

LAWLER, METZGER, KEENEY & LOGAN, LLC

2001 K STREET, NW  
SUITE 802  
WASHINGTON, D.C. 20006

REGINA M. KEENEY  
gkeency@lawlermetzger.com

PHONE (202) 777-7700  
FACSIMILE (202) 777-7763

July 28, 2011

*Via Electronic Filing and Hand Delivery*

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street SW  
Washington, DC 20554

Re: *Applications of AT&T Inc. and Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses and Authorizations – WT Docket No. 11-65*

Dear Ms. Dortch:

On July 26, 2011, Lawrence R. Krevor, Vice President, Government Affairs, Spectrum; Charles W. McKee, Vice President, Government Affairs, Federal & State Regulatory; Richard Engelman, Director, Government Affairs; Trey Hanbury, Director, Government Affairs; and Shuaib Porjosh, of Sprint Nextel Corporation (“Sprint”); along with Sprint’s outside counsel Antoinette Cook Bush and Matthew Hendrickson of Skadden, Arps, Slate, Meagher & Flom, and A. Richard Metzger, Jr., Charles W. Logan and the undersigned of Lawler, Metzger, Keeney & Logan; as well as Sprint’s outside consultants Shailabh Atal, Principal, and Daniel Hays, Director, of PRTM Management Consultants; and Steven Stravitz, CEO and Managing Director, and Hemant Mehta, Director of Engineering, of Spectrum Managing Consulting, Inc. (“SMC”), met with the following of the Federal Communications Commission (“Commission”): Renata Hesse, Senior Counsel to Chairman Genachowski for Transactions; Rick Kaplan, Chief; James Schlichting, Senior Deputy Chief; and Paul D’Ari, Patrick DeGraba, Kathy Harris, Chris Helzer, Pramesh Jobanputra, Charles Mathias, Paul Murray, Susan Singer, Thuy Tran, Melissa Tye, and Weiren Wang of the Wireless Telecommunications Bureau; Paul de Sa, Chief, Office of Strategic Planning and Policy Analysis; and Austin Schlick, General Counsel, and Jim Bird, Neil Dellar, Virginia Metallo, Joel Rabinovitz, and Michael Steffen of the Office of General Counsel. Also joining the meeting by telephone were Nese Guendelsberger and Tom Peters of the Wireless Telecommunications Bureau.

During the meeting, Sprint’s representatives discussed the failure of AT&T, Deutsche Telekom and T-Mobile (the “Applicants”) to demonstrate any cognizable public interest benefits that would outweigh the competitive harms that would result from AT&T’s proposed acquisition

REDACTED – FOR PUBLIC INSPECTION

of T-Mobile. Sprint's representatives distributed the attached slide deck. Sprint noted that AT&T is far from unique in facing rising consumer demand for data services or the need to support multiple generations of technology; explained why AT&T's capacity increase claims offer minimal merger-specific efficiencies and how can AT&T can increase network capacity to meet consumer demand without its proposed takeover of T-Mobile; and pointed out that AT&T's LTE deployment claims are vague and wholly unrelated to the proposed transaction. The points made by Sprint representatives during the meeting are set forth in detail on pages 81-130 of Sprint's Petition to Deny filed in the above-referenced proceeding on May 31, 2011; the Declaration of Steven Stravitz submitted with Sprint's Petition to Deny as Attachment G; pages 48-71 of Sprint's Reply Comments filed on June 20, 2011; and the Reply Declaration of Steven Stravitz submitted with Sprint's Reply Comments as Attachment B.

Sprint representatives explained during the meeting that, contrary to one of the Applicants' claims in this proceeding, AT&T can implement cell splitting to increase network capacity without the proposed transaction. A recent *Wall Street Journal* article reported that "AT&T and other wireless operators could double the amount of capacity they supply with current spectrum by investing more in new wireless equipment on existing cell towers," and quoted the CEO of American Tower, one of the nation's leading tower companies, as saying that "[o]ur tower sites are about 50% loaded on average."<sup>1</sup> During the meeting (*see* page 11 of the attached slide deck), Sprint representatives described a J.P. Morgan research report that indicates that tower companies have both the incentive and capacity to accommodate additional sites for wireless carriers; a copy of the relevant excerpts from this report is attached. Also attached are excerpts from SEC filings by American Tower and Crown Castle further indicating that tower companies are seeking to expand site leasing opportunities, including upgrading their existing sites to accommodate additional tenants.

Sprint representatives also called into question AT&T's assertion that it would incorporate into its network about 35% of T-Mobile's radio access network infrastructure.<sup>2</sup> Using AT&T's own data and a commercial tower inventory database, SMC conducted an analysis that demonstrates that: (1) AT&T has *greatly overstated* the percentage of T-Mobile's infrastructure that it would be able to retain and incorporate into productive use in an integrated, post-takeover AT&T network; and (2) many alternative structures and sites exist today that

---

<sup>1</sup> Spencer E. Ante and Amy Schatz, *Skepticism Greets AT&T Theory – Telecom Giant Says T-Mobile Deal Will Improve Network Quality, but Experts See Other Options*, THE WALL STREET JOURNAL, April 4, 2011, at B1.

<sup>2</sup> AT&T Investor Presentation at 20 (March 21, 2011) (claiming that proposed transaction would increase number of AT&T cell sites in "typical" major markets from 25-35% or 35-45% by integrating T-Mobile cell sites into AT&T network), *available at*: <[http://mobilizeeverything.com/uploaded-files/ATT\\_T-Mobile\\_A\\_World\\_Class\\_Platform\\_for\\_the\\_Future\\_of\\_Mobile\\_Broadband.pdf](http://mobilizeeverything.com/uploaded-files/ATT_T-Mobile_A_World_Class_Platform_for_the_Future_of_Mobile_Broadband.pdf)>; Declaration of William Hogg, ¶ 47 (April 20, 2011), attached to AT&T's Description of Transaction, Public Interest Showing and Related Demonstrations, WT Docket No. 11-65 (April 21, 2011).

would enable AT&T to “cell split” to increase its capacity without the proposed T-Mobile takeover. Stated differently, more than two-thirds of T-Mobile’s existing network would not fit efficiently within AT&T’s existing network design.

Sprint representatives discussed the overall conclusions and methodology of SMC’s analysis during the July 26 meeting with Commission staff (see pages 9-10 of the attached slide deck). The underlying data and findings of SMC’s analysis are set forth in the attached Highly Confidential appendix. This appendix was not distributed during the July 26 meeting with the Commission staff. The Highly Confidential appendix is attached only to the Highly Confidential, unredacted version of this *ex parte* submission. One unredacted copy is being hand delivered under seal to the Secretary’s Office, and two copies of the unredacted version are being hand delivered to Kathy Harris, Mobility Division, Wireless Telecommunications Bureau, Federal Communications Commission, 445 12th Street SW, Room 6329, Washington, D.C. 20554, pursuant to the Commission’s Second Protective Order in this proceeding.<sup>3</sup> The redacted version of this *ex parte* is being electronically filed via ECFS.

Pursuant to section 1.206(b)(2) of the Commission’s rules, 47 C.F.R. § 1.1206(b)(2), this *ex parte* notification is being filed for inclusion in the public record of the above referenced proceeding.

Respectfully submitted,

/s/ Regina M. Keeney  
Regina M. Keeney

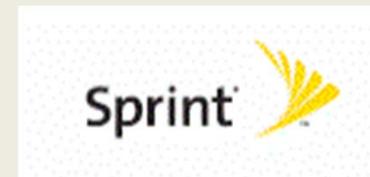
Attachments

cc:

Renata Hesse	Rick Kaplan	Paul de Sa
Austin Schlick	James Schlichting	Joel Rabinovitz
Jim Bird	Pramesh Jobanputra	Susan Singer
Patrick DeGraba	David Krech	Michael Steffen
Neil Dellar	Kate Matraves	Thuy Tran
Stacy Ferraro	Charles Mathias	Melissa Tye
Nese Guendelsberger	Virginia Metallo	Weiren Wang
Kathy Harris	Paul Murray	Best Copy & Printing, Inc.
Chris Helzer	Tom Peters	

<sup>3</sup> *Applications of AT&T Inc. and Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses and Authorizations*, WT Docket No. 11-65, Second Protective Order, DA 11-753, 26 FCC Red 6243, ¶ 4 (2011).

# **AT&T's Takeover of T-Mobile Will Not Serve the Public Interest**



July 26, 2011  
WT Docket No. 11-65

# Overview

- Applicants have not demonstrated any cognizable public interest benefits that would outweigh the competitive harms of their proposed transaction
- AT&T is far from unique in facing rising consumer demand for data services
- AT&T's network efficiency claims are exaggerated and unverifiable
- AT&T can increase network capacity to meet consumer demand without the T-Mobile takeover
- AT&T's LTE deployment claims are vague and wholly unrelated to the proposed transaction

# AT&T Is Not Facing Unique Spectrum or Data Demands

Compared to AT&T, VZW has

- More customers
- Less spectrum
- Better service quality
- Higher data demand

VZW has stated that it has a “very, very good” spectrum position and needs no additional spectrum through 2015

*Comparison of Projected Data Demand on AT&T and VZW Networks*

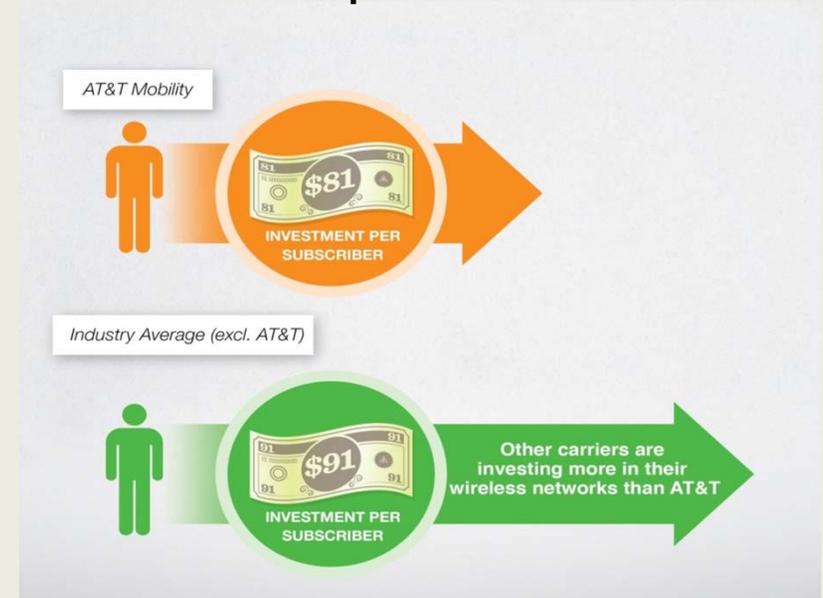
	1Q11	2Q11	3Q11	4Q11
<b>Number of 3G and 4G Users</b>				
AT&T	44,927	46,764	49,612	51,188
Verizon Wireless	43,655	48,463	52,679	56,897
<b>Average Weighted MB Usage/User/Month</b>				
AT&T	265	296	341	378
Verizon Wireless	248	304	364	427
<b>Total Subscriber Data Demand (TB/month)</b>				
AT&T	19,479	21,792	25,233	28,463
Verizon Wireless	20,801	25,930	31,302	37,152
<b>Difference in Data demand, VZW-AT&amp;T</b>	7%	19%	24%	31%
<b>Y/Y Change</b>				
AT&T	86%	79%	69%	66%
Verizon Wireless	68%	79%	94%	106%

Source: JP Morgan, North American Equity Research, Telecom Services & Towers Report, *Breaking Down Data – Part Deux: T and VZ Network Demand Similar, but Growing Faster* (Feb. 4, 2011)

# All Carriers Face Increasing Consumer Demand

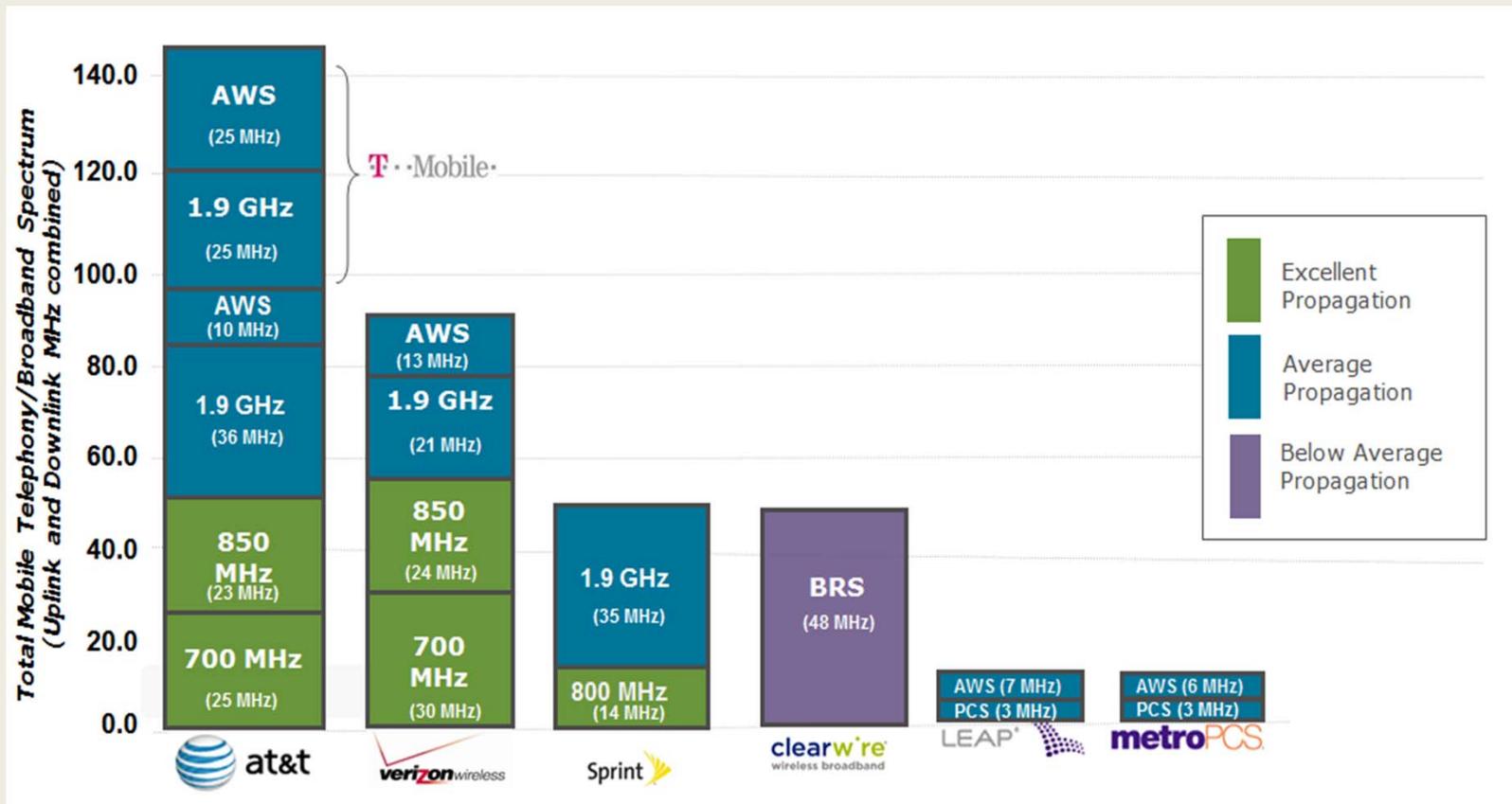
- 3<sup>rd</sup> party drive tests: minimal performance differences (*e.g.*, dropped calls) among studied carriers
- According to Nielsen, iPhone users (most of AT&T smartphone users) consume 492 MB of data per month vs. Android users, who consume 582 MB of data per month

## AT&T Has Underinvested In Its Network Compared to Other Carriers



Annual Capital Expenditure Per Subscriber, 2006-2010  
(sources cited in Sprint Petition to Deny, at 86 (May 31, 2011))

# AT&T Is Better Positioned Than Other Carriers Given Its Large Spectrum Holdings



Total spectrum holdings for various wireless operators  
(Only including spectrum counted under FCC spectrum screen)

# AT&T Is Not Unique in Supporting Multiple Generations of Technology

- Carriers are transitioning to 4G technologies while supporting an embedded base of subscribers
- AT&T's migration to more efficient technologies can be accelerated
  - Expedite deployment of faster, more efficient technologies
  - Offer incentives: handset and service subsidies on newer services, surcharges on older technologies
  - Increase pace of migration by following proven approaches
    - In the 1<sup>st</sup> quarter of 2005, AT&T migrated 9% of its TDMA customer base to its GSM network

# AT&T Still Aggressively Subsidizes, Advertises, and Sells GSM-Only Connections

## CONSUMER

Contrary to AT&T's claims, it continues to heavily subsidize GSM-only phones to both its pre-paid and post-paid customers:

- ✓ Samsung SGH-a107
- ✓ Samsung SGH-a197
- ✓ AT&T R225
- ✓ LG Prime GoPhone



## ENTERPRISE

AT&T is aggressively adding large volumes of inefficient, GSM-only connections through partnerships with M2M vendors including:

- ✓ SmartSync
- ✓ Cooper Power Systems



# **AT&T's Capacity Increase Claims Offer Minimal Merger-Specific Efficiencies**

- Applicants have failed to meet their burden of proving merger-specific public interest benefits based on verifiable data
- Many of AT&T's alleged efficiencies apply only to AT&T's voice network and would not help address increased demands on data network
- Efficiency claims are based on theoretical, unverifiable assertions that ignore real-world factors

# T-Mobile Sites Are Not Complementary to AT&T Sites and Alternative Sites are Available

## Analysis of AT&T Cell Splitting Using T-Mobile Sites

- SMC analyzed 10 markets using AT&T's own criteria and found that a **very low number of T-Mo sites are complementary to AT&T sites**
  - **Largest markets:** % of T-Mobile sites that are complementary range from low single digits to mid-teens
  - **Mid-size markets:** % of T-Mobile sites that are complementary range from mid-teens to low twenties

## Analysis of AT&T Cell Splitting Using Alternative Sites

- SMC analyzed 7 markets and found a **very high number of alternative structures available to enable AT&T cell splits without T-Mobile sites**
  - In large majority of markets, there is at least one non-T-Mobile alternative structure/site for 80-100% of T-Mobile sites
  - Even in top 10 markets, which require site density, significant numbers of alternative sites/structures remain

# Detailed Modeling Identifies Numerous Site Alternatives for AT&T

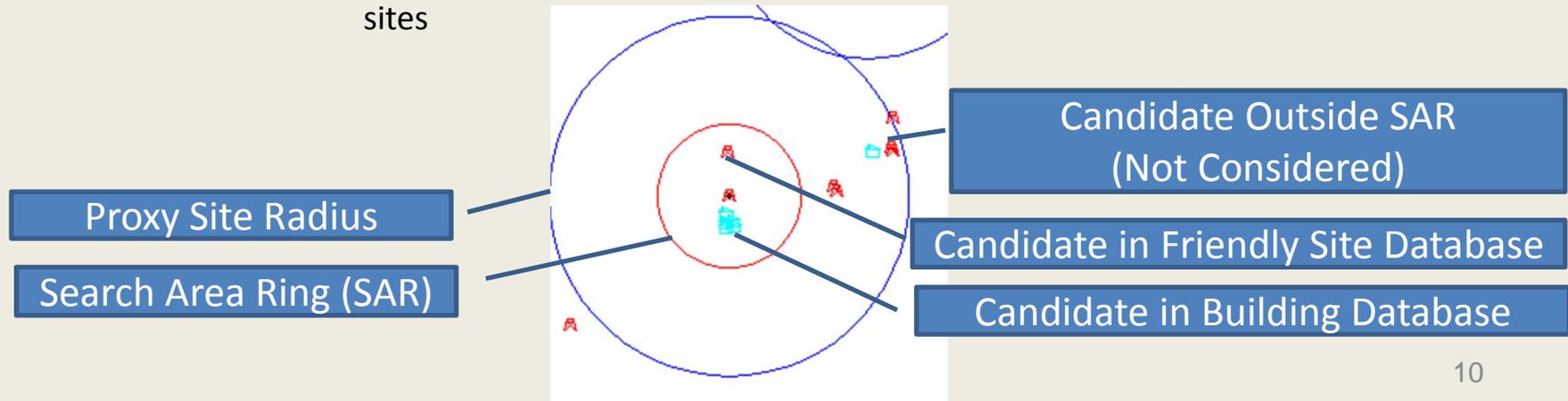


- Selected markets from AT&T Spectrum Exhaust List
- Analyzed seven markets based on CMA boundaries

- Calculated site distance of all sites in each market
- Created site radius Proxy Radius for each T-Mo site based on half of the average distance of the three closest T-Mo sites

- Defined Search Area Rings based on a conservative 20% of the site radius proxy
- Utilized SARs – inner circle below – are only 16% of the area of the Proxy Coverage of the site

- Used SMC databases of friendly sites and buildings to identify alternative sites
- Identified sites within the Search Area Ring for each T-Mo site



# AT&T Does Not Need to Acquire T-Mobile to Gain Access to Thousands of Sites

- A typical cellular tower has capacity available and can host 3 to 5 tenants
- JP Morgan estimates towers average only 1.7 tenants, with capacity available for more than 3 additional tenants
- Top 3 tower companies (ATC, CCI, SBA) have an average of only 2.3 to 2.7 tenants per tower, with room for more

Source: JP Morgan, North America Equity Research, *U.S. Telecom Services & Towers* (Jan. 13, 2011)

Alternatives to T-Mobile Sites for 7 Selected Markets	Number of Towers*
Crown Castle	1019
American Towers	580
Lamar	553
SBA	128
Global Tower Partners	67
KGI Wireless	39
Tower Resource Management (TRM)	32
Unison	22
TowerCo	20
Other	180
Total sites in SAR	2,640

