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October 1, 2008

Industry View  
In-Line

## Telecom Services

### Cutting the Cord: Voice First, Broadband Close Behind

**Investment Conclusion:** The Bells lost a record 2.8m lines last quarter despite fewer cable VoIP adds. We believe that economic pressures are combining with new pricing and product offerings to drive wireless substitution (% of households wireless only) up 20% this year. We see wireless substitution reaching one in three households by 2012. We increasingly expect wireless substitution to impact broadband as laptop cards and other connections displace DSL. Some of the best ways we see to play the wireless substitution theme include MetroPCS and Leap, the Tower stocks, and Rogers in Canada.

**What's new:** Wireless substitution has taken on even more importance in the year since our initial report was published. A weak economy, unlimited wireless pricing plans, new rollouts by Leap and MetroPCS, and products such as T-Mobile@home have made the case for cutting the cord even more persuasive. We believe that 2008 may be a record year for cutting the cord, based on recent Bell access line data. We include updated data from the NIH on wireless substitution, as well as a recent EU study, and reiterate our view that wireless substitution can more than double to 32% of households by 2012. We are also starting to see the early signs of wireless data substitution, as laptop cards and smartphones proliferate. We are particularly focused on the success Leap is having with its \$35/\$40 monthly pricing for laptop cards. In parts of Europe there has been significant DSL displacement, and we would note that DSL adds dropped some 80% yoy in the second quarter.

**Where we differ:** We expect wireless data substitution to become a much bigger factor in coming quarters, particularly if some of the major carriers offer more competitive rate plans. The rollouts of WiMAX and LTE will make wireless data substitution even more compelling. (continued on page 2).

#### GICS Sector: Telecom Services

Strategist's Recommended Weight	4.7%
S&P 500 Weight	3.2%

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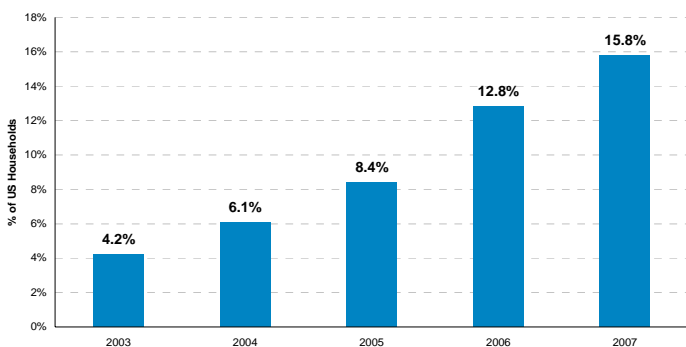
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**Where we differ** (continued) We see wireless substitution being more of a problem for the Bells rather than the RLECs, given issues of coverage, in building penetration, and less coverage by Leap and MetroPCS. Investors are currently concerned that Leap and MetroPCS are suffering from a weak economy and a slowing wireless industry. We believe that their business model will hold up very well in this environment, as they capitalize on this theme of wireless substitution and continue to take share from the major operators.

**What's next:** We expect Leap and MetroPCS to rollout service in New York, Boston, Chicago, Washington/Baltimore and several smaller markets in the next 12 months. This will expand coverage to virtually all of the top 25 markets in the country. We also expect more attractive roaming packages from these companies following their recent roaming agreement. We will be closely watching initial WiMAX deployments as well as laptop card pricing. We also expect more people to use their smartphones for internet access either directly or via tethering with a laptop.

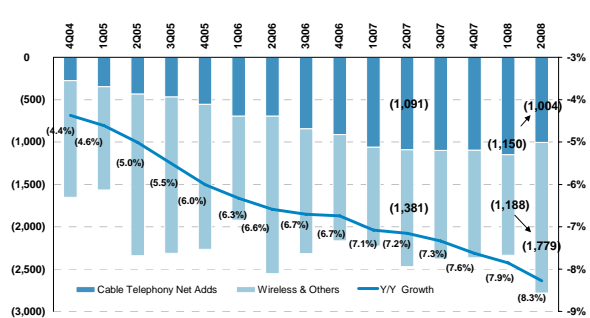
## How Many Have Cut the Cord?

