

PROPOSING A NEW

ENTERPRISE MESSAGING ECOSYSTEM

A NORTH AMERICAN SOLUTION FOR
TWO-WAY A2P MESSAGING



A WHITE PAPER BY TYNTEC



INTRODUCTION

The enterprise messaging market in North America is not working.

This might sound like a criticism. In fact, the market is a victim of its own success.

Demand is soaring. Consumers love the immediacy and convenience of receiving texts from businesses. Similarly, enterprises appreciate how effective – and affordable – text can be.

As a result, brands have found new use cases for mobile messaging. They started with outbound marketing. But now they are sending millions of two-way enterprise messages – appointment confirmations, conversational commerce, customer care dialogs and more.

In fact, they're adding new ideas all the time – particularly around customer care.

This has put pressure on the existing US messaging framework. The industry currently offers two main options for enterprise messaging: five-to-six digit short codes and ten digit long codes ¹.

Neither is ideal. The limited supply of short codes is insufficient to meet the growing enterprise demands (currently the maximum number of short codes that can be used at a given time is approximately 800,000). And it can take weeks for all participating wireless carriers to approve and provision the campaign.

Meanwhile long codes were primarily designed for P2P (person-to-person) messaging. For this reason, A2P (application-to-person) messages sent over long codes are frequently blocked.

AT TYNTEC, WE BELIEVE A RADICAL NEW APPROACH IS NEEDED FOR TWO-WAY ENTERPRISE MESSAGING.

WE PROPOSE AN ENTIRELY NEW SYSTEM THAT

1

Makes messaging simple, fast and safe for enterprises

2

Opens up vast new revenue streams for operators

3

Meets consumer expectations for communicating with brands

This new system will be a framework to support emerging enterprise messaging. It will preserve what works. And add what's missing.

It will require co-operation from all stakeholders.

BUT TOGETHER WE CAN BUILD IT.

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- Shared revenues

3. THE BENEFITS OF A2P MESSAGING

- Ubiquitous
- No data connection required (except for some MMS utilizing data connection)
- Immediate
- No end user training needed
- Interactive – a two-way channel

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- CTIA guidelines on long codes
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- Re-imagining two-way A2P messaging
- Key roles and responsibilities: enterprises, cloud communications providers, fixed-line carriers, mobile operators, interconnection provider, administrator

1. THE CURRENT SITUATION

A2P MESSAGING IN NORTH AMERICA LOOKS LIKE THIS

Let's say an enterprise wants to use mobile messaging to enhance customer care. It wants its customers to be able to authenticate a service, provide feedback and so on. It has two options.

FIRST IT CAN APPLY FOR A SHORT CODE.

Short codes are easy to remember for end users. But they were built for alerts and mass marketing offers. They were not intended for two-way dialog use cases. Meanwhile, many smaller local operators don't (or can't) provide a short code service.

The process of acquiring a code is complex; it can take as long as 12 weeks to get one. Also, they end up being re-used, often for radically different use cases. This risks damaging brand reputation.

There is now the option for multiple enterprises to share the same code. Senders can use keywords to differentiate traffic. This increases the availability of codes.

But it is just a workaround. Ultimately, the short code is not designed for two-way correspondence beyond simple opt-outs or voting replies.

ALTERNATIVELY, AN ENTERPRISE CAN USE A TEN-DIGIT LONG NUMBER TO SEND MESSAGES.

Unlike short codes, there are plenty of long codes to go around. But long codes were designed for P2P, not A2P (application-to-person), use. So, often the recipient will not know who has sent the message.

In fact, the phenomenon of the unknown caller has become a serious issue in the US. In the area of voice, according to call blocking specialist Hiya, US phone owners received 984 million robocalls in September 2016 alone ².

Sometimes the operator will question why a long number is sending thousands of messages and block the number. When it does, the enterprise will not know why. In addition, it can take many days for the service to be restored – even when the use case is entirely legitimate. This is a contentious topic, which has been the subject of lawsuits in the US ³.

The situation is messy and unreliable. It's too difficult for most enterprises to navigate – and to scale.

