AT&T Mobility and AT&T Wireline

Gary Wiggins

TFI Communications Technology Asset Valuation Conference
January 29-30, 2014

Assertions From Last Year's TFI Conference

- Regulators would fast track the transition from TDM networks to Internet Protocol (IP)for Incumbent LECs
- AT&T's Request for IP trials would be expedited with the FCC not being and impediment to moving forward
- Much progress would be made on the regulatory front in a relatively short timeframe
- Circuit networks would begin shutting down following 2015

Presented at TFI Communication Technology Asset Valuation Conference Jan 24-25, 2013

Daniel Berninger

Founder, The VCXC - Voice Communication Exchange Committee

- Daniel Beringer is a Washington, DC based independent communication architect. He is an expert in technical and regulatory aspects of Internet enabled disruptive communications and active in VoIP since 1995.
- Recommendation to buy AT&T stock and Short Google
- As a growth strategy for the telecom industry, focusing investment on mobility and data services while withdrawing it from wireline voice is doomed to fail. People still depend on voice for the vast majority of their communication needs.

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AT&T Compared Google Over the Last Year

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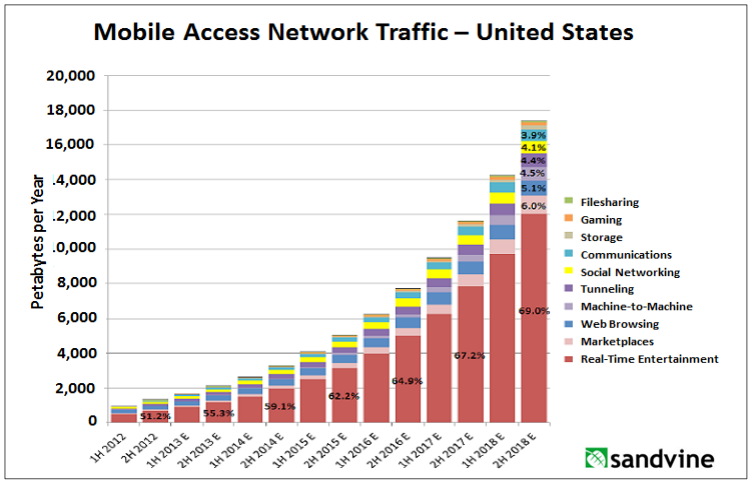
Projection of Mobile Traffic Trends in the United States



Characteristics of Telecommunications by 2020 per AT&T Chairman Randall Stevenson

- It will be increasingly mobile
- Customers, content owners and apps developers all looking for ubiquitous, global connectivity.
- People will neither know nor care if they're on a fixed or wireless connection.
- All that will matter is that the connection is ultra-fast and secure
- Instant access to all their content through the cloud.
- Finally, they'll expect every aspect of telecom services to come together simply and conveniently.

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“The most dangerous man in wireless”

- He called AT&T's network in New York City "crap" and quipped that capped data plans put a crimp on watching porn on phones.

- Great PR, Reality or Both??

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John Legere Before T-Mobile

Is this the real Legere

- The implied image: He's just your average guy.
- John Legere as CEO of Global Crossing.
- Behind the outfit, though, is a pedigree that could compete with that of any top wireless exec. Legere joined the old Ma Bell, (AT&T), after finishing Harvard Business School's leadership program. “Back then, he was known for tailored suits and shiny dress shoes”

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Project Velocity IP

Catch-Up Mode of Operations

•Due to loss of access lines much of AT&T's wireline network could no longer be operated at a profit

•AT&T wireline services were frequently not competitive due to the infrastructure advantages held by AT&T's competitors:

- 4G LTE Wireless Service
- Cable Companies' DOCSIS3 High Speed Broadband & Video
- CLEC & Satellite High Speed Broadband & Video

- There were no buyers for less populated wireline markets

- Had to accelerate completion of 4G LTE Wireless Network to remain competitive

- AT&T announced its $14 Billion ($6B in Wireline & $8B in Wireless) Project Velocity IP CapEx thru 2015. In addition to normal Cap Ex levels

•The $14 Billion CapEx catch-up indicates some measure of AT&T's deficiencies when compared to competitor networks.