\*Excludes T-Mobile and AT&T tower sites

Source: Towermap

# Pooling Gains Are Much Lower for High Usage Areas and Apply Only to GSM Network

Number of TRXs per Operator	Capacity per Operator*	Capacity for the Combined Operator (Without Gains)*	Achievable Capacity for the Combined Operator*	Capacity Gain for the Combined Operator*
1	7.4	14.8	18.35	24%
2	18.35	36.7	41.35	12%
3	29.15	58.3	65.8	12%
4	41.15	82.3	89.9	9%
6	64.9	129.8	138.8	7%
8	89.9	179.8	190.1	6%
10	115.2	230.4	239.8	4%

Channel pooling benefits will decrease as the number of channels in pre-pooling networks increase

**Blue Text:** Capacity gains due to trunking or pooling efficiency in low-use areas with fewer activated channels

**Red Text:** Capacity gains due to trunking or pooling efficiency in high-use areas with more activated channels

\*Note: all capacity in Erlangs

# AT&T Exaggerates Control Channel Efficiencies

- Consolidation of control channels would not "free up" as much spectrum as AT&T has argued
- T-Mobile could "free up" as much as 5 MHz of spectrum without the merger with tighter frequency and reuse plans
- Consolidating control channels can require device replacement, fragment spectrum, and decrease network quality

# AT&T Can Increase Network Capacity Without the Proposed Transaction

## Utilize Spectrum:

Deploy unused spectrum with LTE

OVER

**250%**

## Gain Greater Spectral Efficiency:

Upgrade existing technologies to LTE

OVER

**300%**

## Greater Site Density:

Implement network design of macro & small cells

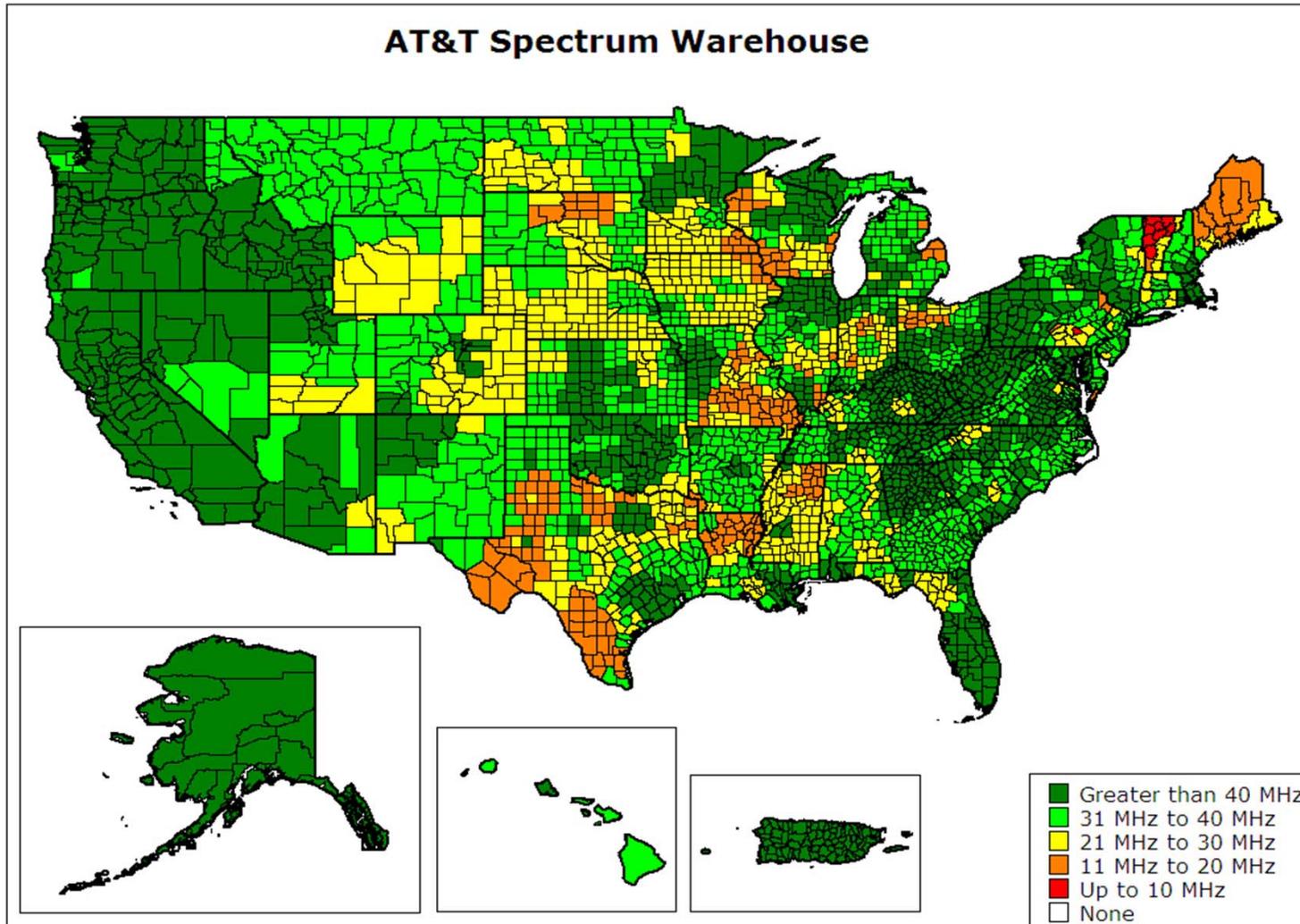
OVER

**600%**

Capacity gains depicted here are cumulative gains AT&T would enjoy by sequentially applying the three methodologies described above.

# Lever One: Use All AT&T Spectrum

AT&T not using any spectrum allocated since the 1990s



Note: Graph reflects unused spectrum not currently deployed for any AT&T wireless service

## ***Lever Two: Expedite Migration to HSPA and LTE***

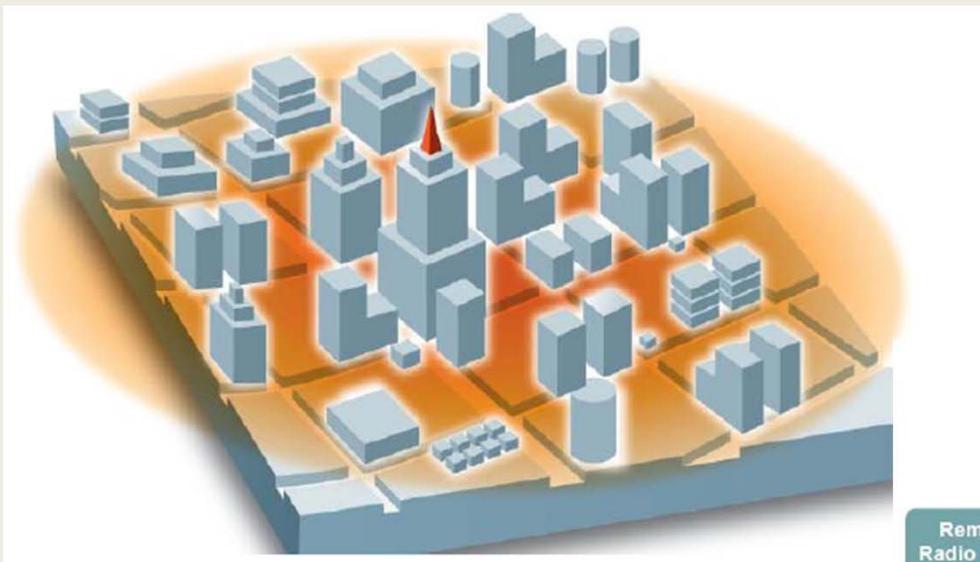
- HSPA+ is 4x more efficient than GSM technology
- LTE greatly increases capacity:
  - 700% more efficient than GSM
  - 70% more efficient than HSPA
- Much of SMC's estimated 600% capacity increase comes from following well-established industry practice of migrating subscribers from older technologies (*e.g.*, GSM) to newer technologies over time

## ***Lever Three: Build Infrastructure***

- Invest in site deployments to create a denser network – AT&T plans only 2000 new sites this year,\* far fewer than expected for a carrier its size claiming spectrum exhaust in many markets
- Invest in heterogenous networks – a mix of macrocells, microcells, picocells, femtocells and similar technologies that can increase capacity by more than 250%
- Invest in more Wi-Fi hotspots and in-building systems to offload data traffic onto Wi-Fi networks
- These infrastructure investments, along with tower- or RAN-sharing arrangements, would be less expensive, easier to implement, and less harmful to the public interest than the proposed transaction

# Heterogeneous Networks Can More Than Double Network Capacity

Macrocell network



Heterogeneous Network

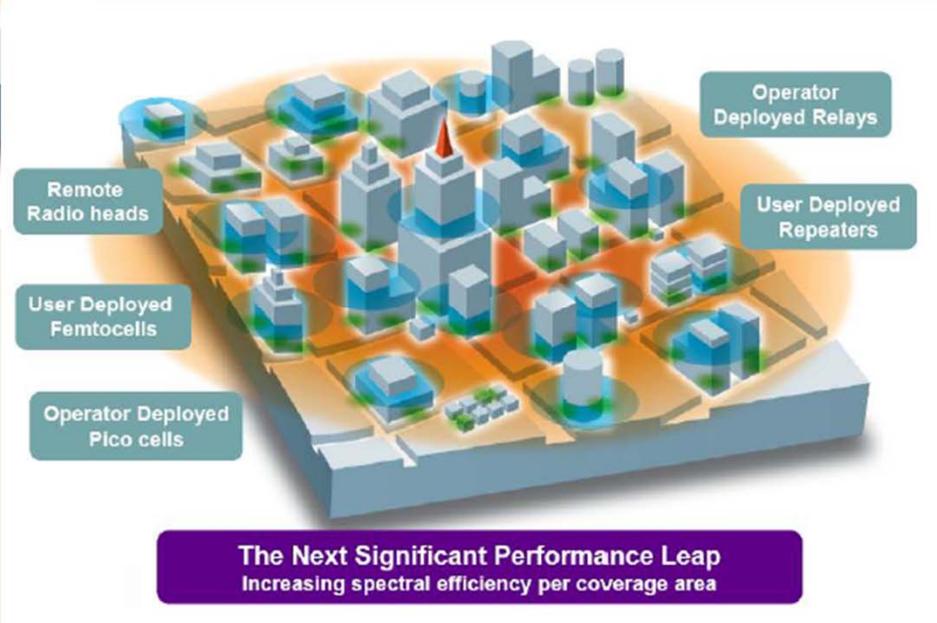


Image Source: Qualcomm Webinar, LTE Advanced (June 2010)

# Los Angeles Case Study

2011

Model's depiction of 125 MHz spectrum allocation for Los Angeles market in 2011



	Unused	GSM	WCDMA	LTE
Spectrum Allocation	60 MHz	5 MHz	60 MHz	0 MHz

2015

Model's depiction of 125 MHz spectrum allocation for Los Angeles market in 2015



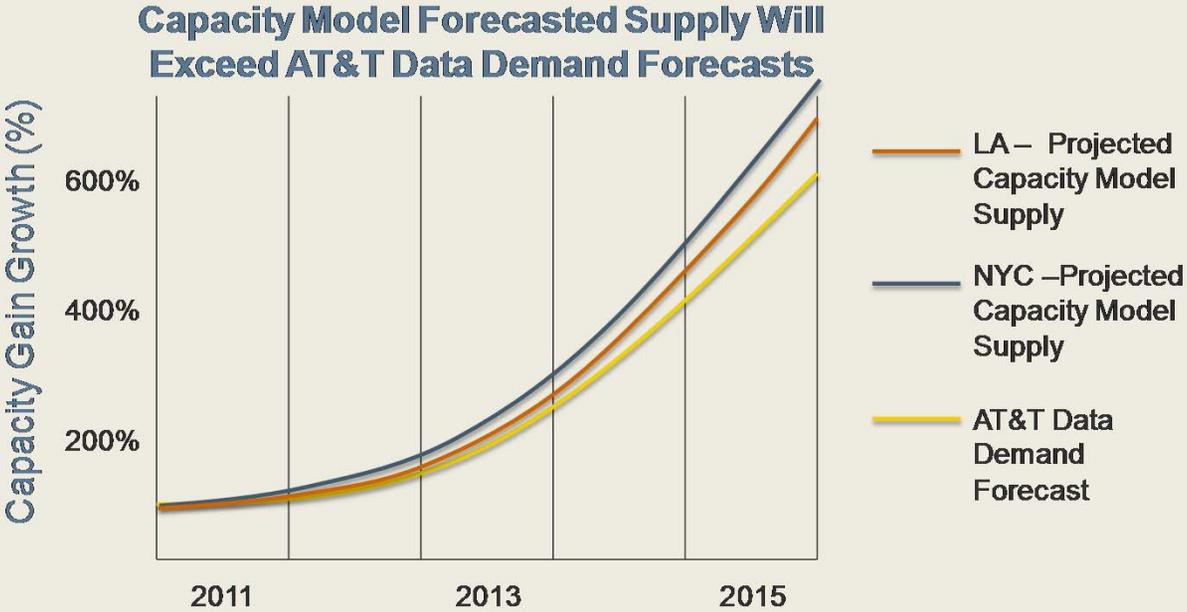
Levers	Enabler	Unused	GSM	WCDMA	LTE
1: Utilize Unused Spectrum	Spectrum Allocation	10 MHz	5 MHz	50 MHz	60 MHz*
2: Upgrade Networks	Spectral efficiency (bps/Hz)	0	0.25	0.75	1.8
3: Deploy Heterogeneous Network	Cell distance and reuse (capacity gain)	0	0	0	2.1x

## % Capacity Gains



\* Includes 10 MHz from PCS band

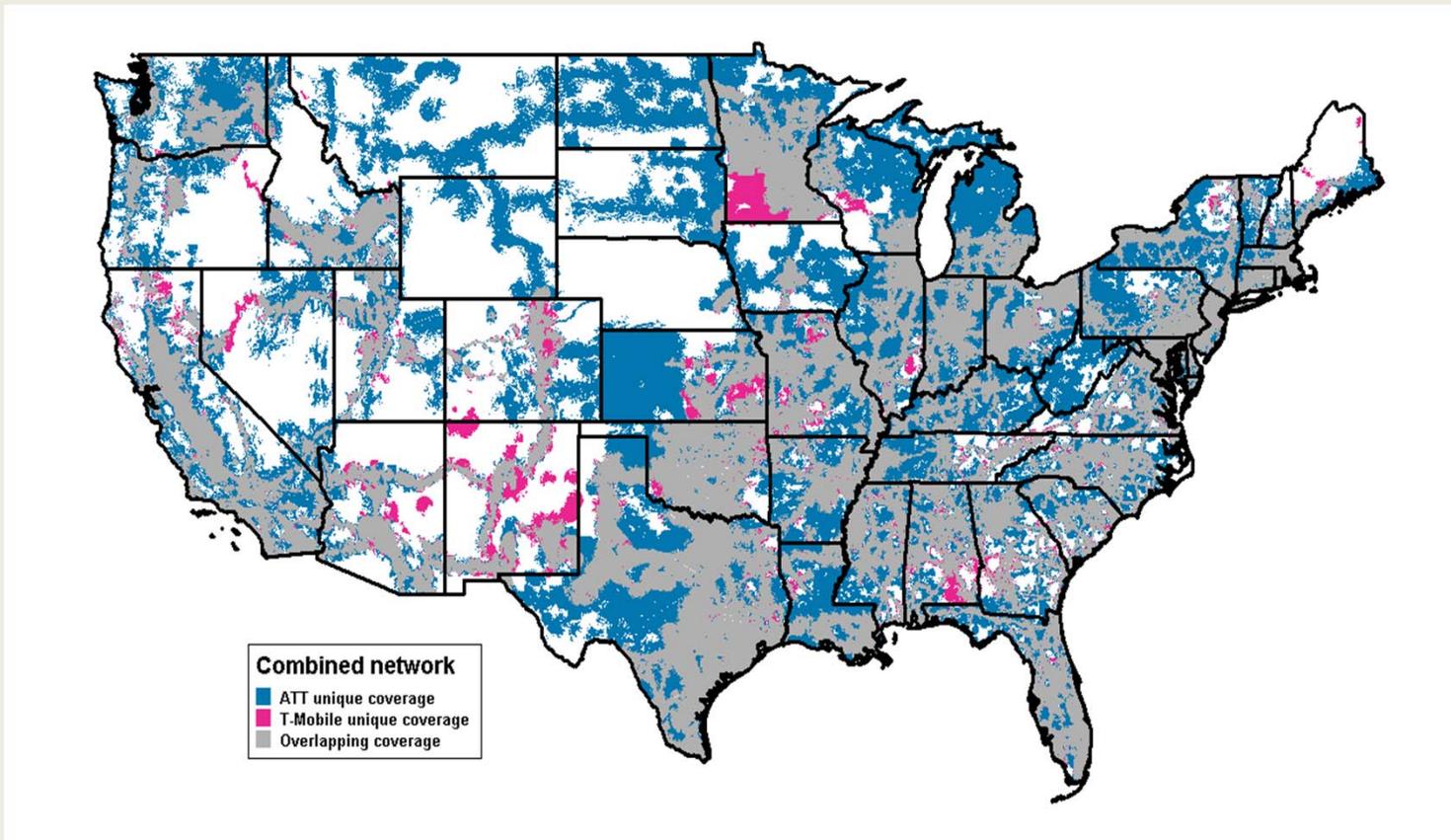
# Readily Available Gains More Than Satisfy Projected Demand



## **AT&T Will Deploy LTE Nationwide, Even Without the Transaction**

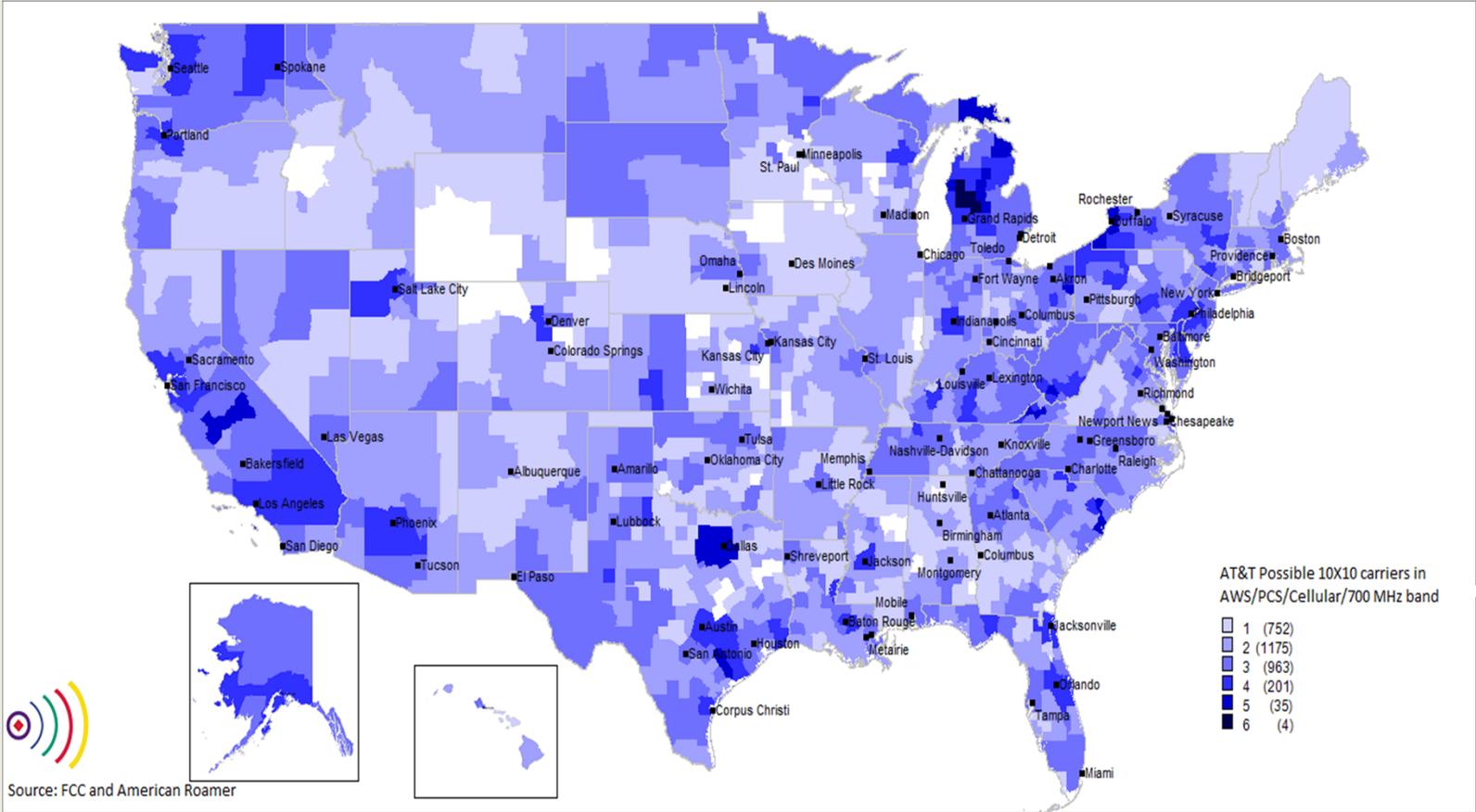
- Competition will drive AT&T to match Verizon's plan to deploy LTE to virtually all U.S. population
- AT&T already plans to deploy HSPA+ to 97% of the population and will need to upgrade this footprint to LTE to match Verizon's speeds
- AT&T's threat not to deploy LTE to an additional 17% of the population is not credible

# T-Mobile Adds Less Than 1% to AT&T's Existing Coverage of 97% of Population



American Roamer, LLC is the creator and copyright holder of the coverage mapping data used in this analysis

# AT&T Has the Spectrum Depth to Deploy LTE Nationwide Without the T-Mobile Takeover



American Roamer, LLC is the creator and copyright holder of the coverage mapping data used in this analysis

# **AT&T Is Seeking to Promote Profit Margins, *Not* the Public Interest**

- “[T]his is a transaction that creates substantial shareholder value. Most important, it enhances our long-term revenue and margin potential. ... [T]he scale and the combination of operational assets provide us with a path to industry-leading wireless margins.” Richard Lindner, AT&T’s CFO, March 2011
- AT&T’s LTE deployment plans are “largely economic” and shaped by desire to increase shareholder return. William Hogg, AT&T’s Senior VP of Network Planning and Engineering, Cal. PUC Hearing, July 2011

REDACTED – FOR PUBLIC INSPECTION

# Analysis of Alternatives to T-Mobile Sites to Support AT&T Cell Splitting

Spectrum Management Consulting

WT Docket No. 11-65

July 26, 2011

**Remaining Pages of Attachment  
Redacted in Full**

# **American Tower Corporation /MA/ (AMT)**

**10-K**

**Annual report**

**Filed on 2/28/2011**

**Filed Period 12/31/2010**

**[Excerpted Pages]**

---

## **Table of Contents**

tenants' engineers to determine the geographic areas where new tower sites will best address the tenants' needs and meet their coverage objectives. Once a new site is identified, we acquire the rights to the land or structure on which the site will be constructed, and we manage the permitting process to ensure all necessary approvals are obtained to construct and operate the communications site under applicable law.