### Nearly 1 in 6 Households Have Cut the Cord; Possible Explanation of Increased Line Loss



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

Incremental Switched Access Lines Lost



Source: Company data, Morgan Stanley Research

### Key Findings:

- New technology and economic considerations continue to lead to increased wireless substitution.
- Almost one-third of households will have cut the cord by 2012.
- The parts of the following categories are cutting the cord more:
  - **Household Structure:** Unrelated adults without children lead this category with 57% wireless only penetration.
  - **Household Ownership:** Those who rent have cut the cord more than those who own their homes.
  - **Age:** 18-29 year olds rely solely on their wireless devices more than any other age group.
  - **Location:** Substitution is more prevalent among urban residents than of rural ones.
- **Job Status:** Students in college are more likely to live in wireless-only households than any other profession.
- **Ethnic Group:** Hispanics and African-Americans are more likely to live in wireless only households.
- **Poverty Status:** Cutting the cord has increased dramatically amongst those considered poor.

Exhibit 1

### Pure Wireless Play Benefits the Most

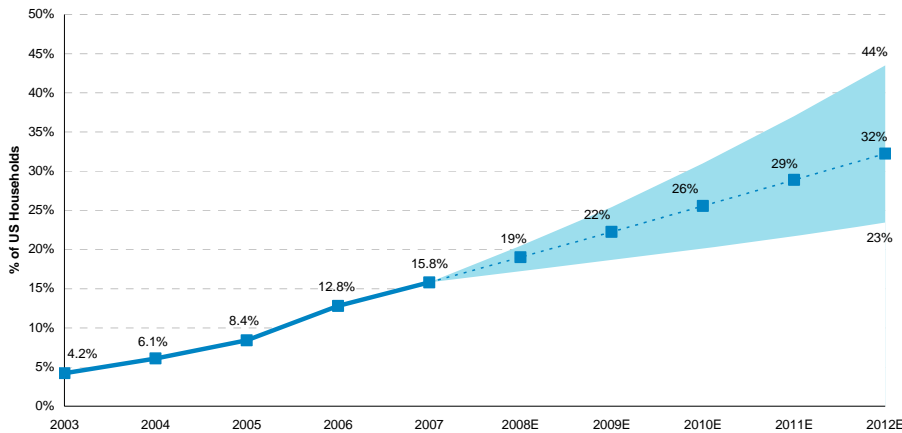
	Positive	Negative	Mixed
Primary	LEAP	Q	Baby Bells CBB Telus
	PCS	EQ	
	RCI		
Secondary	USM Towers	RLECs	

Source: Morgan Stanley Research

## Where Are We Headed?

Exhibit 2

### Wireless-Only Households to Nearly Double by 2012



### Key Assumptions

- The US HH structure will remain relatively constant over the next five years.
- Wireless substitution will increase as a function of household structure proportions (see Exhibit 4)
- Substitution data from other countries has shown the extent to which this trend can penetrate.

Source: National Health Interview Survey, July – December 2007, Morgan Stanley Research

Exhibit 3

### Scenario Summaries

<b>Bull Case</b>	<b>Wireless substitution is widespread</b> Wireless-Only HH reach 44% by 2012 based on an almost fully penetrated unrelated adults segment.
<b>Base Case</b>	<b>Wireless substitution continues modestly</b> Wireless-Only HH reach 32% by 2012 based on modest growth in substitution from adults living alone.
<b>Bear Case</b>	<b>Wireless substitution picks up slowly</b> Wireless-Only HH reach 23% by 2012 based on lagging uptake across all sectors.

Exhibit 4

### Wireless-Only Household Projection for 2012

	2007 Wireless-Only HH	2012		
		BEAR	BASE	BULL
unrelated adults, no children	56.9%	70%	80%	90%
adult living alone	22.9%	30%	40%	50%
adult(s) with children	13.0%	20%	25%	30%
related adults, no children	11.0%	15%	25%	45%
	<b>% of Total US HH</b>			
unrelated adults, no children	3.0%	4.1%	4.7%	5.3%
adult living alone	5.5%	8.2%	10.9%	13.7%
adult(s) with children	3.6%	6.3%	7.8%	9.4%
related adults, no children	3.5%	5.3%	8.9%	16.0%
<b>Total Wireless-Only HH</b>	<b>15.8%</b>	<b>23.9%</b>	<b>32.3%</b>	<b>44.3%</b>
implied avg. line loss (million/yr)		2.6	5.0	8.5

Source: Morgan Stanley Research

## What's New?

Since our report last year, many aspects of the telecom environment have changed that may affect the rate of wireless substitution going forward:

- The economy has weakened considerably.
- PCS/LEAP have launched in new markets in major metropolitan areas.
- 3G networks, the prevalence of the iPhone, and data card offerings (e.g. new laptop card from Leap) have increased data substitution.
- The Big 4 wireless carriers have established unlimited voice and data pricing plans.