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Primary Elements of Project Velocity IP

- Complete nation-wide 4G LTE build out by 2015
- Project Velocity IP will move 25% of its customers constituting 65% of its service territory off the wireline network.
- In remaining 35%
  - U-verse coverage will expand to an additional 8.5 Million customers for a total of 33 Million homes where the service is offered.
  - Internet download speeds will increase up to 75 Mbps capability by 2015 for customers within approximately 1,900 feet of a launch point through vectored VDSL with pair bonding.
  - IP DSLAM Broadband service during 2013 will provide customers within approximately 2,600 feet of a launch point with download speeds up to 45 Mbps though the adaptive rate capability of the DSLAM.
- Huge negative cash flow impact over the next 2 years that other major carriers will not experience.

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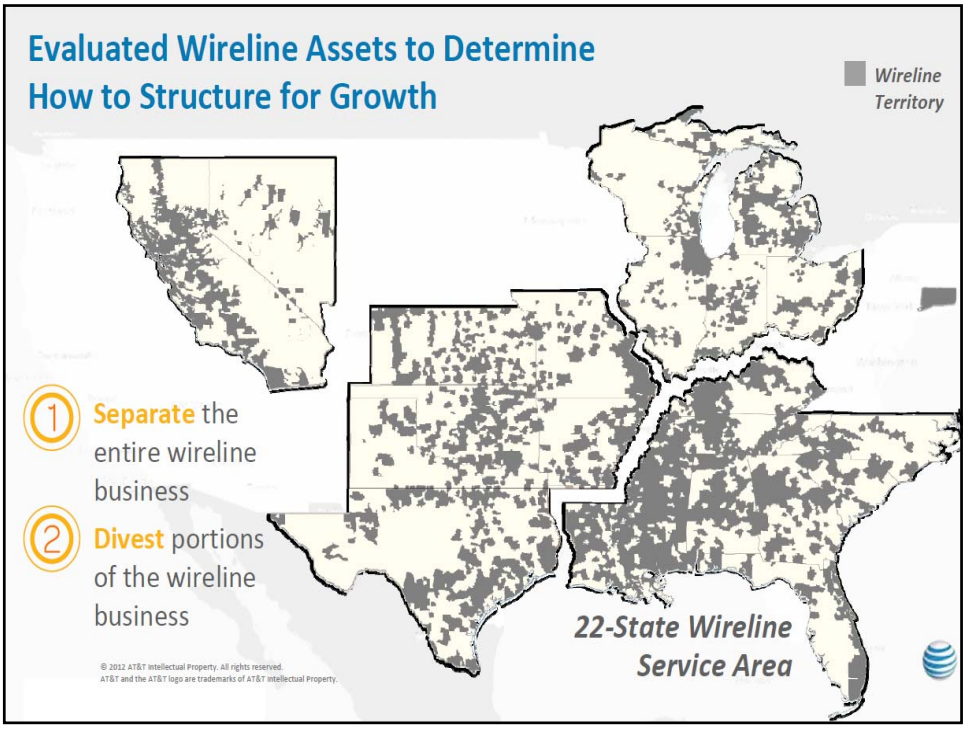
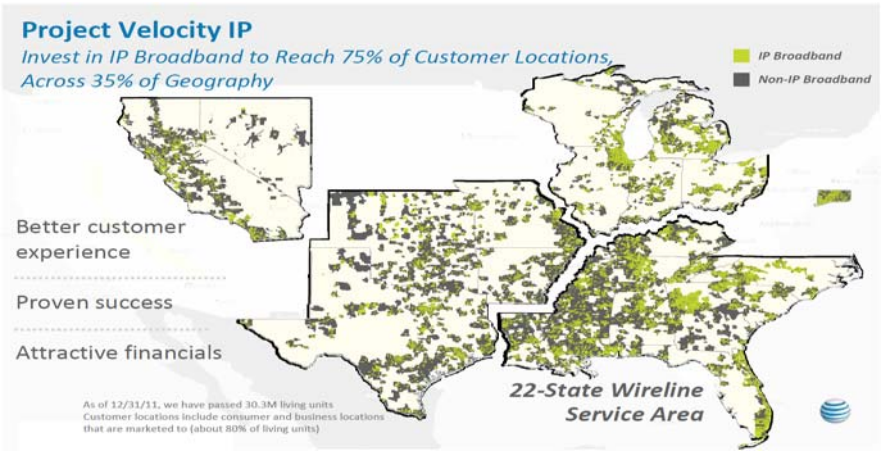
Evaluated Wireline Assets to Determine How to Structure for Growth



Project Velocity IP

More Densely Populated Areas of AT&T's Wireline Network



Project Velocity IP CapEx investments in the more densely populated areas of AT&T's wireline network is necessary to address the network deficiency in terms of throughput capacity in order to remain competitive with cable.

