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CHAPTER I

EXECUTIVE SUMMARY

1.1 Introduction

Voice telecommunications services have been the bedrock of the industry since the telephone was invented by Alexander Graham Bell in 1870s. Voice services over fixed copper lines defined communications services as we know it today, while familiar terms such as “dialing,” “ring-tone,” and “call forwarding”—which are only meaningful in context with copper networks and rotary phones—are loosely used out of this context to describe wireless cell phones features and capabilities. What smartphone comes with a rotary dial? Voice calls are made with alacrity on either wired or wireless phones, so it is not the comparison of which device is chosen, but the combined usage and trends around voice communications that is of interest to us in this report.

In a US telecommunications services industry that will exceed $500 billion in annual revenues in 2013, voice services—both wireline and wireless—constitute over one-third of the industry revenues. Despite its long legacy and stable revenue flow, voice calling has finally peaked and is likely to decline going forward. The familiar time division multiplexing (TDM) method of transmitting and receiving independent signals over a common signal path by means of synchronized switches at each end of the transmission line has run its course in the business, and now packet or IP-based transmission formats are taking over. Over the past decade, voice usage, as measured in calls and minutes of use, has risen modestly, but calling has shifted from wireline to IP and wireless services, causing a rapid drop in wireline TDM voice services. From low penetration rates in the 1990s, wireless subscriber penetration now exceeds the entire US population, as everyone seems to have a cell phone—some have multiple, and families have more cell phones around the home than family members to use them. Wireline access lines (TDM based) are being disconnected at a ten percent annual rate and the wireline customers that remain are shifting to voice over Internet protocol (VoIP) lines as a replacement to their legacy copper, dial-tone services.
Billions of annual revenue dollars are at stake for the incumbent voice carriers, as they seek to preserve customers through this transition. It becomes critical for carriers (i.e., service providers) to retain their customer base and the cash flow generated by consumers as they migrate to both VoIP and mobile services. Maintaining profitably will be challenging as declining networks (i.e., the wireline TDM network) yield higher fixed and variable costs for providers as they continue to service the fewer customers who remain. Retaining customers is equally challenging and will require a raft of innovations centered about service bundles and lower pricing. While providers seek to maintain customers, they must simultaneously provide incentives to migrate them to wireless, advanced data, conferencing, and video services. Voice calling on legacy TDM networks is a declining business with several substitutes, such as VoIP, wireless, emails, text messaging, and social media, and the harvest is near completion.

Residential voice subscribers are fleeing legacy voice services to VoIP and wireless services, while voice migration to VoIP is happening even faster in the business market. Many new households are content with wireless-only services, while new substitutes are appearing in that will provide a “Wireless Home Phone” without using cooper wires. We can begin to envision a future where carriers no longer offer wireline voice services, curtailing all investment and enhancements in the PSTN (public switched telephone network).

Wireless voice volumes (calls, MoUs) are already far greater than wireline voice volumes, as many prefer a wireless handset to a fixed phone. The future for wireless voice communications also has limits, however. Communication patterns are changing, particularly for younger consumers who rely on text and video communication in-place of voice communication. The transport for these new mediums is wireless data service, which is the platform for the PCs, smartphones, and tablets that will propel data volumes well-beyond anything ever experienced on voice networks. Innovations and deployment of wireless 4G LTE (fourth generation long term evolution) will enable many data-intensive applications, such as video streaming and voice over LTE, and will drive even more consumers and businesses to wireless access. While all of this is occurring over the next few years, we see that the wireless device market will also change, as manufacturers
become more competitive and the power balance may shift from the device makers to the service provider.

For wireless carriers, retaining voice customers and will require new offers and providers can no longer rely on mature technologies, such as text messaging, to offset declines in voice revenues. Carriers must also address their voice cost structure to remain profitable. Cost reductions, such as controlling operational costs on legacy networks, cutting back on handset subsidies, and reducing churn, will be critical to carriers in maintaining profitability. As residential and business users migrate to wireless and VoIP it is critical for carriers to retain these subscribers, who are the same customers that are seeking the most advanced data and video services.

This study provides a comprehensive analysis of US voice services marketplace, including details by carrier, subscription plans, subscriber trends, pricing bundles, and minutes of use. The report provides five year forecasts of revenues, units, and pricing.

The report looks at key wireline and wireless trends, including the Internet, VoIP migration, OTT (applications, M2M [machine to machine], and the impact from cable companies. We look at voice traffic trends, including subscribers, minutes, calls, and messaging, while we calibrate usage based on changes and penetration rates. Wireless data services are impacting voice services, and the report looks at the rise of smartphones, tablets, and data traffic and how these are impacting voice revenues and profitability.

