THE 2005 TELECOMMUNICATIONS INDUSTRY REVIEW

AN ANTHOLOGY OF MARKET FACTS AND FORECASTS

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THE
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CHAPTER I
EXECUTIVE SUMMARY

1.1 Telecommunications Industry Economic Conditions

The modest growth of telecommunications services revenue enjoyed by carriers worldwide during 2004 is predicted to continue in 2005. Three quarters of a trillion dollars flowed into the telecom industry during the tech bubble of the late 1990s, but after several brutal years watching telecom industry fortunes being driven downward—with the attendant layoffs, bankruptcies, and even a few accounting scandals—in 2005 the telecommunications industry has turned the corner.

INSIGHT Research's carrier revenue projections by geographic region are provided in Table I-1. Worldwide carrier revenues are predicted to grow from under $1.2 trillion in 2005 to just over $1.5 trillion in 2010. While the overall compound annual growth rate (CAGR) is 5.9 percent there are, however, notable regional differences.

North America (NA) has the slowest growth rate at 3.9 percent annually, but maintains its position as the region with the largest telecommunications services revenue in 2005. As the most mature telecom services market, NA growth is most dependent on new services as opposed to subscriber growth. Europe/Middle East/Africa (EMEA) exhibits a slightly higher growth rate at 4.5 percent per year, due to growth in the wireless market and growth from less developed sub-regions of Eastern Europe, the Middle East, and Africa.

The faster-growing regions are Latin America and the Caribbean (LAC) and Asia/Pacific (AP). LAC is dominated by the fast-growing economies of Mexico and Brazil. Many of the countries in the LAC region have a combination of a rapidly expanding middle class and increased privatization of key industries. The resulting pent-up demand for telecommunications services, much of which is satisfied by wireless services, is reflected in its high CAGR relative to the worldwide composite.

The AP region is experiencing the highest five-year growth overall, at 9.3 percent, and will be the largest telecommunications revenue producer,

overtaking North America by 2007. The sheer size of its underserved populations, especially in China and India, and its generally higher GDP growth rates, combined with more developed countries such as Japan, South Korea and Taiwan whose economies rely heavily on high-tech industries, are fueling this growth.

At the end of the forecast period in 2010, Asia Pacific revenues will contribute 32.2 percent of all global telecommunications revenues, while North America's contribution will fall to 29.2 percent, and EMEA will fall to 31.9 percent of all global telecommunications carrier revenue.

Table I-1 Global Carrier Revenue by Region, 2005-2010 ($Millions)

	2005	2006	2007	2008	2009	2010	CAGR
NA	375,980	390,526	401,726	417,701	435,516	455,735	3.9%
AP	322,416	356,869	396,441	431,236	465,386	502,371	9.3%
EMEA	400,226	416,421	440,856	462,053	479,182	498,123	4.5%
LAC	70,599	78,828	86,461	92,638	98,162	103,647	8.0%
Total	1,169,221	1,242,645	1,325,484	1,403,629	1,478,246	1,559,877	5.9%

In North America, cable TV (CATV) multiple system operators (MSOs) and traditional telephony providers are pitted against one another as both rush to create converged networks capable of providing voice, video, and high-speed data services to residential and business customers. The prospect of increased competition from cable providers taking share in the Bells' core residential phone business forced the ILECs to begin re-evaluating a fiber to the premises (FTTP) business case. Following a concerted lobbying campaign by the Bells, relief came in a precedent-setting order handed down in October, 2004 in which the Federal Communications Commission (FCC) ruled that the ILECs would not be required to lease new fiber installations to competitors. This regulatory ruling, which had been anticipated for several months, signaled that the Bells were ready to begin a new round of investment in fiber that just a few years before would have been unimaginable. One study predicted that the net capital expense of current FTTP deployment plans would run into the $40-$45 billion range.

In Asia, where GDP growth is two to four times that of the US or Western Europe, the telecommunications needs of business and residential subscribers is growing faster than any other region, pushing investment in broadband infrastructure to the top of the shopping list as middle-class expansion increases purchases of telecommunications and entertainment services. In Latin America and the Caribbean nations, many of the same forces are at work—albeit from a much smaller base considering that on the average, only a few percent of global Internet access comes from users in Latin America. Despite the economic and political problems of debt default, recessions, and currency devaluations in the recent past of Brazil, Mexico, Argentina, and Chile—the four largest economies in the region—the telecommunications services market is expected to grow at the healthy CAGR of eight percent through 2010 in the region.

