x7 and upgrading the cadence of porting requires a higher level of support and operations that comes with a cost. While Syniverse is supremely confident of its abilities to support these requirements TRAI should carefully consider the costs vs. benefits of requiring the systems to be online 24x7. These costs would be borne both by the MNPSPs as well as the telecom operators, ILDO/TSPs, etc. It may be most cost efficient to limit porting request and responses to 7:00 AM to midnight or some other reasonable time. This avoids generating costs to support a platform and operations between midnight and 7:00 AM when less than 1% of porting requests happen. Of course, these hours may be adjusted to suit TRAI's requirements, and as stated, Syniverse can easily support 2-hour porting 24x7 but offers our view to TRAI so that the greater good of India can be met.

In section 2.24 TRAI states that in the case of a corporate number being ported that a “DO will within 24 hours or one working day of receipt of the request shall communicate its acceptance or rejection to the MNPSP”. This implies that there is a standard definition of working days agreed to by TRAI, operators and MNPSPs this is an important point as there are many regional holidays and religious holidays that are observed by some but not by others. Additionally, the references to “24 hours or one working day” is vague and would need additional definition in the final requirements. For example, if a request was made at 4:00 PM IST on Friday is that response due before:

- 10:00 AM IST on Saturday (24 hours later)
- 10:00 AM IST on Monday (same time next working day allowing 24 hours excluding non-working days)
- 5:00 PM IST on Monday (end of next working day) or
- 11:59:59 PM IST on Monday (end of next working day).



1.6 Question 6

Whether MNPSP should be compensated towards the cost of generation and delivery of UPC to the subscriber through SMS? If yes, what mechanism can be adopted?

Yes. As proposed by TRAI there are considerable costs borne by the MNPSP to provide the SMS service. In addition to the costs for setting up, testing, maintaining and operating SMPP networks to every Telecom operator's SMSCs, hardware and software changes required for receiving and sending SMS, TRAI must also recognize the cost of providing help to millions of users every month who may need help or have questions about the UPC or have an issue with the UPC. It is extremely likely that the DO and/or RO will tell subscribers to call the MNPSP with any questions, or the subscribers may conclude that themselves. Consequently, the MNPSP may receive a huge number of calls, texts and emails every day asking for help. As mentioned earlier, the cost to the MNPSP to set this up would be huge. Therefore, Syniverse suggests the alternate plan as outlined in 1.3 to avoid burdening the MNPSP with this B2C task better suited to the DO.

In addition to the SMS handling costs, TRAI's proposal calls for a query/response process between the MNPSP and DO so that the MNPSP can obtain information in (e) through (i) in section 2.18 to be stored and used later in the port process. Specifically:

- (e) age on network is less than 90 days
- (f) Change of ownership is underway
- (g) Outstanding payments due for the issued bill for postpaid subscribers
- (h) The Mobile number is sub-judice
- (i) Prohibited by a court

This also represents considerable costs to the MNPSP not only to build its end of the query response interface but also store the data. Plus, this new process will also increase customer service requests which must be handled by the MNPSP.

There are also details to be worked out about the compensation mechanism for the MNPSP in this model. Simply adding to the porting tariff will not be acceptable as the ratio of UPC requests to successful is unknown. This ratio could be 2 to 1 or 3 to 1 or higher. Given the large population and volume this represents potentially a lot of SMSs that do not result in a port.

In addition, who to charge is not clear. The MNPSP has no billing relationship with the subscriber. The donor will charge for an SMS generated on their network, so it may be possible to bill them for each UPC generated, but in cases of a network shut down – where massive quantities of UPCs may be generated – it is doubtful that the MNPSP will be able to collect those funds. Charging the recipient is not practical because at the time the UPC is generated the MNPSP does not know who the recipient operator will be. MNPSPs could charge the recipient once a port request is received, but there will still be many UPCs that do not result in a port request being submitted. Thus, MNPSPs are left with charging all operators on some pro-rata basis according to the percentage of subscribers each operator has amongst all operators in India. For example, if an operator has 25.5% market share (25.5% of all Indian Mobile subscribers) then 25.5% of the UPC generation fees would be assessed to them by the MNPSP. The details of the fee can be negotiated but a fixed fee to cover a set number of SMSs and an additional fee can be allocated if the quantity of SMSs exceeds the set amount. For example, if 5 million UPC request SMS are expected each year an annual limit of 60M can be set for a specific fee and an additional amount for each 5M or portion of one thereafter.



1.7 Question 7

What would be the appropriate mechanism to reinforce the accountability and role of MNPSP in the proposed scenario?

As submitted by M/S Syniverse in its opening comments, this consultation paper is envisioning a bigger role for the MNPSP. Though, we welcome this step, it will require modification in the Licence. The MNPSP license terms should be expanded to cover the new responsibilities and expanded role of the MNPSP. As our licence are coming up for renewal in March 2019, it is submitted that DoT and TRAI and the MNPSP should negotiate these terms and mutually agree on a schedule of expanded responsibilities for the MNPSP and agree to fair and adequate compensation for filling the expanded role. Needless to say, these changes should come into effect only after the licence renewal.