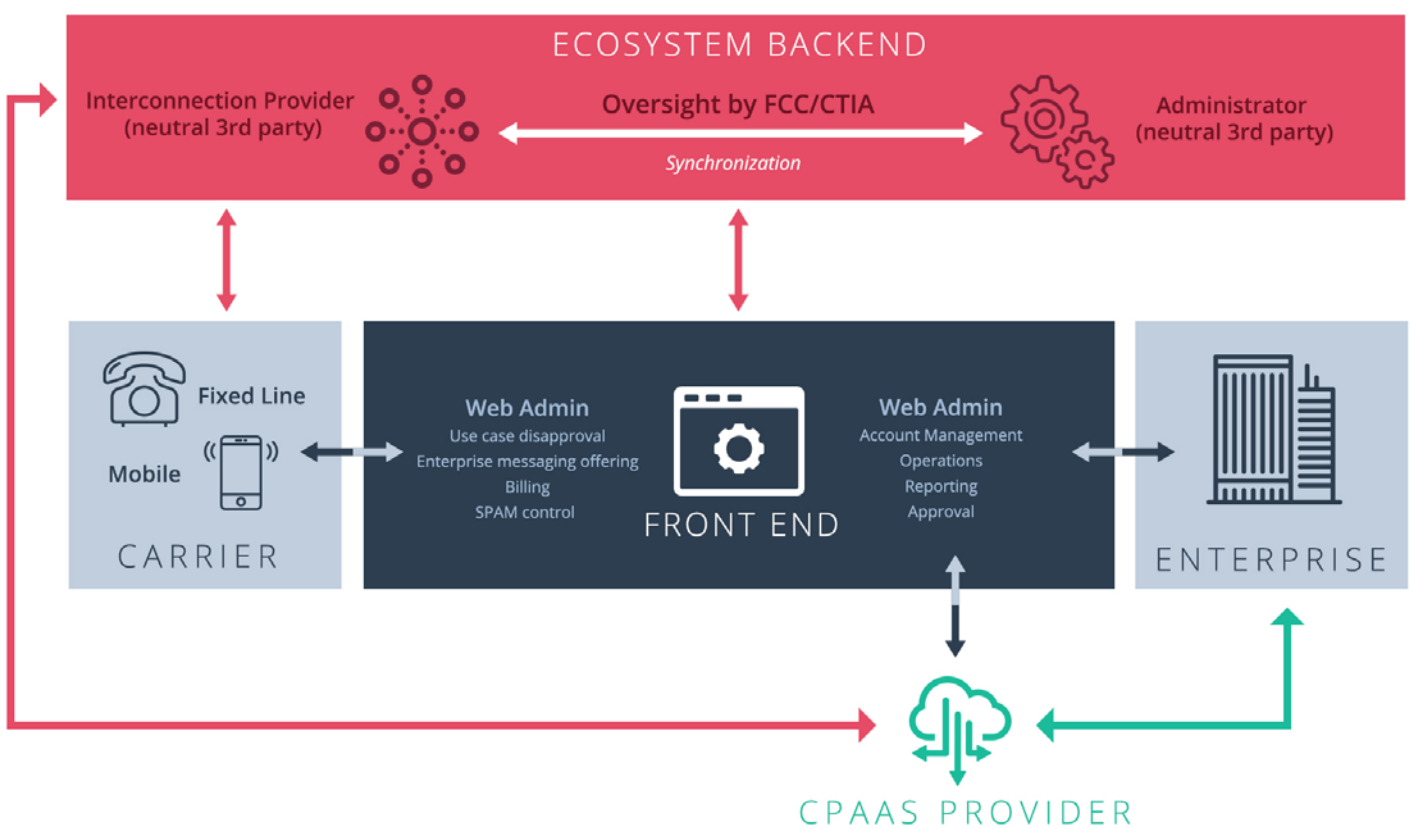
Meanwhile, the system does not serve operators well either. They are not monetizing their revenues and they risk giving their customers a poor experience as more and more consumers expect to use the same communication channels for both personal and commercial communications.

A2P represents an opportunity for operators to make money from a willing business sector. What's needed is a better framework to generate income from new use cases – without having to re-build everything from scratch.

2. THE IDEAL SITUATION:

IMAGINE IF EMERGING TWO-WAY ENTERPRISE MESSAGING IN NORTH AMERICA LOOKED LIKE THIS...