*Structural Analysis.* We offer structural analysis services to wireless carriers in connection with the installation of their communications equipment on our towers. Our team of engineers can evaluate whether a tower can support the additional burden of the new equipment or if an upgrade is needed, which enables our tenants to better assess potential sites before making an installation decision. Our structural analysis capabilities enable us to provide higher quality service to our existing tenants by, among other things, reducing cycle times, as well as provide opportunities to offer structural analysis services to third parties.

## **Strategy**

### ***Operational Strategy***

Our operational strategy is to capitalize on the growth in the use of wireless communications services and the evolution of advanced wireless handsets, as well as the expanding infrastructure required to deploy current and future generations of wireless communications technologies. To achieve this, our primary focus is to increase the leasing of our existing communications site portfolio, invest in and selectively grow our communications site portfolio, further improve upon our operational performance and maintain a strong balance sheet. We believe these efforts will further support and maximize our ability to capitalize on the growth in demand for wireless infrastructure.

- **Increase the leasing of our existing communications site portfolio.** We believe that our highest returns will be achieved by leasing additional space on our existing communications sites. As a result of wireless industry capital spending trends in the markets we serve, we anticipate consistent demand for our communications sites because they are attractively located for wireless service providers and have capacity available for additional tenants. As of December 31, 2010, we had an average of approximately 2.3 average tenants per tower. We believe that of our towers that are currently at or near full structural capacity, the vast majority can be upgraded or augmented to meet future tenant demand, with relatively modest capital investment. Therefore, we will continue to target our sales and marketing activities to increase the utilization, and return on investment of, our existing communications sites.
- **Invest in and selectively grow our communications site portfolio.** We seek opportunities to invest and grow our operations through our capital programs and acquisitions. We believe we can achieve attractive risk adjusted returns by pursuing such investments. This includes pursuing opportunities to invest through new site construction and acquisitions in our domestic and in select international markets which we believe have a high-growth wireless industry and are attractive from a macroeconomic standpoint.
- **Further improve on our operational performance.** We will continue to seek opportunities to improve our operational performance throughout the organization. This includes investing in our systems and people as we strive to improve our efficiencies and provide best in class service to our customers. To achieve this, we intend to continue to focus on customer service, such as reducing cycle times for key functions, including lease processing and tower structural analysis.
- **Maintain a strong balance sheet.** We will continue to maintain our disciplined approach to managing our balance sheet. This includes maintaining a target net leverage ratio and ensuring ample liquidity is available to pursue our strategy. As of December 31, 2010, we had approximately \$1.8 billion of available liquidity. We believe that our investment grade ratings and our current level of net leverage make us an attractive service provider partner for our tenants, and provide us with consistent access to the capital markets.

## Table of Contents

### *Capital Allocation Strategy*

The objective of our capital allocation strategy is to simultaneously increase recurring free cash flow per share growth and our return on invested capital. To achieve this, we expect we will continue to deploy our capital through our annual capital expenditure program and acquisitions, while continuing our stock repurchase program or implementing a dividend program to the extent we determine it necessary or appropriate. During 2010, we generated approximately \$1.0 billion of cash provided by operating activities, which along with incremental debt, was used to fund nearly \$1.7 billion of investments, which included approximately \$346.7 million of capital expenditures, \$899.6 million of acquisitions and \$420.8 million of stock repurchases, including commissions and fees.

- **Annual capital expenditure program.** We will continue to reinvest in our existing assets and expand our existing communications site portfolio through our annual capital expenditure program. This includes capital expenditures associated with maintenance, increasing the capacity of our existing sites, and projects such as new site construction, land acquisitions, and shared generator installations. We believe we can achieve the highest incremental recurring free cash flow per share and returns on our invested capital through our annual capital expenditure program.
- **Acquisitions.** We will seek to pursue acquisitions of communications sites. This includes acquisitions in our existing or new markets where we can meet our return on investment criteria. When evaluating international investments, our return on investment criteria reflects the additional risks inherent to the particular geographic area.
- **Stock repurchase program.** If we have sufficient capital available to fund our capital expenditures and other acquisition opportunities, and we have access to capital available for anticipated future investment, we will seek to return that capital to shareholders. We currently utilize a stock repurchase program to facilitate this return and we may provide return to shareholders in the future through the payment of dividends should we elect real estate investment trust (“REIT”) status.

### *International Expansion Strategy*

We believe that in certain international markets, we can create substantial value by establishing an independent wireless infrastructure leasing business. Therefore, we expect we will continue to seek international expansion opportunities, where our risk adjusted return objectives can be achieved. Our international expansion strategy includes a disciplined, individualized market evaluation, whereby we conduct the following analyses:

- **Country analysis.** Prior to pursuing a new geographical area, we review the country’s political stability, historical and projected macro-economic fundamentals and the general business environment, including property rights and regulatory environment.
- **Wireless industry analysis.** To ensure sufficient demand for an independent tower company, we analyze the competitiveness of the country’s wireless industry and the stage of its wireless network deployment. Characteristics that result in an attractive investment opportunity include a country that has multiple competitive wireless service providers who are actively seeking to invest in deploying voice and data networks, as well as spectrum auctions that have or that are anticipated to occur.
- **Opportunity and counterparty analysis.** Finally, once an investment opportunity is identified within a geographical area with a competitive wireless industry, we conduct a multifaceted opportunity and counterparty analysis. This includes evaluating the type of transaction, its ability to meet our risk adjusted return criteria for the country and the counterparties involved, as well as how the transaction fits within our long-term strategic objectives, including future potential investment and expansion within the region.

---

## **Table of Contents**

### ***Demand Drivers***

Our strategy is predicated on our belief that wireless service providers will continue to invest in their networks in both our domestic and international markets, driving demand for our communications sites:

- **Domestic wireless network investments.** Historically, according to industry data, aggregate annual wireless capital spending in the United States has typically been approximately \$20 to \$25 billion. As a result of this level of capital spending, demand for our site has remained consistent. Accordingly, demand for our domestic communications sites is driven by:
  - Wireless service provider focus on network quality and coverage as a competitive advantage;
  - Rapid subscriber adoption of third generation (“3G”) wireless data applications, such as email, internet access and video;
  - Pursuit of new avenues for growth by wireless service providers, such as deploying fourth generation (“4G”) technology based wireless networks to provide higher speed data services and enable fixed broadband substitution; and
  - Deployment of wireless networks by new market entrants.

As these factors continue to grow as a competitive necessity in the United States on a widespread basis, wireless service providers may be compelled to deploy new technology and equipment, further increase the cell density of their existing networks and expand their network coverage.

- **International wireless network investments.** The wireless networks in our served international markets are less advanced than those in our domestic market, with respect to the density of voice networks and the current technologies generally deployed for wireless services. Accordingly, demand for our international communications sites is primarily driven by:
  - Incumbent wireless service providers investing in existing voice networks to improve or expand their coverage and increase capacity;
  - In certain of our international markets, subscriber adoption of 3G wireless data applications, such as email, internet access and video; and
  - Spectrum auctions, which result in new market entrants, as well as initial data network deployments.

We believe demand for our communications sites will continue as wireless service providers seek to increase the quality and coverage of their networks, while also investing in next generation data networks. To meet this demand, we believe wireless carriers will continue to outsource their communications site infrastructure needs as a means to accelerate access to their markets and more efficiently use their capital, rather than construct and operate their own communications sites and maintain their own communications site service and development capabilities.

## **Recent Developments**

### ***Growth and Expansion***

In 2010, we continued to focus on growing our operations using selective criteria for acquisitions and new site development, including expansion into new and existing international geographic areas. During the year ended December 31, 2010, we grew our communications site portfolio through acquisitions and construction activities, including the acquisition and construction of approximately 7,800 towers and the installation of approximately 30 in-building and outdoor DAS networks. In addition, we continue to evaluate complementary product lines such as shared generators to supplement our tower site growth and expansion strategy. We also continue to evaluate opportunities to acquire larger communications site portfolios that we believe we can effectively integrate into our portfolio.

---

## **Table of Contents**

*United States.* During 2010, in response to the needs of our tenants, we pursued the acquisition and construction of communications sites in select locations throughout the United States. Our expansion in the United States during 2010 included the acquisition and construction of approximately 900 towers and the installation of approximately 30 in-building and outdoor DAS networks.

*International.* During 2010, we increased our footprint in Latin America primarily through the acquisition and construction of approximately 1,700 towers in Brazil, Chile, Colombia, Mexico and Peru. During 2010, we also expanded our presence in India through the acquisition of Essar Telecom Infrastructure Private Limited (“ETIPL”), adding over 4,600 towers to our communications site portfolio. We also constructed approximately 500 towers in India. As previously disclosed, in 2010 we entered into definitive agreements to acquire communications sites in Brazil, Chile, Colombia, Ghana and South Africa, subject to customary closing conditions.

### ***Financing Transactions***

In 2010, we continued to raise capital to refinance our outstanding indebtedness and fund acquisitions. In August and December of 2010, we completed registered public offerings of \$700.0 million aggregate principal amount of our 5.05% senior notes due 2020 (“5.05% Notes”) and \$1.0 billion aggregate principal amount of our 4.50% senior notes due 2018 (“4.50% Notes”).

For more information about our financing transactions, see Item 7 of this Annual Report under the caption “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources” and notes 6 and 13 to our consolidated financial statements included in this Annual Report.

### **Regulatory Matters**

*Towers and Antennas.* Our domestic and international tower operations are subject to national, state and local regulatory requirements with respect to the registration, siting, lighting, marking and maintenance of our towers. In the United States, which accounted for approximately 81% of our total rental and management revenue for the year ended December 31, 2010, depending on factors such as tower height and proximity to public airfields, the construction of new towers or modifications to existing towers may require pre-approval by the Federal Communications Commission (“FCC”) and the Federal Aviation Administration (“FAA”). Towers requiring pre-approval must be registered with the FCC and painted, lighted and maintained in accordance with FAA standards. Similar requirements regarding pre-approval of the construction and modification of towers are imposed by regulators in other countries, such as the Ministry of Civil Aviation in India and the Ministry of Transportation and Telecommunications in Chile. Non-compliance with applicable tower-related requirements may lead to monetary penalties.

Furthermore, in India, each of our subsidiaries holds an Infrastructure Provider Category-I license (“IP-I”) issued by the Indian Ministry of Communications and Information Technology, which permits us to provide tower space to companies licensed as telecommunications service providers under the Indian Telegraph Act of 1885. While we are required to provide tower space on a non-discriminatory basis, we may negotiate mutually agreeable terms and conditions with such service providers. As a condition to the IP-I, the Indian government has the right to take over our infrastructure in the case of emergency or war.

In all countries where we operate, we are subject to zoning restrictions and restrictive covenants imposed by local authorities or community developers. These regulations vary greatly, but typically require tower owners and/or our tenants to obtain approval from local authorities or community standards organizations prior to tower construction or the addition of a new antenna to an existing tower. Local zoning authorities and community residents often oppose construction in their communities, which can delay or prevent new tower construction, new antenna installation or site upgrade projects, thereby limiting our ability to respond to customer demand. In addition, zoning regulations can increase costs associated with new tower construction and the addition of new

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

**FORM 10-K**

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2010

or

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from \_\_\_\_\_ to \_\_\_\_\_  
Commission File Number 001-16441

**CROWN CASTLE INTERNATIONAL CORP.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction  
of incorporation or organization)

**76-0470458**  
(I.R.S. Employer  
Identification No.)

**1220 Augusta Drive, Suite 500, Houston Texas 77057-2261**

(Address of principal executive offices) (Zip Code)

**(713) 570-3000**

(Registrant's telephone number, including area code)

Securities Registered Pursuant to Section 12(b) of the Act	Name of Each Exchange on Which Registered
Common Stock, \$.01 par value	New York Stock Exchange
Rights to Purchase Series A Participating Cumulative Preferred Stock	New York Stock Exchange

**Securities Registered Pursuant to Section 12(g) of the Act: NONE.**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicated by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the

Act. Yes  No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive DataFile required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a small reporting company. See definitions of a "large accelerated filer," "accelerated filer" and "smaller reporting company" in rule 12B-2 of the Exchange Act. Large accelerated filer  Accelerated filer  Non-accelerated filer  Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes  No

Unless this Form 10-K indicates otherwise or the context otherwise requires, the terms, "we," "our," "our company," "the company" or "us" as used in this Form 10-K refer to Crown Castle International Corp. ("CCIC"), a Delaware

## [EXCERPTED PAGES]

corporation organized on April 20, 1995, and its subsidiaries. Unless this Form 10-K indicates otherwise or the context otherwise requires, the terms "CCUSA" and "in the U.S." refer to our CCUSA segment while the terms "CCAL" and "in Australia" refer to our CCAL segment.

### PART I

#### Item 1. *Business*

##### Overview

We own, operate and lease towers and other wireless infrastructure, including distributed antenna system ("DAS") networks in the U.S. and rooftop installations (unless the context otherwise suggests or requires, references herein to "towers" include such other wireless infrastructure). Our core business is renting space on our towers via long-term contracts in various forms, including license, sublease and lease agreements (collectively, "contracts"). Our towers can accommodate multiple customers ("co-location") for antennas and other equipment necessary for the transmission of signals for wireless communication devices. We seek to increase our site rental revenues by adding more tenants on our towers, which we expect to result in significant incremental cash flows due to our relatively fixed tower operating costs.

Information concerning our towers as of December 31, 2010 is as follows:

- We owned, leased or managed approximately 23,900 towers, inclusive of 43 completed DAS networks with a varying number of discrete antenna locations ("nodes").
- We have approximately 22,300 towers in the United States, including Puerto Rico ("U.S."), and approximately 1,600 towers in Australia.
- Approximately 54% and 71% of our towers in the U.S. are located in the 50 and 100 largest U.S. basic trading areas ("BTAs"), respectively. Our towers have a significant presence in 92 of the top 100 BTAs in the U.S. In Australia, 57% of our towers are located in the six major metropolitan areas.
- We owned in fee or had perpetual or long-term easements in the land and other property interests (collectively, "land") on which approximately 34% of our site rental gross margin is derived, and we leased, subleased or licensed (collectively "leased") the land on which approximately 65% of our site rental gross margin is derived. In addition, we managed approximately 600 towers owned by third parties. The leases for the land under our towers had an average remaining life of approximately 31 years, weighted based on site rental gross margin.

Information concerning our customers and site rental contracts as of December 31, 2010 is as follows:

- Our customers include many of the world's major wireless communications companies. In the U.S., Verizon Wireless, AT&T, Sprint Nextel ("Sprint") and T-Mobile accounted for a combined 77% and 73% of our 2010 CCUSA and consolidated revenues, respectively. In Australia, our customers include Telstra, Optus and a joint venture between Vodafone and Hutchison ("VHA").
- Revenues derived from our site rental business represented 91% of our 2010 consolidated revenues.
- Our site rental revenues are of a recurring nature, and typically in excess of 90% have been contracted for in a prior year.
- Our site rental revenues typically result from long-term contracts with (1) initial terms of five to 15 years, (2) multiple renewal periods at the option of the tenant of five to ten years each, (3) limited termination rights for our customers, and (4) contractual escalations of the rental price.
- Our customer contracts have a weighted-average remaining life of approximately eight years, exclusive of renewals at the customers' option, and represent \$15.3 billion of expected future cash inflows.

To a lesser extent, we also provide certain network services relating to our towers, primarily consisting of antenna installations and subsequent augmentations, as well as the following additional services: site acquisition, architectural and engineering, zoning and permitting, other construction and other services related to network development.

## [EXCERPTED PAGES]

### Strategy

Our strategy is to increase long-term stockholder value by translating anticipated future growth in our core site rental business into growth of our results of operations on a per share basis. We believe our strategy is consistent with our mission to deliver the highest level of service to our customers at all times – striving to be their critical partner as we assist them in growing efficient, ubiquitous wireless networks. The key elements of our strategy are to:

- *Organically grow the revenues and cash flows from our towers.* We seek to maximize the site rental revenues derived

1

---

from our towers by co-locating additional tenants on our towers through long-term contracts as our customers deploy and improve their wireless networks. We seek to maximize additional new tenant additions or modifications of existing installations (collectively, "new tenant additions") through our focus on customer service and deployment speed and by leveraging our web-based proprietary tools. Due to the relatively fixed nature of the costs to operate our towers (which tend to increase at approximately the rate of inflation), we expect the increased revenues from rent received from additional co-locations and the related subsequent impact from contracted escalations to result in incremental site rental gross margin and growth in our operating cash flows. We believe there is considerable additional future demand for our existing towers based on their location and the anticipated growth in the wireless communications industry.

- *Allocate capital efficiently.* We seek to allocate our available capital, including the cash produced by our operations, in a manner that will enhance per share operating results. During 2010, we increased our discretionary investments from 2009 levels, as a result of the financial flexibility afforded by financing activities completed during 2009 and 2010 that extended our debt maturities. Our discretionary investments have historically included those shown below (in no particular order):
  - purchase shares of our common stock ("common stock") from time to time;
  - acquire towers;
  - acquire land under towers;
  - selectively construct towers;
  - make improvements and structural enhancements to our existing towers; and
  - purchase or redeem our debt or preferred stock.

Our long-term strategy is based on our belief that additional demand for our towers will be created by the expected continued growth in the wireless communications industry, which is predominately driven by the demand for wireless voice and data services by consumers. We believe that additional demand for wireless infrastructure will create future growth opportunities for us. We believe that such demand for our towers will continue, will result in organic growth of our revenues due to the co-location of additional tenants on our existing towers and will create other growth opportunities for us such as demand for new towers. However, our results of operations may not always be indicative of the extent of changing demand for our towers in any given period as a result of the application of straight-line accounting.

During 2010, consumer demand for wireless data services continued to grow, driven by user-friendly wireless devices, such as smartphones, high speed networks and a robust offering of software applications. This growth in data services is in contrast to the slowing growth rate in voice services as the role of wireless devices expands. The following is a discussion of the recent growth and our expectations for growth trends in the U.S. wireless communications industry:

- We expect that consumers' growing demands for network speed and quality will likely result in wireless carriers continuing their focus on improving network quality and expanding capacity by adding additional antennas and other equipment for the transmission of their services in an effort to improve

## [EXCERPTED PAGES]

customer retention and satisfaction.

- Our customers have introduced, and we believe they plan to continue to deploy, next generation wireless technologies, including 3G and 4G, in response to consumer demand for high speed networks. We expect these next generation technologies and others, including LTE, HSPA+ and WiMAX, to translate into additional demand for tower space, although the timing and rate of this growth is difficult to predict.
- We have seen, and anticipate there could be other, new entrants into the wireless communications industry that should deploy regional or national wireless networks for voice and data services.
- Spectrum licensed by the Federal Communications Commission ("FCC") in 2006 and 2008 has enabled next generation networks, and we expect these and future auctions should continue to enable next generation networks in the U.S.
- Consumers are increasing their use of wireless voice and data services according to recent U.S. wireless industry reports.
  - Wireless data services grew in 2010 as consumers increased their wireless use of e-mail, internet, social networking, music and video sharing. Wireless data service revenues for the first half of 2010 were nearly \$25 billion, which represents a 27% increase over the first half of 2009 and accounted for more than 25% of all wireless services revenues.<sup>(a)</sup>
  - Wireless connections were nearly 293 million as of June 30, 2010, which represents a year-over-year increase of over 16 million subscribers, or 6%.<sup>(a)</sup>
  - Wireless data consumption per line increased by 450% between the first quarter of 2009 and the second quarter of 2010.<sup>(b)</sup>
  - Wireless devices are trending toward more bandwidth intensive devices such as smartphones, laptops, netbooks, tablets and other emerging and embedded devices. In particular smartphone shipments are expected to grow by 55% in 2010 from 2009.<sup>(c)</sup> Despite the growth in smartphones, market penetration for smartphones was approximately 30% at the end of 2010 and is expected to surpass 50% by the end of 2011.<sup>(d)</sup>
  - Access to the internet by mobile devices has continued to grow during 2010 with 59% of the U.S. population

---

accessing the internet on their phones in 2010, up from 25% in 2009.<sup>(e)</sup>

---

(a) Source: Cellular Telecommunications & Internet Association ("CTIA")

(b) Source: Federal Communications Commission

(c) Source: International Data Corporation ("IDC")

(d) Source: Morgan Stanley Research

(e) Source: Pew Research Center

### **2010 Highlights and Recent Developments**

See "*Item 7. MD&A*" and our consolidated financial statements for a discussion of developments and activities occurring in 2010, including the refinancing of \$3.5 billion face value of debt and the settlement of all remaining forward-starting interest rate swaps.

### **The Company**

Virtually all of our operations are located in the U.S. and Australia. We conduct our operations principally through subsidiaries of Crown Castle Operating Company ("CCOC"), including (1) certain subsidiaries which operate our tower portfolios in the U.S. and (2) a 77.6% owned subsidiary that operates our Australia tower portfolio. For more information about our operating segments, as well as financial information about the geographic areas in which we operate, see note 16 to our consolidated financial statements and "*Item 7. MD&A.*"

[EXCERPTED PAGES]

*CCUSA*

*Site Rental.* The core business of CCUSA is the renting of antenna space on our towers, including co-locating tenants on our indoor and outdoor DAS networks, which are located in areas in which zoning restrictions or other barriers may prevent or delay the deployment of a tower and often are attached to public right-of-way infrastructure such as utility poles and street lights. We predominately rent space to wireless carriers under long-term contracts for their antennas which transmit a variety of signals related to wireless voice and data. As a result, we believe our towers are integral to our customers' network and their ability to serve their customers.