1.8 Question 8

What could be the mandatory obligations on part of the MNPSP?

See Question 7 above.

1.9 Question 9

In the event of large scale disruption or sudden shutdown of network, what could be the appropriate alternative mechanism to ensure delivery of UPC and completion of porting process?

Normally, sudden shutdown of a telecom network does not happen as their Licence mandates that the TSP must give a notice of minimum 30 days to its subscribers before closing the service. It could be mandated that along with the notice, the TSP should also generate and communicate the UPC to the subscriber. Though the DO or TRAI could request that the MNPSP pre-generate and proactively send UPCs to subscribers in a throttled manner (so as not to overwhelm the DO network), it will require the DO to share certain aspects of its subscriber data base with the MNPSP to determine whether the account is prepaid or postpaid and whether or not the number is corporate or individual in order to generate the correct form of UPC and later set the porting time frame as either 2 hours or next business day.

The MNPSP should be compensated for this work above and beyond the porting fee because there is work performed in this process that is far above and way beyond the normal porting process supported by the MNPSP.

1.10 Question 10

(a) Do you agree with the process for transfer of the prepaid balance to the subscriber's account as described in the consultation paper? What changes do you envisage in licensing/ regulatory framework to enable the provision? Please elaborate your answer.

One could argue that in the case of normal porting operations, the subscriber should know and understand that any prepaid balance is to be forfeited upon porting. And since the subscriber can control the timing of their port, they can ensure that the prepaid balance is minimized and may not be too concerned if a small balance is forfeited. However, in the case of forced porting due to network closure the subscriber is unfairly penalized by forfeiting the balance of prepaid accounts.

On the other side, the utility and value of porting is increased when it came happen as soon as the subscriber decides to make it happen.



If this process is adapted, the regulations should require the donor network to provide the current prepaid balance on the account in a message to the MNPSP at the time the MNPSP instructs the DO to break the connection. This could be returned in an acknowledgment message to the break connection message or as a separate message. Alternatively, or in addition, TRAI can require the DO to provide a daily summary file to the MNPSP listing the details such as account number, balance, telephone number and other applicable details specified by TRAI. This would provide information to help calculate the amount owed.

Since each operator is at times both a DO and an RO, the actual amount of cash to be exchanged can be net settled from each operator's perspective. For example, if operator A some subscribers who ported out with prepaid balances and needs to pay some recipients for that. But at the same time Operator "A" may have ported in some subscribers with prepaid balances and needs to receive the cash for this from the various donor networks in order to deposit this into the account of the its subscribers appropriately. At the end of the month some operators may be a net payor, and some may be a net recipient, but in end, the amount paid in and paid out should balance to 0 Rs.

Instead of paying out to all other operators and trying to collect from all other operators it becomes much more efficient to have a neutral party collect and pay collectively.

But for this to happen TRAI would need to enforce that the operators paying must do so without exception by a certain date. The MNPSP cannot be put into the position of having to pay out to the operators who are net recipients without first collecting from the operators who are net payors.

Syniverse is the foremost experienced and successful provider of clearing and settlement of roaming fees among mobile operators today. So, we are uniquely qualified to provide this service. A portion of the fees due by the operators should be provided to Syniverse, or alternatively a set monthly allocation by subscribers can be devised to compensate the MNPSP for accepting this enhanced role and responsibility.

(b) If the above process is not agreeable, please suggest alternate mechanism.

Not applicable as Syniverse agrees.

1.11 Question 11

What should be the regulatory requirements to monitor efficacy of the provision of transferring the unspent pre-paid balance? Please elaborate your answer.

No Comments

1.12 Question 12

In the proposed scenario of reduced MNP timelines, should the validity of the UPC be reviewed? If yes, what should be the period of validity of UPC? Please elaborate your answer with justification.

Normally, a subscriber takes some time before deliberately deciding to port his or her number by generating a UPC and porting it. Therefore, a time of 15 days was decided by TRAI initially. It had no relation with the actual time taken in porting a number. However,, if the format of the UPC is changed to include a "P" for postpaid in either the 3rd character for individual or 4th character for corporate subscribers the combination of possible UPC codes for postpaid subscribers will be reduced by approximately 10%. This could lead to a need to recycle the UPCs for a given operator in a given circle more rapidly.



It should also be noted that shortening the validity period of a UPC could lead to increased porting failures beyond the control of the MNPSP. And more importantly, it should be noted that there are costs to be borne by the MNPSP even on failed ports and these costs are not insubstantial. The MNPSP must process the request using the same facilities and process and do the same amount of work for a failed port as a successful port. In some cases, the failed port may be costlier to handle if there are questions from DO or RO about the failed port.

1.13 Question 13

Whether it would be appropriate to review the existing structure of UPC? Please elaborate your answer with justification.

It would not make much difference except that this would be a convenient way to signal to a RO that the number was previously postpaid and may be subject to Non-Payment Disconnection (NPD) if the subscriber does not pay his final bill in the allotted time. Other than assigning the proper format there is no difference in how the MNPSP software would behave since we already know the MSISDN as either prepaid vs. postpaid from the query response to the DO for the purpose of scheduling the port in either 2 hours or next business day.

