Telecom Services

The State of Telecom 2007: Investment and Investor Sentiment

Presentation to The Columbia Institute for Tele-Information

Morgan Stanley 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. Customers of Morgan Stanley in the U.S. can receive independent, third-party research on the company covered in this report, at no cost to them, where such research is available. Customers can access this independent research at www.morganstanley.com/equityresearch or can call 800-624-2063 to request a copy of this research.

For analyst certification and other important disclosures, refer to Disclosure Section.

AGENDA

• Key Trends
  – Access Lines
  – Broadband
  – Telco TV
  – Wireless
  – Wireless Data

• Financial Indicators

• Investor Sentiment & Outlook
Bells Losing 2 Million Lines Per Quarter

Incremental Switched Access Lines Lost

Source: Company Data, and Morgan Stanley Research
Note: Data shown for VZ, T and Q.

Cablevision Telephony – Surpasses 65% of Broadband Subs

Source: Company data, Morgan Stanley Research
Nearly One-Third of Homes Become Wireless-Only in Base Case

Broadband Growth Continues to Moderate (Last 12 Months Adds)
Verizon FiOS Adds Above Expectations in Q2

AT&T U-verse Starting to Scale
Bells Could Approach 10% by 2010

Wireless Contract Net Adds Continue to Head South
Wireless Penetration Highest Among 35-39 Year Olds

Wireless Penetration

91% 92% 93% 94% 90% 89% 87% 89% 81%

18-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65+

Average penetration 89%

Source: Morgan Stanley Research

Revenues Could Triple in Five Years

Growth of Wireless Data & Comparison with Google

Wireless Data Growth Rate

Google Revenues

Google Revenue Growth Rate

Wireless Data Industry Growth Forecast

Non-Text Data Services

Text Messaging

Source: CTIA's Wireless Industry Indices, company data, Morgan Stanley Research

Note: In 2002 and 2003, Google's growth rates were 409% and 234%, respectively.

Source: CTIA's Wireless Industry Indices, Morgan Stanley Research
The Tipping Point Arrives for Wireless Data

Applications / User Interface
- SMS
- IM
- E-Mail
- Photos
- Music
- News
- Maps
- Mobile TV
- Games
- Stock Quotes

Pricing
- $5/mo. SMS
- $20/mo. Unlimited Internet Access
- $2 per Wireless Song Download

Data Usage Explodes

Devices
- iPhone
- Blackberry
- Laptop Cards
- Cameras
- Chipsets

Networks
- 3G
- WiFi
- UMA
- WiMAX
- EDGE
- Bluetooth
- GPS

Source: Morgan Stanley Research

Wireless Data Service Revenue Composition

<table>
<thead>
<tr>
<th>Service</th>
<th>Revenue Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Messaging</td>
<td>~ 30%</td>
</tr>
<tr>
<td>Data Bucket Plans* (messaging, wireless web)</td>
<td>&lt; 30%</td>
</tr>
<tr>
<td>E-mail* (Blackberry)</td>
<td>&lt; 20%</td>
</tr>
<tr>
<td>Data Access Cards*</td>
<td>15 – 20%</td>
</tr>
<tr>
<td>Content Download</td>
<td>&lt; 10%</td>
</tr>
</tbody>
</table>

*Segments with the highest growth
Source: Morgan Stanley Research
Cable Cos Maintaining Lead in RGU Growth Over Telcos

Wireline EBITDA per Connection: Productivity Improves
Leverage Is Generally Modest

Payout Ratio (%) vs. Net debt to EBITDA (2006E) (from ModelWare).

LVLT, SBAC, and FRP are not included in the graph above.

Source: FactSet, and Morgan Stanley Research

Payout ratio is defined as the ratio of dividend per share ("DPS") to consensus EPS (2006E) (from FactSet).

LVLT, SBAC, and FRP are not included in the graph above.

Source: FactSet, and Morgan Stanley Research

The Bells Are Booming

Stock Price Appreciation (1-1-06 to 10-14-07)

Source: Company data, Morgan Stanley Research
Key Factors Driving Performance

- Booming Broadband & Wireless
- Merger Synergies/ Industry Consolidation
- Regulatory Charge
- Return of Cash – Dividends & Buybacks
- Share Shifts
- Telecom as a Defensive Haven

2008 Could Be More Challenging

- DSL & Wireless Maturing
- Competitive Risks Are Rising
- Merger Synergies Are Fading
- Valuations Are Elevated
- The Economy Is Under Pressure
Morgan Stanley

Disclosure Section

Analyst Certification
The following analysts hereby certify that their views about the companies and their securities discussed in this report are accurately expressed and that they have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report. Simon Flannery.

Important US Regulatory Disclosures on Subject Companies


Within the last 12 months, Morgan Stanley managed or co-managed a public offering of securities of American Tower Corp., AT&T, Inc., CenturyTel, Clearwire Corporation, Crown Castle Corp., Leap Wireless, MetroPCS Communications, SAVVIS Inc., Verizon Communications.