Most of our CCUSA towers were acquired from the four largest wireless carriers (or their predecessors) through transactions consummated during the last decade, including (1) approximately 10,700 towers from Global Signal Inc. ("Global Signal") in 2007, of which approximately 6,600 were originally acquired from Sprint, (2) approximately 4,800 towers during 1999 to 2000 from companies now part of Verizon Wireless, (3) approximately 2,700 towers during 1999 to 2000 from companies now part of AT&T, as well as (4) other smaller acquisitions from companies now part of T-Mobile and other independent tower operators.

We generally receive monthly rental payments from tenants, payable under long-term contracts. We have existing master lease agreements with most wireless carriers, including Verizon Wireless, AT&T, Sprint, T-Mobile and Clearwire, which provide certain terms (including economic terms) that govern contracts on our towers entered into by such parties during the term of their master lease agreements. Over the last several years, we have negotiated 15-year terms for both initial and renewal periods for certain of our customers, which often included fixed escalations. We continue to endeavor to negotiate with our existing customer base for longer contractual terms, which often may contain fixed escalation rates.

Our customer contracts have a high renewal rate because of (1) the integral nature of our towers within our customers' networks, (2) customers' cost associated with relocation of their antennas and other equipment to another tower, and (3) zoning and other barriers associated with the construction of new towers. With limited exceptions, the customer contracts may not be terminated. In general, each customer contract which is renewable will automatically renew at the end of its term unless the customer provides prior notice of its intent not to renew.

See note 15 to our consolidated financial statements for a tabular presentation of the minimum rental cash payments due to us by tenants pursuant to contract agreements without consideration of tenant renewal options.

The average monthly rental payment of a new tenant added to a tower varies based on (1) the different regions in the U.S., (2) aggregate customer volume, and (3) the type of signal transmitted by the tenant, primarily as a result of the physical size of the antenna installation and related equipment. We also routinely receive rental payment increases in connection with contract amendments, pursuant to which our customers add additional antennas or other equipment to towers on which they already have equipment pursuant to pre-existing contract agreements.

Approximately two-thirds of our direct site operating expenses consist of ground lease expenses and the remainder includes property taxes, repairs and maintenance, employee compensation and related benefit costs, and utilities. Our cash operating expenses tend to escalate at approximately the rate of inflation, partially offset by reductions in cash ground lease expenses from our purchases of land. As a result of the relatively fixed nature of these expenditures, the co-location of additional tenants is

---

achieved at a low incremental operating cost, resulting in high incremental operating cash flows. Our tower portfolio requires minimal sustaining capital expenditures, including tower maintenance and other non-discretionary capital expenditures, and are typically less than 2% of site rental revenues.

We have an agreement to provide certain management, construction and acquisition services for a third party as to certain tower opportunities in the U.S. with an initial period through March 2011. The arrangement was entered into to permit us to maintain our construction and acquisition capabilities and expertise and further our good relationships with certain major customers with limited capital commitments and expenditures as to such towers.

## [EXCERPTED PAGES]

*Network Services.* To a lesser extent, we also offer wireless communication companies and their agents certain network services relating to our towers. For 2010, approximately 71% of network services and other revenues related to antenna installations and subsequent augmentation (collectively, "installation services"), and the remainder related to the following additional services: site acquisition, architectural and engineering, zoning and permitting, other construction and other services related to network development. We do not always provide the installation services on our towers as the customer may obtain a third party to complete these services, as reflected in our quarterly market share for installation services on our towers, which has ranged between one-quarter to two-thirds over the last two years (see also "*Competition*" below). We have grown our network services business over the last several years as a result of our focus on customer service and increasing our market share for installation services on our towers. We have the capability and expertise to install, with the assistance of our network of subcontractors, equipment and antenna systems for our customers. These activities are typically non-recurring and highly competitive, with a number of local competitors in most markets. Nearly all of our antenna installation services are billed on a cost-plus profit basis.

*Customers.* We work extensively with large national wireless carriers, and in general, our customers are primarily comprised of providers of wireless voice and data services who operate national or regional networks. The following table summarizes the net revenues from our four largest customers expressed as a percentage of CCUSA's and our consolidated revenues for 2010. See "*Item 1A. Risk Factors.*"

<u>Customer</u>	<u>% of 2010 CCUSA Net Revenues</u>	<u>% of 2010 Consolidated Net Revenues</u>
AT&T	22%	21%
Verizon Wireless	22%	21%
Sprint	21%	20%
T-Mobile	12%	11%
Total	77%	73%

In addition to our four largest customers, new tenant additions for 2010 were derived from customers offering emerging wireless technologies, such as those offering wireless data only technologies and, to a lesser extent, national wireless carriers other than those mentioned in the table above, such as those offering flat rate calling plans. New entrants in the wireless industry are emerging as new technologies become available, including Clearwire, a provider of WiMAX wireless mobile data services.

*Sales and Marketing.* The CCUSA sales organization markets our towers within the wireless communications industry with the objectives of renting space on existing towers and on new towers prior to construction as well as obtaining network services related to our towers. We seek to become the critical partner and preferred independent tower provider for our customers and increase customer satisfaction relative to our peers by leveraging our (1) technological tools, (2) process centric approach, and (3) customer relationships.

We use public and proprietary databases to develop targeted marketing programs focused on carrier network expansions, including DAS networks, and any related network services. We attempt to match specific towers in our portfolio with potential new site demand by obtaining and analyzing information, including our customers' existing antenna locations, tenant contracts, marketing strategies, capital spend plans, deployment status, and actual wireless carrier signal strength measurements taken in the field. We have developed a web-based tool that stores key tower information above and beyond normal property management information, including data on actual customer signal strength, demographics, site readiness and competitive structures. In addition, the web-based tool assists us in estimating potential demand for our towers with greater speed and accuracy. We believe these and other tools we have developed assist our customers in their site selection and deployment of their wireless networks and provide us with an opportunity to have proactive discussions with them regarding their wireless infrastructure deployment plans and the timing and location of their demand for our towers. A key aspect to our sales and marketing strategy is a

## [EXCERPTED PAGES]

continued emphasis on our process-centric approach to reduce cycle time related to new leasing and amendments, which helps provide our customers with faster deployment of their networks.

A team of national account directors maintains our relationships with our largest customers. These directors work to develop

4

---

tower leasing and network service opportunities, as well as to ensure that customers' tower needs are efficiently translated into new leases on our towers. Sales personnel in our area offices develop and maintain local relationships with our customers that are expanding their networks, entering new markets, bringing new technologies to market or requiring maintenance or add-on business. In addition to our full-time sales and marketing staff, a number of senior managers and officers spend a significant portion of their time on sales and marketing activities and call on existing and prospective customers.

*Competition.* CCUSA competes with (1) other independent tower owners which also provide site rental and network services, (2) wireless carriers which build, own and operate their own tower networks and lease space to other wireless communication companies, and (3) owners of alternative facilities, including rooftops, water towers, broadcast towers, DAS networks, and utility poles. Some of the larger independent tower companies with which CCUSA competes in the U.S. include American Tower Corporation, SBA Communications Corporation, Global Tower Partners and TowerCo. Wireless carriers that own and operate their own tower networks generally are substantially larger and have greater financial resources than we have. We believe that tower location and capacity, deployment speed, quality of service and price have been and will continue to be the most significant competitive factors affecting the leasing of a tower.

Competitors in the network services business include site acquisition consultants, zoning consultants, real estate firms, right-of-way consulting firms, construction companies, tower owners and managers, radio frequency engineering consultants, telecommunications equipment vendors who can provide turnkey site development services through multiple subcontractors, and our customers' internal staffs. We believe that our customers base their decisions on the outsourcing of network services on criteria such as a company's experience, track record, local reputation, price and time for completion of a project.

### *CCAL*

Our primary business in Australia is the renting of antenna space on towers to our customers. CCAL is owned 77.6% by us and 22.4% by Permanent Nominees (Aust) Ltd, acting on behalf of a group of professional and private investors led by Todd Capital Limited. CCAL is the largest independent tower operator in Australia. As of December 31, 2010, CCAL had approximately 1,600 towers with 57% of such towers located in the six major metropolitan areas, including Sydney, Melbourne, Brisbane, Perth, Adelaide and the Australian Capital Territory. The majority of CCAL's towers were acquired from Optus (in 2000) and Vodafone (in 2001). CCAL also provides a range of services including site maintenance and property management services for towers owned by third parties.

For 2010, CCAL comprised 5% of our consolidated net revenues. CCAL's principal customers are Telstra, Optus and VHA, which collectively accounted for approximately 93% of CCAL's 2010 revenues. In June 2009, Vodafone and Hutchison merged their Australian operations in a joint venture named VHA Pty Ltd., with the intention to market primarily under the name Vodafone.

In Australia, CCAL competes with wireless carriers, which own and operate their own tower networks; service companies that provide site maintenance and property management services; and other site owners, such as broadcasters and building owners. The other significant tower owners in Australia are Broadcast Australia, an independent operator of broadcast towers, and Telstra and Optus, wireless carriers. We believe that tower location, capacity, quality of service, deployment speed and price within a geographic market are the most significant competitive factors affecting the leasing of a tower.

### **Employees**

## [EXCERPTED PAGES]

At January 31, 2011, we employed approximately 1,200 people worldwide, including approximately 1,100 in the U.S. We are not a party to any collective bargaining agreements. We have not experienced any strikes or work stoppages, and management believes that our employee relations are satisfactory.

### **Regulatory and Environmental Matters**

To date, we have not incurred any material fines or penalties or experienced any material adverse effects to our business as a result of any domestic or international regulations. The summary below is based on regulations currently in effect, and such regulations are subject to review and modification by the applicable governmental authority from time to time. If we fail to comply with applicable laws and regulations, we may be fined or even lose our rights to conduct some of our business.

#### *United States*

We are required to comply with a variety of federal, state and local regulations and laws in the U.S., including the FCC and Federal Aviation Administration ("FAA") regulations and those discussed under "*—Environmental*" below.

*Federal Regulations.* Both the FCC and the FAA regulate towers used for wireless communications, radio and television broadcasting. Such regulations control the siting, lighting and marking of towers and may, depending on the characteristics of particular towers, require the registration of tower facilities with the FCC and the issuance of determinations confirming no hazard

## U.S. Telecom Services & Towers

### Initiating Coverage with Favorable View as Data Trends Drive Demand

We are initiating coverage on 14 US telecom and wireless tower stocks with a favorable view on investment in the industry due to strong cash flow characteristics, stable business trends and potential improvements as the economy rebounds, and the potential for data demand (wired and wireless) to drive traffic and revenue higher in the next few years. While some carriers will continue to see heavy competition, we see little irrational competition in either wireless or wireline today.

- **Wireless fundamentals shift to data from voice.** We expect wireless voice adds to decline again in 2011, and forecast only 2.8 million postpaid adds among the Big 4 carriers, down from 3.7 million in 2010. Instead, data should be the main driver of value creation from here, as consumers upgrade to smartphone plans with higher monthly bills and add 3G-enabled tablets and MiFi devices to their everyday lives. An improving economy could benefit all carriers, but particularly those that target lower demographics like Leap Wireless and MetroPCS. The move to data is also driving an upgrade cycle of hardware at the cell site, which should continue to support strong growth for tower companies in 2011 and 2012.
- **Wireline trends are stabilizing, led by data and video.** While only a few years ago the wireline business looked terminal, today access line trends are slowly improving and data/video businesses have become big enough to drive growth in some companies' consumer wireline revenue. Despite constant legacy revenue pressure, carriers have managed to cut costs and maintain margins to support their large dividends, which we believe are sustainable. As consolidation continues, we expect merger synergies to allow companies like Frontier to expand margins.
- **2H10 stock performance leads to some caution near term.** Many telecom stocks outperformed the S&P 500 in the second half of 2010 as investors looked for defensiveness in high-dividend-paying stocks and worries about a dividend tax hike faded. As we enter 2011 we expect these stocks to lag the market somewhat (as has happened in the last few years), as investors view them as a source of funds, but still see significant upside for investors willing to hold through any volatility.
- **In telecom we favor stocks with highest cash flow yields (AT&T, Frontier) and potential turnaround stories (Sprint, Leap Wireless).** Among the largest telecom players, we prefer AT&T over Verizon given its better cash flow profile and low multiples, which we believe offset the risks created by the loss of iPhone exclusivity. Not only should AT&T's EPS grow faster in 2011, but the multiple should also expand once iPhone risk has been quantified. Among the wireless names, we like the risk/reward on Sprint as it continues to turn around and recommend Leap Wireless and MetroPCS into the companies' traditionally strong first quarters, though we prefer Leap Wireless given its earlier-stage turnaround. We would avoid US Cellular given its high multiple, weak cash flow, and controlled status.
- **Tower group remains attractive.** Though there are small differences in strategy, the wireless tower business is fundamentally homogenous and exposed to strong secular tailwinds. We recommend all three companies, American Tower, Crown Castle, and SBA Communications, with Overweight ratings, and among them prefer SBA Communications given its higher growth potential and flexibility.

#### See page 307 for analyst certification and important disclosures.

J.P. Morgan does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

#### Telecom Services & Towers

##### Philip Cusick, CFA<sup>AC</sup>

(1-212) 622-1444  
philip.cusick@jpmorgan.com

##### Richard Choe

(1-212) 622-6708  
richard.choe@jpmorgan.com

##### Manish Jain

(1-212) 622-8692  
manish.x.jain@jpmorgan.com

##### Derya Erdemli

(1-212) 622-8529  
derya.erdemli@jpmorgan.com

J.P. Morgan Securities LLC

#### Coverage Universe

Ticker	Price (1/12/11)	JPM Rating	YE11 Target
T	\$28.04	OW	\$33
VZ	\$35.47	N	\$38
S	\$4.41	OW	\$7
CLWR	\$5.70	N	\$6
LEAP	\$13.19	OW	\$16
PCS	\$12.97	OW	\$16
NTLS	\$19.68	N	\$22
USM	\$50.30	UW	\$45
TDS	\$36.28	N	\$42
FTR	\$9.43	OW	\$11
WIN	\$13.37	N	\$14
AMT	\$50.70	OW	\$60
CCI	\$42.09	OW	\$55
SBAC	\$40.19	OW	\$53

Source: J.P. Morgan.

Note: J.P. Morgan ratings: OW – Overweight;  
N – Neutral; UW – Underweight.

**Equity Ratings and Price Targets**

Company	Symbol	Mkt Cap (\$ mn)	Price(\$)	Rating		Price Target	
				Cur	Prev	Cur	Prev
AT&T Inc.	T	166,501.52	28.04	OW	-	33.00	-
Verizon Communications	VZ	100,380.10	35.47	N	-	38.00	-
Sprint Nextel	S	13,185.90	4.41	OW	-	7.00	-
Clearwire	CLWR	5,619.13	5.70	N	-	6.00	-
Leap Wireless International	LEAP	1,001.98	13.19	OW	-	16.00	-
MetroPCS	PCS	4,591.43	12.97	OW	-	16.00	-
NTelos Holdings Corporation	NTLS	821.60	19.68	N	-	22.00	-
US Cellular	USM	4,347.33	50.30	UW	-	45.00	-
Telephone & Data Systems	TDS	3,820.21	36.28	N	-	42.00	-
Frontier Communications	FTR	9,326.27	9.43	OW	-	11.00	-
Windstream Corp	WIN	6,413.59	13.37	N	-	14.00	-
American Tower	AMT	20,455.17	50.70	OW	-	60.00	-
Crown Castle International	CCI	12,042.75	42.09	OW	-	55.00	-
SBA Communications	SBAC	4,611.72	40.19	OW	-	53.00	-

Source: Company data, Bloomberg, J.P. Morgan estimates. n/c = no change. All prices as of 12 Jan 11.

## Table of Contents

<b>Investment Conclusion .....</b>	<b>5</b>
<b>Wireless Industry .....</b>	<b>13</b>
Wireless Key Investment Points .....	15
Wireless Stock Recommendations .....	15
Wireless Investment Risks .....	17
Wireless Industry Overview .....	18
Handsets – Smartphone Share Is Growing .....	27
Emerging Devices to Augment Growth .....	43
Competition and New Entrants .....	45
Spectrum Auctions Will Come Eventually .....	47
2011 Is the Year of 4G Transitions .....	49
Cash Flow Solid Across Wireless Space .....	52
<b>Wireline Industry .....</b>	<b>53</b>
Wireline Key Investment Points .....	55
Wireline Stock Recommendations .....	56
Wireline Investment Risks .....	57
Wireline Industry Overview .....	57
Consumer Buoyed by Data, Video .....	62
Business, Regulatory 60%+ of Wired Revs .....	67
Consolidation to Insulate Cash Flow .....	71
<b>Tower Industry .....</b>	<b>75</b>
Tower Key Investment Points .....	77
Tower Stock Recommendations .....	78
Tower Investment Risks .....	79
Tower Industry Overview .....	80
Wireless Tower Overview .....	98
<b>Large Cap Integrated Telecom Operators .....</b>	<b>109</b>
AT&T Inc. ....	111
Verizon Communications .....	123
Sprint Nextel .....	139
Clearwire .....	151
Leap Wireless International .....	161
MetroPCS .....	171
NTELOS Holdings Corp .....	179
US Cellular Corp .....	185
Telephone & Data Systems .....	191
<b>Wireline Operators .....</b>	<b>197</b>
Frontier Communications Corp .....	199
Windstream Communications .....	209

<b>Wireless Tower Operators .....</b>	<b>217</b>
American Tower .....	219
Crown Castle International .....	225
SBA Communications .....	231
<b>Company Models.....</b>	<b>237</b>
AT&T Model .....	239
Verizon Model .....	245
Sprint Nextel Model.....	251
Clearwire Model .....	257
Leap Wireless Model .....	261
MetroPCS Model .....	265
NTELOS Model.....	269
US Cellular Model .....	275
TDS Model .....	279
Frontier Model .....	283
Windstream Model .....	287
American Tower Model.....	291
Crown Castle Model .....	295
SBA Communications Model .....	303

## Wireless Tower Stocks

*Though there are small differences in strategy, fundamentally the wireless tower business remains more or less homogenous and exposed to strong secular tailwinds. We recommend all three companies, American Tower, Crown Castle, and SBA Communications, with Overweight ratings, and among them prefer SBA Communications given its higher growth potential and flexibility.*

### **American Tower – Initiating with Overweight rating and \$60 YE11 price target**

American Tower, with its scale, conservative financial position, and focus on profitability, has been the most stable tower company and offers an attractive risk/reward at this level, in our view. International opportunities could drive higher returns in comparison to those in domestic markets and the company has diversified into eight countries already, with no country but the US accounting for more than 10% of revenue. The firm's relatively low leverage at 4x EBITDA provides us with additional comfort and gives the company the ability to consider a larger tower deal or buy back stock. Finally, we see REIT conversion as the most likely case for American Tower and include it in our target valuation of \$60 per share; however, if this does not occur, our estimated YE11 valuation for the company would be only \$45, implying 11% downside from the current level.

### **Crown Castle International – Initiating with Overweight rating \$55 YE11 target**

Crown Castle has substantial scale and an attractive tower portfolio in the top 100 markets. We are confident Crown Castle will be able to turn the positive business trends into solid revenue, EBITDA, and cash flow growth and view shares of the company as attractive at current levels. In addition, leverage at Crown Castle is relatively modest at about 5x, which provides us with additional comfort and gives the company the ability to execute a larger tower deal or buy back stock. Finally, we see REIT conversion as the most likely case for Crown Castle given NOLs are forecast to run out in 2016 and include it in our target valuation of \$55 per share. We see little downside risk to our valuation if a conversion is delayed due to minimal net impact of tax changes.

### **SBA Communications – Initiating with Overweight rating and \$53 YE11 target**

SBA has been a superior operating and financial performer; as a result, we believe SBA warrants a premium valuation. SBA has decided to not sign a master lease agreement (MLA) with AT&T, and so should report faster growth in 2H11 and 2012 than its peers as AT&T signs LTE amendments. SBA has started to expand internationally with a focus on markets that are fairly mature but still offer higher growth and better return prospects than the US. While we see REIT conversion as a possibility when the company's NOLs run out, we don't think this will happen in our forecasting time frame (before 2020).



## Telecom and Tower Sector Risks

### **High competition in wireless and wireline telecom spaces**

The telecom sector remains one of high and aggressive competition. In wireless especially, there are an average of 5-6 players per market and Clearwire and Lightsquared represent two potential new entrants that may have a lower cost structure than incumbent players. In the fixed broadband/video universe, cable and telecom companies aggressively target each others' customers and temporary price discounts are the norm.

### **Slowing subscriber growth**

The pay TV, fixed broadband, and wireless voice markets are essentially saturated, and we expect share shifts to prove more important than industry growth as a driver of carrier success. As the pie of new subscribers shrinks, there is risk that weaker players could get more aggressive on price and drive down margins across the industry.

### **High capital intensity with steady upgrade cycles**

The telecom space generally requires large fixed costs in terms of spectrum acquisition and network build, so a struggling entity will often find it better to cut prices to a marginally positive (or potentially negative) cash return than exit the business. Given the ongoing shift to 4G technology in wireless, we expect capital intensity to increase at most carriers in the next two years. Finally, while Verizon has taken the hit on its wireline fiber upgrade and can expect to see lower wireline capital intensity going forward, AT&T has taken a more gradual approach and we expect its capex levels to remain elevated. Wireless carriers may also require additional spectrum to support the rapidly increasing demand for data services.

### **Consolidation potential**

The telecom space remains fragmented, and we expect to see additional wireless consolidation as well as regional wireline roll-up in the next five years. We would view another major merger as a long-term negative for the tower companies. In addition, with the US market saturated, international acquisition risk is likely higher, as domestic growth slows and cash flows are strong. The major independent tower operators either own towers already or could consider acquiring towers in international markets. Building up a bigger presence in any emerging market, in which the wireless industry is still developing and country-specific risks are very different from those in the United States, could negatively impact a company's risk profile and multiple.