SYSTEM ARCHITECTURE



An enterprise decides to use mobile messaging to 'talk' with its customers or employees. This process is simple.

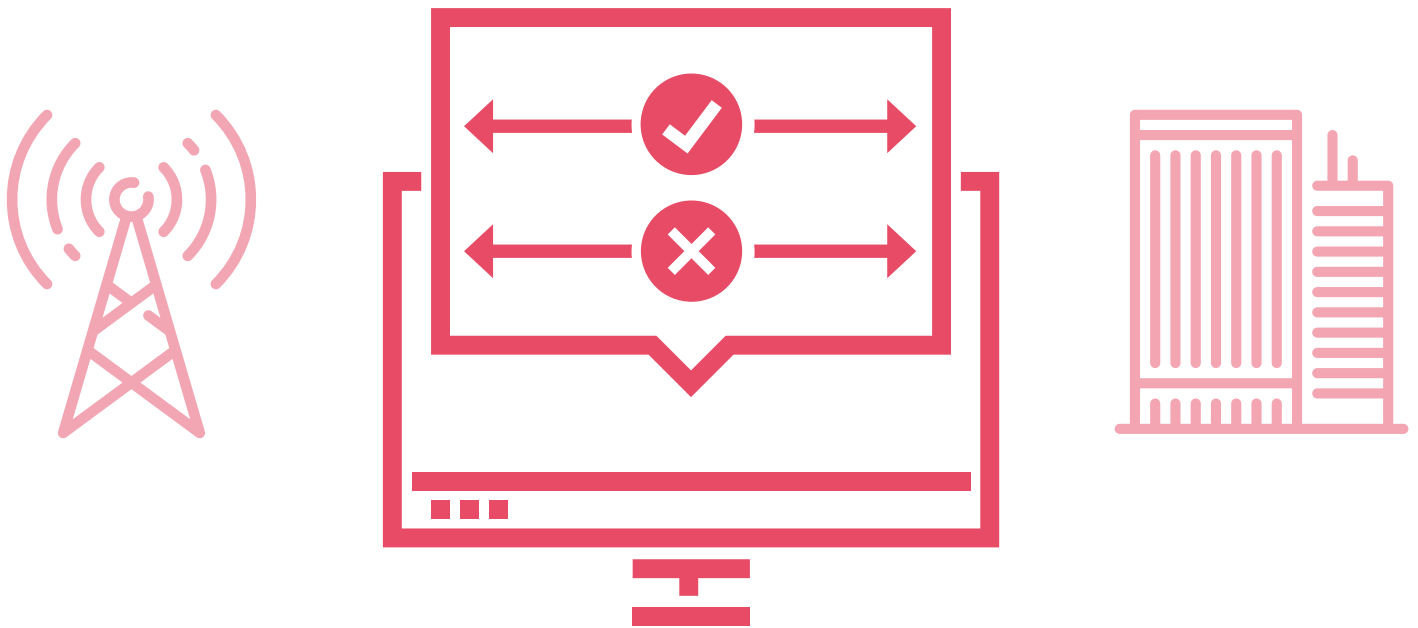
THE BUSINESS LOGS IN TO A WEB-BASED DASHBOARD.

The system uses a graphical user interface, which is easy to understand even for non-technical staff.

Inside the dashboard, the enterprise creates a company profile, and registers phone numbers (fixed line or mobile number) to be used for 2-way texting use cases. This simple process is done all online.

Once the enterprise's registration is completed, the system administrator pings two parties:

1. The operator. It can quickly approve (or disapprove) the enterprise's use case.
2. The DID provider (which provided the phone number to the enterprise). It can quickly approve (or disapprove) the enterprise use case.



It's a speedy process with clear expectations and strong accountability built in. Why? Because any user can easily identify the enterprise user by its profile and declared use case. This means there is no need for time-consuming case-by-case assessments.

The operators don't even have to worry about interconnection. This is handled by a neutral third party, which provides the same level of support to everyone.

And that's it. With a few clicks, a brand can start a new two-way messaging project.

**IT'S A FAST, EFFICIENT PROCESS.
AND IT'S AFFORDABLE TOO.
THE NEUTRAL THIRD PARTIES
THAT HOST THE SERVICES AND
PROVIDE ACCESS ON A USAGE
BASIS BEAR MOST OF THE COST.**

At present, the above scenario is hypothetical.

