Converged-mobile-messaging analysis and forecasts

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January 15, 2013

This research was underwritten by tyntec.

Mobile

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Executive summary

Over-the-top (OTT) messaging applications have upended the mobile operators' highly profitable short messaging services (SMS) business. The traditional mobile-messaging value chain is changing as upstart OTT players attack the carriers' control of the value chain and drive down cost.

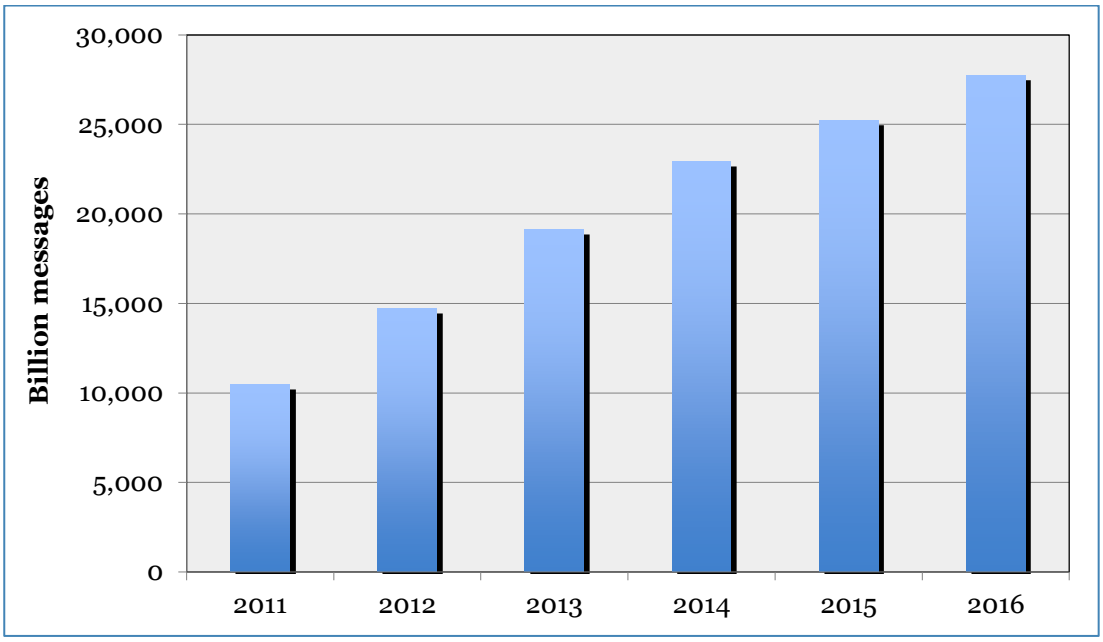
Many players participate in the mobile-messaging market, including carriers, handset original equipment manufacturers (OEM), platform vendors, social media players, stand-alone IP-based messaging services, aggregators, and SMS wholesalers. Each player competes in at least one of the primary areas of the messaging value chain: user interface, message delivery, and directory management.

The flexibility and extensibility of IP technology enables compelling and innovative user interfaces for mobile-messaging services. The use of application programming interfaces (APIs) has allowed IP-based messaging providers to synchronize their user directories with contacts within a user's embedded address book, simplifying the interface and driving use. Carrier control of the mobile network and the ability to push messages to any phone across any network ensures that carriers will remain the key players in the delivery segment of the value chain.

While OTT players have experienced significant user adoption, their reach is still limited to smartphones and current subscribers. The carriers' influence over the universally used phone number and its function as the foundation of interconnectivity has helped them retain an extremely influential position in the directory-management segment of the value chain. Regardless of carrier influence, however, the emergence of virtual phone numbers presents opportunities for IP-based messaging players to compete and cooperate with carriers in the mobile-messaging ecosystem, adding interoperability to their services. This trend will redefine the concept of OTT messaging, as the convergence of SMS and IP messaging is routing messages through carrier infrastructure as well as over the top. This convergence also allows market players to leverage one another's strengths in the value chain, with carriers providing scalability and delivery while IP-based messaging apps develop compelling and innovative interfaces.

The ability of mobile messaging to support mobile marketers and enable consumers and the enterprise to communicate in real time when voice is not the best option will continue driving demand for mobile messaging. Consequently, we forecast there will be 27.7 trillion messages by 2016. We expect most of the growth in messaging traffic will come from IP-based messaging services, which will account for 60 percent of messaging traffic.

Figure 1. Total mobile-messaging traffic forecast: 2011–2016



Source: Smith's Point Analytics/GigaOM Research

Mobile-messaging trends vary across the globe, so some markets are responding more effectively to the changing environment than others. In the United States, carriers are reducing the cost of SMS while aligning their business models with their expenses. Other carriers are partnering with OTT players or offering free IP-based messaging services of their own. Carriers that are ill-prepared to benefit from this inevitable shift to IP-based messaging will unwisely cling to the ways of the past and become less competitive. Successful carriers will embrace the new technology and use it to extend the value they are best-positioned to provide: reliability and scalability.

Introduction

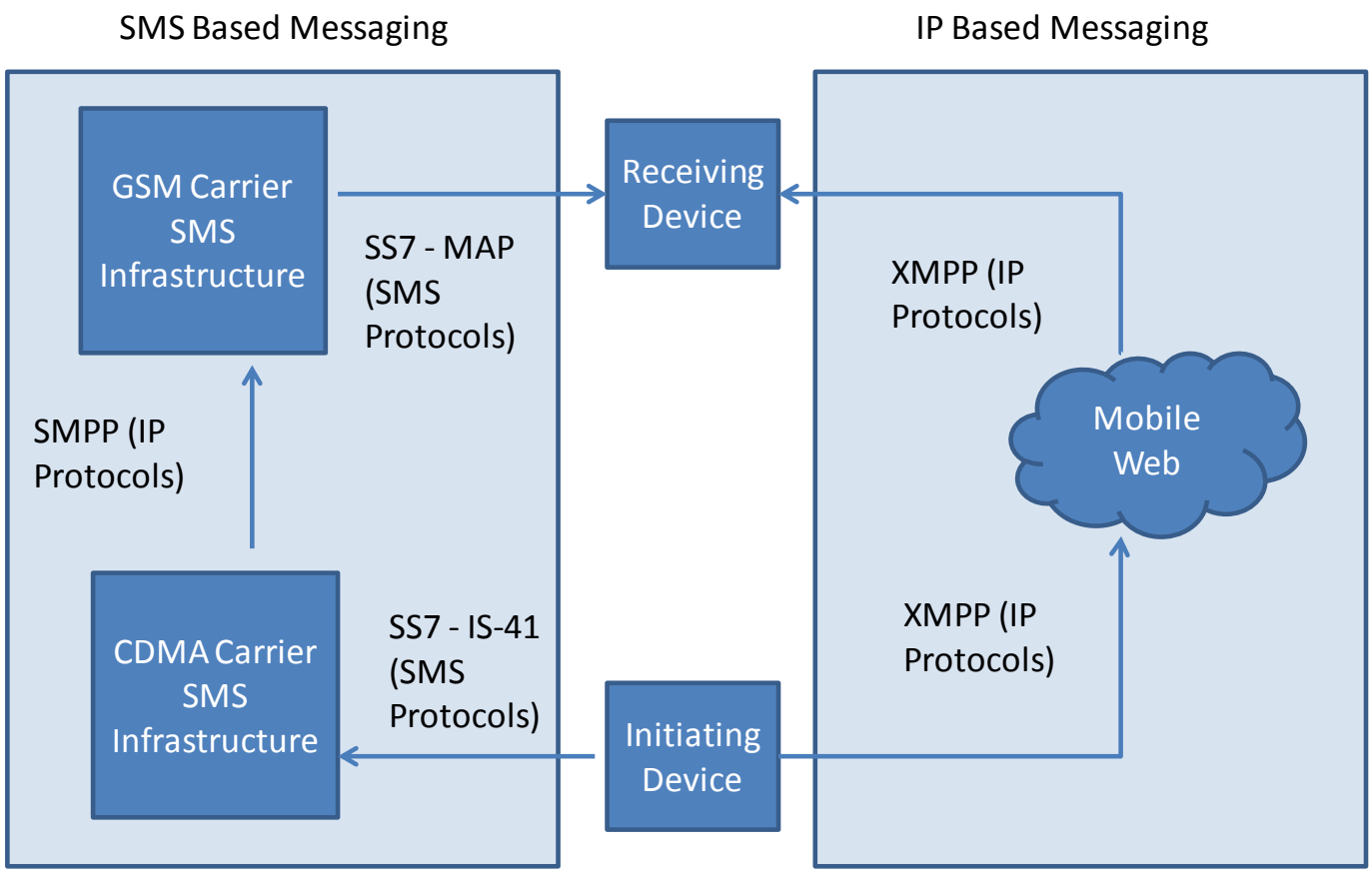
The ability of text-messaging services to send messages quickly and reliably has added significant utility to the mobile phone, spawning a multitude of communication modes for both it and the internet. For the purpose of our analysis, we have defined mobile messaging as real-time messaging that is initiated from a mobile device or terminates at one. In this context, "mobile devices" include mobile phones, smartphones, or tablets. In this definition, we do not include updates to social networking sites or microblogging, because they are not time-sensitive: They can be consumed at a user's leisure, they do not require responses, and they are directed at more loosely defined groups rather than at individuals. These applications can better be defined as those that support user-based internet content. While we do not consider posting an update on a social network to be a mobile message, we do include sending a private message to contacts within that social network. A good example of this is Facebook Messenger. Group chatting among mobile users qualifies as mobile messaging because the messages terminate on mobile devices.

Within mobile messaging there are three types of messages:

- Person to person (P2P) is when an individual sends a message to another individual.
- Application to person (A2P) is when an application sends an automated message to a number of different recipients. For example, a banking application can provide a password for an online transaction.
- Person to application (P2A) is when an individual sends a message to an application, for example messages involving TV shows, competitions, and text-to-win promotions. It does not represent a large segment of the market.

Two basic technologies are used to route and deliver mobile messaging: internet protocols (IP) and SS7 protocols used by SMS. While IP-based protocols such as SMPP are used to exchange SMS messages between carriers in the U.S., for the purpose of our analysis we consider this type of messaging SMS based. IP messages are routed to specific IP addresses associated with particular computing devices, while SMS uses phone numbers to route mobile messages. While IP messaging and SMS are the primary technologies for mobile messaging, converged messaging that routes messages via both IP and SMS is now beginning to emerge.