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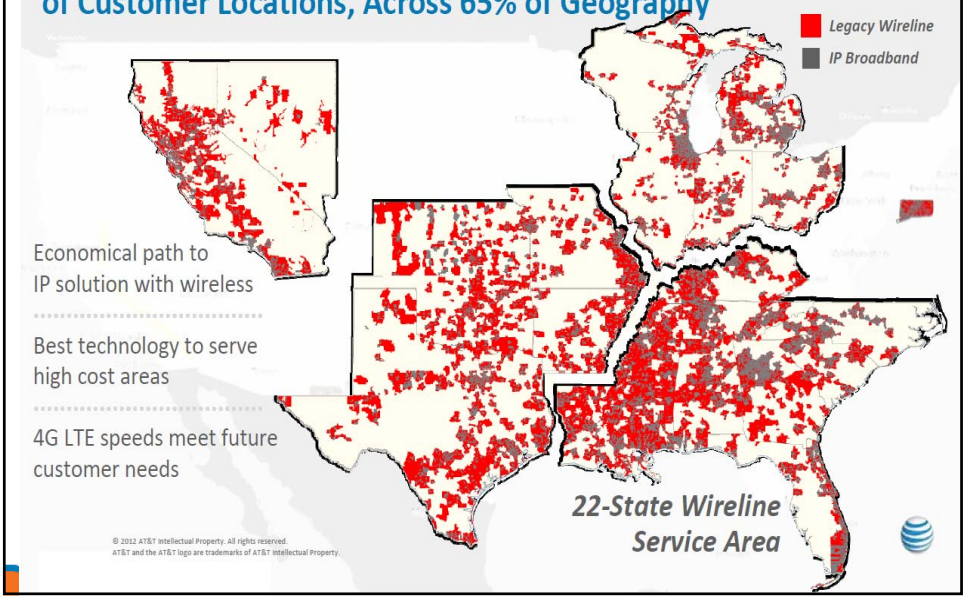
Plan to Alter Legacy Wireline Cost Structure for 25% of Customer Locations, Across 65% of Geography



Plan to Expand IP Broadband to 57 Million Customer Locations

U-verse

Complete, fully integrated solution

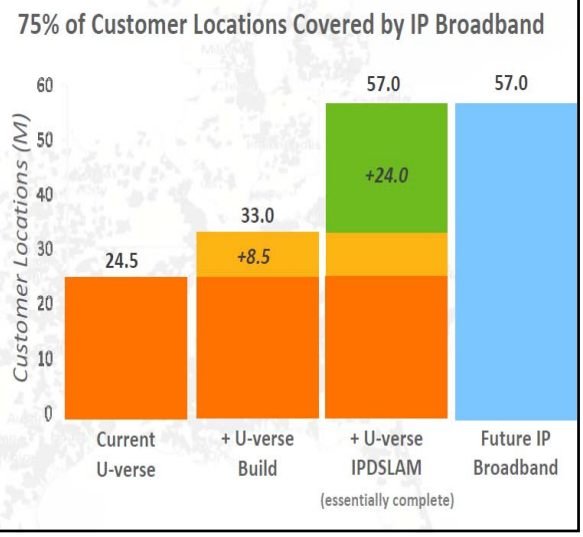
Speeds will meet growing customer requirements

U-verse IPDSLAM

Competitive broadband with future optionality

High affinity with satellite TV

Positioned if content model changes



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AT&T Wireless Home Phone

- The offering, dubbed A&T Wireless Home Phone, became available in July 2012 in “select domestic markets where AT&T did not offer traditional landline service,”