### **iDEN shutdown could be a 3%-plus headwind for the tower industry**

We expect Sprint Nextel to shut down its 20,000 iDEN cell sites in the 2012-2016 time frame, with the bulk coming in 2013-2015. We model iDEN site shutdowns weighing on our base-case revenue scenario of 68,000 sites by 4% in 2012, and we expect an incremental ~600 bps in dilution annually until 2015. Peak dilution of 26% is expected in 2016, a substantial negative impact if CDMA augmentations do not partially offset the revenue loss. We believe the wireless tower industry could lose about 3% or more in site revenue from Sprint Nextel once its network is fully optimized.



Philip Cusick, CFA  
(1-212) 622-1444  
philip.cusick@jpmorgan.com

North America Equity Research  
13 January 2011

Tower Industry

Philip Cusick, CFA  
(1-212) 622-1444  
philip.cusick@jpmorgan.com

North America Equity Research  
13 January 2011

**J.P.Morgan**

## Tower Key Investment Points

### **Sprint's Network Vision plan could drive upside to 2011-12 activity**

While the iDEN shutdown will eventually reduce tower demand, in the near term Sprint will need to augment all of its 48,000 remaining cell sites to enable the 800 MHz frequency band for its CDMA network. We expect Sprint to start augmenting its cell sites in 2011 and finish in 2013, and model a tower lease expense increase of 6.5% in revenue in 2011 and 2.2% in 2012. We expect Sprint to begin taking down iDEN cell sites in 2014 with the full impact in 2016 when net dilution is 16% to our base case with CDMA augmentations adding 10 percentage points and iDEN dilution of 26 percentage points. We believe the industry could lose about 3% or more in site revenue from Sprint Nextel once its network is fully optimized.

### **Strong growth continues from increased density of 3G network and 4G builds**

We forecast strong wireless capacity demand growth driven by subscriber adoption of smartphones and data devices like tablets and wireless broadband. 4G network builds have begun in earnest and amendment activity should drive tower revenue growth through 2013. Verizon has driven most amendment activity so far but we expect Sprint and AT&T amendments to accelerate in 2011. Clearwire has stalled lately but could reaccelerate its WiMAX build with additional funding. We don't expect much from Lightsquared, but if it finds partners and funding this could be a significant driver in 2012.

### **International expansion driven by higher potential returns**

Some tower companies have looked to international markets for growth as the domestic market has matured. With fewer opportunities to build towers in the US and recent domestic deals commanding multiples as high as ~20x tower cash flow, tower companies are looking to international markets for higher rates of return. Although we consider these investments higher-risk than domestic towers, a diverse portfolio of international markets can spread risk and allow investors to focus more on IRRs as much as 7-9% higher than those for domestic towers.

### **REIT conversion should lead to continued low effective tax rates**

Tower companies have historically used the fast depreciation of tower assets to lower effective tax rates. As operating losses run out for American Tower in the next two years, we expect AMT to convert to REIT status to continue its low effective tax rates. Interestingly, REIT companies tend to trade at higher multiples than tower companies, despite tower companies' better growth and customer base. The J.P. Morgan REIT coverage universe is trading at 20.8x on a price-to-2011E AFFO basis versus about 20.0x for the tower companies on a price-to-2011E RFCF basis (net of straight-line impacts). American Tower has the biggest potential downside risk if it does not convert to a REIT due to its potential tax liabilities. We value AMT at \$60 per share assuming REIT conversion versus \$45 without conversion.

### **Improved debt structures after 2010 refinancing actions**

During the financial crisis, the tower companies were faced with not being able to raise debt at all and only later at unattractive rates with near-term maturities weighing on the companies. The highly leveraged, high-multiple tower stocks fell 51-72% vs. the S&P 500 down 38%. While the tower companies remain leveraged at 4-7x, all the companies have taken advantage of a friendly debt financing environment and have raised a total of \$6.3 billion of fixed-rate debt with an average

rate of 4.9% since the start of 2010. In addition, maturities were extended and the first tranches are not due until 2015 and some do not mature until 2020. Each company has laddered out debt schedules so an overbearing amount of principal does not come due in one year.

## Tower Stock Recommendations

### **American Tower – Initiating with Overweight rating and \$60 YE11 price target**

American Tower, with its scale, conservative financial position, and focus on profitability, has been the most stable tower company and offers an attractive risk/reward at this level, in our view. International opportunities could drive higher returns in comparison to those in domestic markets and the company has diversified into eight countries already, with no country but the US accounting for more than 10% of revenue. The firm's relatively low leverage at 4x EBITDA provides us with additional comfort and gives the company the ability to consider a larger tower deal or buy back stock. Finally, we see REIT conversion as the most likely case for American Tower and include it in our target valuation of \$60 per share; however, if this does not occur, our estimated YE11 valuation for the company would be only \$45, implying 11% downside from the current level.

### **Crown Castle International – Initiating with Overweight rating \$55 YE11 target**

Crown Castle has substantial scale and an attractive tower portfolio in the top 100 markets. We are confident Crown Castle will be able to turn the positive business trends into solid revenue, EBITDA, and cash flow growth and view shares of the company as attractive at current levels. In addition, leverage at Crown Castle is relatively modest at about 5x, which provides us with additional comfort and gives the company the ability to execute a larger tower deal or buy back stock. Finally, we see REIT conversion as the most likely case for Crown Castle given NOLs are forecast to run out in 2016 and include it in our target valuation of \$55 per share. We see little downside risk to our valuation if a conversion is delayed due to minimal net impact of tax changes.

### **SBA Communications – Initiating with Overweight rating and \$53 YE11 target**

SBA has been a superior operating and financial performer; as a result, we believe SBA warrants a premium valuation. SBA has decided to not sign a master lease agreement (MLA) with AT&T, and so should report faster growth in 2H11 and 2012 than its peers as AT&T signs LTE amendments. SBA has started to expand internationally with a focus on markets that are fairly mature but still offer higher growth and better return prospects than the US. While we see REIT conversion as a possibility when the company's NOLs run out, we don't think this will happen in our forecasting time frame (before 2020).

## Tower Investment Risks

### **iDEN shutdown could be a 3%-plus headwind for the tower industry**

We expect Sprint Nextel to shut down its 20,000 iDEN cell sites in the 2012-2016 time frame with the bulk coming in 2013-2015. We model iDEN site shutdowns dragging our base-case revenue scenario of 68,000 sites by 4% in 2012, and we expect an incremental ~600 bps in dilution annually until 2015. Peak dilution is expected in 2016 at 26%, a substantial negative impact if CDMA augmentations do not partially offset the revenue loss. We believe the tower industry could lose about 3% or more of gross industry revenue once Sprint Nextel's network is fully optimized.

### **Carrier consolidation likely would reduce growth**

While we do not expect near-term consolidation for major national wireless carriers, we would view another major merger as a long-term negative for tower companies. Consolidation of a regional carrier could be a small headwind for tower companies, but a large national consolidation likely would have a significant negative impact. The last substantial merger that led to cell site and tower consolidations was AT&T Wireless and Cingular, which shaved off about a percentage point in growth for the tower companies for about five years.

### **Debt refinancing could be at risk if credit markets close or tighten**

The tower companies have substantial leverage that ranges from 4-7 times with debt maturities in the 2014-2020 time frame. The companies need to be able to refinance their debt as it matures. If the credit markets were closed or refinanced debt bore substantially higher interest rates, the tower companies would be negatively affected.

### **International expansion could create uncertainty**

The major independent tower operators either own towers already or could consider acquiring towers in international markets. We believe that site management and ownership in foreign markets offer an opportunity for growth but could also bring incremental risks not experienced in the United States. The tower ownership model in the US is clear in terms of the structure of leases, pricing, operating and capital costs, property ownership rights, and zoning issues. This model has not been as well defined in other developing countries. Building up a bigger presence in any emerging market, in which the wireless industry is still developing and country-specific risks are very different from those in the United States, could negatively impact a company's risk profile and multiple.

### **Wireless technology innovation could lead to less reliance on towers**

Technological advances in wireless equipment could reduce the number of sites required or the amount of space needed on a tower. The unlimited carriers have used Distributed Antennae Systems (DAS) to build out parts of some markets, instead of traditional tower and rooftop builds. Being able to share one antenna for multiple wireless technologies is another potential risk for the tower companies. Other innovations in technology and equipment could lead to negative impacts for the tower companies.

**High multiple valuations could come under pressure in a volatile environment**  
 The tower companies trade at high forward EV/EBITDA and EV/revenue multiples of about 14-17x and 9-11x, respectively, substantially higher than those of the S&P 500. Disruptions in the financial markets or negative earnings results could dramatically reduce the multiples investors are willing to pay for tower company stocks. Any operational missteps could also lead to a higher risk profile for the tower companies, especially given their reputation for stability.

## Tower Industry Overview

The wireless transmission tower companies continue to benefit from solid momentum due to positive wireless industry trends. Data growth is driving tower revenue with more robust 3G network builds and new 4G builds. Carriers continue to expand wireless coverage and improve network quality to reduce churn. We expect the continued adoption of smartphones and expansion of network capacity to support data usage to drive the need for more towers and equipment on existing towers. AT&T and Verizon are leading the way with robust 3G and 4G activity and other carriers are a distant third, but could provide incremental upside. Until AT&T or Verizon slow down their leasing activity, the tower companies will continue to face a positive operating environment, in our view.

### Carriers Continue to Spend on Wireless Networks

The wireless industry remains extremely competitive and key differentiators include network quality, capacity, and speed. The rapid adoption of smartphones has burdened the data capacity of wireless networks, which were originally optimized for voice services. Carriers are racing to upgrade their wireless networks to be able to handle the data demand generated by smartphone usage. Furthermore, new 4G networks are being built with the main purpose of being able to handle faster data speeds and higher capacity.

**Growing data use and new technologies keep tower traffic high**

Table 30: US Carrier 4G Deployment Status

Company	Legacy network	4G Status	4G spectrum plan
AT&T	WCDMA/HSPA	75M pops LTE EOY 2011, Complete 2013	30-40 MHz in AWS and 700 bands
Verizon Wireless	CDMA	38 live markets	40-50 MHz in AWS and 700 bands
T-Mobile USA	WCDMA/HSPA	HSPA+ for now	Refarm 2G/3G spectrum
SpectrumCo LLC (Cable co's)	NA	NA	20 MHz AWS
Sprint	CDMA	WiMax with CLWR	Clearwire, refarm 2G/3G spectrum
Clearwire	WiMax	120 M pops today	~150 MHz
Echostar	NA	NA	
MetroPCS	CDMA	LTE deployed today	~10 MHz of PCS or AWS
Leap Wireless	CDMA	2011 LTE trials	Refarm PCS/AWS
Cox Wireless	CDMA	NA	
US Cellular	CDMA	2011 LTE trials	
Cellular South	CDMA	4Q11 LTE target	

Source: Company reports and J.P. Morgan.

Table 31: Capex by Carrier

In millions

	2008	2009	2010E	2011E	2012E
Verizon Wireless	6,510	7,152	8,405	8,842	9,228
AT&T Mobility	5,869	5,907	8,521	8,740	8,745
Sprint Nextel	2,259	1,161	1,471	2,350	2,850
T-Mobile	3,603	3,662	2,741	2,850	2,850
US Cellular	586	547	589	620	620
nTelos	88	45	45	46	50
MetroPCS	1,201	832	810	698	676
Leap Wireless	796	807	418	450	555
Total	20,911	20,112	23,001	24,596	25,573
National carrier total	18,241	17,882	21,138	22,782	23,673

Source: Company reports and J.P. Morgan estimates.

### Amendment Activity Should Dominate Again in 2011

Carriers that want to change out the equipment on their tower lease may have to pay an amendment fee to the tower company that is tacked on to the monthly lease payment and is usually subject to the same annual escalators as the lease. As Verizon and AT&T overlay their networks with LTE, they often need larger or heavier antennas as well as more ground space for the extra base station. These typically cost \$300-500 per tower per month to add to the lease. We expect Sprint to start amendment activity in 2011 as well and need larger antennas as well as add a Remote Radio Head (RRH) to the antenna array which adds weight and cost to the lease.

#### 2010 closed strong; 2011 outlook driven by VZ, with T pulled forward

Site rental revenue grew an estimated 10% for the tower industry in 2010 and we forecast 8% growth in 2011. For 2010, this broke down to 2% escalator growth (net of 1% churn), 4% tower portfolio growth, 3% amendment-related growth, and 1% from Clearwire, for 10% growth. For 2011, we forecast a slower growth rate for tower builds and lower amendment benefit due to the pull-forward of AT&T into 2010. Verizon should continue a high level of amendment activity in 2011 due to the continued buildout its LTE network. We model 2% escalator growth (net of 1% churn), 3% tower portfolio growth, 2% amendment growth, and 1% from Clearwire, for 8% net growth. Upside could come from significant activity from T-Mobile USA, Sprint amendments, LightSquared expansion, or additional coverage builds by Leap Wireless or MetroPCS.

#### Master lease agreement amendment for AT&T pulled revenue into 2010

A major carrier (we believe AT&T) signed new Master Lease Agreements (MLAs) with American Tower and Crown Castle in 3Q10 to accelerate its LTE overlay. While the individual agreements vary somewhat, the major provisions seem likely to have a similar impact on each company's revenue.

“Use fee” tacked on to escalator for roughly six years. The MLA is structured to add an additional “use fee” of ~3% to the regular ~3.5% lease escalator for six years which allows the carrier to add whatever is necessary to its existing towers and RAD centers during that period, after which the escalator drops back to the standard ~3.5%. Thus, rather than renegotiating the lease for a specific equipment package on a site-by-site basis, the carrier can change out equipment much faster with a similar overall cost during the period in which the use fee is accruing.

On at least one of the MLAs the carrier can only do this work for free on its towers during the six years in which the use fee is accruing. If it doesn't update the towers during that six years and wants to at a later date, that would require an additional amendment process and most likely payment.

**We do not think that any significant upfront cash came with the new MLAs**

**Straight-line accounting will drag 2011+ revenue for AMT, CCI.** Because of straight-line accounting rules, AMT and CCI calculate the total incremental revenue created by the MLA over the lease period and recognize it on a straight-line basis through the contract. Thus, American Tower guided to \$21 million in additional revenue in 4Q10 due to accounting on the new MLA, but we believe this will not have any cash impact on its business near term. Assuming the 3% additional use fee applies for six years of a ten-year average lease life results in incremental revenue of 12.6%. Now that the revenue has been booked upfront for all AT&T amendments, however, the new MLAs will negatively impact GAAP revenue growth for CCI and AMT from 2H11.

**We expect SBA to come out in-line or ahead after not signing the MLA**

**SBA prefers pay-as-you-go approach.** SBA Communications has chosen to not sign a similar MLA as have CCI and AMT, and noted that it believes it could see a better outcome by completing one-by-one augmentations in a short amount of time. Our analysis estimates that a site-by-site augmentation that hit 100% of sites over five years could mean 16.8% more revenue for SBA from that carrier, better than the 12.6% return of the new MLAs for CCI and AMT. However, a ten-year lease-up scenario would lower the return to 10.6%, about 200bps below those estimated for the new MLAs. We estimate the breakeven scenario of the new MLAs versus a site-by-site lease up is about 7-8 years.

Some may ask if AMT and CCI could potentially attract more business from the carrier because of the new MLAs. While AT&T may be able to hit the CCI or AMT sites earlier in its 4G overlay because of pricing and the MLAs, we expect that over time AT&T will need to upgrade nearly 100% of its towers for 4G, whether they belong to SBA, AMT, or CCI. Since that 4G upgrade probably hits 90%+ in the next 3-5 years, we can't fault SBA for holding back.

Table 32: Comparison of New MLA for AMT and CCI vs. Base Case

	0	1	2	3	4	5	6	7	8	9	Total	Annual	Monthly
Base tower rent (\$2000 month)	\$24,000												
Escalator	3.50%												
Use fee	3.00%												
Base case (3.5% escalator)	\$24,000	\$24,840	\$25,709	\$26,609	\$27,541	\$28,504	\$29,502	\$30,535	\$31,603	\$32,710	\$281,553	\$28,155	\$2,346
Base case (3.5% escalator and 3% use fee for 6 years)	\$24,000	\$25,560	\$27,221	\$28,991	\$30,875	\$32,882	\$35,019	\$36,245	\$37,514	\$38,827	\$317,134	\$31,713	\$2,643

Source: Company reports and J.P. Morgan estimates.

## CDMA Augmentations Reduce iDEN Pain

**The market so far appears to have ignored the potential positive from Sprint's network upgrade for towers**

Sprint Nextel currently has the largest tower lease count of any American carrier – 68,000 sites – even though it has only about 50% of the customers of Verizon (43,000 sites). This excess tower count is due to the still-unconsolidated combination of Nextel's iDEN network, which was built very densely in the early 2000s to add capacity, and Sprint's CDMA network in the 1900 MHz band which required more sites for coverage than a cellular (800 MHz) network.

Sprint recently announced its Network Vision blueprint – a full modernization of its network that will entail upgrading site and core network hardware. The plan includes putting CDMA service on Nextel's 800 MHz spectrum for higher quality and coverage, deploying next-generation PTT service on CDMA, and starting to shut

down cell sites on its iDEN network in 2013. The company has a goal to eliminate roughly 20,000 of its 68,000 sites late in that transition, and we believe the majority of sites would roll off in the 2013-2015 period. The iDEN network could go completely dark in 2015-2016, 3-4 years after Sprint starts the migration process.

Table 33: Sprint Nextel Exposure by Tower Company as % of Total Revenue

	Sprint Nextel Exposure	iDEN Exposure
American Tower	18%	Less than 3%
Crown Castle	22%	Less than 3%
SBA Communications	22%	Less than 3%

Source: Company reports and J.P. Morgan estimates.

**Sprint's Network Vision plan could drive 6.5% upside to 2011 Sprint lease spend**

The near-term impact of Sprint's Network Vision plan could actually drive upside to tower company results. Sprint will need to augment all of its 48,000 remaining cell sites to handle the 800 MHz frequency band for its CDMA network. We expect Sprint to start augmenting these cell sites in 2011 and finish the majority in 2013, and begin taking down iDEN cell sites in 2012 with final shutdowns in 2016. While the net negative impact will be greater from shutting down 20,000 iDEN sites, CDMA augmentations should come first and soften the effects of iDEN cell site decommissions.

**iDEN shutdown is four-plus years away**

**iDEN shutdown could cut Sprint tower spending by 26%...**

In our iDEN shutdown scenario, we model Sprint Nextel shutting down 20,000 iDEN cell sites from 2012 to 2016 with the bulk coming in 2013-2015. In 2012, we model iDEN site shutdowns dragging our base-case revenue scenario of 68,000 sites by 4% and we expect an additional ~600 bps in dilution a year until 2015. Peak dilution is expected in 2016 at 26%, a substantial negative impact if CDMA augmentations do not lessen the blow.

**...but net impact closer to 16%, translating to ~3% of tower industry revenue**  
 Sprint Nextel's CDMA augmentations could add about 10% in revenue to our base-case scenario starting in 2013, which partially offsets the losses from the iDEN site shutdowns. On a net basis, we see low-single-digit revenue gains in 2011 and 2012 with only 1% dilution in 2013. The full impact of the iDEN shutdown is likely to be felt in 2016 with net dilution of 16%, with iDEN dilution of 26 percentage points and CDMA augmentations adding 10 percentage points. Overall these estimates translate into the industry possibly losing a net 3% or more in site revenue once Sprint's network is fully optimized.

In the table below we outline the impact of the CDMA augmentation spending as well as the iDEN rolloff. We start with a base case of 68,000 sites with a 3% escalator – as if nothing would change from here. We then add the CDMA augmentation assuming 16,000 sites amended each year from 2011 to 2013 at \$300 per amendment, which also grows at the standard escalator. Finally, we start removing iDEN sites in 2012 with 2,000 sites, but ramp that to 5,000 sites each year from 2013 to 2015.



**What is required before Sprint can shut down the iDEN network?**

Sprint is currently nearing completion of the spectrum swap with public safety in the 800 MHz band, after which it will have 14 MHz of contiguous spectrum in that band. While the pre-swap spectrum was good only for the iDEN technology, this new spectrum is excellent, paired spectrum that can be used for standard wireless technologies like CDMA or LTE. The company has already reserved some of this spectrum for CDMA service, and is testing the CDMA radios in the field today.

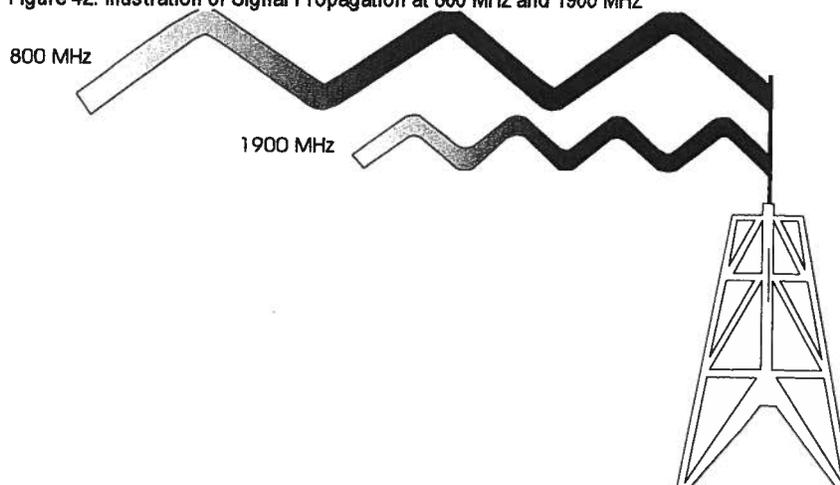
Table 36: Spectrum Swap Changes for Legacy Nextel Position

	700 MHz	800 MHz	900 MHz	1.9 GHz
Pre-swap Spectrum Holdings	4 Contiguous	18.5: 10 Contiguous	4 Non-contiguous	0
Final Settlement	0	14 Contiguous	4 Non-contiguous	10 Contiguous

Source: Company reports and J.P. Morgan estimates.