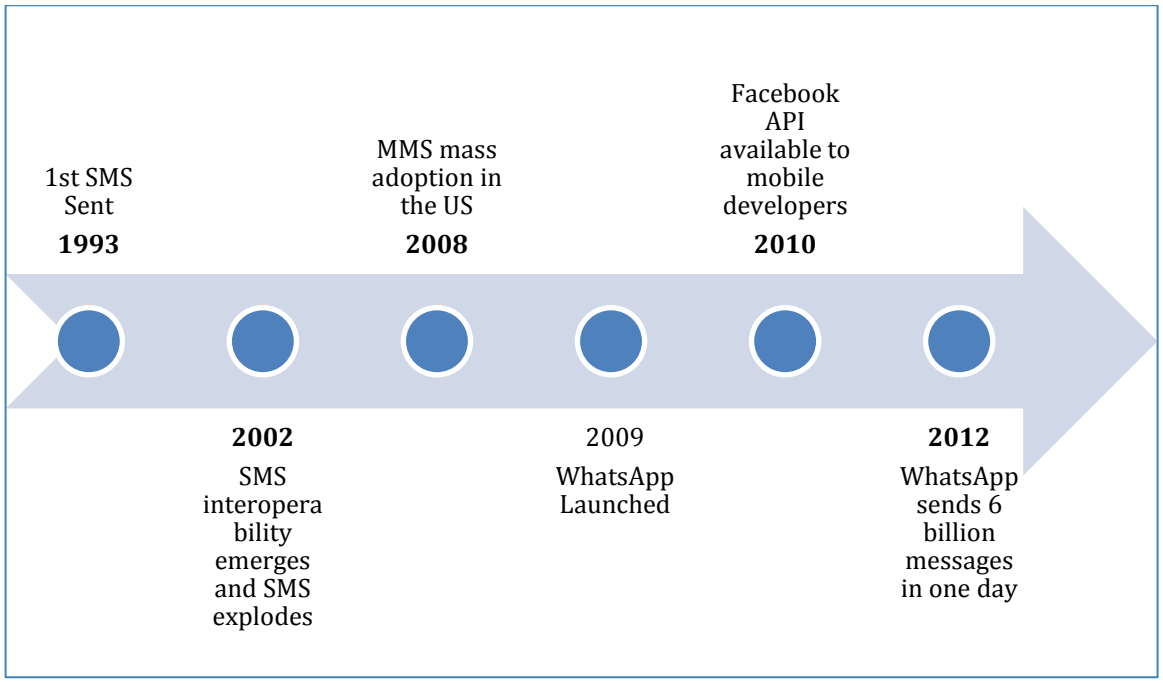
Figure 2. Routing technologies for messaging



Source: Smith's Point Analytics/GigaOM Research

Evolution of mobile messaging

Figure 3. Evolution of mobile messaging: 1993–2012



Source: Smith's Point Analytics/GigaOM Research

Short messaging service

SMS is a point-to-point messaging system with messages that travel through the core of a carrier network and have a maximum of 160 characters. Through storage and forwarding network capabilities, SMS messages are guaranteed to be delivered, as the platform stores the message when the mobile is turned off and sends the SMS when the mobile phone is on again. SMS messaging is also ubiquitous across all mobile phones, because device phone numbers are used to route messages to the appropriate recipients and SMS messaging applications are built into all mobile phone operating systems. Although the concept of SMS dates to the early 1980s and the first SMS messages were sent between 1992 and 1993, adoption was slow, especially in the U.S. This was due in part to the lack of interoperability among networks, so only subscribers on the same network could text one another, a factor that limited the utility of the SMS system. With the emergence of interoperability among networks, Metcalfe's law (which states that the value of a network is proportional to the square of the number of connected users) held true, and adoption exploded around 2002.

Multimedia messaging service

With the growth of SMS, phones capable of multimedia messaging services (MMS) began to appear on the market in 2002. MMS is an extension of the SMS system that allows users to send multimedia such as pictures. While the technology is an extension of SMS, it operates quite differently. In MMS messaging, SMS is used as a control technology while the actual multimedia content is delivered via IP protocols. Users began adopting MMS en masse in the U.S. in 2008, but the service never really took off internationally due to a lack of interoperability and because sending mobile emails with attachments was not possible.

Premium SMS and MMS

Premium SMS and MMS services have also emerged over the years. These services charge users a premium to deliver additional content, such as ringtones or the ability to cast a vote on television programs such as *American Idol*. The ease with which customers can be enticed to use premium SMS and MMS messaging has led to a significant amount of fraud. In addition to high costs, this has limited the appeal of premium SMS and MMS.

IP-based messaging

The emergence of the mobile internet and the explosion of smartphones have provided an opportunity for IP-based mobile messaging to compete with SMS. IP-based messaging has seen significant adoption in recent years due primarily to its extensibility, openness, and lower cost. IP-messaging solutions use the open internet to deliver messages, compared to SMS-based messages, which must pass through a carrier resource before they can be delivered. Without the requirement of passing through the carrier infrastructure, IP messages can be delivered free of charge. Examples of this practice of delivering messages without leveraging any carrier infrastructure — OTT messaging — are Google Talk, WhatsApp, Skype, and Facebook Messenger.

Given the openness of IP protocols, significant investment and innovation has grown around IP, so the ability to integrate IP messaging into applications has become much easier for developers. With this level of flexibility, IP messaging is receiving much more innovation than SMS. Given this innovation, a variety of different types of IP messaging and OTT applications have evolved.

The flexibility of IP technology is also supporting a move toward unified communications (UC). UC is the ability to communicate over any medium, from any device. Skype's integrated offering is a good example. Messaging is an important piece of UC and IP technologies' abilities to work across multiple devices; networks, including connecting to SMS infrastructure, are a key to their success. For example, Skype allows two-way IP messaging and one-way SMS outbound messaging.

SOCIAL MEDIA MESSAGING

Social media messaging is a feature of a social media application that allows users to send private instant messages (IMs) to others within their social networks. Many social networking messaging services also include group messaging, which enables users to send private messages to a defined group of friends. Facebook Chat and Messenger are good examples, as is the private messaging feature on microblogging services such as Twitter. The primary focus of these messaging applications is to maintain each user's identity and connections among users. While IP is the primary technology used in social media messaging, SMS is also being used worldwide, especially in developing countries with lower smartphone penetration and/or lack of data coverage.

STAND-ALONE OTT MESSAGING SERVICES

Stand-alone OTT messaging services, such as WhatsApp, are designed to compete directly with SMS services provided by carriers. These services, which are growing in popularity, cost much less than carrier-based SMS services and often have no cost to the user.

SMS today

While IP-based OTT messaging has a number of advantages over SMS, three primary factors are keeping SMS popular:

- The timely delivery of SMS messaging
- Interoperability and ubiquity so that reaching anyone with a mobile phone via an SMS message is possible
- Changing carrier plans that bundle SMS with other services, reducing incremental cost to users

SMS is also being used outside real-time messaging applications and is competing with IP technology as websites expand to mobile. The ubiquitous nature of the technology is particularly relevant in developing countries to support applications such as microblogging sites. GupShup, a service similar to Twitter in India, is one example.

Table 1. Overview of mobile-messaging services

	Main features	Key success factors
SMS	Carried via the mobile network Store and forward	Ubiquity Interoperability Reliability Connected with the mobile phone number
IP-based messaging	Carried via the internet Enabled in various forms: social media, OTT	Compelling interfaces Low cost or free

Source: Smith's Point Analytics/GigaOM Research

Future: convergence

As the mobile-messaging market evolves, the benefits of new technology and the proven dependability of SMS switching technology are beginning to converge; as a result each is adding value to a more open and flexible messaging ecosystem. Messaging will become more technology and protocol agnostic as messages travel among SMS systems and IP-based messaging systems. Pinger is one example of a next-generation messaging application; it can send free text messages to any phone in the U.S. The application also allows users to text from a desktop, iPad, or iTouch. These hybrid IP-SMS applications are running over the top of carrier networks to deliver messages to users on IP-based messaging systems, and they are routing messages through carrier SMS infrastructures to reach users who are leveraging SMS.

The growth of IP-based messaging is also driving interest in group-chat messaging. Large players such as Skype (with the acquisition of GroupMe) and Facebook (which acquired Beluga) are helping to increase the awareness of chat messaging.

Value chain of the mobile-messaging market

While the mobile-messaging value chain can be complex and competitive, players can provide value in three primary areas: directory management, message delivery, and mobile interface.

- **Directory management:** Maintaining a database of mobile subscribers and unique addresses (a phone number, social networking identity, or IM user name) to which a message can be delivered
- **Message delivery:** A delivery process that includes routing, storing, and forwarding messages
- **Mobile interface:** Presenting a message to a user on a mobile device, either through an application or an interface built into the mobile operating system

Each of these areas in the value chain is a vital piece of the mobile-messaging system, and each area provides opportunities for players to differentiate their services and create competitive advantages.

Current players in the mobile-messaging market

A number of companies from the mobile handset, telecom, internet, and software industries are participating in the mobile-messaging market. Certain categories of players have different focuses in the messaging value chain.

Table 2. Players in the messaging value chain and their focuses

	Directory	Delivery	Interface
Social network players (Facebook, orkut, Myspace)	Core competency	No competency	Secondary competency
OEM and platforms (Apple, RIM)	Secondary competency	Secondary competency	Core competency
Carriers	Secondary competency	Core competency	No competency
OTT; VoIP or UC (WhatsApp, Tencent; Skype, fring)	Secondary competency	Limited competency	Core competency
Aggregator clients (Shape, Nimbuzz)	No competency	No competency	Core competency
SMS wholesalers (Clickatell, Sybase 365, tyntec)	No competency	Core competency	Secondary competency

Source: Smith's Point Analytics/GigaOM Research

SOCIAL NETWORKS IN THE MOBILE-MESSAGING MARKET

Many large social networking vendors have integrated instant messaging into their applications. These features allow users to IM their current connections in the social network. New social networking IM features also enable users to communicate with other users who are not currently in their network of friends. Emerging proximity-based mobile social networking applications are taking this ability a step further and allowing users to chat with other users in their proximity, even though they may not know them.