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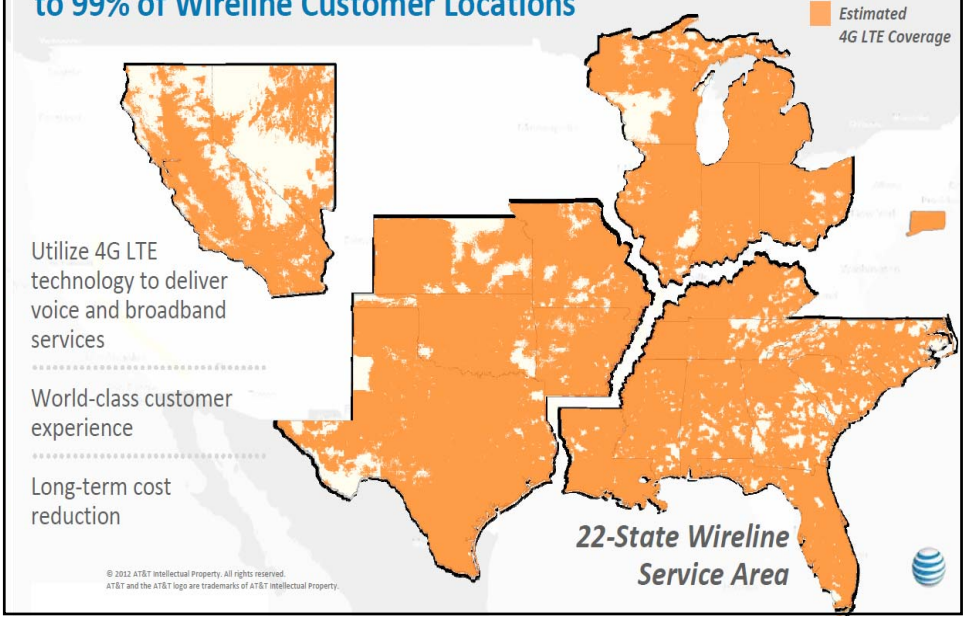
Plan to Deliver 4G LTE Wireless IP Solution to 99% of Wireline Customer Locations



Project Velocity IP – Update as of 12/31/13

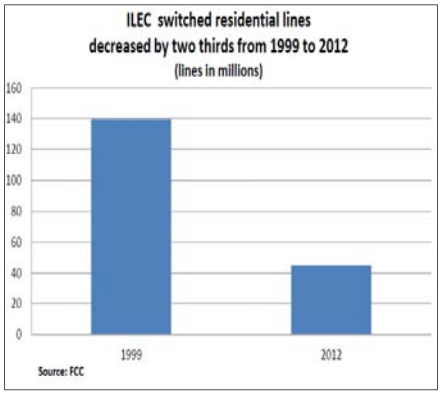
Plan:	Nov. 2012 Position or Identified Goal	Achieved by Year end 2013	% Complete
1. Extend 4G LTE to 300M POP's by end of 2014	150M	270M	80.00%
2. Extend U-verse availability to 33M customer locations by Year end 2015	24,500,000	26,993,000	29.33%
3. Extend IP DSLAM service to 24M customer locations by Year end 2015	24,000,000	27,573,000	114.89%
4. Proactively light fiber connections to an additional 1M business locations by end of 2015 - 50% of Multi-Tenet Office Buildings	1,000,000	250,000	25.00%
5. IP DSLAM capable of providing 45 MBPS service during 2014	AT&T achieved this goal by Aug. 26, 2013. 45Mbps is available in markets located in 15 states.		
6.Increase U-verse broadband locations by 1.3M during 2013	1,300,000	2,493,000	191.77%

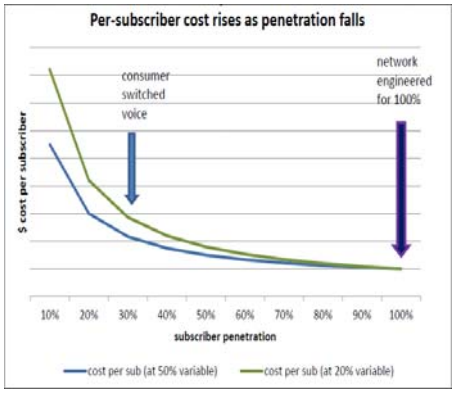
Why did AT&T Move Forward With Project Velocity IP (VIP)

- Lost 73% of access lines
- In many areas services were not competitive
- Analysts say AT&T found no buyers for its rural networks.
- Highly unlikely regulators would allow AT&T to discontinue service in rural markets
- Not cost effective to build fiber everywhere
- Needed to increase throughput capacity of metro customers to remain competitive with cable
- Wireless LTE can provide greater bandwidth at lower cost than a rural copper pair network
- Competition required AT&T to complete its Wireless LTE build nationwide to 300 POPs in any event

Why Move to an All IP Network (continued)

As subscribers decline, penetration rates decline. In turn, cost per subscriber increases.