It is worth noting however, that in cases where the DO does not respond to the account information query from the MNPSP the MNPSP (as per the proposed regulations) will assign the UPC regardless. In this case, it is not known by the MNPSP whether the account is postpaid or prepaid and whether the subscriber is corporate or individual account. In this case, the MNPSP would have to assign a UPC and TRAI would need to specify the "default" format for the UPC.

1.14 Question 14

If you agree to above, does the proposed structure as discussed above adequately serve the purpose or would you suggest any other mechanism? Please elaborate your answer with justification.

Since a corporate postpaid UPC is a "C" followed by seven alpha-numeric characters it is possible that UPCs may exist with a "P" in either the third or fourth character. This means the MNPSP creating the UPC must avoid randomly assigning a "P" in the 3rd character for corporate postpaid accounts where a "P" will be placed in 4th character and likewise must avoid randomly assigning a "P" in the 4th character for non-corporate postpaid accounts where a "P" will already be placed in the 3rd character. If either of these limitations is not followed it would result in a UPC with a "P" in both the 3rd and 4th characters and that would confuse the issue greatly. Otherwise, the format specified in 2.51 should adequately serve the intended purpose. However, it might be easier for people to understand this if the last of the 8 alpha-numeric characters was a "P" rather than a

1.15 Question 15

Should the provision of withdrawal of porting request be done away with in the revised MNP process? Please state your answer with justification.

No Comments

1.16 Question 16

What additional changes do you envisage in the MNP regulations? Elaborate your suggestions.

Syniverse has no other suggestions.



1.17 Question 17

Due to the difficulty envisaged, should the subscriber be allowed to reconnect his mobile number even after number return process is initiated? If yes, what could be the criteria? Please elaborate suitable method.

Syniverse has no comments on the criteria to permit return of number even after the return process has been initiated. However, once the number is returned to the NRH it becomes extraordinarily difficult to coordinate the return – and outright impossible if the number has been reassigned by the NRH to a new subscriber. For this reason, Syniverse would be in favour of extending the 60-day return window to 90 days before returning to the NRH but would not be in favour of returning a number after the number has been returned to the NRH.

It is also submitted that these activities should be counted as a number port payable by the subscriber to the RO and the RO to the MNPSP because MNPSP is doing extra work to coordinate the return to the NRH.

1.18 Question 18

Should the MNPSPs be allowed to charge for the ancillary services such as number return and bulk database download by TSPs? Please provide your comments with justifications.

Yes. Considering the globally unprecedented low level of India's 19 Rs. per port tariff *before* the price, never mind the current rate of 4 Rs. the MNPSPs will be losing money going forward. Consequently, the MNPSPs must be allowed to charge for any ancillary services such as NPD, Number Returns and Bulk Data Downloads. Both MNPSPs should also be allowed to implement the licenses for dipping solutions to enterprises, ILDOs, and other telecom service providers operating within India's telecom ecosystem. Considering the limited number (34,400 since January 2011) of instances for partial or full bulk data downloads this will not be a financial hardship on the operators. Furthermore, it is not the fault of the MNPSP that the operator is needing the bulk data download. For the MNPSP to perform this activity takes time and effort that they should be compensated for as it represents a cost to the MNPSP. The beneficiary of the activity should be paying for this service. In fact, if the bulk data download came with a price, operators would have incentive to improve their operations to not require as many bulk data downloads in the future and this would improve service for mobile subscribers in general.

1.19 Question 19

Would the new technologies, such as blockchain, be helpful for facilitating faster and transparent MNP process? What can be the possible advantages and challenges? Please elaborate.

If Blockchain is being used merely within the porting process in India it is an expensive solution (due to the need for massive computing processes to validate the encryption algorithms) with little benefit over the traditional porting processes. Moreover, some of the information which TRAI is suggesting to be a part of Blockchain, is probably considered confidential by the operators. Question 20

If there are any other issue(s) relevant to the subject, stakeholders are requested to offer comments along with explanation and justifications.

None.



2 About Syniverse

Syniverse is the leading global transaction processor that connects more than 1,500 mobile service providers, enterprises, ISPs and OTTs in nearly 200 countries and territories, enabling seamless mobile communications across disparate and rapidly evolving networks, devices and applications. We deliver innovative cloud-based solutions that facilitate superior end-user experiences through always-on services and real-time engagement. For more than 25 years, Syniverse has been simplifying complexity to deliver the promise of mobility – a simple, interoperable experience, anytime, anywhere.

As a pioneer in mobile innovations since the dawn of the mobile industry, Syniverse is at the forefront of creating solutions for LTE, revenue management and mobile engagement, reach, protection and engagement. Syniverse reaches more than 6 billion mobile end users globally and has more than 500 customer-facing IPX connections.

Based at our global headquarters in Tampa, Florida, U.S.A., our multi-lingual support includes English, Spanish, Portuguese, French, Mandarin, and Chinese. We also have regional technical support offices around the world. Syniverse's approach to handling Production Issues and Service Request encompasses a multi-level customer support model.