Table 3. Social networking messaging players

Social network	Messaging client
Facebook	Facebook Chat and Messenger
Google+	Google Talk embedded in Google+ client
Myspace	MyspaceIM
Orkut	Google Talk–integrated

Source: Smith's Point Analytics/GigaOM Research

The primary value that social networking players bring to the mobile-messaging ecosystem is directory management. Social networks maintain vast databases of users, along with their connections and personal information. This existing database quickly adds significant value to a messaging service when it is layered on top of the social network itself. Friends are already using the social networking service, so the ability to communicate with one another easily and via a low-cost mobile-messaging service presents a strong value proposition.

Social networks also provide value in the interface segment of the value chain. Social networking applications are engaging, and users spend a significant amount of time interacting with them, which presents a great opportunity for integrating a messaging interface. In the delivery segment of the value chain, social networks have a limited role; messages are delivered via IP over the internet, or, in some cases, particularly in developing countries, SMS infrastructure is used.

OEM AND PLATFORM PLAYERS IN THE MOBILE-MESSAGING MARKET

A number of OEMs of handsets and mobile platform vendors are also providing mobile-messaging services. In some cases, these services are only available on the service provider's handsets. For example, Apple's iMessage is only available on the iPhone, and the BlackBerry Messenger (BBM) service is only available on BlackBerry devices. Platform vendors also support their own branded messaging services by integrating proprietary messaging interfaces into the platform. Microsoft has integrated the Live Messenger client into the Windows Phone OS, and Skype is also deeply integrated into Windows Phone 8.

Table 4. Handset and platform vendors providing messaging services

OEM or platform	Messaging service
RIM	BlackBerry Messenger (BBM)
Apple	IMessage
Samsung	ChatOn
Nokia	Nokia Chat
Google	Google Talk
Microsoft	Windows Live Messenger

Source: Smith's Point Analytics/GigaOM Research

The primary value that OEMs and platform vendors bring to the mobile-messaging market is the interface. Mobile platform vendors and OEMs are able to integrate messaging clients deeply in their operating system so users can easily access messages and receive notifications of new messages. Apple and Research In Motion (RIM) have done this with their messaging services, but in the process they have limited participation with iPhone and BlackBerry devices.

OEMs also provide value in directory management, but that value is limited. OEM-provided messaging services manage a database of users and addresses for a specific OEM's services, but in most cases that database is limited to users of the service, which then limits the service's network effect. For example, iMessage users can only send free messages to those Apple users who are also using iMessage. Exceptions include Windows Live Messenger, which has interoperability with Yahoo Messenger, Facebook Chat, and Google Talk, which will work with any applications that support the open Extensible Messaging and Presence Protocol (XMPP).

Limited participation in the delivery segment of the value chain is also characteristic of OEM and mobile-platform vendors. RIM provides similar delivery services for its BBM service and its email messaging service. Apple also provides push infrastructure to support its iMessage service.

CARRIERS IN THE MOBILE-MESSAGING MARKET

Primarily, wireless carriers participate in the mobile-messaging market though SMS and MMS services. SMS messages are handled entirely by those carriers that route messages and ensure that they are delivered to the intended recipients. Since carriers control the entire system, including the billing relationship with the mobile subscriber, SMS services are very profitable.

Message delivery is a core value proposition in the mobile-messaging ecosystem for wireless operators. SMS systems have a significant advantage over IP-based messaging systems because they are interoperable across carriers, therefore making SMS messaging ubiquitous and reliable. With storage and forwarding services, messages that cannot be delivered to a user immediately are stored in a database within the carrier network, and delivery is complete once the recipient becomes available. This is a strong advantage when compared to IP-based messaging systems, which can only deliver messages when a recipient is logged into the messaging service. While some IP-based messaging services are incorporating storage and forwarding capabilities, without the network awareness provided by SMS technology, IP-based services cannot see when a device becomes available on the network so that it can ensure delivery.

Carriers can also provide significant value to the directory-management segment of the mobile-messaging ecosystem, because they have relationships with mobile subscribers and therefore control mobile phone numbers. Carriers maintain a database of in-network phone numbers as well as numbers that have been ported to other carriers. These databases are queried by telecom protocols that match phone numbers and devices in order to deliver SMS and MMS messages. All mobile users have phone numbers associated with their phones that are listed in this database, making it the most complete database of users in the industry.

Carriers provide limited value in the interface segment of the value chain, but they still have influence. Handset OEMs that have significant control of the user interface rely on carriers for distribution and connectivity, so the carriers have an ability to dictate what phones will enter the market and how messaging interfaces will be configured. The carriers' introduction of Joyn and Rich Communication Suite–enhanced (RCS-e) is a good example of how they are influencing interfaces.

OTT MESSAGING APPLICATION AND VOIP PLAYERS

Stand-alone mobile OTT applications are mobile apps that provide instant messaging over the top of carrier networks. The user must download these applications to a phone or tablet and in some cases to a desktop (such as Skype); typically messages can only be sent between subscribers who are using the same service.

Table 5. OTT messaging pure plays

Company	Application or service
WhatsApp	WhatsApp
Tencent	WeChat

Source: Smith's Point Analytics/GigaOM Research

Along with pure OTT-messaging players, Voice over IP (VoIP) applications or unified messaging clients often incorporate chat or instant messaging features into a service. These services usually incorporate many communications technologies, such as video, and span both mobile and desktop.

Table 6. VoIP players

Company	Application or service
Microsoft	Skype
Fring	Fring
Truphone	Truphone
Viber Media	Viber

Source: Smith's Point Analytics/GigaOM Research

OTT providers maintain a closed database of subscribers, limiting the reach of the value they provide in the directory-management segment of the value chain. To overcome this limitation, some innovative OTT players are integrating their applications into the phone's native address book. By placing icons next to contacts in the native phone book that identify friends and contacts who are also using the particular OTT service, users can more easily choose what messaging service to use.

OTT players do not add a significant value to delivering instant messages, which traditionally are routed using open IP protocols over wireless carrier networks.

Using IP technology allows OTT players to create dynamic interfaces and more-compelling experiences. This is key for OTT players striving to be competitive. From a single interface, users can make video calls and phone calls as well as send instant messages. In some cases, conversations can be switched from an IM session to a video call.

Converged messaging is beginning to redefine the OTT messaging market. In order to create more reach and interoperability, traditional OTT players are beginning to link their services with SMS by routing messages through the carrier network. This trend redefines these players as converged mobile messaging players; otherwise they are purely routing messages over the top of a carrier's infrastructure.

AGGREGATOR CLIENTS

Aggregator clients also participate in the mobile-messaging value chain. These players integrate multiple messaging services into a single interface that allows users to chat with friends and contacts on different IP-based messaging services from a single application.

Table 7. Aggregator clients and the applications they provide

Company	Application
Shape	IM+
DotSyntax	Digsby
Nimbuzz	Nimbuzz

Source: Smith's Point Analytics/GigaOM Research

Aggregators mainly provide value in the interface segment of the value chain. These players leverage the directory and delivery infrastructure of other OTT players and carriers. Using APIs, aggregators are able to integrate multiple services into a dynamic and flexible interface, which is their primary competitive advantage.

SMS WHOLESALERS

SMS wholesale providers enable applications to send a high number of SMS messages to a large group with bulk pricing and global coverage. Gateways offered by these vendors are primarily used by the enterprise to push communications to customers and prospects.

Table 8. SMS wholesalers and the applications they provide

Company	Application
SAP	Sybase 365
MBlox	Mobile Messaging
Clickatell	Bulk SMS Gateway
tyntec	Mobile Messaging

Source: Smith's Point Analytics/GigaOM Research

While SMS wholesalers do not participate in the P2P messaging market, they provide an interface for A2P messaging. Enterprises, small businesses, and marketers can leverage the gateways to deliver messages across a multitude of carrier networks. SMS wholesalers will also often provide interoperability services to carriers. These services provide significant value to the ecosystem as it supports interoperability among carriers.

Value-chain strategic analysis

Within the three basic segments of the value chain — directory, delivery, and interface — each market player has strengths and weaknesses.

DIRECTORY

The ability to identify and locate a mobile-messaging user is a core use case for any messaging system. IP-based services and SMS-based services complete this process quite differently, which gives each a competitive advantage.

Carriers have a significant advantage in mobile messaging; because they influence the distribution of mobile phone numbers and control the wireless network, they can quickly locate the phone on the network that is associated with a particular phone number. To match a phone or SIM card with a phone number, messaging services must search the open directory within the mobile network.

The ubiquitous phone number also allows carriers to reach any phone across the globe. However, while this system is reliable and global, it has traditionally been limited to mobile phones. With new mobile devices coming to market and the emergence of cloud computing, users are demanding access to their personal content from any device, at any time. This trend and the emergence of virtual phone numbers are providing an opportunity for IP-based messaging services, because they can link phone numbers with user IDs, enabling unified messaging across services, networks, and devices.

The flexibility of IP-based messaging has led to a significant amount of fragmentation in the market. OTT players only control the identity of the subscribers in their own databases, making interoperability across messaging services a challenge. With so many messaging services coming to market, interoperability across players would require partnership agreements between each pair of vendors or the use of a universal standard identifier like the phone number. With limited interoperability for OTT players and given Metcalfe's law, OTT communications networks are not as valuable as carrier-based networks, which enable SMS messaging. While Metcalfe’s law references users on a network, the ability of a single user to access the network from multiple devices across multiple networks also presents significant value for OTT players.

Social networks are focused on creating connections and sharing content. Because they can control their users’ profiles, they are in a unique competitive position and have proved that they can quickly build user bases. Personal content posted on social networks not only adds value and attracts users but also provides context for messaging. Status updates, new pictures, and Likes can stimulate new messages among friends. The vast amount of personal information that social networks control also puts them in a unique position to drive advertising revenues from their messaging service. While protecting the privacy of their subscribers is of paramount importance, the data and delivery mechanism is available to push highly targeted mobile-advertising messages to social networking users.