The wireless telecommunications market has long been recognized as one of the most dynamic and fastest-growing segments of the global telecommunications industry, and worldwide is growing at a faster rate than wireline service. The uptake of wireless services in developing regions, and the ability to achieve reasonable wireless data rates, has resulted in unprecedented wireless services penetration and revenue growth. With the continuing rapid declines in wireless equipment prices, and the rise in the use of wireless devices as Internet appliances, wireless services growth will continue to outpace wireline services growth throughout the forecast period.

The penetration of wireless services in developing regions and the ability to achieve reasonable speeds for wireless data has resulted in continued wireless services penetration and revenue growth, often at the expense of wireline services. INSIGHT's research suggests that global wireless services revenues will exceed wireline services revenues by 2007, driven wholly by the continuing wireless penetration outside of NA, specifically in economically rising countries within the AP region. The AP region also has a "mobile phone" culture, where having the latest phone and using its capabilities is important to a person's image.

1.2 Report Structure

This report is segmented into six distinct chapters, each reviewing targeted areas of the overall telecommunications market. The broad segments covered in this report are:

- Telecommunications industry market trends,
- Network infrastructure,
- Broadband and narrowband access,
- Network support,
- Telecom services, and
- Enterprise telecom markets.

The **Background: Telecommunications Industry Markets** chapter lays the foundation for INSIGHT's forecasts and forward-looking analysis of the selected areas in the telecommunications industry. It provides and overview of industry-wide trends including international narrowband and broadband, wireless, and cable TV markets.

The chapter entitled **The Next-Generation Communications Network: Improvements to the Infrastructure** posits that continued technological advancement and the ongoing transformation of network infrastructure are ultimately driven by end-user demand for bandwidth. The migration of networks from electronic circuit switching to photonic packet switching is paramount to keeping pace with the transmission requirements of innovative, high-bandwidth services and applications. Accomplishing this requires carriers to update systems and equipment at all levels of the telecommunications network architecture—end-user, access, metro, and core. This report examines these issues as well as the migration path to Next Generation Network (NGNs) architecture and the role of NGN components such as softswitches, optical add-drop multiplexers (OADMs), digital and optical cross connects, wavelength division multiplexing systems, optical fibers, as well as discrete optical components such as transmitters, tunable lasers, and modulators. A discussion of wavelength service is also provided.

The Access Network: Narrowband and Broadband examines the interplay of narrowband and broadband technology in the access network. The advent of high-speed broadband access is not taking place without impacts on

narrowband; this chapter examines the US access line losses and the various options for broadband content delivery: digital subscriber line (DSL), hybrid fiber/coax (HFC), the new fiber builds underway in the US, fixed broadband wireless (FBW), and WiFi. As with advancements in underlying technologies, the demand for applications, notably higher-speed Internet services, is fueling the growing demand for broadband local access, which is also covered.

Supporting The Infrastructure: Network And Customer Support analyzes and the network support systems that lie behind the network infrastructure including the various operations support systems (OSSes) and business support systems (BSSes). Network operators' legacy support systems must be continually updated to accommodate new technologies, services, and applications. Business support systems include customer care, mediation, rating, and billing. Network support systems include engineering and planning, provisioning, trouble/repair, and network management.

Present and Future Communications Services Markets considers the changing nature of the telecom services landscape. This section begins with an overview of domestic US telecom spending before analyzing the impacts that residential wireless calling has exerted on the long distance network providers. The Voice over Internet Protocol (VoIP) market as well as IP-based application services (including IP-based conferencing and messaging applications as well as location-based services and Instant Messaging [IM]) are also presented. This chapter also includes a discussion of the carrier network requirements for streaming media network services revenue from such sources as encoding, digital right management (DRM), content hosting, performance-measurement services, and content delivery. The chapter concludes with a comparison of the relative attributes of growth impacting WiFi markets in Europe and US.

The final section of this report, **Enterprise Telecommunications Markets** examines the revenue contributions associated within three critical components of business services market: private line services; toll-free calling and corporate call centers; and the roll of premises-based voice switching via IP PBXs or a managed service alternative provided by an IP Centrex-type service.

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