The laws of physics dictate that, all else being equal, a signal on a lower frequency will travel further and penetrate buildings better than a higher-frequency signal. Sprint's service in marginal areas is disadvantaged by its use of 1900 MHz spectrum vs. the 850 MHz that AT&T and Verizon use, and the company spends ~\$1 billion annually on roaming with Verizon to augment its coverage. While unlimited capital spending could fix this problem, that is unfeasible, and we believe that only by deploying CDMA in the 800 MHz band can Sprint improve its coverage offering, as well as penetrate deeper into buildings to improve in-home quality. That this possibility is finally close to coming true, five years after the merger of Sprint and Nextel, could be the help that Sprint needs to move into the ranks of high-quality carriers, in our view.

Figure 42: Illustration of Signal Propagation at 800 MHz and 1900 MHz



Source: J.P. Morgan.

This CDMA at 800 MHz rollout will be part of Sprint's Network Vision plan that will start in 2011 and end in the 2014 time frame, but likely covering the majority of the country by 2013. At the same time, Sprint will begin to address its handset lineup and start offering CDMA handsets with wider 800 MHz capability. Sprint's devices can look at the 800 MHz cellular frequencies today where Verizon runs its CDMA network, but new devices will need to be retuned to access the Nextel spectrum as well. We expect Sprint to start selling these devices into its base in the second half of 2011.

**CDMA at 800 MHz should boost Sprint's network quality dramatically**

Note that CDMA handsets with wider 800 MHz capability offered in 2011 and 2012 are likely to have better CDMA coverage, but aren't likely to offer the next-generation Q-CHAT technology until the CDMA at 800 MHz overlay is mostly complete. Once that is mostly done in 2014 we estimate Sprint Nextel could still have 2-3 million postpaid iDEN customers and begin an aggressive handset migration effort to get them off the network by the end of 2015. As a result, we do not see a full iDEN network shutdown until at least 2016, but the company should be able to remove capacity sites starting in 2012.

Finally, Sprint Nextel will have to decide whether to let leases expire or pay the termination fee. Our checks in the tower industry have not indicated any holding off of re-signing iDEN tower leases, and we estimate the average iDEN tower still has 5-7 years remaining on its lease. Alternatively, Sprint could choose to pay to terminate the leases, which is typically the NPV of the remaining lease payments.

**International Expansion Offers Growth, with Some More Risk**

Some tower companies are looking to international markets for growth as the US market continues to mature. With fewer opportunities to build towers in the US and recent small deals commanding multiples of roughly 20x tower cash flow, American Tower and SBA Communications are turning to international markets for higher rates of return. Crown Castle has a sizable Australian portfolio, but has not completed any significant international tower transactions recently.

**Build or buy? Here or there?** A tower company has four options to expand its tower portfolio, build in the US or internationally or buy in the US or internationally. Below we have provided a framework as an example of how a tower company could analyze a build-versus-buy decision in the US and internationally. Given our assumptions, a tower company would see the highest returns from either building or buying internationally with domestic returns being 700-900bps lower.

Table 37: Potential Return Scenarios for Domestic and International Towers

	US Tower	Acquired US Tower	International Tower	Acquired International Tower
Acquisition multiple	NA	20x	NA	15x
Starting tenant leases	1.0	2.5	1.0	1.5
Annual Lease-Up	0.2	0.1	0.2	0.2
Tenant target	2.5	3.5	2.5	3.0
Ending Annualized Revenue	\$45,000	\$62,607	\$33,750	\$40,658
Operating Cost	11,000	11,000	5,500	5,500
Tower Cash Flow	34,000	51,607	28,250	35,158
Tower Cash Flow Margin	76%	82%	84%	86%
Avg. New Build or Acquisition Cost per Tower	\$287,500	\$680,000	\$150,000	\$221,250
Monthly Rent per Tenant	\$1,500	\$1,500	\$1,125	\$1,125
Escalator	3.0%	3.0%	3.0%	3.0%
Terminal Multiple	15.0x	15.0x	12.5x	12.5x
Implied Leveraged IRR	21%	14%	28%	23%

Note: We assume 50% leverage at a 6% interest rate.  
 Source: Company reports and J.P. Morgan estimates.

**US build-versus-buy assumptions**

**New tower build opportunities remain limited, but we estimate an attractive IRR.** We assume a new tower costs \$250,000-325,000 to develop and the tower starts with a single anchor tenant. We model an average lease-up rate of 0.2 per year at a final 2.5 tenancy at \$1,500 in monthly rent per tenant. Our tower operating cost estimate of \$11,000 a year (\$917/month) remains relatively flat regardless of tenancy. The ending new tower cash flow margin would then be 76%. Given our

**Recent domestic deals have been fairly small, but also expensive given high demand, limited supply**

assumptions, we model an IRR of 21% for a new tower build with 50% financing at a 6% interest rate.

**Domestic deals have occurred at ~20x TCF.** The market for smaller private tower acquisitions has returned to robust levels and asking prices are high. We estimate a 20x purchase price of tower cash flow or \$680,000 for a mature tower with a tenancy of 2.5, and assume that increases to 3.5 over ten years. With the same general assumptions of a new tower build, we estimate an IRR of 14%.

The higher price and lower lease-up potential of an acquired tower make the build decision a better one for a tower company, given our assumptions. Unfortunately, the opportunity for attractive US tower builds continues to shrink, leaving acquisitions as the alternative domestically.

Incremental tenants increase the return on a tower. We assume one (1.0) incremental tenant per tower in our base case. For a 2.0 incremental tenant lease-up scenario, our IRRs go to 27% and 15% from 21% and 14%, respectively, in our build vs. acquire scenarios.

Table 38: Potential Return Scenarios for Building or Acquiring Domestic Tower

	Base Case		Higher Lease-Up	
	US Tower	Acquired US Tower	US Tower	Acquired US Tower
Acquisition multiple	NA	20x	NA	20x
Starting tenant leases	1.0	2.5	1.0	2.5
Annual Lease-Up	0.2	0.1	0.33	0.2
Tenant target	2.5	3.5	3.5	4.5
Ending Annualized Revenue	\$45,000	\$62,607	\$62,550	\$80,214
Operating Cost	11,000	11,000	11,000	11,000
<b>Tower Cash Flow</b>	<b>34,000</b>	<b>51,607</b>	<b>51,550</b>	<b>69,214</b>
Tower Cash Flow Margin	76%	82%	82%	86%
Avg. New Build or Acquisition Cost per Tower	\$287,500	\$680,000	\$287,500	\$680,000
Monthly Rent per Tenant	\$1,500	\$1,500	\$1,500	\$1,500
Escalator	3.0%	3.0%	3.0%	3.0%
Terminal Multiple	15.0x	15.0x	15.0x	15.0x
<b>Implied Leveraged IRR (1)</b>	<b>21%</b>	<b>14%</b>	<b>27%</b>	<b>15%</b>

Note: We assume 50% leverage at a 6% interest rate.  
Source: Company reports and J.P. Morgan estimates.

**International offers higher returns to offset higher country risks**

The public tower companies expect higher potential returns from international tower builds or purchases, despite higher risk. New builds are cheaper due to lower soft and construction costs. In addition, many markets are still developing and need new tower builds. Collocation in some markets is starting to be adopted by more carriers and some carriers are selling tower portfolios to focus on core strategies, like most US carriers. Our analysis sees a substantially higher return potential (difference of 700-900 bps) for international sites than domestic ones.

**Opportunities for new tower builds are substantially greater than in the US.** We assume a significantly lower tower development cost, mostly due to lower soft costs (site acquisition, zoning, etc.) and construction costs. We model an international tower could only cost \$130,000-190,000, or about 50% less than a US tower. In addition, we assume a lower rent rate of about \$1,125 per tenant, 75% of the US rental rate, and a lower operating cost structure of \$5,500 annually (\$458/month), about 50% less than in the US. At an ending tenancy of 2.5, we calculate a tower

cash flow margin of 84% vs. 76% for a US tower build. Given our assumptions, we model an IRR of 28% for a new tower build with 50% financing at a 6% interest rate.

The public tower companies see ample opportunities to partner or purchase carrier tower portfolios internationally, especially in Central and South America, Africa, and parts of Asia. In some international wireless markets, collocation is still a new market dynamic and is starting to gain acceptance, providing an opportunity for an independent third party, such as the US public tower companies, to run a tower portfolio. For an international acquired tower, we estimate a 15x purchase price of tower cash flow or \$221,250 for a tower. In our international scenario, we assume a tower is purchased with 1.5 tenants and we model an average lease-up rate of 0.2 to 3.0 ending tenants in ten years. With the same general assumptions of a new tower build, we estimate an IRR of 23%.

**Incremental tenants increase the return on a tower.** We assume one (1.0) incremental tenant per tower in our base case. For a 2.0 incremental tenant lease-up scenario, our IRRs go to 35% and 26% from 28% and 23%, respectively, in our build vs. acquire scenarios.

Table 39: Potential Return Scenarios for Building or Acquiring International Tower

	Base Case		Higher Lease-Up	
	International Tower	Acquired International Tower	International Tower	Acquired International Tower
Acquisition multiple	NA	15x	NA	15x
Starting tenant leases	1.0	1.5	1.0	1.5
Annual Lease-Up	0.2	0.2	0.33	0.3
Tenant target	2.5	3.0	3.5	4.0
Ending Annualized Revenue	\$33,750	\$40,658	\$46,913	\$53,863
Operating Cost	5,500	5,500	5,500	5,500
Tower Cash Flow	28,250	35,158	41,413	48,363
Tower Cash Flow Margin	84%	86%	88%	90%
Avg. New Build or Acquisition Cost per Tower	\$150,000	\$221,250	\$150,000	\$221,250
Monthly Rent per Tenant	\$1,125	\$1,125	\$1,125	\$1,125
Escalator	3.0%	3.0%	3.0%	3.0%
Terminal Multiple	12.5x	12.5x	12.5x	12.5x
Implied Leveraged IRR	28%	23%	35%	26%

Note: We assume 50% leverage at a 6% interest rate.  
Source: Company reports and J.P. Morgan estimates.

We use some broad assumptions as a base example, knowing actual scenarios in each country around the world could be dramatically different from our assumptions. In addition, we are not providing a framework that includes demographics, political environment, regulations, wireless market structure, and other country-specific issues that could impact wireless tower returns.

#### **American Tower has most aggressive international expansion plan**

American Tower now has 28% of its wireless towers in Mexico, Brazil, Chile, Peru, Colombia, and India. In addition, the company has agreed to purchase towers from Cell C in South Africa and announced a joint venture with MTN Group in Ghana called TowerCo Ghana (51% ownership) to purchase MGN Ghana's existing towers. Both deals are expected to close in early 2011. All in all, total international tower count for AMT could near 50% of total towers by the end of 2011. In 2009, international site leasing revenue accounted for about 15% of revenue, but we expect it to be closer to 20% in 2011.

Table 40: American Tower Global Tower Portfolio and Credit Metrics by Country

	Towers	S&P Debt Rating	5-Yr CDS Spread
US	20,333	AAA	41
International	12,347		
Mexico	2,619	BBB	113
Brazil	1,659	BBB-	110
Chile	113	A+	85
Peru	131	BBB-	113
Colombia	225	BBB-	112
India	7,600	BBB-	NA
South Africa	1,400*	BBB+	125
Ghana	1,876*	B	NA

\* Denotes pending acquisition.

Note: American Tower has 199 broadcast towers in Mexico and 2 DAS networks.

Source: Company reports, Bloomberg, and J.P. Morgan estimates.

#### Crown Castle's international assets

Crown Castle has 1,595 towers, or about 7% of its tower portfolio, in Australia. The sites generate about 5% of Crown Castle's site revenue. The company has not started further international expansion at this time. The majority of Crown Castle's Australian towers were purchased in 2000 and 2001 from Optus and Vodafone, respectively. On average, the revenue per tower is \$57,162 vs. \$74,337 in the US and the gross margin is 68.2% vs. 73.7%.

Table 41: Crown Castle Global Tower Portfolio and Credit Metrics by Country

	Towers	S&P Debt Rating	5-Yr CDS Spread
US	22,265	AAA	41
Australia	1,595	AAA	49

Source: Company reports, Bloomberg, and J.P. Morgan estimates.

#### SBA's international assets

SBA Communications has international assets mainly in Panama and Canada. The company is also starting very small operations in El Salvador and Costa Rica. SBA's international strategy is to focus on more mature and developed markets in which development and zoning restrictions enable a stable, predictable return. The company acquired Jade Tower in May 2009, giving SBA a foothold in Canada with 52 owned towers and 360 managed communications sites. In Panama, SBA has a backlog of 290 potential tower acquisitions and it plans on building 100 towers in Costa Rica with others in Canada and Central America.

Table 42: SBA Global Tower Portfolio and Credit Metrics by Country

	Towers	S&P Debt Rating	5-Yr CDS Spread
US	8,538	AAA	41
International	167		
Canada	52	AAA	NA
Costa Rica	4	BB	NA
El Salvador	10	BB	NA
Panama	101	BBB-	99

Source: Company reports, Bloomberg, and J.P. Morgan estimates.

SBA so far has been cautious about international expansion

## REIT Conversion Impact

The tower operators, as has long been discussed, are prime candidates for converting their organizational structures to real estate investments trusts (REITs). We anticipate that some tower companies will opt for REIT structures over the next few years at varying times, once available net operating losses are fully utilized and they are in a position to pay corporate cash taxes. Though they are enablers of wireless and broadcast services, the tower companies are essentially owners of real estate assets, including the physical towers and increasingly the land beneath the towers. A REIT structure likely would shield the companies from paying most if not all corporate taxes.

**AMT should be the first tower company to run through its NOLs**

### **AMT is expected to convert in 2012; valuation starting to reflect change**

We expect American Tower to be the first tower company to opt to convert to a Real Estate Investment Trust (REIT) structure to lower taxes as its NOL balance runs out, which we expect to happen in early 2012, and the company has said it is exploring the option. The company could hold a vote at its annual shareholder meeting in May 2011 for actual conversion in 2012 or beyond. The J.P. Morgan REIT coverage universe is trading at 20.8x on a price-to-2011E AFFO basis versus about 20.0x for the tower companies on a price-to-2011E RFCF basis. American Tower has the biggest potential downside risk if it does not convert to a REIT due to its potential tax liabilities. We value AMT at \$60 per share with REIT conversion versus \$45 without conversion.

**SBA likely will not work through its NOLs for ten-plus years**

### **CCI could convert in 2017; SBAC probably avoids REIT status**

Crown Castle is unlikely to run out of its NOLs until after 2016 and we think Crown Castle could then convert into a REIT. Our valuation for the company is \$55 with REIT conversion versus \$54 without conversion due to the minimal net impact of out-year tax changes. Finally, we do not forecast SBA running out of its NOL position before 2020 and expect no change in status for the foreseeable future.

Below we address concerns over REIT requirements, potential challenges to pursuing investments, potential changes to investor bases, valuation, and possible delays to conversion.

### **REIT requirements**

In order for a corporation to qualify for REIT classification, the company must meet a variety of criteria. Below we highlight some key requirements:

- **Taxes.** Perhaps most attractive about the REIT structure, no less than 90% of taxable income must be distributed as dividends to equity holders. Any remaining taxable income would face standard corporate taxes. With the remaining 10%, a company would have to consider the tax consequences in any decision to invest (at a taxed level) rather than return cash to shareholders untaxed.
- **Ownership.** The shareholder base of a REIT must consist of at least 100 different equity holders. In addition, 50% of the equity cannot be held among five owners or less. American Tower's top five owners control about 23% of shares outstanding.
- **Real estate tests.** At least 75% of gross income (defined as revenue and passive income) as well as company assets must be attributed to property or interest on loans for property. Income from other businesses, unrelated to real estate, cannot

represent more than 5% of total revenue, though passive income such as dividends and interest on bank deposits can contribute up to 20%. However, REITs can hold ownership in taxable subsidiaries, which are excluded from standard REIT rules, though the value of such subsidiaries cannot represent more than 25% of the REIT's total asset value. In other words, the majority of the company's assets must fall under a REIT classification, while a minority could be held within a taxable subsidiary.

- **Treatment of ancillary businesses.** We believe the tower operators would likely elect to place a portion of their assets in a taxable subsidiary, within the 25% threshold. For example, the tower operators are involved in ancillary businesses that do not derive income directly from their real estate assets. The network development services, network services, and site development businesses for American Tower, Crown Castle, and SBA, respectively, primarily consist of consulting and construction services, though this varies among each operator. Each of these businesses represents 3-14% of consolidated revenue for the operators.

Table 43: Services Business Contribution

\$ in millions

	AMT	CCI	SBAC
<b>2010 Revenue</b>			
Site Leasing/Rental Revenue	\$1,924.7	\$1,697.9	\$535.4
Site Development/Services Revenue	51.7	173.2	88.8
Total 2010 Revenue	1,976.4	1,871.1	624.3
<b>Revenue Breakdown</b>			
Site Leasing/Rental Revenue	97%	91%	86%
Site Development/Services Revenue	3%	9%	14%
Total	100%	100%	100%

Source: Company reports and J.P. Morgan estimates.

In addition, a portion of the companies' international operations may be candidates for placement in a taxable subsidiary. We estimate American Tower's international operations represented approximately 15% of site leasing revenue in 2010, though this is expected to grow in the future, while 5% of Crown Castle's site leasing revenue was generated outside the United States.

Table 44: International Business Contribution

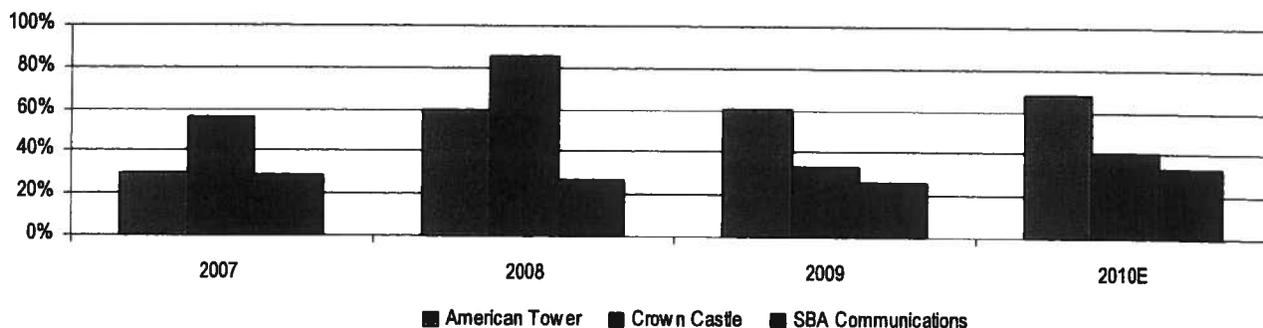
\$ in millions

	AMT	CCI	SBAC
<b>2010 Site Leasing Revenue</b>			
US	\$1,636.0	\$1,607.4	\$530.1
International	288.7	90.5	5.4
Total 2010 Site Leasing Revenue	1,924.7	1,697.9	535.4
<b>Breakdown</b>			
US	85%	95%	99%
International	15%	5%	1%
Total	100%	100%	100%

Source: Company reports and J.P. Morgan estimates.

**Payout ratio limits capital for growth, but high cash flow more than enough**  
 The primary reason to opt for a REIT structure is the tax efficiency it provides. REITs are required to distribute 90% of taxable income as dividends to shareholders, limiting taxes payable. However, this could also potentially impact cash available to pursue growth opportunities or reinvest in the business, which we consider to be the primary drawback of converting to a REIT. For the towers specifically, we do not believe this is a significant concern. Current taxable income is limited by heavy levels of depreciation, driven by the size of the companies' tower real estate holdings which are depreciated over 15-20 years. However, on a cash flow basis, we believe there is ample cushion to support current and, if necessary, elevated capital spending levels.

Figure 43: Capital Spending as % of Depreciation – Tower Capex Continues to Run Below Depreciation



Source: Company reports and J.P. Morgan estimates.

We estimate that American Tower, Crown Castle, and SBA Communications might only allocate 20-50% of cash flow after dividends towards capital expenditures in 2010. After including acquisitions, both Crown Castle and SBA have substantial cash flow, though American Tower's investments exceed estimated cash flow. However, both Crown and SBA participated in fewer M&A deals through 3Q10, relative to typical levels, as they addressed leverage challenges. American Tower has kept leverage at the low end of target levels, limiting excess capital. It is unclear to us how leverage would be handled as a REIT. It is possible that rating agencies could be more stringent compared to today, given that the companies would be forced to pay dividends, driving less of a cash cushion.

Table 45: Investment Activity Compared to Available Cash Flow

\$ in millions

	AMT	CCI	SBAC
Adjusted 2010 Taxable Income	\$587.2	\$90.3	(\$127.7)
Minimum Dividend Distribution	528.5	81.2	0.0
<i>% of Taxable Income</i>	<i>90%</i>	<i>90%</i>	<i>0%</i>
Remaining Taxable Income	58.7	9.0	0.0
Corporate Taxes	22.3	3.4	0.0
<i>Tax Rate</i>	<i>38%</i>	<i>38%</i>	<i>0%</i>
Investable Net Income	36.4	5.6	0.0
Depreciation and amortization	463.2	550.1	276.2
Stock-based compensation	56.1	36.7	10.3
Cash Flow after Dividends	555.8	592.4	286.5
Estimated 2010 Maintenance Capital Expenditures	(42.9)	(21.7)	(10.0)
Investable Cash Flow	512.9	570.7	276.4
Estimated 2010 Discretionary Capital Expenditures	(271.9)	(197.9)	(62.1)
Excess Cash Flow	241.0	372.8	214.3
Estimated 2010 Acquisitions	(584.3)	(127.0)	(281.5)
Cash Flow after Acquisitions	(343.2)	518.2	200.8
<i>Capital Spend % of Cash Flow after Dividends</i>			
Estimated 2010 Maintenance Capital Expenditures	7.7%	3.7%	3.5%
Estimated 2010 Capital Expenditures	48.9%	33.4%	21.7%
Estimated 2010 Acquisitions	105.1%	21.4%	98.3%
<i>Total % of Cash Flow after Dividends</i>	<i>161.8%</i>	<i>58.5%</i>	<i>123.4%</i>

Note: We do not expect SBAC to generate positive normalized taxable income in 2010.