We have received more data and studies from the following sources:

- Two new surveys from the National Institute of Health have been published (% of wireless-only households: 13.6% in 1H07 and 15.8% in 2H07)
- E-Communications Household Survey was performed for the countries of the EU, finding that 24% of household in the EU are wireless only.
- A study was also recently released by Nielsen claiming that wireless only households have already climbed to 17.1% as of 2Q08 in the US.
- Sweden & Austria have seen a significant impact on DSL adds from mobile broadband. Mobile broadband accounted for more than 70% of total broadband adds in Austria last year.

Exhibit 5

### EU Snapshot: 1 in 4 European HH Wireless-Only

Entity	% wireless only HH
Finland	61%
Portugal	48%
Austria	38%
Italy	37%
Spain	25%
<b>EU</b>	<b>24%</b>
Denmark	22%
France	16%
United Kingdom	15%
Germany	11%

Source: E-Communications Household Survey

Exhibit 6

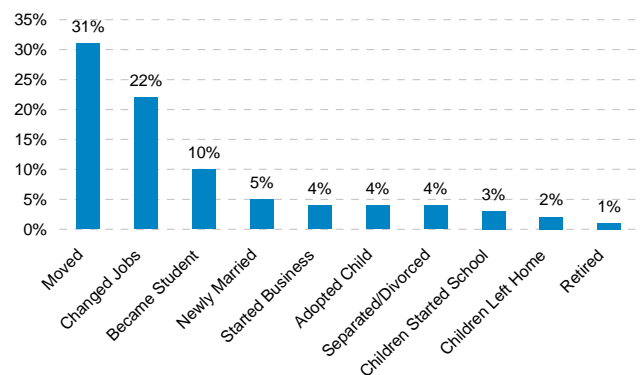
### New Unlimited Plans from Big 4

	Unlimited Voice	Unlimited Voice + Data <sup>(2)</sup>
AT&T	\$99.99/mth	\$149.99/mth
Sprint <sup>(1)</sup>	\$89.99/mth	\$99.99/mth
T-Mobile <sup>(1)</sup>	\$99.99/mth	\$139.99/mth
Verizon	\$99.99/mth	\$139.99/mth

Source: Company Data, Morgan Stanley Research. (1) includes unlimited texting (2) unlimited smartphone data plan with unlimited texting

Exhibit 7

### Life Events Driving Wireless Substitution



Source: Nielsen Mobile Wireless Substitution Report, Sept 2008.

Exhibit 8

## Rewards Outweigh the Risks

<h3>Why?</h3>	<b>New Technologies</b> <ul style="list-style-type: none"> <li>• T-Mobile HotSpot@Home [UMA]</li> <li>• Sprint Airave [femtocell]</li> <li>• T-Mobile@home</li> <li>• Skype- PC Based VoIP</li> </ul>	<b>Convenience</b> <ul style="list-style-type: none"> <li>• Using one phone for all calls</li> <li>• All-In-One Products: contacts, calendar, music, internet access, etc.</li> <li>• Products like Skype allow for connectivity anywhere in the world.</li> </ul>
	<b>Product Driven Consumers</b> <ul style="list-style-type: none"> <li>• Apple iPhone</li> <li>• RIM Pearl</li> <li>• RIM Curve</li> <li>• Samsung Instinct</li> </ul>	<b>Costs</b> <ul style="list-style-type: none"> <li>• More attractive pricing per minute for mobile solutions vs. fixed alternatives—unlimited calling plans</li> <li>• Broadband and wireless bundles (no landline required)</li> <li>• Naked DSL at T and VZ cheaper than adding phone service</li> </ul>
<h3>Why Not?</h3>	<b>Signal Quality</b> <ul style="list-style-type: none"> <li>• Dead spots in rural areas</li> <li>• Dropped calls</li> </ul>	<b>Reliability</b> <ul style="list-style-type: none"> <li>• Emergency Services – Difficult to pinpoint location</li> <li>• Home alarm systems often require landlines</li> <li>• Battery life of wireless phones</li> </ul>