- As customer count decreases, operating costs do not decrease at the same rate.
- If only 20% of the cost of running a network is variable, then the cost per subscriber is nearly tripled at 30% penetration.

Sources: FCC & Telecommunications competition: the infrastructure investment race, Anna-Marie Kovacs

AT&T's Wireline Network Is At The End Of Its Economic Life??

- Property is at the end of its economic life when it will no longer provide a competitive service that will generate a market required return without substantial investment to rehabilitate the property.
- The core of AT&T's wireline network is copper pair which no longer has the bandwidth to support competitive services required by today's customers.
- It has lost more than 70% of its customer access lines and continues to lose access lines at a rate of 14% per year
- Had to rehabilitate the network or shut it down, and it chose to do both
- Still have carrier of last resort obligations
- Slow movement by regulators has created substantial external obsolescence

Competition Impact

Broadband - Leichtman Research Group

Cable Operators Surpass Telcos in Broadband Subscribers

Broadband Internet Provider	Subscribers 3rd Q 2013	Subscribers Dec. 2012	Net Change	Annual Growth Rate
Comcast	20,283,000	19,367,000	916,000	4.73%
Time Warner	11,550,000	11,395,000	155,000	1.36%
Charter	4,535,000	3,978,000	557,000	14.00%
Cablevision	2,774,000	3,055,000	(281,000)	-9.20%
Suddenlink	1,039,100	1,002,100	37,000	3.69%
Other Cable Providers	8,500,296	7,972,235	528,061	6.62%
Total Cable Companies	48,681,396	46,769,335	1,912,061	4.09%
AT&T	16,427,000	16,390,000	37,000	0.23%
Verizon	8,995,000	8,795,000	200,000	2.27%
CentruyLink	5,942,000	5,848,000	94,000	1.61%
Frontier	1,808,000	1,757,000	51,000	2.90%
Windstream	1,183,400	1,214,500	(31,100)	-2.56%
FairPoint	330,698	326,367	4,331	1.33%
Cincinnati Bell	265,600	259,400	6,200	2.39%
Total Telephone Companies	34,951,698	34,590,267	361,431	1.04%
Total Broadband	83,633,094	81,359,602	2,273,492	2.79%

Through 3rd Quarter 2013 Cable companies accounted for 84% of the Broadband additions for the year.

The Transition to an All-IP Network From a Regulatory Perspective

- On Nov. 19, 2013, new FCC Chairman Tom Wheeler blogged:
  - "Communications protocols are moving from circuit-switched Time-division Multiplexing (or TDM) to IP." and
  - "Commissioner Pai, for example, has said the Commission should "embrace the future by expediting the IP Transition""
  - "…expectation that the January meeting will include consideration of an Order for immediate action."
  - Commissioner Pai commented on Wheeler's announcement that this would allow carriers "to stop investing in the networks of the past and instead concentrate finite resources on the networks of the future."
- FCC open meeting scheduled for January 30, 2014 to address AT&T's Petition:
  - "consider a Report and Order, Notice of Proposed Rulemaking, and Notice of Inquiry that invites diverse technology transitions experiments to examine how to best accelerate technology transitions…"
  - AT&T's IP market trials expected to be given a green light

Current AT&T Wireless Network

AT&T Network is Comprised of 3 Separate Technologies

- Technologies of AT&T Network:
  - GSM - Voice and Data Network.
  - UMTS – Voice and Data Network.
  - LTE – Currently only a data network (voice capability with VoLTE in 2014).
- **Current configuration inefficient and costly to operate:**
  - Effectively operating 5 networks simultaneously.
  - Inefficient use of existing spectrum.
    - Current spectrum utilization has resulted in capacity issues
  - Cost of building & operating GSM and UMTS networks is excessive in comparison to current LTE technology.
  - UMTS HSPA+ network traffic has peaked
  - With the growth of LTE, GSM and UMTS equipment is entering the portion of service life represented by declining utilization and obsolescence.