But, if the industry works together, we can make it real.

3. THE BENEFITS OF A2P MOBILE MESSAGING

UBIQUITOUS, IMMEDIATE AND EASY-TO-USE. THERE IS NO TWO-WAY ENTERPRISE-TO-CONSUMER COMMUNICATION CHANNEL TO RIVAL SMS.

A2P stands for application-to-person, and it describes the use of SMS by enterprises to send texts to customers, employees and partners.

This kind of messaging is growing fast. According to market analyst Mobilesquared, enterprises sent 1.38 trillion A2P messages in 2015. By 2020, the total will rise to 3.4 trillion ⁴.

Why? Because SMS remains the most immediate, ubiquitous and easy-to-use communications tool money can buy.

Consider the alternatives.

Email is prone to spam. Recipients take a long time to read messages – if they read them at all.

Meanwhile new kinds of mobile messaging have emerged. These OTT (over the top) channels – WhatsApp, Facebook Messenger – work well for P2P (person to person) chat and for siloed enterprise groups. But they cannot deliver the ubiquity that enterprises need for broader customer conversations.

The same goes for social media messaging channels like Twitter and SnapChat. Businesses realize that, when it comes to having immediate and meaningful conversation with customers, employees and partners, SMS is easily the best tool.

Let's look at why in more detail.



SMS IS UBIQUITOUS

Anyone with a mobile phone can use SMS – no matter what handset, operator, OS or country. In the US, penetration is virtually 100 percent. Contrast that with the country's most popular OTT app Facebook Messenger. According to eMarketer, it has 105.2 million active users in the US (approx. 32 percent). The market analyst says nearly two-thirds of the US population used Facebook Messenger at least once a month in 2016 ⁵.

SMS IS ALWAYS ON – NO DATA CONNECTION REQUIRED

(except for some MMS utilizing data connection)

Text messages are transmitted over mobile networks, which reach across virtually every inhabited location. Chat and social apps, on the other hand, require a data connection – either via 3G or wi-fi.

These connections are far from 'always on', and many consumers have limited data packages.

SMS IS IMMEDIATE

Users open and respond to texts almost immediately. A study by Dynmark revealed that 98 percent of people read text messages ⁶. By contrast email has a typical read rate of up to 30 percent. Dynmark also found that 90 percent of texts are read within three seconds.

SMS REQUIRES NO USER TRAINING

Consumers know intuitively how to read and respond to a text.

SMS IS RESPONSIVE

Many new use cases of SMS contain a call to action – confirming an appointment, for example. SMS is a genuinely two-way medium.

The above reasons explain why more and more enterprises recognize SMS as by far the most effective channel for two-way interaction with their customers and employees.

In the early days of mobile messaging, texts were mainly used for promotional purposes. Enterprises would use SMS to alert customers about special offers and so on.

But in time, mobile became the primary communications tool for consumers. This led enterprises to embrace the channel and devise new use cases.

SMS emerged as a channel through which businesses could talk to customers rather than just sell to them.

So today, enterprises use SMS to open a dialog. These use cases include: appointment confirmations; conversational commerce; dialog with service reps; communications with sales forces and suppliers; and more.



4. EXPLAINING THE CURRENT ECOSYSTEM

A2P messaging in North America: a history

WHY HAS ENTERPRISE MESSAGING IN NORTH AMERICA EVOLVED INTO A PATCHWORK OF SHORT CODES, LONG CODES AND TECHNICAL WORKAROUNDS?

To answer that, you have to look at the structure, regulation and history of the market. This can be traced back to 2003 and the establishment of a short code platform.

SHORT CODES

In 2003, CTIA (the telecoms trade body for North America) teamed up with a handful of technical providers to create a short code platform ⁷.

The aim was to meet the rising demand from businesses for bulk wireless (or mobile) messages. Common short codes comprise 5 or 6 digits and are best for high-volume marketing messages and alerts (flight updates, bank notifications, delivery confirmations, etc.).

By creating a platform, the CTIA was able to accommodate high volume SMS traffic and monitor who was running the campaigns. In the US, the Common Short Code Administration (CSCA) operates the short code registry. Its aim is to protect the public from unwanted messaging 'spam', and outlaw inappropriate usage.