Table 9. Overview of players, their assets, challenges, and key opportunities

Player	Key assets	Key challenges	Key opportunities
Carriers	Influence phone number distribution Mobile infrastructure	Emergence of cloud computing and OTT	Usage of virtual phone numbers in the cloud Leverage international SMS traffic
OTT players	Directory of own user base	How to deal with fragmentation Security	Usage of virtual phone numbers to converge IP and SMS
Social networks	Control of user identities, creation of user databases Context for messaging (updates, new friends)	Privacy protection	Messaging for highly targeted advertising

Source: Smith's Point Analytics/GigaOM Research

DELIVERY

OTT players are challenged to compete with carriers to deliver mobile messages. SMS systems are ubiquitous and interoperable, and they can deliver messages more reliably and more securely. As already explained, carriers know when a mobile phone is available on the network, so they can store messages and deliver them when the phone appears back on the network. Their knowledge of where a device is on the network also allows them to route messages quickly and deliver them to any user anywhere in the world. With control of wireless networks and its infrastructure, carriers have an untouchable advantage in delivering mobile messages.

It is a challenge for startup OTT players to scale their operations and deliver messages securely, so they are at a significant disadvantage when they compete with carriers. For example, OTT player LiveProfile had a significant service outage after adding 1 million users in five days. Also, in order to quickly sign up new users, WhatsApp uses the phone number as a user's name and the phone serial number as the password, which makes hacking relatively easily. WhatsApp is also struggling with encrypting messages, making it possible for hackers to easily intercept messages sent over a Wi-Fi network.

INTERFACE

Among the different interfaces that competing OTT players and carriers use in the mobile-messaging market, carrier interfaces are much easier and simpler to use than OTT interfaces, but OTT interfaces can

offer a much richer experience. SMS interfaces have the advantage of being built into the mobile operating system, which can then automatically open the interface when a message is received. Operating systems can also provide a text-messaging API to third-party applications, allowing texts to be sent from within these apps.

While the SMS interface is simple and easy to use, IP-messaging interfaces can bring together multiple communications mediums to create a much richer experience. Mobile messaging or chat can be integrated with video so that users can exchange messages while consuming and sharing media. IP technology also enables switching from a chat session to a voice call to a video call, all from the same interface.

One of the challenges for third-party OTT application providers is to develop interfaces for the variety of mobile devices and operating systems available in the market. Using a third-party messaging service requires the additional step of downloading the app and signing up for the service. This is not a problem for SMS services, since all mobile operating systems have a built-in SMS interface.

The changing value chain

Emerging technologies and strategies are leading to a mobile-messaging value chain that is more flexible and extensible. These trends are creating opportunities for new players to gain positions in the market. These trends include:

- The use of APIs to integrate messaging services into third-party apps
- The ability for third parties to access device phone books
- Virtual phone numbers, enabling ubiquitous connectivity, IP messaging, and SMS

EXTENDING MESSAGING SERVICES WITH APIS

The increased use of APIs is changing how users interact with their messaging services and making interface and directory less important. These APIs are also separating the value provided by directory management from the messaging interface itself.

Social networks are providing APIs to third-party vendors that want to integrate their applications with the social network. With these APIs, third-party applications can leverage the social network's user base to make new connections and drive communication. By using APIs, third-party applications can leverage

the value they provide in managing a database of users and identities, allowing application developers to focus on innovative interfaces that incorporate new communications and interactions. Internet players offering instant messaging services such as Google and AOL have also provided APIs that enable developers to integrate messaging services into their applications. Startup messaging vendors such as Twilio and Tropo also offer messaging as a service accessible by API.

BATTLE OVER THE ADDRESS BOOK

Open-source mobile operating systems also provide APIs that allow third parties to access a device's phone book. With the ability to integrate with the mobile phone book, OTT players significantly increase their competitiveness with carriers. Users typically initiate a text by accessing the mobile phone book and choosing the recipient for the message. With access to the mobile phone book, OTT players can integrate their services into the primary messaging interface, enabling users to choose their preferred messaging service. When a mobile phone book is integrated with an OTT user directory, these two directories can be synced and icons can be incorporated into the phone book that indicate which contacts are available on which OTT services. This integration essentially takes much of the value provided by directory management within the network and puts it on the phone. Given that most messaging is between people who already know each other, the value of SMS to reach any user is diminished, because users can message any of their contacts from their phone books.

Carriers understand that the power of the mobile phone book threatens their competitive position. As part of the GSMA's Rich Communications Suite, they launched RCS-e to integrate multiple communications technologies into the mobile phone book. RCS-e and the associated brand name Joyn are being launched and integrated into OEM devices. The software inserts a Joyn logo in the mobile phone book that indicates which contacts in the address book have Joyn communications capabilities such as chat, video, or file share. Vodafone Spain as well as three German operators, T-Mobile, Vodafone, and O2, are launching RCS-e beta tests.

While most leading OEMs have signed on to integrate Joyn into their operating systems, Apple has declined to participate. Instead, the company has integrated the iMessage service into the iPhone's phone book so that the application will automatically send messages via iMessage if the recipient is available on iMessage and will use the carrier's SMS network as a secondary messaging system. This scheme competes with Joyn directly. Apple's strong brand allows it to retain control of the mobile phone book without being pressured to integrate the carrier-controlled Joyn software. Other OEMs are so dependent on

carriers selling their devices to consumers that they must make concessions on prioritizing carrier messaging systems over proprietary ones.

VIRTUAL PHONE NUMBER: DRIVING CONVERGENCE OF DIRECTORY MANAGEMENT AND DELIVERY

The emergence of mobile virtual phone numbers is breaking the carrier monopoly on assigning and managing mobile phone numbers. Third-party applications are able to create virtual phone numbers that are listed in the centralized database of phone numbers and linked with messaging IDs. In Europe the process is more cumbersome, due to carriers controlling the distribution of phone numbers, though middlemen such as tyntec are helping by enabling IP-messaging vendors to access virtual phone numbers. This use of a universal address protocol, the phone number, allows interconnectivity across SMS and IP networks. Phone numbers can be assigned to social networking identities or to IM accounts, thereby allowing SMS users to message other users on OTT services if they have an associated virtual phone number. While this type of message will incur an SMS tariff, it enables OTT service users to reach other users, which solves one of the major problems with OTT services: limited reach.

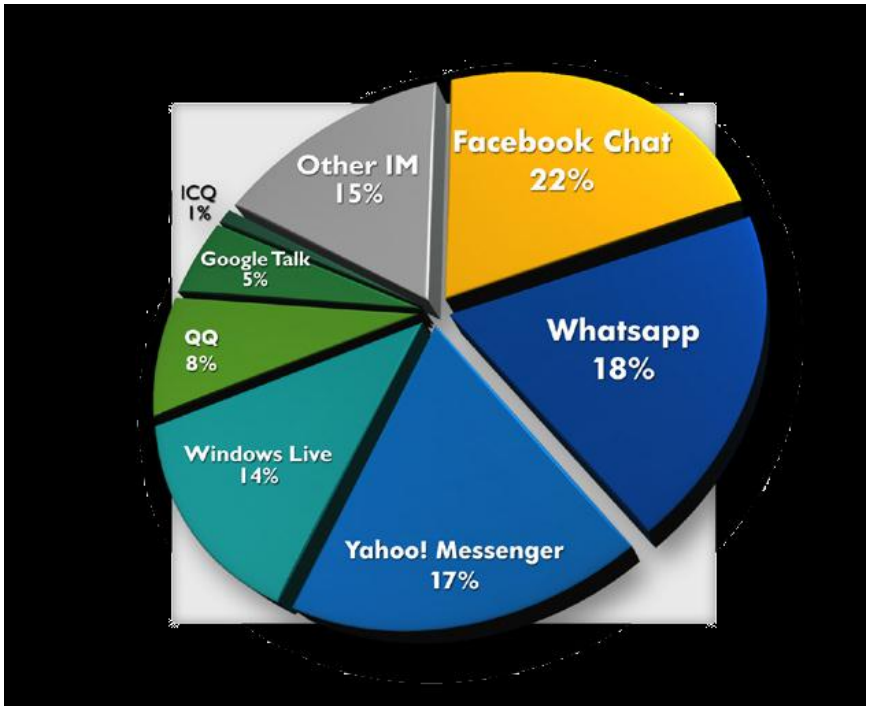
With the virtualized phone number being adopted by OTT vendors as a universal address, carrier SMS networks are being opened up to IP-based traffic. The convergence of these two systems through the adoption of the universal phone number also allows carriers to handle increased messaging traffic that is being created though more-engaging interfaces provided by IP-based messaging services. While carriers will lose a share of messaging traffic to internet-based messaging, operators are betting that the increased volume created by engaging and integrating interfaces will offset some of the lost SMS messaging. Carriers will be happy with increased messaging traffic while social networks can leverage the carrier messaging infrastructure to increase the reach of their messaging services. Social networks, particularly Facebook, have struggled to reach nonsmartphone users; by using SMS network infrastructure they can broaden their reach.

What strategies are working and what will work in the future

OTT messaging players have experienced remarkable growth in the past 12 months, particularly with Facebook Chat and WhatsApp. Data from Allot Communications shows that Facebook and WhatsApp accounted for 22 percent and 18 percent, respectively, of mobile instant messaging traffic in the second

half of 2011, a significant increase over the first half of the year. This data represents IM traffic only, not VoIP.

Figure 4. Mobile IM share of bandwidth, second half of 2011



Source: Allot Communications

FACEBOOK

With more than 950 million users accessing its site in a given month and over half of them accessing it from a mobile device, Facebook can control a significant amount of messaging traffic by layering messaging features on top of its app. The company launched the Facebook Chat app on the desktop site in April 2009 and opened up the API to third-party mobile developers in February 2010. In December of that same year, Facebook incorporated Facebook Chat into its Android app. In August 2011 Facebook Messenger launched as a stand-alone mobile-messaging application. By providing the Facebook Chat API to developers before launching its own interface, Facebook leveraged third parties to integrate the Facebook user base into their mobile chat applications. This was an important factor in driving the usage of Facebook Chat. As Facebook refines its mobile strategy it is also targeting feature-phone users in developing countries and using SMS as a protocol to post updates and chat with mobile apps designed for lower-end phones.

WHATSAPP

WhatsApp has had phenomenal success in upending the traditional mobile-messaging market. Launched in late 2009, the application reached 6 billion outgoing messages in one day in August 2012. Much of the company's success is due to its integration with the on-device phone book. When a user downloads WhatsApp, the program searches the user's phone book to find fellow WhatsApp users. This strategy has helped drive viral growth. The fact that the application has support on five platforms and in 11 languages has increased its reach. The application's easy-to-use interface and regular updates also make it attractive to users. However, as mentioned before, the security issues faced by WhatsApp can potentially harm its growth in the future.