Within the last 12 months, Morgan Stanley & Co. Incorporated has received compensation for products and services other than investment banking services from AMDOCS, American Tower Corp., AT&T, Inc., BCE Inc., Qwest Communications Int’l, Verizon Communications.

STOCK RATINGS
Different security firms use a variety of rating terms as well as different rating systems to describe their recommendations. For example, Morgan Stanley uses a relative rating system including terms such as Overweight, Equal-weight or Underweight (see definitions below). A rating system using terms such as buy, hold and sell is not equivalent to our rating system. Investors should carefully read the definitions of all ratings used in Morgan Stanley Research. In addition, since Morgan Stanley Research contains more complete information concerning the analyst’s views, investors should carefully read Morgan Stanley Research in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor’s decision to buy or sell a stock should depend on individual circumstances (such as the investor’s existing holdings) and other considerations.
Unless otherwise specified, the time frame for price targets included in this report is 12 to 18 months. That securities that we do not currently consider "more volatile" can still perform in that manner.

A quantitative assessment of historical data, or in the analyst’s view, it is likely to become materially more volatile over the next 1-12 months compared to the relevant broad market benchmark, as indicated below.

Analyst Stock Ratings
Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

More volatile (V). We estimate that this stock has more than a 25% chance of a price move (up or down) of more than 25% in a month, based on a quantitative assessment of historical data, or in the analyst’s view, it is likely to become materially more volatile over the next 1-12 months compared to the relevant broad market benchmark, as indicated below.

Unless otherwise specified, the time frame for price targets included in this report is 12 to 18 months.

For a discussion, if applicable, of the valuation methods used to determine the price targets included in Morgan Stanley Research, and the risks related to achieving these targets, please refer to the latest relevant published research on these stocks. Research is available through your sales representative or on Client Link at www.morganstanley.com and other electronic systems.

Other Important Disclosures
For a discussion, if applicable, of the valuation methods used to determine the price targets included in Morgan Stanley Research, and the risks related to achieving these targets, please refer to the latest relevant published research on these stocks. Research is available through your sales representative or on Client Link at www.morganstanley.com and other electronic systems.
Disclosure Section (cont.)

With the exception of information regarding Morgan Stanley, research prepared by Morgan Stanley Research personnel is based on public information. Morgan Stanley makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. We have no obligation to tell you when opinions or information in Morgan Stanley Research change apart from when we intend to discontinue research coverage of a subject company. Facts and views presented in Morgan Stanley Research have not been reviewed by, and may not reflect information known to, professionals in other Morgan Stanley business areas, including investment banking personnel. Morgan Stanley Research personnel conduct site visits from time to time but are prohibited from accepting payment or reimbursement by the company of travel expenses for such visits.

The value of and income from your investments may vary because of changes in interest rates or foreign exchange rates, securities prices or market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in your securities transactions. Past performance is not necessarily a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. Unless otherwise stated, the cover page provides the closing price on the primary exchange for the subject company's securities/instruments.

To our readers in Taiwan: Information on securities/instruments that trade in Taiwan is distributed by Morgan Stanley Taiwan Limited (*MSTL*). Such information is for your reference only. The reader should independently evaluate the investment risks and is solely responsible for their investment decisions. Morgan Stanley Research may not be distributed to the public media or quoted or used by the public media without the express written consent of Morgan Stanley. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation or a solicitation to trade in such securities/instruments. MSTL may not execute transactions for clients in these securities/instruments.

To our readers in Hong Kong: Information is distributed in Hong Kong by and on behalf of, and is attributable to, Morgan Stanley Asia Limited as part of its regulated activities in Hong Kong. If you have any queries concerning Morgan Stanley Research, please contact our Hong Kong sales representatives.

Morgan Stanley Research is disseminated in Japan by Morgan Stanley Japan Securities Co., Ltd.; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents); in Singapore by Morgan Stanley Asia (Singapore) Pte. (Registration number 192062682K) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200006344H); regulated by the Monetary Authority of Singapore, which accepts responsibility for its contents; in Australia by Morgan Stanley Australia Limited A.B.N. 67 002 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents; in Korea by Morgan Stanley & Co International plc, Seoul Branch; in India by Morgan Stanley India Company Private Limited; in Canada by Morgan Stanley Canada Limited, which has approved of, and has agreed to take responsibility for, the contents of Morgan Stanley Research in Canada; in Germany by Morgan Stanley Bank AG, Frankfurt am Main, regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin); in Spain by Morgan Stanley, S.V., S.A., a Morgan Stanley group company, which is supervised by the Spanish Securities Markets Commission (CNMV) and states that Morgan Stanley Research has been written and distributed in accordance with the rules of conduct applicable to financial research as established under Spanish regulations; in the United States by Morgan Stanley & Co. Incorporated, which accepts responsibility for its contents. Morgan Stanley & Co. International plc, authorized and regulated by Financial Services Authority, disseminates in the UK research that it has prepared, and approves solely for the purposes of section 21 of the Financial Services and Markets Act 2000, research which has been prepared by any of its affiliates. Private U.K. investors should obtain the advice of their Morgan Stanley & Co. International plc representative about the investments concerned. In Australia, Morgan Stanley Research and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act.