Source: Morgan Stanley Research

Exhibit 9

## Non-Cable Losses Up 29% in 2Q

	Bell Line Loss	Cable VoIP Net Adds	Δ	
1Q07	2,230	1,061	1,169	<ul style="list-style-type: none"> <li>• There has been acceleration in the rate of Y/Y non-cable line loss in 2Q. Losses jumped from a 2% Y/Y increase in 1Q to 29% Y/Y in the last quarter.</li> <li>• The increased number of foreclosures from the housing crisis, coupled with wireless substitution is a driver of the marked increase in our opinion.</li> </ul>
1Q08	2,338	1,150	1,188	
2Q07	2,472	1,091	1,381	
2Q08	2,787	1,004	1,779	

Source: Company Data, Morgan Stanley Research.

Exhibit 10

## New Rollouts, New Pricing Plans and No Contracts Make It Easier to Cut the Cord

Recently Launched Markets		New Markets Planned	
Metro PCS		Metro PCS	
Los Angeles	2H07	Boston	1Q09E
Las Vegas	1Q08	New York	1H09E
Philadelphia	3Q08		

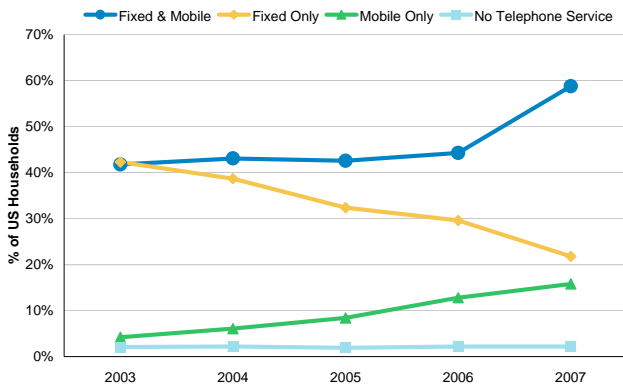
Leap Wireless		Leap Wireless	
Las Vegas	2Q08	Chicago	2009E
St. Louis	2Q08	Washington/Baltimore	2009E
		Philadelphia	2009E

- PCS and Leap continue to build out major markets and bring their unlimited voice and data offering across the country.
- Similar to the no contract offering at PCS and LEAP, Verizon wireless recently announced a month-to-month no contract option for its customers.

Source: Company Data, Morgan Stanley Research.

Exhibit 11

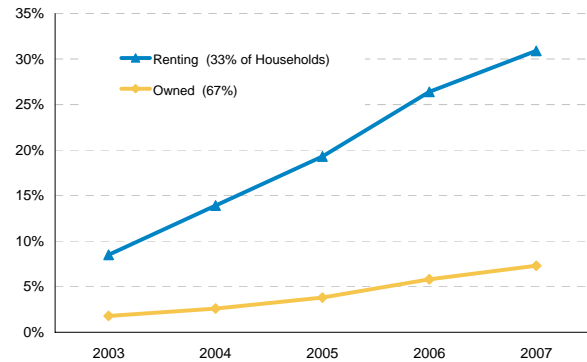
## Nearly 17 Million US Wireless-Only Households



Source: NHIS, 2003 -2007, Morgan Stanley Research.  
Note: Landline and non-landline households with unknown wireless telephone status are not included (-1.4% of households in 2007).

Exhibit 13

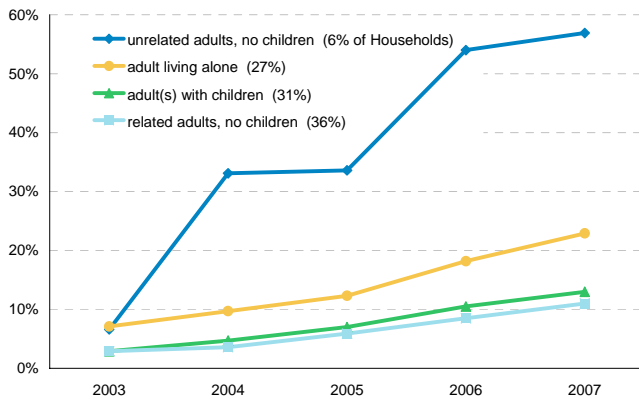
## Gap Between Renters and Owners Grows



Source: NHIS, 2003 -2007, American Community Survey 2003-2006: US Census Bureau, Morgan Stanley Research.