APPLE IMESSAGE

An important factor driving the success of Apple's iMessage service is that it ships with each iPhone, iPad, or iPod touch. The interface is also innovative in that it will automatically send messages via the iMessage system instead of SMS if the message recipient is also an iMessage user. As of June 2012, the service had 140 million users and sent 1 billion messages per day.

Use cases

The value of mobile messaging is evident in various use cases, from enterprise applications such as mobile check-in and two-factor authentication to marketing use cases. Messaging is growing, especially in the web space with the integration of SMS, IP messaging, or both, due to the advent of OTT, social networking, and web applications in general. The person-to-person applications are also seeing a surge of new use cases powered by the various services and technologies available to consumers.

Table 10. Overview of messaging use cases in the web space

Player	Key assets
SMS	• Marketing • Authentication of web accounts and ecommerce transactions • Social networking • Virtual dating • Chatting • Email to SMS (e.g., Gmail in Africa and India)
IP-based messaging	• Social networking • Virtual dating • Chatting

Source: Smith's Point Analytics/GigaOM Research

MARKETING

Mobile messaging is a valuable tool for marketers in any industry sector, with both SMS-based messaging campaigns and IP-based messaging having their benefits.

SMS marketing has proved effective over the years as the technology is ubiquitous, providing marketers significant reach, and open rates are high. Recipients open 95 percent of SMS messages. While SMS is effective, the medium is very personal, and marketers need to ensure that users opt in to receive marketing messages; otherwise, they risk annoying customers and hurting their brands. To be effective

using SMS, marketers must ensure they are not invading users' space. They do this by meeting their users' expectations of how they will be solicited with SMS.

The use of IP-based messaging in marketing also has its benefits and drawbacks. The fragmentation of the IP-messaging market requires that marketers send messages across a number of different services to reach a large audience. While the flexibility of IP messaging may drive fragmentation, it also allows marketers to be more innovative with their messaging interfaces. IP messages can be shared with multiple users, thus extending the value of a marketing message directed to a single user. The ability to integrate a call-to-action feature, such as click-to-call within a message, also allows marketers to track the performance of their campaigns. They can track when users click to call from a particular message or offer, which helps refine strategies as well as support performance-based advertising business models.

Retailers have embraced mobile messaging and geofencing as ways to combat the growing trend of showrooming, the practice of viewing and touching merchandise in a store and then purchasing the item online. Working with an independent research firm, Aprimo, a Teradata company, recently found that 20 percent of smartphone users "showroom," or check merchandise in a store and then use a mobile device to compare prices. By integrating geofencing with SMS messaging, retailers can draw users' attention when they are near a retail outlet and offer a coupon that could stimulate a purchase. According to Juniper Research, 3.4 billion mobile coupons were redeemed in 2011. Sending messages when users are in certain locations can be even more intrusive than a simple SMS message, so marketers must be careful about how they use this technology; retailer Kiehl's limits the number of text alerts to three per month.

AUTHENTICATION

Many web companies (Facebook and Google, for example) and OTT players use SMS to authenticate accounts. The SMS verification trend is likely to grow with other e-companies integrating messaging for security purposes; one example is WordPress (see disclosure) having implemented two-factor authentication via SMS to verify logins. In addition, ecommerce companies might also integrate SMS to authenticate transactions and, as a step further, to receive payments.

WordPress/Automattic is backed by True Ventures, a venture capital firm that is an investor in the parent company of this blog, Giga Omni Media. Om Malik, the founder of Giga Omni Media, is also a venture partner at True.

SOCIAL NETWORKING, DATING, AND CHATTING

The ability to integrate messaging services into social networking and dating applications is enabling mobile users to create new connections, friendships, and romances. Location-based social discovery or dating applications such as Badoo have launched mobile versions of their sites and allow users to chat with people they do not know. Anonymous mobile messaging allows users to get to know one another and build relationships.

EMAIL TO SMS

With the proliferation of feature phones in developing markets, players like Google are enabling emails to be translated to SMS messages and vice versa. Google has already launched the service in Ghana, Nigeria, Kenya, and India.

MOBILE MESSAGING CONVERGENCE WITH OTHER COMMUNICATIONS

While we do not include microblogging and email as forms of mobile messaging in our analysis, mobile-messaging services such as SMS can support these services. Email can be converted to SMS for delivery to low-end mobile phones, and SMS can also be used for posting updates to social networks and microblogging sites. As mentioned, Google is providing a service that will translate Gmail messages to SMS, and Facebook is enabling its feature-phone application with SMS messaging.

Market drivers and barriers

Many factors drive the demand for mobile messaging. Some of them impact the entire mobile-messaging market while others unevenly impact different messaging technologies. With mobile messaging being a culture-based technology and heavily influenced by carrier policies and consumer behavior, demand drivers also vary across regions throughout the world.

Table 11. Overview of mobile-messaging drivers and barriers

	Drivers	Barriers
General mobile messaging	New input technologies such as voice recognition	Fewer devices with QWERTY keyboards
SMS	Demand from marketers, enterprises, and internet companies Use of feature phones in the developing world; smartphone penetration still low worldwide Low cost compared to voice calls Interoperability and ubiquity Reliability SMS integrated into carrier plans (flat rates)	High cost compared to free offerings such as OTT
IP messaging	LTE as an IP network Lower messaging costs Growing smartphone penetration Compelling interface Integration with phone book (for some players)	Fragmentation Data-plan costs Security

Source: Smith's Point Analytics/GigaOM Research

General mobile messaging

DRIVER: NEW INPUT TECHNOLOGIES

The growth of new and improved input technologies is one market driver that has an impact across all regions. The integration of advanced voice-recognition software such as Siri enables users to create text messages using their voices more easily. With this technology, one participant in a conversation can use voice while another can type a message, each depending on the surrounding environment. While today's haptic-feedback technology has had limited adoption, future innovations have the potential to make typing on a touchscreen much easier, which will drive demand for texting.

BARRIER: FEWER DEVICES WITH QWERTY KEYBOARDS

The emergence of the touchscreen keyboard has made typing messages more challenging than it was with a traditional QWERTY keyboard.

SMS drivers and barriers

DRIVER: DEMAND FROM MARKETERS, ENTERPRISES, AND INTERNET COMPANIES

The effectiveness of mobile messaging as a marketing, business, and networking tool is also driving demand for A2P mobile messaging. For example, the many benefits for marketers are helping drive them to use SMS messaging as a part of their marketing campaigns. These benefits include:

- High open rates
- High conversion rates
- Instantaneous delivery
- No spam filters to block messages
- Easy opt in and opt out
- Because of the high percentage of young users preferring SMS, the medium is still considered cool and cutting-edge

Enterprises are also leveraging SMS to push notifications to clients and employees. One example is airlines that are using A2P SMS platforms to alert travelers when schedules change or IT staff when there is a system outage.

Internet companies are developing tools and applications that can send and receive text messages from the desktop, including email to SMS, and they are integrating SMS into applications and websites.

DRIVER: CONTINUED USE OF FEATURE PHONES IN DEVELOPING WORLD; LOW PENETRATION OF SMARTPHONES WORLDWIDE

While the explosion of the smartphone in developed countries has driven demand for IP-based messaging, in emerging markets the feature phone is still the device of choice and is driving demand for SMS. In the developing world, devices are replaced much less often, so it is difficult for smartphones to represent an overwhelming share of mobile phones in use. Across the globe, smartphone penetration is estimated at 10 percent, according to TomiAhonen Consulting, and it is expected to reach 39 percent worldwide, based on projections from market analyst Mobile Squared.

BARRIER AND DRIVER: COST

The higher cost of SMS service in certain markets in comparison to free offerings such as OTT might be a significant barrier to increased usage and adoption. The factor having the greatest impact on use is cost. How texting and data plans are structured varies from carrier to carrier and from country to country; furthermore, the competitive and regulatory factors influencing these plans vary around the world. Those plans that offer unlimited texting or package the service with other services stimulate the use of SMS, while those charging per message discourage it.

IP messaging drivers and barriers

DRIVER: LTE AS AN ALL-IP NETWORK

Long-term evolution (LTE) networks, which are being rolled out in developed areas such as the U.S., Germany, and Scandinavian countries, can provide better support for IP-based messaging. Since LTE networks are higher-speed and optimized for IP traffic, they increase opportunities for IP-based upstarts.

DRIVER: SMARTPHONE PENETRATION

The explosive growth of smartphone devices with robust and extensible operating systems is a significant driver for the growth of IP-based mobile messaging. The ability for these devices to support innovative and flexible interfaces is key to the expanding use of IP-based messaging. IHS forecasts that two-thirds of mobile phone shipments in 2016 will be smartphones (remembering, of course, that shipments are not the same as penetration), whereas as already mentioned the forecasted global penetration for smartphones will be about 39 percent. While smartphone sales growth will propel penetration, an important driver for IP-based messaging, startups such as Saya are working on IP-based messaging solutions for feature phones.

BARRIER AND DRIVER: COST

The low cost of IP-messaging services compared to SMS is a significant driver of these services in certain markets such as Europe, in some cases even when the operator provides flat rates. In other markets such as the U.S., Verizon and AT&T are including unlimited SMS services in shared data plans, eliminating incremental costs for SMS messaging plans. In some cases, these plans also include data caps that limit the amount of data, discouraging the use of IP-based messaging.

BARRIER: FRAGMENTATION

The increasing number of mobile-communications options coming to market is creating significant amounts of fragmentation. With the numerous choices of IP-messaging applications available to users, the probability that contacts are regularly using the same service is low. This fragmentation and lack of interoperability confuses users and reduces traffic.

Variations across regions

Emerging trends across various regions of the globe are having a significant impact on the usage of mobile messaging as well as driving disruption in the legacy SMS messaging systems.

NORTH AMERICA

In North America, the mobile-messaging market is unique and changing. In the U.S., SMS messaging was slow to gain traction compared to its acceptance in developed countries in Europe, but in recent years, it has seen significant growth.