Source: Company reports and J.P. Morgan estimates.

### Investor base implications

Should the tower equities convert to REIT structures, there could be a shift in the investor base. The potential investor base could actually expand, as the companies join REIT indices. In fact, American Tower and Crown Castle could be two of the larger REITs in the market, with market capitalizations of approximately \$19.5 billion and \$12.2 billion, respectively, representing approximately 10% of the MSCI US REIT Index on a pro forma basis.

However, the stocks in general could also experience some volatility as non-REIT funds may be forced to sell holdings. Unfortunately, it is tough to gauge the potential risk or upside, as disclosures of top holders do not specify whether ownership is held by a REIT fund or telecom fund within a larger family of funds.

**There are already 15 REITS in the S&P 500; AMT is bigger than 14 of them**

For American Tower specifically, its membership in the S&P 500 is unlikely to be affected, in our view. Given it already has membership and it would not be undergoing any significant restructuring or change in its business model, we anticipate it likely would be kept in the index. However, future admission into the S&P 500 as REITs could be more difficult for Crown Castle or SBA, as additional REIT representation could be offered to larger REIT operators instead.

Table 46: REITs in the S&P 500 Index

REIT	Weighting in S&P 500
Apartment Investment & Management Co	2.7%
AvalonBay Communities Inc	8.5%
Boston Properties Inc	10.6%
Equity Residential	13.1%
HCP Inc	11.7%
Health Care REIT Inc	6.0%
Host Hotels & Resorts Inc	10.4%
Kimco Realty Corp	6.4%
Plum Creek Timber Co Inc	5.3%
ProLogis	7.2%
Public Storage	12.4%
Simon Property Group Inc	25.6%
Ventas Inc	7.3%
Vornado Realty Trust	11.9%
Weyerhaeuser Co	8.9%

Source: Company reports and J.P. Morgan estimates.

#### Other scenarios

A variety of factors could slow the process of the tower companies converting to REITs. The tower operators could pursue additional acquisitions, which could increase net operating losses, delaying the need for conversion. In addition, if leverage were to increase, we could see a larger drag from interest expense, increasing losses. Finally, should leasing revenue growth slow more than expected, it would take longer for the companies to consume their NOLs.

#### Valuation as a REIT

We believe many investors already compare the tower equities to REITs, using recurring cash flow as a benchmark for adjusted funds from operations (AFFO). We calculate recurring cash flow as Adjusted EBITDA less the total of net interest expense, cash taxes, preferred dividends, and maintenance capital expenditures, as a standardized measure of cash flow across the tower operators.

REIT-specific cash flow measures, such as funds from operations (FFO) and adjusted funds from operations (AFFO), are similar. FFO is calculated by taking net income and adding depreciation and amortization, but deducting preferred dividends. AFFO adjusts FFO by subtracting straight-line rent and maintenance capital expenditures. We cannot include the impact of straight-line rent in our recurring cash flow calculation as all of the tower operators do not provide the data.

When comparing tower valuations to REIT valuations, the tower equities continue to appear very attractive. REITs are trading at 20.8x on a price-to-2011E AFFO basis using J.P. Morgan's REIT team estimates, while the tower stocks are trading at 20.0x recurring cash flow (net of straight-line impacts). However, we expect tower recurring cash flow to grow 8.9% while AFFO growth for the REITs is expected to be 8.4%.

Table 47: Tower Valuation Summary

\$ in millions

	AMT	CCI	SBAC	Group
Recent Price	\$50.50	\$42.60	\$39.66	
Shares outstanding	387	286	114	
Market Cap- Equity	\$19,540	\$12,192	\$4,540	\$36,272
Year-end Net Debt (Cash)	4,184	5,531	2,853	12,568
Enterprise Value	23,724	17,723	7,393	48,840
Adj. EBITDA Y/Y Growth - 2010E	13.8%	15.0%	13.7%	14.3%
Adj. EBITDA Y/Y Growth - 2011E	16.2%	8.3%	11.3%	12.4%
Adj. EBITDA Y/Y Growth - 2012E	6.8%	7.7%	9.9%	7.5%
EV / Adj. EBITDA - 2010E	17.6x	15.2x	19.2x	16.9x
EV / Adj. EBITDA - 2011E	15.2x	14.0x	17.3x	15.0x
EV / Adj. EBITDA - 2012E	14.2x	13.0x	15.7x	14.0x
Recurring Cash Flow - 2010E	946	602	228	1,775
Recurring Cash Flow - 2011E	1,026	638	269	1,933
Recurring Cash Flow - 2012E	1,164	761	309	2,235
Recurring Cash Flow Y/Y Growth - 2010E	12.3%	17.9%	12.2%	14.1%
Recurring Cash Flow Y/Y Growth - 2011E	8.4%	6.1%	18.0%	8.9%
Recurring Cash Flow Y/Y Growth - 2012E	13.5%	19.3%	15.0%	15.6%
Price / Recurring Cash Flow - 2010E	20.7x	20.3x	19.9x	23.1x
Price / Recurring Cash Flow - 2011E	19.0x	19.1x	16.9x	20.0x
Price / Recurring Cash Flow - 2012E	16.8x	16.0x	14.7x	16.7x

Source: Company reports and J.P. Morgan estimates.

Note: Pricing as of 1/7/2011. Share count and net debt 2011E.

Table 48: REIT Industry Summary Valuation

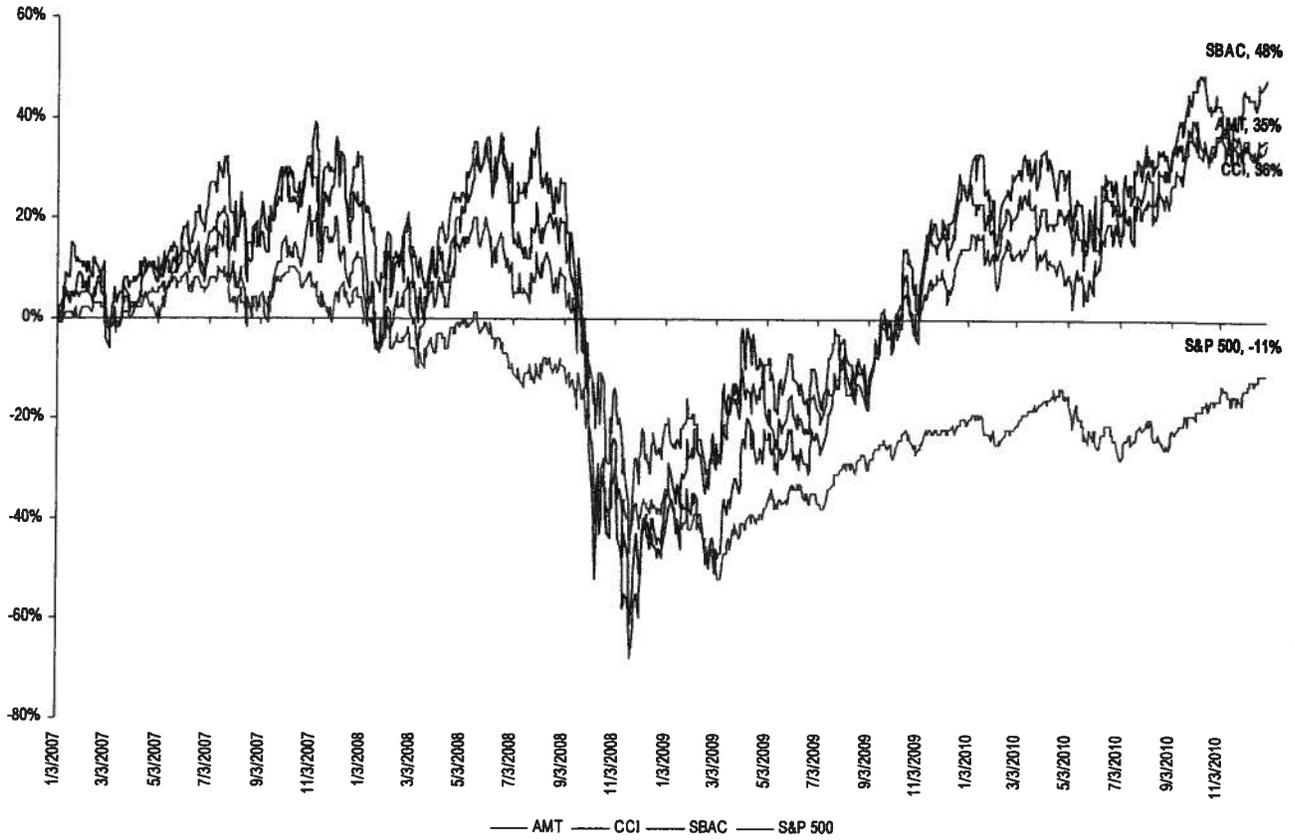
Property Type	EV/ EBITDA	P/FFO		P/AFFO		2010E Growth		2011E Growth		2012E Growth	
		2011E	2012E	2011E	2012E	FFO	AFFO	FFO	AFFO	FFO	AFFO
Health Care	16.5x	14.6x	13.4x	15.9x	15.1x	3.9%	4.2%	11.9%	12.4%	8.7%	5.7%
Industrial	17.1x	20.9x	18.9x	30.9x	26.8x	11.8%	(35.6%)	10.9%	22.7%	10.0%	15.4%
Lodging	23.2x	19.0x	14.4x	24.1x	19.6x	6.7%	13.6%	24.1%	29.8%	34.2%	41.7%
Manufactured Housing	15.4x	13.5x	12.6x	15.3x	14.2x	0.0%	0.3%	9.6%	10.1%	6.6%	7.7%
Multifamily	20.3x	20.3x	18.5x	24.6x	21.9x	(0.9%)	(3.2%)	8.9%	9.6%	10.2%	12.4%
Office	15.4x	14.6x	13.7x	21.8x	20.5x	6.7%	0.6%	3.3%	2.4%	7.0%	6.6%
Regional Mall	16.1x	15.0x	14.3x	18.4x	17.5x	(5.3%)	(9.6%)	9.6%	7.2%	4.8%	4.7%
Self Storage	17.6x	18.0x	16.8x	19.7x	18.3x	(0.0%)	(2.0%)	7.9%	9.7%	7.3%	7.7%
Strip Center	15.8x	15.9x	15.1x	20.1x	19.0x	(1.8%)	(18.2%)	4.3%	0.0%	4.6%	5.7%
Triple Net Lease	12.9x	12.7x	12.6x	13.2x	12.9x	0.4%	(5.9%)	5.3%	6.1%	0.6%	2.5%
<b>REIT Industry Weighted Average</b>	<b>16.9x</b>	<b>16.3x</b>	<b>15.0x</b>	<b>20.8x</b>	<b>19.2x</b>	<b>1.8%</b>	<b>(4.3%)</b>	<b>8.3%</b>	<b>8.4%</b>	<b>8.5%</b>	<b>9.2%</b>

Source: FactSet, SNL Financial, and J.P. Morgan REIT team estimates. As of 01/10/2010.

## High Leverage, but Manageable Debt Structures

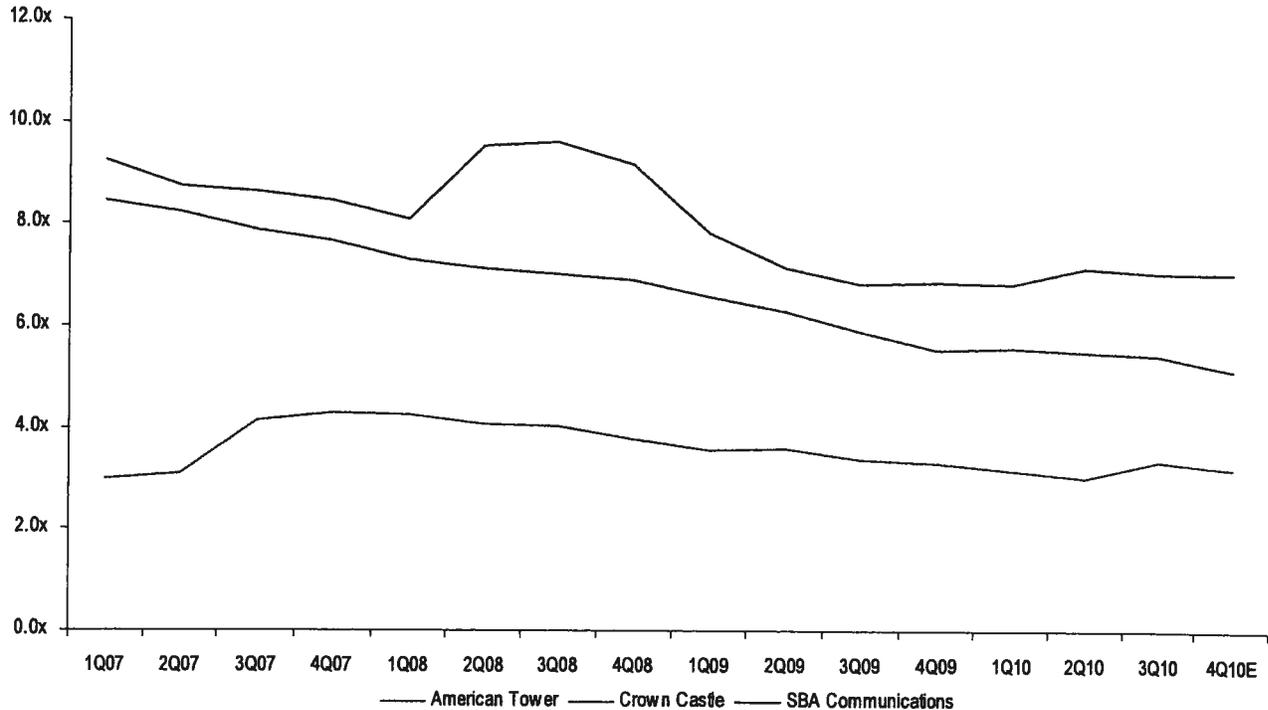
During the financial crisis, the tower companies were faced with not being able to raise debt at almost any rate as near-term maturities weighed on the companies. The highly leveraged, high-multiple tower stocks fell 51-72% vs. the S&P 500 down 38%.

Figure 44: Stock Prices for the Public Tower Companies from 2007 to 2010



Source: Company reports and J.P. Morgan.

Figure 45: Tower Company Trailing-Twelve-Month Leverage from 2007 to 2010

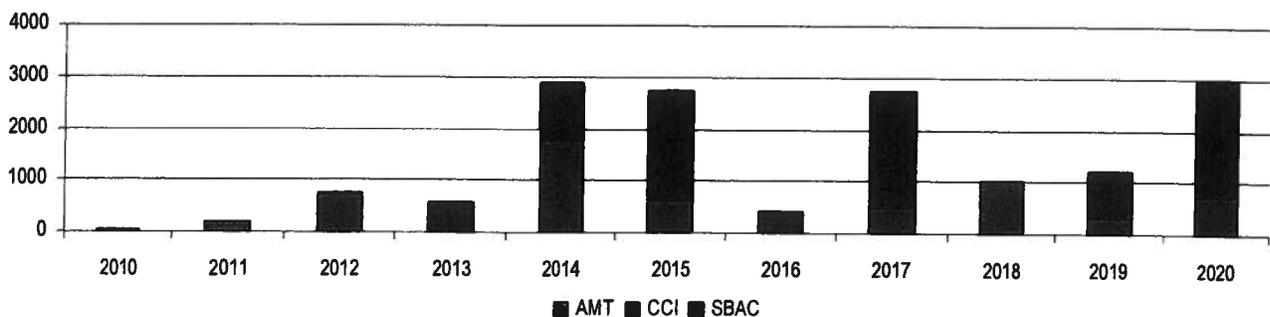


Source: Company reports and J.P. Morgan estimates.

While the tower companies remain leveraged at 4-7x, all the companies have taken advantage of a friendly debt financing environment and have raised a total of \$6.3 billion of fixed-rate debt with an average rate of 4.9% since the start of 2010. In addition, maturities were extended and the first tranches are not due until 2014 and some do not mature until 2020. Each company has laddered out debt schedules so an overbearing amount of principal does not come due in one year.

Figure 46: Tower Company Debt Maturity Schedule

\$ millions



Source: Company reports and J.P. Morgan estimates.

Of the three public tower companies, American Tower or Crown Castle could increase leverage some, in our view, to either purchase towers more aggressively or buy back more stock. SBA is at about 7x levered already and we do not think management wants to increased leverage to 8-10x unless a transformative tower deal was available. In our view, American Tower has the ability to lever up by 1 or 2 multiple points to 5-6x net debt/EBITDA from 4x today, which translates into \$2-3 billion or more of additional debt capacity with no acquired EBITDA. At current prices, this could allow AMT to repurchase approximately 7-14% of its outstanding stock. We think Crown Castle could add about one additional turn of leverage to 6x from about 5x today or about \$1.2 billion more debt capacity. At that level, the company could repurchase about 10% of its outstanding stock at current prices.

## Wireless Tower Overview

We estimate that there are between 100,000 and 120,000 leaseable towers in the US today. For purposes of our tower industry model, we use about 112,000 wireless towers with about 46% being owned by the three public tower companies. AT&T, T-Mobile, Verizon, and US Cellular have carrier tower portfolios adding up to about 23% of the total. Two large private tower companies are Global Tower and TowerCo with 4,400 and 3,200 towers, respectively. The remaining towers are generally owned by mom-and-pop owners. We forecast that the independent tower operators could build 2,500-3,000 leaseable towers for 3G/4G purposes over the next few years.

The wireless industry has added 73,593 sites over the past five years. This includes sites on rooftops, collocations on existing towers, anchor tenants on newly built towers, and collocations on newly built towers. We have used the Cellular Telecommunications Industry Association's (CTIA's) published figures (the results of CTIA's semiannual survey) to track cell sites, which at the end of June 2010 totaled 251,618 cell sites in the United States. These are total cell sites and we assume 25% are on rooftops and other alternative structures to towers, leaving about 75% on towers. We estimate the average tenant per tower in the US at ~1.7.

Table 49: Tower Industry Model

Towers	1Q09	2Q09	3Q09	4Q09	2009	1Q10	2Q10	3Q10	4Q10E	2010E
Crown Castle	22,481	22,425	22,385	22,365	22,365	22,338	22,321	22,265	22,280	22,280
American Tower	14,339	14,339	16,039	18,039	18,039	20,039	20,162	20,333	20,383	20,383
AT&T Towers	9,676	9,726	9,776	9,826	9,826	9,876	9,926	9,976	10,026	10,026
SBA Communications	7,805	7,924	8,004	8,241	8,241	8,296	8,502	8,618	8,742	8,742
T-Mobile Towers	5,820	5,855	5,890	5,925	5,925	5,955	5,985	6,000	6,015	6,015
Verizon Wireless Towers	5,570	5,575	5,580	5,585	5,585	5,590	5,595	5,600	5,605	5,605
US Cellular Towers	4,210	4,225	4,240	4,255	4,255	4,270	4,285	4,300	4,315	4,315
Global Tower Partners	3,650	3,750	3,850	3,950	3,950	4,050	4,150	4,400	4,450	4,450
TowerCo	3,120	3,140	3,160	3,180	3,180	3,190	3,202	3,217	3,232	3,232
Mobilite LLC	2,761	2,766	2,771	2,776	2,776	2,781	2,786	2,791	2,796	2,796
Other	22,500	22,800	23,100	23,400	23,400	23,700	24,000	24,150	24,300	24,300
<b>Total</b>	<b>101,932</b>	<b>102,525</b>	<b>104,795</b>	<b>107,542</b>	<b>107,542</b>	<b>110,085</b>	<b>110,914</b>	<b>111,650</b>	<b>112,144</b>	<b>112,144</b>
<i>y/y % change</i>	<i>3.8%</i>	<i>3.2%</i>	<i>4.3%</i>	<i>6.1%</i>	<i>6.1%</i>	<i>8.0%</i>	<i>8.2%</i>	<i>6.5%</i>	<i>4.3%</i>	<i>4.3%</i>
<i>q/q % change</i>	<i>0.5%</i>	<i>0.6%</i>	<i>2.2%</i>	<i>2.6%</i>	<i>6.1%</i>	<i>2.4%</i>	<i>0.8%</i>	<i>0.7%</i>	<i>0.4%</i>	<i>4.3%</i>
<b>Market share</b>	<b>1Q09</b>	<b>2Q09</b>	<b>3Q09</b>	<b>4Q09</b>	<b>2009</b>	<b>1Q10</b>	<b>2Q10</b>	<b>3Q10</b>	<b>4Q10E</b>	<b>2010E</b>
Crown Castle	22.1%	21.9%	21.4%	20.8%	20.8%	20.3%	20.1%	19.9%	19.9%	19.9%
American Tower	14.1%	14.0%	15.3%	16.8%	16.8%	18.2%	18.2%	18.2%	18.2%	18.2%
AT&T Towers	9.5%	9.5%	9.3%	9.1%	9.1%	9.0%	8.9%	8.9%	8.9%	8.9%
SBA Communications	7.7%	7.7%	7.6%	7.7%	7.7%	7.5%	7.7%	7.7%	7.8%	7.8%
T-Mobile Towers	5.7%	5.7%	5.6%	5.5%	5.5%	5.4%	5.4%	5.4%	5.4%	5.4%
Verizon Wireless Towers	5.5%	5.4%	5.3%	5.2%	5.2%	5.1%	5.0%	5.0%	5.0%	5.0%
US Cellular Towers	4.1%	4.1%	4.0%	4.0%	4.0%	3.9%	3.9%	3.9%	3.8%	3.8%
Global Tower Partners	3.6%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.9%	4.0%	4.0%
TowerCo	3.1%	3.1%	3.0%	3.0%	3.0%	2.9%	2.9%	2.9%	2.9%	2.9%
Mobilite LLC	2.7%	2.7%	2.6%	2.6%	2.6%	2.5%	2.5%	2.5%	2.5%	2.5%
<b>Total</b>	<b>100.0%</b>									

Source: Company reports and J.P. Morgan estimates.