Exhibit 12

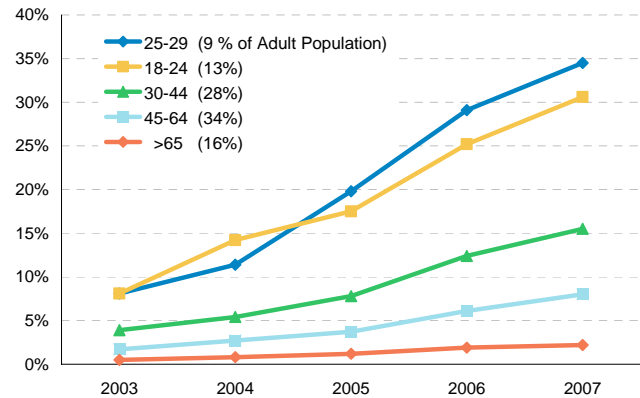
## Roommates Lead the Way



Source: NHIS, 2003 -2007, American Community Survey 2003-2006: US Census Bureau, Morgan Stanley Research.

Exhibit 14

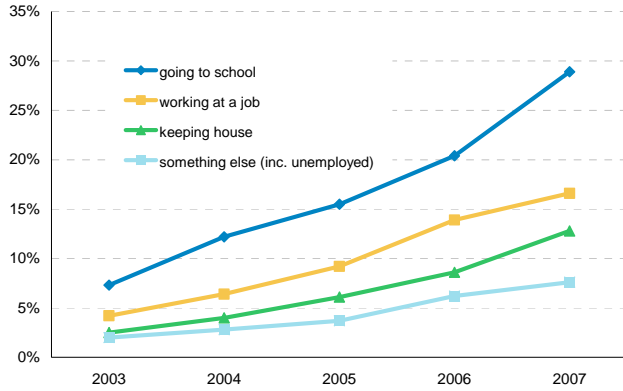
## Wireless Substitution - Trendy Among Young Adults



Source: NHIS, 2003 -2007, American Community Survey 2003-2006: US Census Bureau, Morgan Stanley Research.

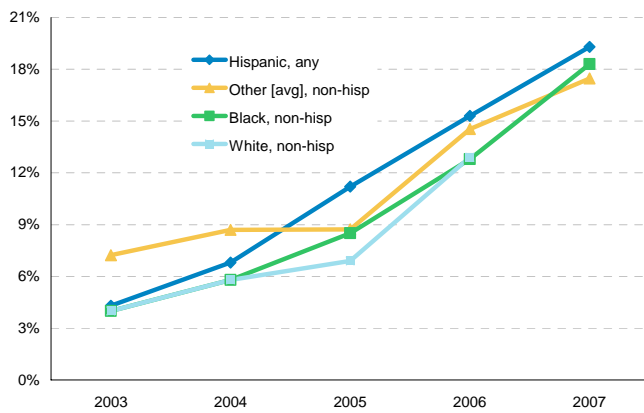
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**Exhibit 15**  
**Students in Wireless – Only HH Accelerates**



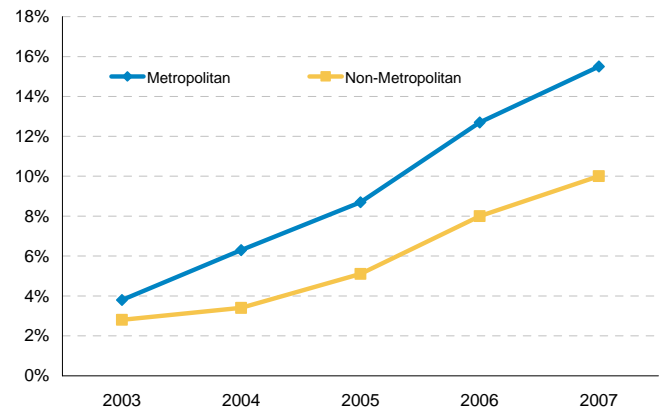
Source: NHIS, 2003 -2007, American Community Survey 2003-2006: US Census Bureau, Morgan Stanley Research.