Changing data-plan structures in the U.S. will have a significant effect on the usage of SMS and IP-based messaging in the future. The two leading carriers in the U.S., Verizon and AT&T, have begun offering shared data plans that enable multiple devices and users to pool mobile-data allotments. These new plans also include unlimited text messaging. By making mobile data more accessible and flexible but at the same time limited, carriers can more easily stimulate demand for mobile data while they increase their revenues. This strategy also reduces the attractiveness of IP-based OTT services, because SMS messaging is already paid for where unlimited data usage is metered. By better aligning revenue models with mobile data, carriers can also benefit from innovations in mobile communications through integrated interfaces that combine text, voice, and video. These innovations will lead to increased data consumption. The demand on data will be compounded if users on the shared data plan communicate via video calling over IP.

With some carriers in the U.S. moving toward metered data and unlimited texts and others sticking with unlimited data, the demand for SMS messaging and IP messaging will vary across networks. This variability will increase demand for services that enable messages to pass between SMS and IP networks.

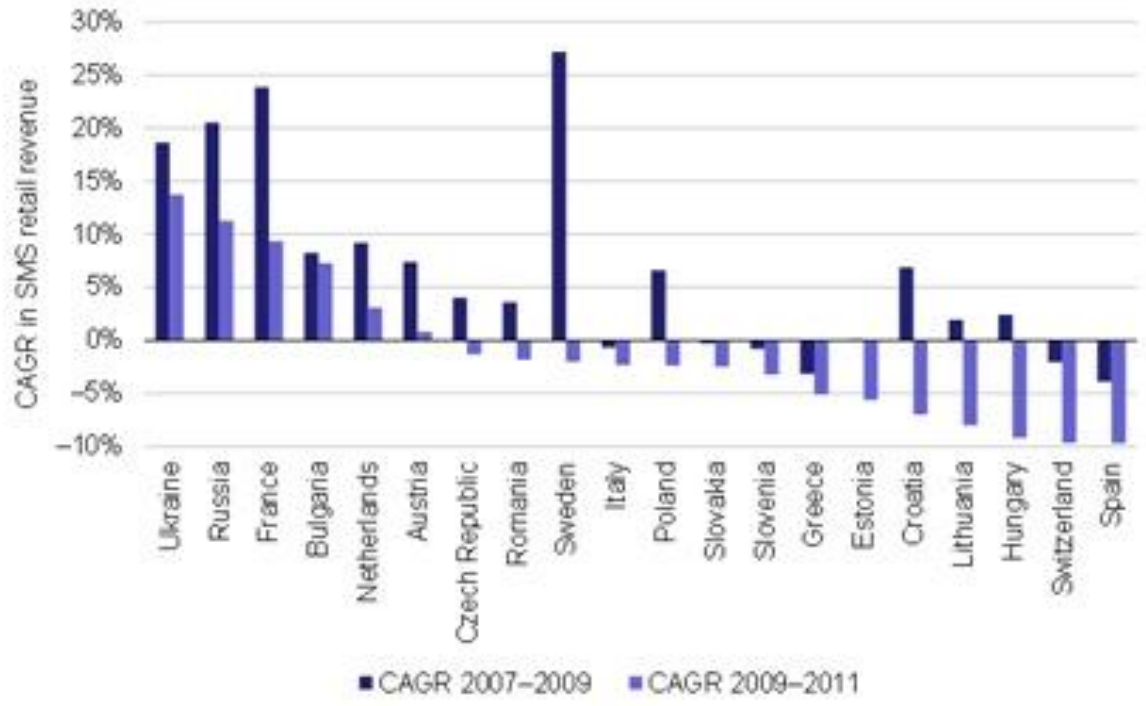
EUROPE

Large parts of Europe such as Spain, Portugal, Italy, and Greece have been hit hard by the global recession, and many young people — the most active users of SMS services — are without jobs, so cost is a much greater concern for them. This factor could be one that drives demand for IP-based messaging. The proliferation of smartphones in Europe also supports the growth of OTT players.

On the other hand, data collected by Analysys Mason demonstrates that at least part of the drop in SMS revenues by European carriers can be attributed to specific OTT players. In the Netherlands, leading operator KPN specifically singled out WhatsApp as the cause of its slumping SMS revenues, though part of this shift can be attributed to carriers in the Netherlands keeping SMS messaging fees high.

The popularity of Apple's iMessage app in France is helping cannibalize SMS revenues in that country. In Sweden, a hotbed for mobile innovation, the pressure on SMS revenues for person-to-person traffic is drastic, as shown in Figure 5.

Figure 5. CAGR in SMS retail revenues, selected European countries, 2007–2009 and 2009–2011



Source: Analysys Mason

ASIA-PACIFIC

China

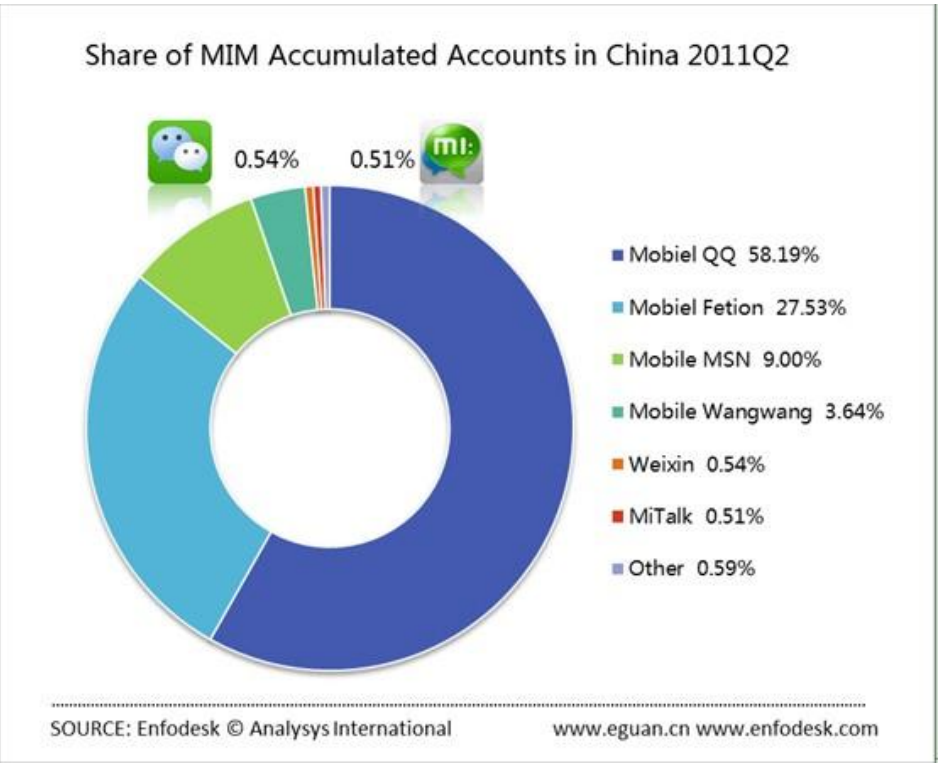
Competition from OTT players in China is intensifying. In China Mobile's 2012 interim report the company referenced weakness in SMS revenues due to "the impact of new technologies and services that are replacing traditional communications services."

China Mobile attempted to get ahead of this trend with the launch of Fetion, a free mobile IM services, in 2007. Other Chinese operators have followed suit. For example China Telecom is partnering with

Microsoft to develop a mobile instant messaging service that leverages Microsoft's Live Messenger. China Telecom also launched Yi Liao in the fall of 2011; it is a cross-platform, free messaging service that integrates with a mobile phone's address book. In August 2011 China Unicom launched the mobile client for its instant messaging service Wo You.

While Chinese operators have captured their share of the mobile IM market in the country, third-party OTT player Tencent controls more than half of the market with its Mobile QQ product. Tencent continues to move the market forward and has released a new application, WeChat, which integrates multiple ways to communicate, connect, and share into one mobile app.

Figure 6. Chinese mobile IM market vendor market share



Source: EnfoDesk @Analysis International

The increasing penetration of smartphones in China will also be an important driver of IP-based messaging. IDC reported that smartphone shipments overtook feature-phone shipments in the second quarter of 2012.

India

The demand for OTT service in India is limited by the lower penetration of smartphones compared to the rates in more-developed countries. IDC reported that smartphone shipments are expected to represent only 2.5 percent of mobile handset shipments in 2012. The greater numbers of feature phones in India present significant opportunities for SMS services to function as the messaging protocol for social and web applications. As mentioned, Google has enabled a service that allows Gmail users to send messages to mobile phones via SMS.

Indonesia, Malaysia, and the Philippines

In many Southeast Asian countries, particularly in the Philippines and Indonesia, the penetration of the mobile internet is relatively low and the SMS volume is very high. While opportunities for pure-play OTT players may be limited in these countries, social-network players are seeing opportunities. Facebook has partnered with carriers in Malaysia and Indonesia to bring Facebook applications to feature-phone users in these countries. Working with Myriad Group, Facebook is creating a text-based social mobile-messaging service.

LATIN AMERICA

In South America, the adoption of OTT messaging has been quite rapid. BlackBerry Messenger is very popular in Venezuela; Venezuelans seem to enjoy its ability to support multiple conversations at one time and incorporate emoticons. Telefónica began preloading and promoting WhatsApp in Colombia late in 2011. In September 2012 the company launched its own OTT application, TU Me.

MIDDLE EAST AND AFRICA

The proliferation of feature phones in the Middle East and Africa is motivating IP-based internet players to embrace carrier-based SMS technology. Following trends in Southeast Asia, Facebook has reached an agreement to launch a Facebook app in Saudi Arabia that will leverage SMS services. Google is also launching an SMS version of Gmail in Africa that enables emails to be translated to SMS messages and vice versa.