Enterprises lease short codes on a monthly basis. Numbers deemed "random" are \$500/month while "select" numbers cost \$1000/month. To be approved, they also have to submit a plan outlining for how

the code will be used. This is usually done through a handful of aggregators that work with most of the carriers.

Self-evidently short codes can be costly to run and time-consuming to acquire. It can take months between applying for a number and running a campaign.

Moreover, the number of short codes is necessarily limited (currently the maximum number of short codes that can be used at a given time is approximately 800,000). Such limitations make it more likely for short codes to be re-purposed for different campaigns. Obviously, this can be confusing to end users. They might store a message from, say, a bank and then find that the same number is sending them messages about pizza a year later. Clearly this can raise a branding concern.

LONG CODES

Before the creation of a short code platform in 2003, enterprises sent messages using familiar 10 digit long codes. In one way, the short code was designed to sideline this long code activity.

The CTIA had good reasons to worry about the commercial use of long codes (which were primarily designed for person-to-person use).

After all, it's quite easy for unscrupulous senders to buy cheap SIMs and use them to send millions of unsolicited messages. Spam, in other words. Clearly, the operators are anxious to stop this. To protect their customers, they can de-list any number or aggregator they suspect to be sending unwanted messages.

Occasionally, though, this de-listing affects messages wanted by consumers. And the lack of delivery assurance can lessen the attractiveness of using the SMS channel for two-way consumer communications.

However, as stated in the short code section above, there is a strong case for the use of legitimate long codes by business. There are enough 10-digit codes to meet the rising demand for mobile messaging from enterprises.

They are also much better than short codes at supporting two-way conversations between sender and recipient.

Enterprises are devising new messaging use cases all the time. They are mindful that their customers and employees have embraced mobile messaging. Now, they want to use the channel for meaningful two-way conversations.

The need for a robust long code ecosystem is more pressing than ever.

PROXY/VIRTUAL NUMBERS

The growing demand for enterprise messaging – and the inadequacy of short and long codes to meet it – has led the industry to improvise solutions.

One is a proxy or virtual number.

Essentially, this describes a single number that acts as a stand-in for large sets of existing numbers. The benefit of a proxy number is that the identity of the sender is clear, and senders can therefore avoid the messiness of thousands of numbers messaging

thousands of recipients.

Take a ride-sharing firm for example. It might connect all its drivers' numbers to one branded proxy number and use this to connect to all passengers.

Originally, proxy numbers were limited to short codes and 10 digit numbers connecting very small numbers of users, for example a group conference.

In 2017, the CTIA announced a fresh classification of proxy numbers for A2P use. Effectively, it permitted their use in A2P messaging and made activity subject to a new set of guidelines⁸.

TOLL-FREE

Toll-free telephone numbers are a subset of 10 digit telephone numbers that use prefixes such as 800, 888, 877, 866, 855 and 844. These digits indicate to end users that they are free to use.

Toll-free numbers were designed for voice calling, but the A2P messaging ecosystem has co-opted them.

There are good reasons to do so. Consumers recognize toll-free numbers as business numbers. Indeed, enterprises put a lot of effort and dollars into marketing them as such.

Making these numbers work for text as well as voice makes a lot of sense. Many people would rather text a service and wait for a response while they are doing something else, rather than hold for a voice call operator.

The main problem with toll-free for text is with how the messages are routed. While A2P texting is shared across a range of intermediaries working to agreed rules, toll-free is a monopoly.

In 2014-2015, the US big five operators contracted a single company – Zipwhip – to handle toll-free text⁹.

Monopolies can lead to price hikes, unreliability and a lack of investment. According to a paper by QSI Consulting¹⁰, this is what has happened.

It says, with the introduction of Zipwhip, per-message fees rose by 3x and text providers required to pay to both send and receive toll-free messages.

It also asserts “tens, if not hundreds, of millions of text messages are being blocked each year. In most cases, no warning is given that blocking will occur and wireless subscribers typically do not receive notice that their TTF messages have gone undelivered.”

In 2015, the CTIA amended its SMS Interoperability Guidelines to include toll-free text. Its aim was to improve reliability and let a neutral third party registry manage the system. However, this has had little impact to date.