©2007 Morgan Stanley

Simon Flannery, (312) 751-6465, Simon.Flannery@morganstanley.com
Industry Coverage: Telecom Services

<table>
<thead>
<tr>
<th>Company/Ticker</th>
<th>Rating as of</th>
<th>Price (10/15/2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amdocs (DOX.N)</td>
<td>E (12/18/2006)</td>
<td>$35.95</td>
</tr>
<tr>
<td>American Tower Corp. (AMT.N)</td>
<td>O-V (09/17/2007)</td>
<td>$43.05</td>
</tr>
<tr>
<td>Crown Castle Corp. (CCI.N)</td>
<td>O-V (06/18/2007)</td>
<td>$38.41</td>
</tr>
<tr>
<td>Level 3 Communications, Inc. (LVLT.O)</td>
<td>E-V (06/29/2006)</td>
<td>$4.36</td>
</tr>
<tr>
<td>PAETEC Holding Corp. (PAET.O)</td>
<td>O (05/24/2007)</td>
<td>$12.73</td>
</tr>
<tr>
<td>SAVVIS Inc. (SVVS.O)</td>
<td>O (01/30/2007)</td>
<td>$41.98</td>
</tr>
<tr>
<td>SBA Communications (SBAC.O)</td>
<td>O (10/05/2006)</td>
<td>$34.50</td>
</tr>
<tr>
<td>TELUS Corp. (TU.N)</td>
<td>E (09/08/2006)</td>
<td>$56.88</td>
</tr>
<tr>
<td>Time Warner Telecom Inc. (TWTC.O)</td>
<td>O (03/27/2006)</td>
<td>$22.94</td>
</tr>
<tr>
<td>AT&amp;T, Inc. (T.N)</td>
<td>O (03/08/2006)</td>
<td>$42.19</td>
</tr>
<tr>
<td>Alltel Corporation (AT.N)</td>
<td>E (03/08/2006)</td>
<td>$70.60</td>
</tr>
<tr>
<td>CenturyTel (CTL.N)</td>
<td>E (08/01/2006)</td>
<td>$45.32</td>
</tr>
<tr>
<td>Cincinnati Bell Inc. (CBB.N)</td>
<td>E-V (11/03/2006)</td>
<td>$5.03</td>
</tr>
<tr>
<td>Citizens Communications (CZN.N)</td>
<td>E (05/07/2007)</td>
<td>$13.51</td>
</tr>
<tr>
<td>Clearwire Corporation (CLWR.O)</td>
<td>E-V (07/27/2007)</td>
<td>$20.16</td>
</tr>
<tr>
<td>Embarq Corporation (EQ.N)</td>
<td>U (09/27/2007)</td>
<td>$57.29</td>
</tr>
<tr>
<td>FairPoint Communications (FRP.N)</td>
<td>++</td>
<td>$19.18</td>
</tr>
<tr>
<td>Iowa Telecom (IWA.N)</td>
<td>U (04/17/2006)</td>
<td>$20.00</td>
</tr>
<tr>
<td>Leap Wireless (LEAP.O)</td>
<td>O-V (04/28/2006)</td>
<td>$75.30</td>
</tr>
<tr>
<td>MetroPCS Communications (PCS.N)</td>
<td>E-V (05/29/2007)</td>
<td>$24.02</td>
</tr>
<tr>
<td>Qwest Communications Int’l (Q.N)</td>
<td>E (08/02/2007)</td>
<td>$8.40</td>
</tr>
<tr>
<td>Rogers Communications, Inc. (RCIb.TO)</td>
<td>O (04/27/2005)</td>
<td>C$47.44</td>
</tr>
<tr>
<td>Sprint Nextel Corporation (S.N)</td>
<td>U (02/24/2004)</td>
<td>$17.79</td>
</tr>
<tr>
<td>Telephone &amp; Data Systems (TDS.A)</td>
<td>E (09/21/2007)</td>
<td>$67.72</td>
</tr>
<tr>
<td>US Cellular Corporation (USM.A)</td>
<td>E-V (08/13/2003)</td>
<td>$96.84</td>
</tr>
<tr>
<td>Verizon Communications (VZ.N)</td>
<td>E (01/19/2005)</td>
<td>$44.63</td>
</tr>
<tr>
<td>Windstream Corp. (WIN.N)</td>
<td>O (04/17/2006)</td>
<td>$14.10</td>
</tr>
</tbody>
</table>

Stock Ratings are subject to change. Please see latest research for each company.