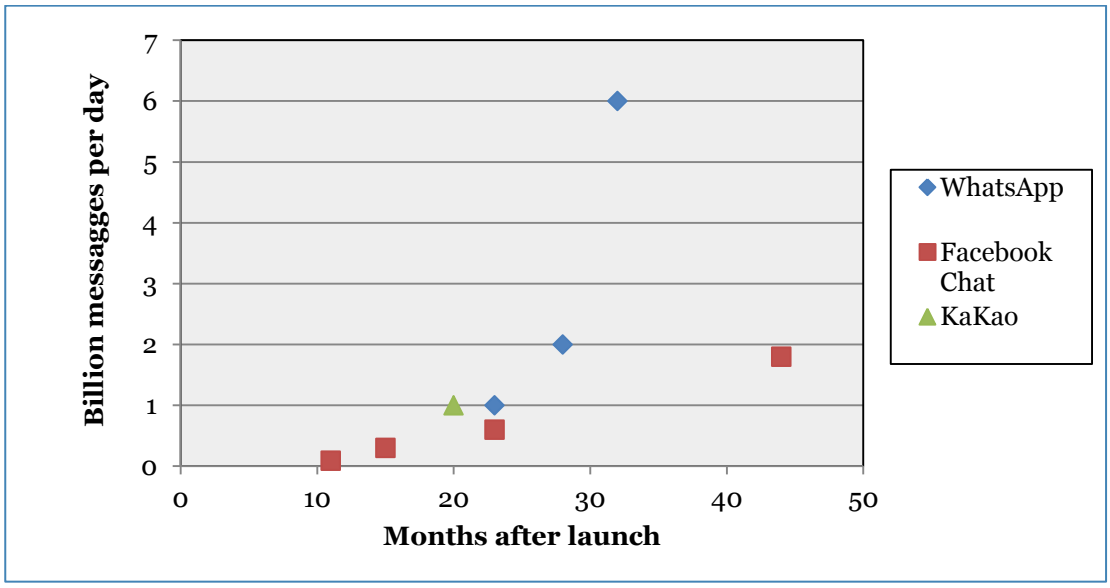
In South Africa, the upper-middle-income economy and diverse culture have created a much different environment than on the rest of the continent, providing opportunity for OTT player Mxit, which has gained significant traction.

Mobile-messaging forecasts: 2012–2016

Mobile-messaging traffic

The ramp rate of popular IP-based messaging services has been phenomenal, with companies such as WhatsApp sending 6 billion messages per day 32 months after the application was launched. Korean messaging app Kakao Talk reached 1 billion messages per day just 20 months after being launched, in March 2010. Figure 7 shows the ramp rate of popular IP-based messaging applications WhatsApp and Kakao and estimates for Facebook mobile messaging. These numbers compare to the largest carrier in the world, China Mobile, which processes 2 billion SMS messages per day.

Figure 7. Ramp rate for leading IP-messaging players



Source: Smith's Point Analytics/GigaOM Research

We expect this trend to continue over the next five years, and we forecast IP-based mobile-messaging traffic to increase at a 23 percent CAGR from 2012 to 2016.

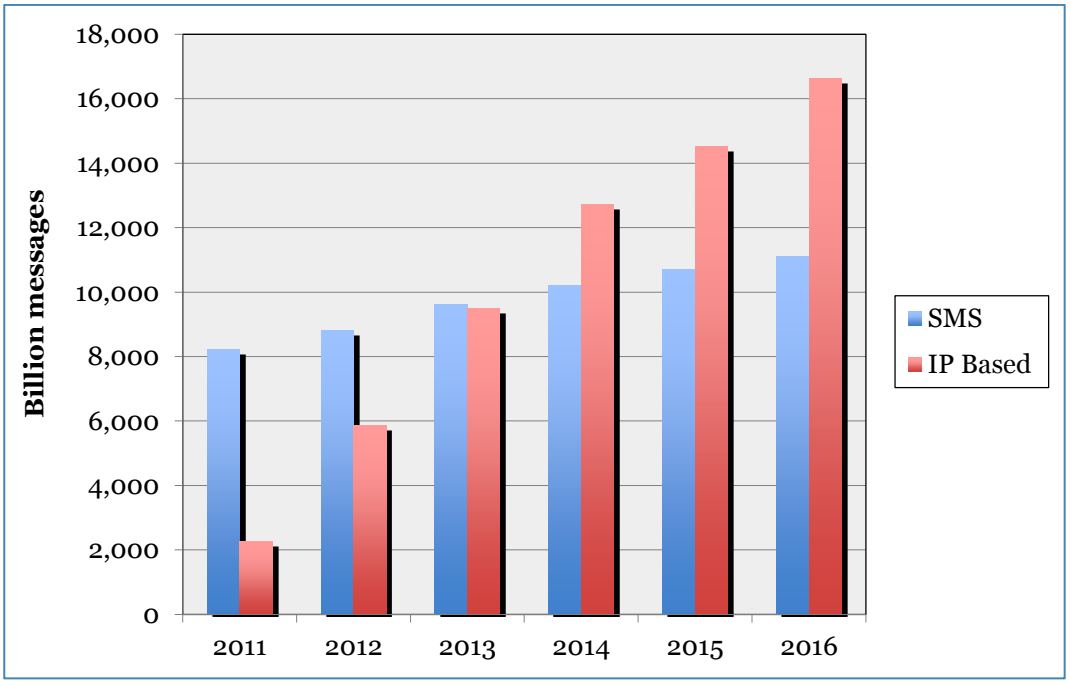
The following data points suggest that the growth of global SMS traffic is slowing.

- In the U.S., according to CTIA, SMS traffic growth was 56 percent in 2009, 52 percent in 2010, and 12 percent in 2011.
- China Mobile's SMS traffic growth in 2009 was 12 percent, according to the company's annual report. By 2010 and 2011 it had dropped to 4 percent.
- These two markets represent 40 percent of the global SMS traffic.

For A2P messaging, SMS is still expected to grow as social networks, internet companies, and enterprises continue to implement SMS in a wide range of use cases.

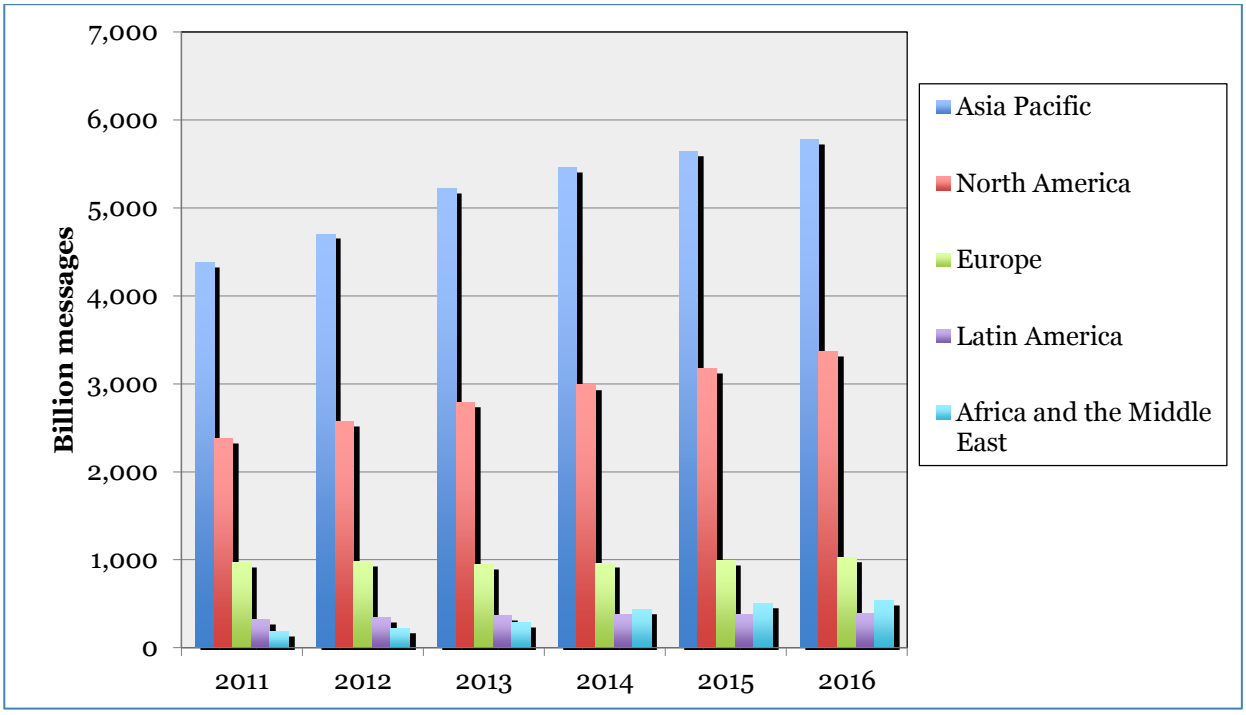
We also expect this downward trend to continue, and we forecast a 5 percent CAGR for global SMS traffic from 2012 to 2016.

Figure 8. Forecasted annual traffic generated from mobile-messaging applications and services segmented by technology: 2011–2016



Source: Smith's Point Analytics/GigaOM Research

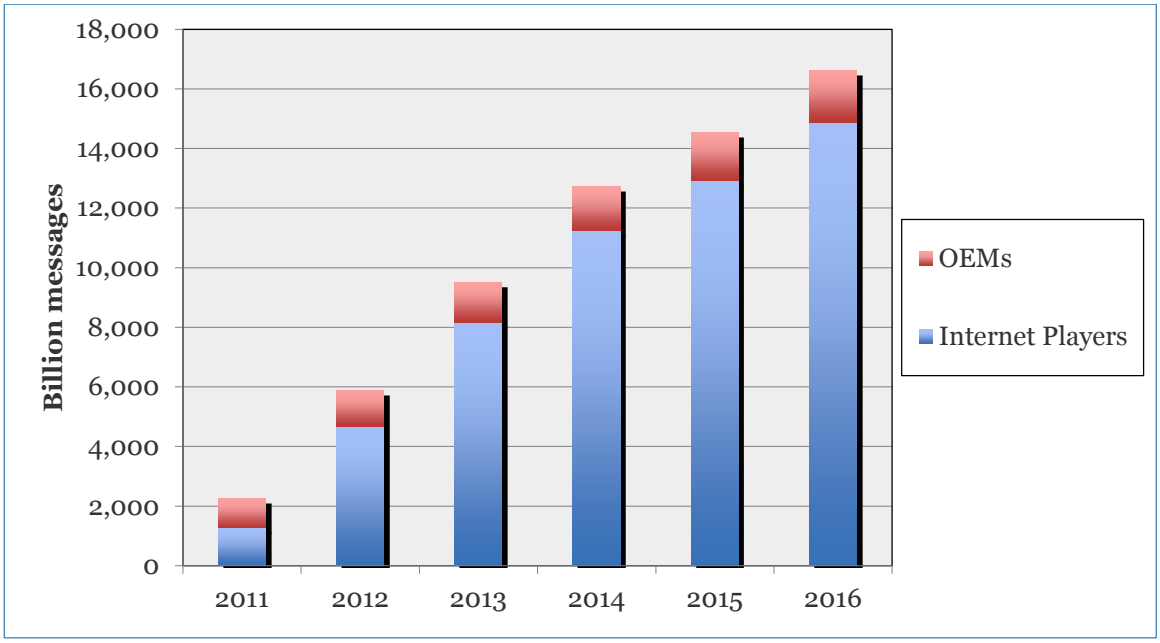
Figure 9. Global SMS messaging traffic forecasts segmented by region: 2011–2016



Source: Smith's Point Analytics/GigaOM Research

Figure 10 shows IP-based mobile-messaging traffic segmented by OEM-based services compared to IP messaging services not associated with a handset vendor. The limited interoperability of OEM services compared to more-flexible third-party services is a key factor that will increase traffic growth for internet players compared to OEM services. Currently OEM-based messaging services are interoperable with devices from the same manufacturer, whereas internet-based services are available to anyone who downloads the app.