LANDLINES

Nearly all enterprises have landline numbers. Clearly it would be useful if these numbers could be adapted for A2P usage.

Unlike dedicated short codes, these numbers are easily available. Enterprises routinely integrate landlines into their communication systems/workflow.

Once enabled for text messaging, landline numbers can also support two-way conversations via SMS/MMS without disrupting voice calls.

So, adding SMS capabilities to existing business landlines makes a compelling case for growing enterprise needs.

EXISTING OPTIONS FOR ENTERPRISE MESSAGING

SHORT CODES

Designed for bulk marketing campaigns, requiring carrier-by-carrier content approval

- Exhausting setup process
- Slow Go-To-Market

PROXY NUMBERS

Stand-in numbers for large sets of existing numbers

- Limited to group messaging services

LONG CODES (10-DIGIT NUMBERS)

Primarily designed for P2P use, experiencing growing demand for A2P use

- Ad-hoc workarounds leading to false filtering/service degradation
- Unhealthy ecosystem (rouge practices)

TOLL-FREE NUMBERS

A subset of 10-digit numbers, originally designed for voice calls

- Dominated by a single service provider

5. BUILDING THE NEW ECOSYSTEM

The conditions are in place for an explosion of two-way A2P messaging activity across North America.

Consumers have enthusiastically embraced mobile messaging as a conversation channel. And they have shown their willingness to interact with enterprises via SMS.

Enterprises have responded to this consumer demand by creating new use cases. They're ready to go beyond marketing, alerts and polls. They want to engage customers, employees and partners in meaningful SMS conversations.

Finally, operators are waking up to the huge revenue potential of this next phase of the A2P messaging

story. They want to be able to meet the demand for emerging ideas. However, they want to do this without re-building the infrastructure from scratch or increasing their operational expenses. But to re-cap, the current system does not support this kind of messaging. Short codes are built primarily for non-conversational use cases. And the long-code workarounds simply cannot meet the level of quality enterprises need.

So, let's reimagine the ecosystem. Let's preserve what works. And add what's missing.

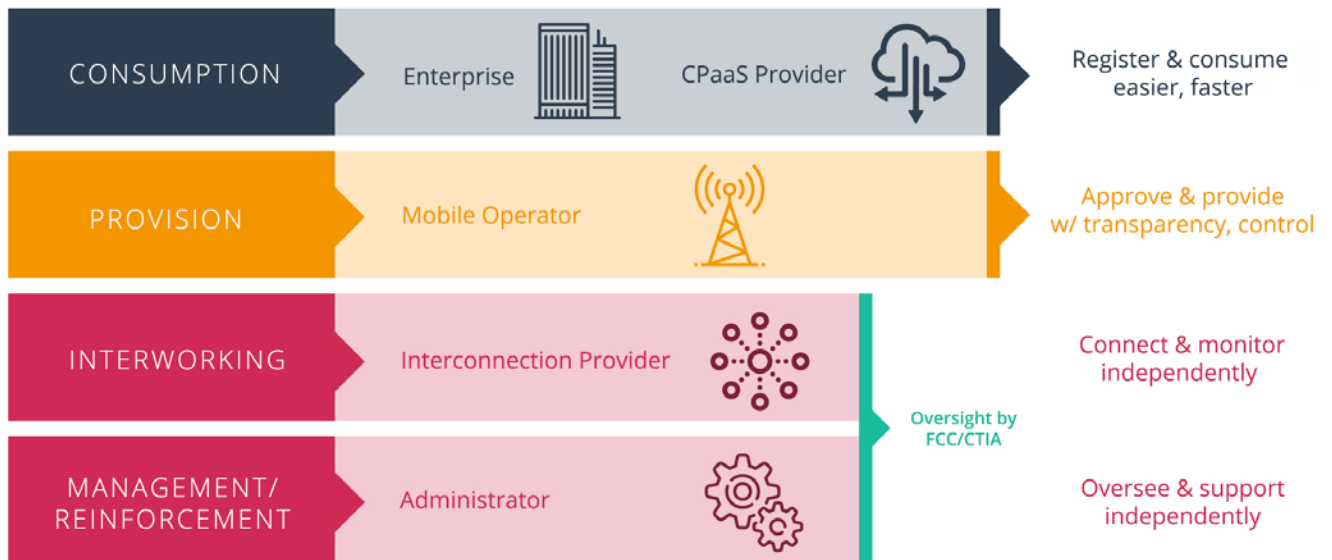
We believe a way forward is possible that works for everyone. We propose an entirely new ecosystem for managing two-way A2P messaging that is:



- **Trusted by Consumers:** consumers can go to a web page and look up phone numbers to verify the enterprise sender
- **Trusted by Operators:** operators can see that the enterprise identities are verified during the registration process
- **Flexibility for Enterprises:** enterprises can buy phone numbers (when needed), choose from multiple interconnection providers during the on-boarding process (if desired)

This new system augments the established messaging ecosystem – and extends the current limits in scale, speed and convenience, offering a simple online process for both operators and enterprises.

VALUE CREATION ACROSS PARTICIPANTS



THE MAIN PARTICIPANTS IN THE NEW SYSTEM ARE:

THE ENTERPRISE

Enterprises (or their cloud communications providers) can register via the online administration dashboard. Here, they can manage their numbers and use cases for two-way messaging.

The online system is easy to use, ensuring rapid adoption by enterprise users.

THE MOBILE OPERATOR (MNO)

MNOs can quickly approve or reject two-way A2P messaging requests by checking the enterprise profile and use cases. Most importantly, they don't have to worry about interconnection. This is managed by an interconnection platform, which provides the same quality and support of service to everyone.

THE INTERCONNECTION PROVIDER

Interconnection platforms, such as tyntec, will play a central role in the smooth-running of the new

system. They will provide and maintain technical interconnections across multiple operators. This will minimize the work the MNOs have to do.

SPECIFICALLY, THEY WILL:

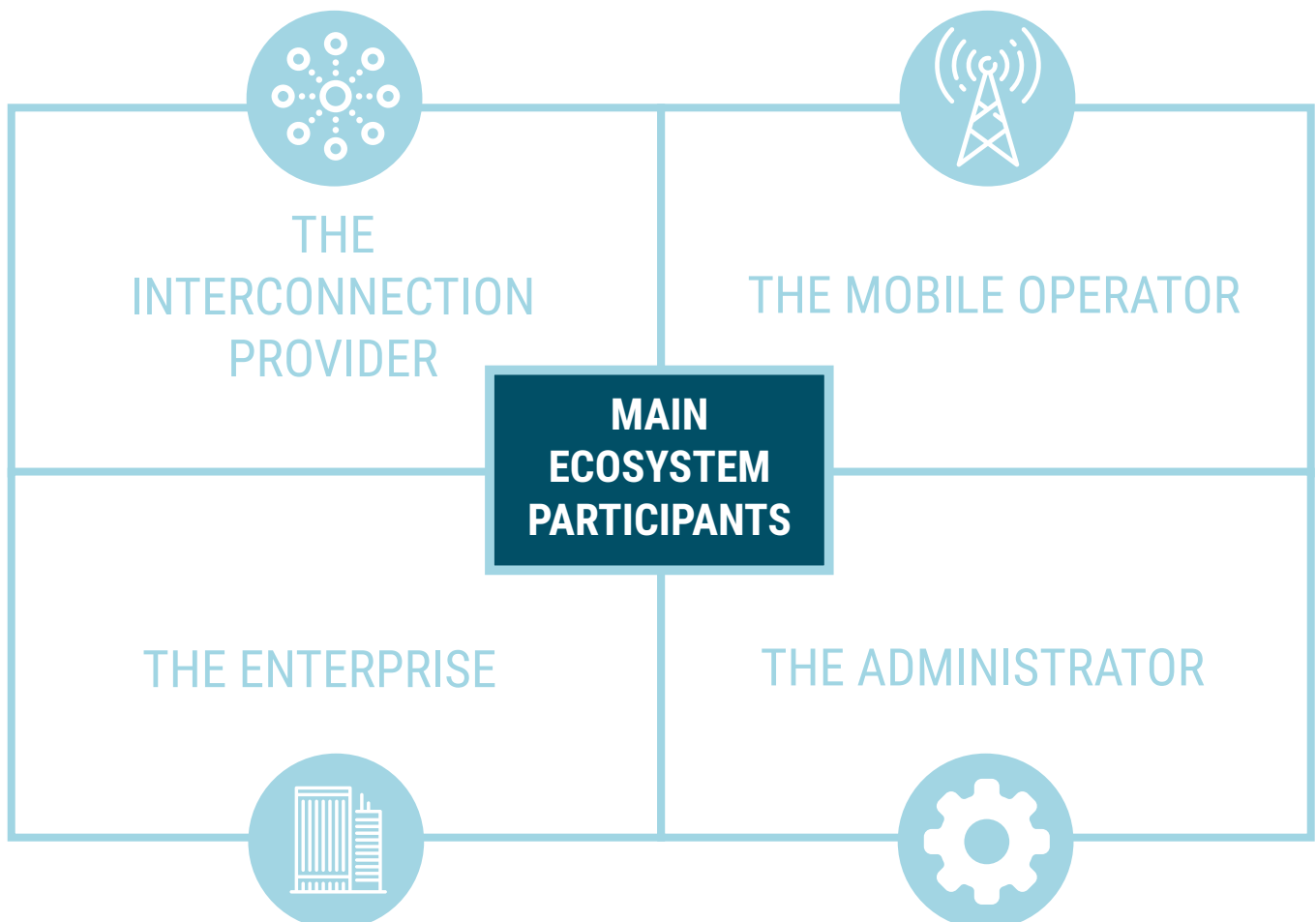
- Manage the network interconnections and ensure they are interoperable
- Register all operators, cloud communications providers and service providers that require interconnectivity via the platform
- Create traffic reports used for billing
- Invoice the cloud communications providers
- Pay the operators
- Enforce black- and whitelisting as specified by the operators
- Prevent spam by monitoring traffic
- Provide opt-out/opt-in services