The voice market can be segmented in several dimensions, and we look at trends in prepaid versus postpaid wireless services, residential versus business markets, and retail versus wholesale channels to help readers understand the dynamics that will affect each segment. In addition, we help you understand how “share of consumer wallet” affects total telecommunications spending and associated voice pricing.

The major players and their roles in the market are covered in Chapter III, while we provide our opinion on the power of the Verizon/AT&T duopoly in the US and
how it may change over the next few years. Providers such as Sprint, T-Mobile, and CenturyLink (and others) are covered and we suggest specific areas and strategies that they are likely to pursue.

### 1.2 Current Voice Market

The past decade has been turbulent for many industry players who were not prepared for the shift from wireline to wireless and from voice to data. The era is marked by declines in wireline voice revenues, increases in wireline data, and increases in wireless voice and data services, as the reader can see in the proportion shift in Figure I-1.

**Figure I-1 US Telecommunications Revenue Compositions, 2005 vs. 2013**

The US wireline voice installed base peaked at 192 million access lines in 2000. In following decade, despite nominal population growth, close to 80 million access lines or more than 40 percent of wireline loops have been disconnected, replaced largely by cell phones or Internet-based phone services. The rapid decline in access lines has not only reduced revenue but also seriously impacted
the profit margins on the wireline business, as the unit cost of maintaining the century-old PSTN network keeps on rising.

TDM to VoIP migration continues at a modest pace, while wireless voice has risen sharply since its first commercial use in the 1985. Cell phone usage became the most quickly adopted consumer technology in the history of the world, and it may ultimately render wireline voice service as obsolete. In 2002, the telecommunications industry reached a crossover point at which the number of mobile service subscribers surpassed those of fixed telephone networks—making mobile services the dominant means of voice communications. At the close of 2002, there were 1.2 billion mobile customers around the world, compared with 1.1 billion fixed telephone lines. The situation in the US was similar, as US wireless call volumes doubled from 2005 to 2011, rising from 1,130 billion MoUs to 2,296 billion MoUs—while wireline volumes declined from 1,136 billion to 512 billion.

As the communication paradigm shifts from voice to data, wireless voice call volumes have peaked, while text messaging, either offered by wireless carriers or running over-the-top (OTT) of the data network has been flourishing and replacing a substantial amount of voice conversation minutes. Wireless voice monthly usage per subscriber as measured by MoUs fell from 769 in 2007 to 615 in 2011. During the same period, the wireless phone subscriber growth rate also slowed down to single digits. As a result, total US wireless voice call volume growth also stalled at only 2 percent CAGR since 2007. In 2012, total wireless voice volumes plateaued at 2,300 billion MoUs, almost flat from the previous year. In the same year, US wireless carriers’ text messaging volumes reached 2,190 billion. It is estimated that OTT messaging service volumes have surpassed the traditional text messaging in 2012 and are still growing exponentially.

This gradual shift from voice communication to data communication will continue to unfold in the coming years. While voice communications will always remain as an essential part of people’s daily life and a core business for telecom carriers, it is undeniable that people are spending less time on voice calling, while choosing other digital forms to communicate with others.
1.3 Market Forecast Summary

INSIGHT projects that US telecommunications service revenues will continue to grow over the forecast period from 2013 to 2018 as both consumers and businesses turn to network providers to support their basic communications needs. Despite the overall growth in this market, INSIGHT forecasts that voice revenue will continue to decline at -4.81 percent CAGR from $163 billion in 2013 to $127 billion in 2018, as shown in Figure I-2. Similarly, as total wireless revenues continue to grow over this period, wireless voice—which peaked at $118 billion in 2008—will decline at -3.82 percent CAGR to $84 billion in 2018 due to price erosion and lower voice usage. In parallel, wireline voice will drop even faster at -6.56 percent CAGR from $61 billion in 2013 to $44 billion in 2018 as consumers continue to “cut cords” and businesses continue to migrate to VoIP platforms.

Figure I-2  US Voice Service Revenue, 2013-2018 ($Million)

Chapter V provides a detailed breakdown of these voice revenue forecasts along with usage and pricing forecasts over the same period. Five year forecasts are provided by these segments:
The report is packed with both historic and forecasted data that will assist the serious analyst and business managers in developing business plans to address this market.

Some of the notable trends—which are further substantiated in the detailed forecasts provided throughout the report—are the following:
1) Wireless voice has been and will continue to be the dominating form of voice communications.

2) Interconnected VoIP revenues as a percent of total wireline voice revenues will double by 2018, as these revenues rise by over 50 percent.

3) Wireline voice penetration will continue to decline as more households “cut the cords” and go wireless only.

4) Overall wireless revenues will grow due to strong wireless data revenue growth, partially offset by declines of wireless voice revenues.

5) After years of growth, wireless voice minutes will start to experience consistent decline during the forecast period, as more people are turning to text messaging and other data-enabled communications means.
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