Figure 10. IP-based mobile-messaging traffic forecast: 2012–2016

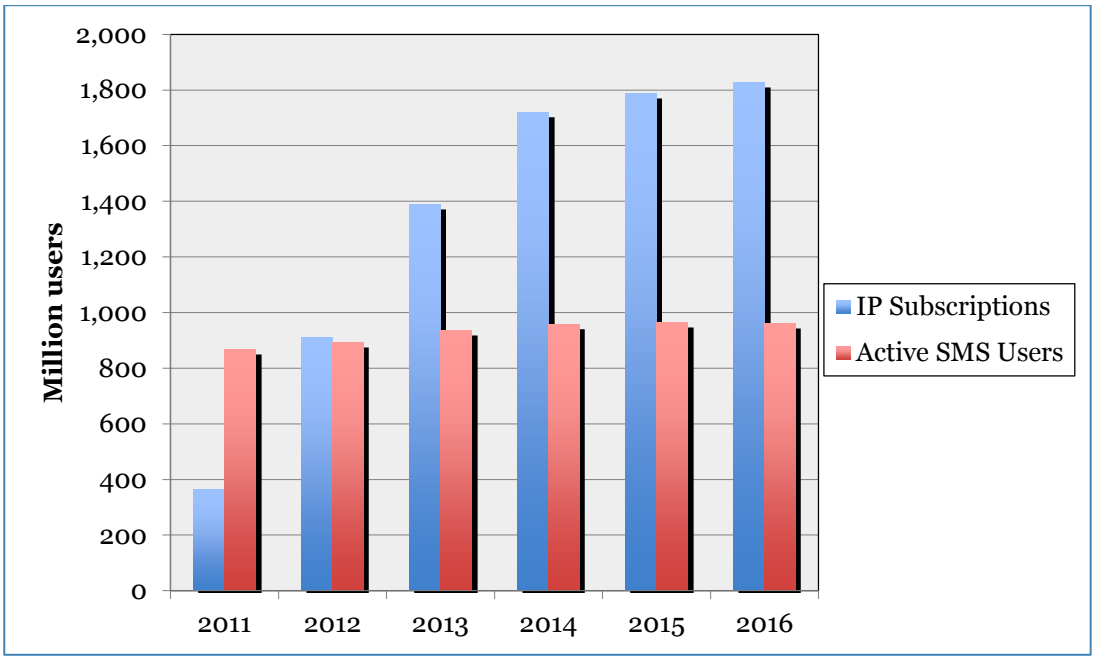


Source: Smith's Point Analytics/GigaOM Research

Mobile-messaging users

Measuring the number of active users of SMS messaging technology is challenging, because everyone with a mobile phone is reachable via SMS. Figure 11 estimates the number of active SMS users and IP-based messaging subscriptions. IP figures reflect subscriptions as opposed to individual users. In some cases, individuals use multiple messaging services. The exploding user base of IP-based messaging apps is being driven by leading apps in Asia such as WeChat, with 200 million users; Nimbuzz, with 100 million users; and Kakao Talk, with 60 million users. Six hundred million mobile Facebook users are also having a significant influence on IP-based mobile messaging.

Figure 11. Global mobile-messaging users forecast segmented by messaging technology: 2012–2016



Source: Smith's Point Analytics/GigaOM Research

Methodology

Data sources for this report include various publicly available sources including:

- Financial reports from carriers
- Press releases from messaging vendors
- Publicly available research from third-party firms
- Various articles detailing messaging trends in the mobile industry

Adoption models and usage forecasts were created by extrapolating current growth curves.

Future of mobile messaging

Short-term outlook for mobile messaging

The mobile-messaging market is converging, and the flexibility of IP allows vendors to extend their value propositions throughout the value chain. With open APIs to a device's phone book, OTT players can migrate directory management out of the cloud and closer to the user. This allows users much more control over their messaging services, because various services can be easily accessed from the mobile phone book. Essentially OTT players are layering their mobile phone books on top of the embedded device directories. The virtual phone number is also driving the convergence of IP-based messaging and SMS. The use of the phone number as the universal address protocol for messaging further distances users from the underlying delivery technology. Users can just type a message and send it to a phone number without having to find user names for IP services and think about whether that message is being routed via IP or SMS. Much the way the positioning of apps in the app stores has a great effect on usage, positioning communications services within the phone book will become a competitive advantage.

While late to respond, GSMA's Joyn initiative attempts to compete with OTT players hijacking the address book; it does this by integrating multiple communications services into the address book. The challenge for carriers will be to keep up with the innovation in communications driven by startups.

In order to keep up, carriers will need to launch their own IP-based messaging services. Telefónica has already taken the lead with the launch of TU Me, a free IP-messaging service based on the technology developed by Jajah, a startup acquired in 2010. One of the innovative features of the app is its ability to maintain the history of a user's communications across multiple mediums such as messaging, phone calls, and voicemails in a timeline format. Because innovative startups working with flexible IP technology increasingly influence the messaging interface, new ways of communication will evolve. Expect carriers to continue acquiring innovative startups so they can improve the communications interface.

With OTT players getting between users and carrier-based messaging, service carriers are being disenfranchised, leaving them little choice but to refocus on their core value proposition: delivery and scalability. We believe that the best way for carriers to leverage their propositions is through the use of APIs. Carriers can deliver services that extend the value of their infrastructure to innovative developers. With communications and messaging transcending networks and devices, services to manage these cloud-based communications services will provide opportunities for carriers. By providing APIs to

developers that expose information on messaging traffic and histories, carriers can leverage their investments in infrastructure to provide value to startups that need reliable scalability. This strategy will only work if carriers partner closely with innovators to create services that support emerging interfaces and business models. This will ensure that carriers can meet the needs of developers by reducing the need for them to invest in their own infrastructure. Carriers can also extend their value by investing in IP technology that improves the reliability of message delivery.

For developers that want to create their own services, carriers should provide virtual phone numbers. By making virtual phone numbers available, carriers can provide reach for developers and ensure traffic passes through their network. This strategy also allows them to take a share of revenues.

As mobile-messaging users quickly adopt IP-based messaging, carriers will rethink their business models. Verizon was one of the first to do this by bundling unlimited text messaging with its shared data plans. With the rollout of its LTE network, shifting to IP has a lot of benefits, but lost revenues from SMS must be replaced. Shifting revenue models to better reflect data usage opens the door for Verizon to innovate with IP messaging. This strategy also allows Verizon to leverage the greater speed and bandwidth of its network as a competitive advantage. We expect more carriers to embrace this model, especially ones that have upgraded their networks.

As IP-based messaging services challenge SMS for P2P messaging dominance, new opportunities are emerging for SMS to carry messages between applications and A2P. In developing countries SMS is being used to support applications on feature phones the way IP packets would be used on more-sophisticated smartphones. Mobile money applications are using SMS to post transactions, and social networking applications are also using SMS to post updates.

Long-term outlook for mobile messaging

OEMS ATTEMPT TO MOVE UP THE VALUE CHAIN THROUGH THE PHONE BOOK

Carriers will increasingly compete with Apple as it moves up the value chain. Apple's integration of iMessage into the iOS operating system and its refusal to support GSMA's RCS-e initiative indicate that it is intent on controlling the messaging service on its devices. By controlling the phone book on the iPhone and not supporting Joyn, Apple can present iMessage as its default messaging service without interference from carriers.

Apple's loyal user-based, retail-distribution organization and brand provide the company with much more leverage over carriers than other OEMs have. The company will use this power to infringe on the value carriers provide in the mobile-messaging ecosystem.

OTT PURE PLAYERS WILL BE ACQUIRED

While pure-play OTT messaging providers have seen significant adoption, we do not see long-term competitive advantages for these players. OTT vendors provide the most value in directory management and innovative interfaces. They are attracting early adopters, who are very finicky; innovations capture these users' attention and draw them to new providers. The allure of free SMS messaging will lose its competitive advantage as carriers build out new business models that cannibalize SMS revenues and drive down the cost for consumers. OTT players that are able to innovate in the messaging interface and integrate it seamlessly with multiple communications technology will be able to add value in the future. We expect that as these players gain traction in the market, carriers will acquire them so that they can incorporate them into their messaging platforms.

CONVERGENCE OF MOBILE MESSAGING

As carriers move into the IP-messaging space and IP-messaging providers partner with carriers to expand their reach, messaging will converge. Consumers will have significant low-cost communication options and flexibility with the underlying technology being invisible to the user. Users will also enjoy great interfaces coupled with reliability and interoperability. The ubiquitous mobile phone number will be a key piece of this convergence as the unique identifier for every mobile device. This convergence of the IP and SMS worlds will also lead to opportunities for SMS as a technology outside the realm of P2P messaging.

About Peter Crocker

Peter Crocker is the founder and principal analyst at Smith's Point Analytics, a full-service market research and consulting firm focused on the mobile and wireless industry. He has five years of experience in the mobile and wireless market both as an analyst and as a marketing professional. Prior to founding Smith's Point Analytics, Crocker was a senior analyst with VDC Research, covering the enterprise mobility and mobile software markets. In addition to his experience following the market as an analyst, Crocker has been instrumental in building business and guiding strategy at mobile software startups including Pyxis Mobile and Medxforms. Crocker also has a background in financial service and consulting and holds an MBA from the College of William and Mary. He has been a regular contributor to online and print publications such as *Mobile Enterprise* magazine and Rethink Wireless.

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