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Historical & Projected Network Traffic Trends

2G GSM & 3G UMTS network traffic is declining

Traffic in Millions of Bytes (MBs)* Equivalents

	ACTUAL 12-31-2012	ACTUAL 11-30-2013**	PROJECTED 12-31-2014	PROJECTED 12-31-2015	PROJECTED 12-31-2016	PROJECTED 12-31-2017	PROJECTED 12-31-2018	PROJECTED 12-31-2019
2G GSM	2.27%	0.26%	0.11%	0.03%	0.00%	0.00%	0.00%	0.00%
3G UMTS	84.27%	52.97%	20.82%	10.79%	6.81%	4.79%	3.58%	2.88%
4G LTE	13.46%	46.77%	79.08%	89.17%	93.18%	95.21%	96.42%	100.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	102.88%

* Includes Voice if digitized as a data packet (VoIP / VoLTE)
** Actuals for December 2013 not available at time report prepared.

Source: AT&T Network Organization

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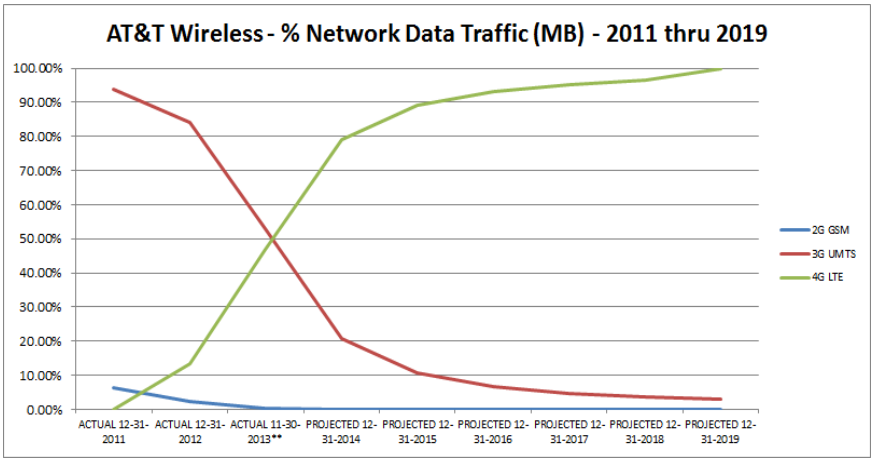
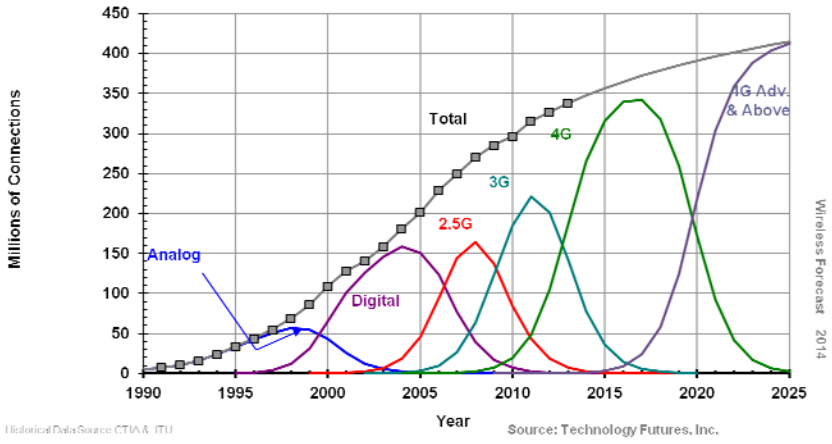
Historical & Projected Network Traffic Trends