**Exhibit 16**  
**Limited Dispersion Between Ethnic Groups**



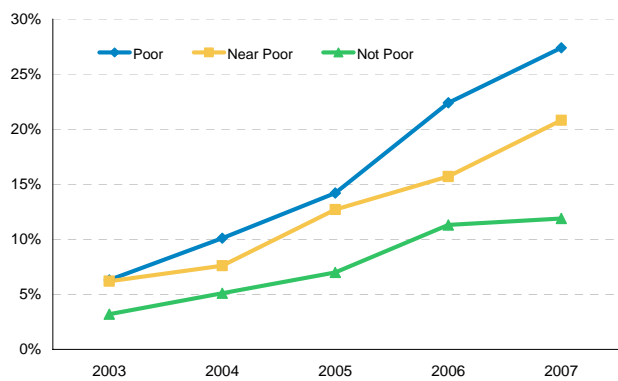
Source: NHIS, 2003 -2007, American Community Survey 2003-2006: US Census Bureau, Morgan Stanley Research.

**Exhibit 17**  
**Rural Wireless Only HH Growing; Still Lags Urban**



Source: NHIS, 2003 -2007, American Community Survey 2003-2006: US Census Bureau, Morgan Stanley Research.

**Exhibit 18**  
**Increases In All Income Levels**



Source: NHIS, 2003 -2007, American Community Survey 2003-2006: US Census Bureau, Morgan Stanley Research.

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October 1, 2008  
Telecom Services

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<b>Underweight/Sell</b>	<b>387</b>	<b>17%</b>	<b>90</b>	<b>14%</b>	<b>23%</b>
<b>Total</b>	<b>2,216</b>		<b>660</b>		

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**Industry Coverage: Telecom Services**

Company (Ticker)	Rating (as of)	Price (09/30/2008)
<b>Simon Flannery</b>		
AT&T, Inc. (T.N)	O (03/08/2006)	\$27.92
American Tower Corp. (AMT.N)	O-V (09/17/2007)	\$35.97
BCE Inc. (BCE.N)	O-V (07/09/2008)	C\$36.91
CenturyTel (CTL.N)	E (07/24/2008)	\$36.65
Cincinnati Bell Inc. (CBB.N)	E-V (11/03/2006)	\$3.09
Clearwire Corporation (CLWR.O)	++	\$11.88
Crown Castle Corp. (CCI.N)	O-V (06/18/2007)	\$28.97
Embarq Corporation (EQ.N)	U (09/27/2007)	\$40.55
FairPoint Communications (FRP.N)	NA (10/29/2007)	\$8.67
Frontier Communications Corp (FTR.N)	E (05/07/2007)	\$11.5
Iowa Telecom (IWA.N)	E (03/03/2008)	\$18.68
Leap Wireless (LEAP.O)	O-V (04/28/2006)	\$38.1
Level 3 Communications, Inc. (LVL.T.O)	U-V (02/14/2008)	\$2.7
MetroPCS Communications (PCS.N)	O (10/31/2007)	\$13.99
Neutral Tandem, Inc. (TNDM.O)	E-V (12/12/2007)	\$18.54
PAETEC Holding Corp. (PAET.O)	E (06/26/2008)	\$2.15
Qwest Communications Int'l (Q.N)	O (08/08/2008)	\$3.23
Rogers Communications, Inc. (RCIb.TO)	O (04/27/2005)	C\$34.52
SAVVIS Inc. (SVVS.O)	E (12/07/2007)	\$13.44
SBA Communications (SBAC.O)	O (10/05/2005)	\$25.87
Sprint Nextel Corporation (S.N)	++	\$6.1
TELUS Corp. (T.TO)	O (12/17/2007)	C\$38.87
Telephone & Data Systems (TDS.N)	E (09/21/2007)	\$35.75
US Cellular Corporation (USM.N)	E-V (08/13/2003)	\$46.92
Verizon Communications (VZ.N)	++	\$32.09
Windstream Corp. (WIN.N)	O (04/17/2006)	\$10.94
tw telecom inc (TWTC.O)	E (06/26/2008)	\$10.39

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