Table 50: Cell Sites by Tower Company

CTIA	244,021	245,912	246,497	247,081	247,081	249,350	251,618	245,818	248,018	248,018
Sites on towers	183,016	184,434	184,872	185,311	185,311	187,012	188,714	184,364	186,014	186,014
Tenants	1.80	1.80	1.76	1.72	1.72	1.70	1.70	1.65	1.66	1.66

Cell sites by tower compan	1Q09	2Q09	3Q09	4Q09	2009	1Q10	2Q10	3Q10	4Q10E	2010E
Crown Castle	59,799	59,987	60,216	60,497	60,497	60,759	61,048	61,229	61,604	61,604
American Tower	35,977	35,145	38,486	42,789	42,789	48,094	48,389	46,766	46,881	46,881
AT&T Towers	9,676	9,726	9,776	9,826	9,826	9,876	9,926	9,976	10,026	10,026
SBA Communications	19,289	19,750	20,010	20,602	20,602	20,741	21,255	21,545	21,854	21,854
T-Mobile Towers	7,566	7,612	7,657	7,703	7,703	7,742	7,781	7,800	7,820	7,820
Verizon Wireless Towers	5,570	5,575	5,580	5,585	5,585	5,590	5,595	5,600	5,605	5,605
US Cellular Towers	4,210	4,225	4,240	4,255	4,255	4,270	4,285	4,300	4,315	4,315
Global Tower Partners	4,745	4,875	5,005	5,135	5,135	5,265	5,395	5,720	5,785	5,785
TowerCo	4,368	4,553	4,740	4,929	4,929	5,104	5,283	5,469	5,818	5,818
Mobilite LLC	2,761	2,766	2,771	2,776	2,776	2,781	2,786	2,791	2,796	2,796
Other	29,055	30,221	26,392	21,215	21,215	16,791	16,971	13,168	13,510	13,510
<b>Total</b>	<b>183,016</b>	<b>184,434</b>	<b>184,872</b>	<b>185,311</b>	<b>185,311</b>	<b>187,012</b>	<b>188,714</b>	<b>184,364</b>	<b>186,014</b>	<b>186,014</b>

Market share	1Q09	2Q09	3Q09	4Q09	2009	1Q10	2Q10	3Q10	4Q10E	2010E
Crown Castle	32.7%	32.5%	32.6%	32.6%	32.6%	32.5%	32.3%	33.2%	33.1%	33.1%
American Tower	19.7%	19.1%	20.8%	23.1%	23.1%	25.7%	25.6%	25.4%	25.2%	25.2%
AT&T Towers	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.4%	5.4%	5.4%
SBA Communications	10.5%	10.7%	10.8%	11.1%	11.1%	11.1%	11.3%	11.7%	11.7%	11.7%
T-Mobile Towers	4.1%	4.1%	4.1%	4.2%	4.2%	4.1%	4.1%	4.2%	4.2%	4.2%
Verizon Wireless Towers	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
US Cellular Towers	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Global Tower Partners	2.6%	2.6%	2.7%	2.8%	2.8%	2.8%	2.9%	3.1%	3.1%	3.1%
TowerCo	2.4%	2.5%	2.6%	2.7%	2.7%	2.7%	2.8%	3.0%	3.1%	3.1%
Mobilite LLC	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Other	15.9%	16.4%	14.3%	11.4%	11.4%	9.0%	9.0%	7.1%	7.3%	7.3%
<b>Total</b>	<b>100.0%</b>									

Source: Company reports and J.P. Morgan estimates.

### Positive characteristics of investing in tower companies

Tower ownership offers investors a scalable model with long-term contracted revenues with built-in escalators from a diverse, creditworthy customer base and effectively fixed direct operating costs and overhead costs. Tower companies provide a mission-critical service to the operation of wireless networks, so churn rates are very low and generally not even reported. We estimate industry churn rates at about 1% per annum (not to be confused with monthly churn rates) which are typically driven today by broadcast and paging, not wireless, companies exiting. As a result, we expect these companies to experience solid top-line growth and expanding cash flow margins over the next several years. Almost all capital expenditures for tower assets are discretionary and immediately provide incremental operating cash flow.

### Towers ride the wireless growth wave, without the competition

The tower sector is often compared to other industries that generally are better understood by investors, including broadcasting, outdoor advertising, and real estate. We maintain that the fundamental characteristics of the tower industry are superior to those of all of the above-mentioned sectors. Below we compare these characteristics with those of the wireless telephony business.

Table 51: Wireless Towers vs. Telephony

Characteristic	Towers	Wireless Telephony
Pricing	<ul style="list-style-type: none"> <li>Increasing pricing for new tenants. Existing tenant leases have built-in price escalators.</li> </ul>	<ul style="list-style-type: none"> <li>Declining per-minute pricing model.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>Technology-agnostic. The greater number of technologies used, the better.</li> </ul>	<ul style="list-style-type: none"> <li>Technology choice creates risk of obsolescence and requires upgrades.</li> </ul>
Churn	<ul style="list-style-type: none"> <li>Less than 1% per annum.</li> </ul>	<ul style="list-style-type: none"> <li>20%-25% per annum.</li> </ul>
Surety of Revenues	<ul style="list-style-type: none"> <li>Based on long-term contracts (average five years with multiple automatic renewals).</li> </ul>	<ul style="list-style-type: none"> <li>Revenues generally based on usage.</li> </ul>
Potential EBITDA margins	<ul style="list-style-type: none"> <li>70%-80%.</li> </ul>	<ul style="list-style-type: none"> <li>30%-40%.</li> </ul>
Customer Base	<ul style="list-style-type: none"> <li>National and regional wireless providers. Service is critical to wireless carriers' network operation.</li> </ul>	<ul style="list-style-type: none"> <li>Businesses with pricing power.</li> <li>Individuals.</li> </ul>
Barriers to Entry	<ul style="list-style-type: none"> <li>Access to capital/critical mass.</li> <li>Zoning/regulation.</li> </ul>	<ul style="list-style-type: none"> <li>Multiple competitors licensed in each market.</li> </ul>

Source: Company reports and J.P. Morgan estimates.

With few exceptions, the stock prices of public independent tower operators have tracked each other fairly closely. In our opinion, part of the reason for this is that the market is not distinguishing the different approaches and growth strategies that each company has employed to take advantage of the tower ownership model. Key items that differentiate these businesses include critical mass to achieve economies of scale, liquidity position and access to capital, percentage of revenues and cash flow from site leasing, tower build component of tower addition strategy, and sources of acquired towers. We believe that all three public tower companies will benefit from estimated solid demand for tower space for at least the next few years.

## History of Towers

### The original tower owners

The original owners of towers were mostly wireless network operators and broadcasters. These companies viewed towers as a capital cost and an integral, strategic part of their networks. Accordingly, carriers and broadcasters generally did not allow competitors to collocate transmission equipment on their towers. The mindset was that the carriers and broadcasters would provide their rivals with a cost advantage by allowing them to avoid the cost of zoning, developing, and constructing towers. Although collocation was a potential incremental source of revenue, it fell below most carriers' and broadcasters' radar screens. With the introduction of several new wireless competitors to each market throughout the US (mostly PCS licensees), network operators, broadcasters, and others recognized the monetization opportunity in their towers. In addition, zoning of new sites became increasingly difficult as communities fought the proliferation of towers. This served to raise the value of existing towers with excess capacity by forcing new wireless entrants and existing carriers expanding their footprints to devise creative ways to add sites for both network capacity and geographical coverage.

### **Enter the independent tower operators**

In the mid- and late 1990s, several entrepreneurs recognized the financial opportunity in owning wireless transmission towers. Although it is a capital-intensive business, they saw the potential demand for tower space, the potential for high margins, the recurring revenue model, the pricing power, and the formidable barriers to entry. These entrepreneurs had varied backgrounds, including wireless, broadcasting, cable, real estate, and technology. In 1999 and 2000 alone, the five public independent operators raised, in the aggregate, more than \$13 billion in new capital and capital commitments, by our estimates. These companies have raised capital from just about every source available, including bank debt, high-yield debt, convertible debt, preferred securities, private equity, and public equity. Even in difficult markets, they have demonstrated the ability to secure significant amounts of capital. Each of the three public companies has approached the tower opportunity in a different way, but all have adhered to the same general guiding concepts that tower ownership is crucial and that the best existing sites cannot be replicated.

### **Carrier deals transform the tower sector**

Although conversations between wireless carriers and independent tower operators about the transfer of tower ownership had been going on for years before, in 1999 and 2000 the carrier tower transactions became a reality. In that period, Bell Atlantic, BellSouth, SBC, Powertel, Nextel, GTE, AirTouch, Triton PCS, Dobson Cellular, ALLTEL, and other carriers all announced deals to sell their towers. These deals transformed the tower industry. Wireless carriers recognized that tower ownership and management was not a core competency and was, therefore, a good outsourcing opportunity. The tower monetization relieved the carriers of tower operating costs and provided capital to invest in their core business – adding subscribers and driving minutes of use through their networks.

Previously, the tower industry had been considered too small-cap for institutional investors to consider. Suddenly, these companies were raising hundreds of millions of dollars and garnering multi-billion-dollar valuations in the public market. Management teams were (and continue to be) generally stretched to focus on capitalizing on the land grab opportunity for the best towers in the country.

We maintain that many of the towers originally built and operated by wireless carriers are among the best towers an independent tower operator can own. We particularly like carrier towers for three main reasons.

1. These towers tend to be well-clustered around major markets and are often in locations where the construction of a new tower would be virtually impossible.
2. These towers tend to be overbuilt. The capacity of towers built for cellular networks was usually in excess of what was needed. As a result, these towers generally have excess capacity and the ability to add multiple incremental broadband tenants with no or minimal incremental capital expenditure.
3. Carrier towers tend to be underutilized because, under the carriers' watch, collocation attempts by competing wireless carriers often were ignored, if not rebuffed. There is usually pent-up demand for space on carrier towers when they are transferred to an independent tower operator, so, when a major carrier's portfolio of towers is sold to an independent tower operator, the tower company often experiences strong initial lease-up rates.

### **Tower companies turn to integration and execution**

In 1999 and 2000, most of the public independent tower companies made company-altering acquisitions and built towers in order to gain critical mass, including several carrier tower deals and intra-industry combinations. The goal of the major tower companies from that point was to integrate those acquisitions and demonstrate the ability to execute on the lease-up potential of existing towers (2000 was supposed to be the year of execution and integration, but the large carrier tower deals kept coming). This integration process included hiring senior managers to handle the added complexity of these companies and field workers to perform due diligence, site management, and site-related services.

### **From boom to bust (almost)**

The independent tower companies' stock prices peaked in 2000 and started their downward march through 2002, losing over 95% of their equity value from peak to trough. Furthermore, Pinnacle Holdings and SpectraSite filed for bankruptcy. The performance largely mirrors that of the dot-com, technology, and telecom companies of the time. The tower companies suffered from slowing business conditions, heavy debt burdens, and reduced capital spending from wireless carriers trying to remain free cash flow positive. While operating performance for the tower companies continued to improve, they were unable to grow fast enough to support untenable capital structures. In 2003, the long road to recovery started for the tower companies.

### **The road to recovery**

From 2003 to 2007, the tower companies addressed their once-toxic capital structures and started to deleverage from double-digit net leverage. The companies underwent a virtuous cycle of growing EBITDA, reducing interest expense and debt levels, and reached positive free cash flow, which enabled the companies to further improve their capital structures. As result of both financial recovery and continued operational improvements, wireless carriers experienced solid growth with follow-on benefits for the tower companies. By the end of 2007 the stocks of tower companies had come back to 80-100% of their peak 2000 values with substantially improved balance sheets, financials, and operational fundamentals.

### **Back from the brink of the financial crisis, and stronger too**

The financial crisis of 2008 closed the credit markets to the tower companies, which had substantial leverage and looming debt maturities. The fear of debt default gripped investors and the tower stocks fell 40-75% from peaks to their 2008 troughs vs. the S&P 500 which declined as much as 50% in the same period. American Tower performed the best in part due to its lower leverage. As the government stepped in and credit markets improved, the tower companies started to recover and Crown Castle was one of the first companies to raise new debt and re-open the credit markets in 2009. Promisingly, through the decline the tower companies continued to see relatively stable business trends, despite some pullback in builds from smaller carriers.

The stock prices of the tower companies recovered to peak 2008 prices by early 2010 due to excitement about carrier health, LTE amendments at Verizon, and the potential for new carriers like Clearwire and Lightsquared. The tower companies have been able to take advantage of favorable credit markets and they refinanced \$6.3 billion of debt in 2010 at an average fixed interest rate of 4.9%. In addition, maturities were extended and the first tranches are not due until 2015 and some do not mature until 2020. Each company has laddered out debt schedules so an

overbearing amount of principal does not come due in one year. Finally, the tower companies have started to look to international markets for incremental growth opportunities as the domestic wireless market continues to mature. The tower companies have been able to weather the financial crisis storm and now have come out stronger on the other end.

## Basic Tower Economics

Towers are a key component of any wireless communications network. Every terrestrial wireless system consists of a network of cell sites on which antennae and other electronic equipment are placed. Because these antennae must be elevated in order for their signal to propagate to provide coverage, the majority of wireless transmission antennae are located on existing structures such as rooftops. However, if there is no available structure high enough that an antenna can be attached to it within a particular cell, a tower must be erected to provide the requisite elevation.

The need for incremental sites to provide both coverage and capacity and the difficult zoning environments are the two main drivers of demand for collocation and, therefore, the value of wireless transmission towers. Competition among wireless service providers appears to have migrated from pricing to the quality of coverage, a situation that has greatly benefited the independent tower operators. As wireless telephony subscriber penetration has accelerated, demand for cell sites – and, thus, towers – has exploded. Wireless service providers are not only playing catch-up to provide competitive coverage for today's voice and circuit-switched data offerings, but are also trying to achieve the necessary cell site density to accommodate continued subscriber growth and higher data speeds as 3G and 4G networks are planned and developed. In addition, all cell sites require zoning approval from local municipalities, and communities throughout the country have been fighting the proliferation of towers, often delaying or blocking zoning approval.

A wireless carrier's top network development priority is to deploy its sites in as quick and cost-efficient a manner as possible, and the only two ways to provide coverage are either to get new cell sites zoned or to rent space, or collocate, on existing sites. Collocation provides faster network development time and significant capital cost savings and is therefore almost always preferable.

### Sources of revenue

A tower's primary source of revenue is rental income from the leasing of tower space to wireless service providers and broadcasters onto which those companies attach antennae. A tower operator's goal, therefore, is to "lease up" its towers by adding as many collocation tenants onto each tower as possible to maximize leasing revenue.

The market for lessees is vast because potential tenants include any user of wireless spectrum, including cellular, PCS, paging, wireless data, radio dispatch, radio and TV broadcasting, and government and private networks. Lessees pay a fixed monthly rent regardless of technology, coverage, or minutes of use. Commercial tenant leases average around five years in duration and usually have multiple automatic renewals and periodic rate escalations. Rental rates differ from location to location and from market to market based on demand for the site and the local zoning environment.

The rule of thumb for rental rates for a wireless carrier tenant (cellular, PCS, etc.) is generally \$2,000 per month, although tougher zoning environments and carriers'

urgent need to add sites has boosted the average rent for some towers and markets. Typical rental rates for the increasingly scarce narrowband tenants (paging) average around \$500 per month, and radio and TV broadcasters' rents generally range from \$5,000 to \$10,000 per month. Lease rates for new wireless technology providers vary significantly, but are often priced favorably for the tower owner relative to a broadband equivalent on a lease rate-to-load ratio. Lease rates usually escalate on an annual basis at a fixed rate of about 3-5% or at a variable rate based on an index such as the CPI.

All three of the public independent tower operators also provide wireless network development services, most of which are associated with the development of new towers or the modification of existing antenna configurations. These services include RF engineering, site acquisition, site development, site construction, and line and antenna installation and modification. These services provide lower gross margins than the site leasing business, but offer incremental cash flow.

We believe there are significant potential operating synergies from both owning wireless transmission towers and providing these network development services. For instance, providing site acquisition services to a wireless carrier can enhance the company's relationship with the carrier and the company's knowledge of the carrier's network build plan, potentially driving lease-up of the company's owned towers. Conversely, ownership of a multi-tenant tower on which an incremental carrier wants to collocate gives the company leverage to provide and charge for line and antenna installation service.

#### **Network development revenues should continue to grow**

Just a couple of years ago, the common view of network development services was that it was a fee-based, project-type business that would shrink and possibly disappear over time as the PCS buildout matured and the BTS model became more prevalent. At any point in time over the past ten years it was assumed that network development services revenue would diminish substantially in the following three to five years. Our view is that, although network development revenues are not as consistent as site leasing revenues, the independent tower operators will continue to have significant and growing network development revenues. We expect these revenues to rise as the tower companies expand their tower footprints and further solidify their relationships with the major wireless carriers. As wireless networks become denser and more complex, the need for incremental equipment modifications at the tower will increase. Nonetheless, we believe that network development services will become a smaller percentage of total revenues, as site leasing revenues are expected to grow at much higher rates than network development revenues.

#### **Critical mass provides economies of scale**

Another fundamental aspect of the tower ownership model is that the direct operating costs for a tower are low and essentially fixed, regardless of the number of tenants on the tower. Although tower operating costs vary, they average around \$10,000-12,000 per year per site (assuming the tower company leases the land). Substantially all incremental revenue from the collocation of additional tenants on a tower, therefore, falls to the tower cash flow line. Key tower operating expenses include the ground lease, site maintenance, insurance, and utilities, with the cost of the ground lease usually making up two-thirds or more of the total. Typically, the independent tower owner does not own the swatch of land on which the tower stands, although all of the

major independent tower operators are slowly acquiring the land beneath their towers or extending lease lengths if that makes more sense.

The table below demonstrates the ability to leverage the fixed nature of direct tower operating expenses and the capacity to accommodate multiple tenants to drive tower cash flow margins (tower leasing revenues less direct cash tower costs) to as high as 70-85%.

Table 52: Tower Unit Economics

	Anchor Tenant Only	Low Lease-Up	Mature Tower
Acquisition multiple	NA	NA	NA
Starting tenant leases	1.0	1.0	1.0
Annual Lease-Up	0	0.133	0.266
Tenant target	1.0	2.0	3.0
Ending Annualized Revenue	\$18,000	\$35,955	\$53,910
Operating Cost	11,000	11,000	11,000
<b>Tower Cash Flow</b>	<b>7,000</b>	<b>24,955</b>	<b>42,910</b>
Tower Cash Flow Margin	39%	69%	80%
Avg. New Build or Acquisition Cost per Tower	\$287,500	\$287,500	\$287,500
Monthly Rent per Tenant	\$1,500	\$1,500	\$1,500
Escalator	3.0%	3.0%	3.0%
Terminal Multiple	15.0x	15.0x	15.0x
<b>Implied Leveraged IRR (1)</b>	<b>3%</b>	<b>17%</b>	<b>24%</b>

Note: We assume 50% leverage at a 6% interest rate.  
Source: Company reports and J.P. Morgan estimates.

Similar economies also are achievable across a portfolio of towers because the marginal overhead expenses related to adding a new tower to a portfolio are minimal. The consolidation of the industry over the past few years has been driven by the goal of gaining critical mass to attain economies of scale in operating costs and cost of capital. Overhead expenses of the major tower operators have increased over the past few years as these companies have invested in core internal systems, personnel, and regional offices to accommodate their ongoing rapid growth. We expect these expenses to continue to grow modestly as the tower operators go through this high-growth phase and as large acquisitions, both domestic and international, are integrated into existing systems. In addition, we anticipate that incremental overhead expenses will be required as these companies augment their network services businesses.

#### **Tower ownership is critical**

The model we have described is exclusively for owned towers, not site management. Independent tower operators often maintain and manage for collocation towers and other sites they do not own. In these cases, tower operators share revenues with property owners, but also avoid the operating costs related to site ownership. The property owners, which are often commercial building owners renting space on the rooftop, generally take the lion's share of the revenue. Although the revenue split is negotiated for each site, the site manager generally only gets about 15-40% of the lease revenue. As a result, the operating cash flow margins to the site manager are generally much lower, and the revenue growth opportunity for managed sites is limited. Still, the major tower consolidators frequently enter into tower and rooftop management agreements with tower and real estate owners for two main reasons:

1. Adding managed towers to a tower portfolio of owned sites in a market can increase the marketability and, as a consequence, the lease-up potential for the entire market footprint, including owned sites.
2. Adding managed sites to a tower portfolio can provide incremental cash flow with limited upfront capital costs for the sites.

#### **Tower development**

Building towers generally is the most capital-efficient way to accumulate towers, allowing independent tower operators to lower blended capital costs per tower addition. Below is a breakdown of the capital costs to zone, develop, and construct a typical multi-tenant, self-supporting lattice tower:

Table 53: Tower Development Costs of a Typical Multi-Tenant Tower

	US
Soft Costs (site acquisition, zoning, etc.)	\$50,000-70,000
Materials	\$60,000-80,000
Construction	\$140,000-175,000
<b>Total Development Costs</b>	<b>\$250,000-325,000</b>

Source: Company reports and J.P. Morgan estimates.

The tower company should have the requisite knowledge of the local wireless market and existing coverage by local wireless carriers as well as relationships with wireless carriers to know whether they would consider collocating on a given tower and, if so, the timing of those collocations. Meticulous due diligence is required to measure the potential lease-up of any tower. The greatest risk in the tower business is building a tower and not being able to lease it up. It is those companies with superior market knowledge and relationships with wireless carriers that will achieve the highest returns, in our view. The combination of tower companies avoiding towers in locations they believe to be uneconomical and negligible churn rates leads us to believe that the likelihood of an overbuild of towers in the US is very low.

Philip Cusick, CFA  
(1-212) 622-1444  
philip.cusick@jpmorgan.com

North America Equity Research  
13 January 2011

**J.P.Morgan**