THE ADMINISTRATOR

The administrator is the provider of this new two-way enterprise messaging service. As such, it will oversee and support the system.

SPECIFICALLY, IT WILL:

- Register enterprises that want to use the system (if the cloud communications provider of the enterprise has not already done so)
- Manage MNOs' review of enterprise applications; whitelisting/blacklisting
- Register business phone numbers of enterprise applicants
- Validate ownership of submitted phone numbers
- Announce the use case associated with the registered phone number
- Provide traffic reports for all parties eligible to access the online administration center



CONCLUSION



The North American mobile ecosystem stands on the verge of a huge opportunity.

The way enterprises communicate with employees, partners and consumers is changing. They all want real-time, two-way communication.

And they want the mobile channel to provide it.

Now, it's time for the North American messaging community to capture this opportunity. We must build a robust system that makes it easy for enterprises – and the companies that represent them – to connect with today's consumers.

And also tomorrow's. After all, the industry is already looking ahead to next generation channels such as RCS, which will bring advanced features like rich media sharing and read receipts to the universal messaging experience.

We believe the common interconnected system we have described meets these needs.

The system should be managed independently by a neutral web administrator with network access provided by an interconnection platform. It must abide by Federal Communications Commission (FCC) and CTIA rules and guidelines.

This new approach will give operators the ability to support enterprise-to-consumer messaging beyond short codes and long code workarounds.

IN SO DOING, IT WILL WORK FOR ALL STAKEHOLDERS:

- 1** Enterprises and CPaaS providers: simpler, faster and safer two-way communications with customers, employees and suppliers
- 2** Operators: vast new revenue streams, serving new modern use cases
- 3** Consumers: a convenient way to communicate in the way they prefer

SO, LET'S BUILD IT!

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Marco Lafrentz is responsible for tyntec's person-to-person and cloud services business. As an expert in platform technology and enterprise solutions, Marco leads tyntec's CPaaS development. He is also frequently called on to provide expert comment on topical issues relating to enterprise mobile communications.



ABOUT TYNTEC

tyntec is a cloud communications company enabling businesses to communicate with their customers, workforce and machines. tyntec has built its global connectivity from the ground up and developed cloud APIs on top to provide full advantage of cloud communications on a global scale.

Building on its heritage of tier-one global SMS messaging provider, tyntec continues to advance how today's enterprises utilize the universal services of messaging, voice and phone numbers to connect and perform transactions with people around the world.

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