Rapidly Changing Network Technology

Technology & Wireless Subscribers

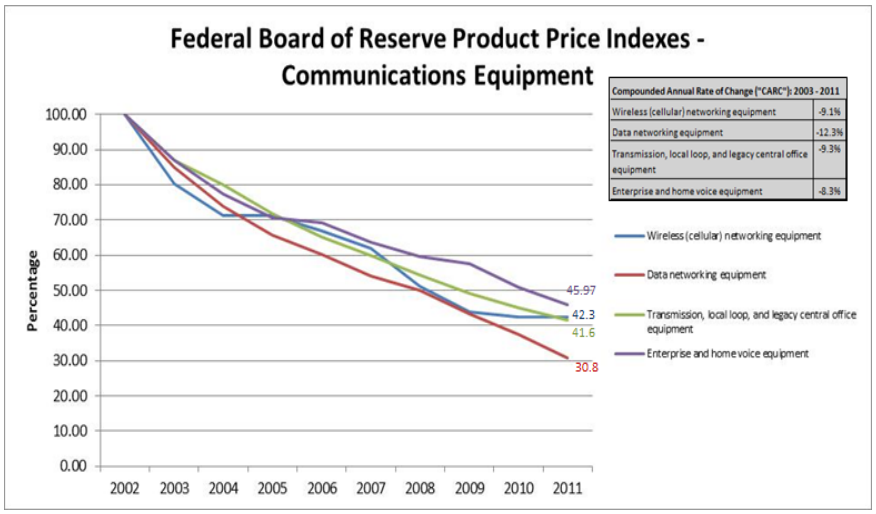
Wireless Subscribers by Technology



Declining New Equipment Prices

Graph of Historical Trends

Source: Board of Governors of the Federal Reserve System



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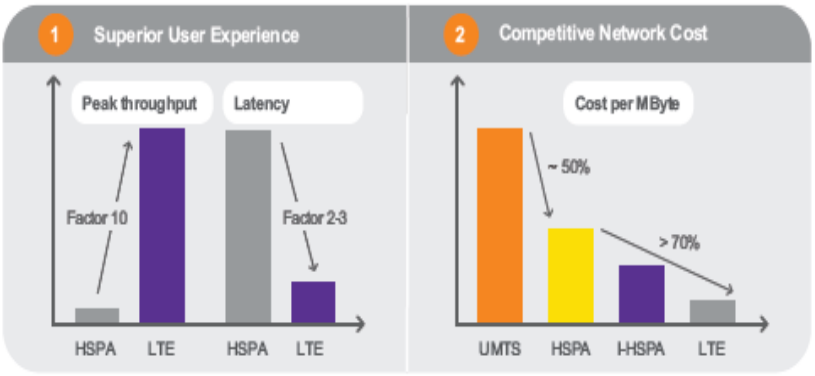
LTE – Significant Performance & Operating Cost Advantages



Source: Network Evolution: Heading a more powerful Mobile Network with LTE/SAE.; Nokia Siemens Networks; 2007

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By 2017, Global Mobile Data Traffic Will be 134 Exabytes ("EB") per Year

- The average mobile connection speed will grow 6 fold from 2012 to 2017 reaching 14.3 Mbps.
- By 2017, mobile data traffic generated by tablets (16 EBs) will be 1.5X total global mobile data traffic generated by all devises in 2012 (11EBs).
- By 2017, global mobile data traffic generated by smartphones (90EBs) will be 8.5X the global mobile data traffic of all devises in 2012.
- Globally, 1.2 Billion mobile users will generate over 2 Gigabyte per month. In 2012 only 88 Million users generated 2 Gigabyte per month of data traffic.

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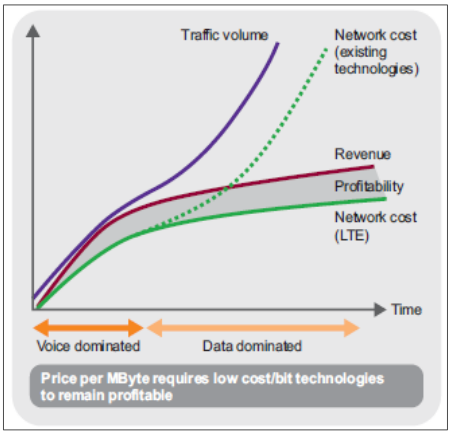
Growth Does Not Necessarily Result in Improved Profitability



1. Revenue growth does not necessarily correspond with traffic growth
2. Historically, there has been price erosion alongside increasing demand
3. Voice ARPUs have been trending downward;
4. Historically, costs have been traffic driven;
5. Costs must be scalable in order for a company to remain profitable.

Source: Long Term Evolution (LTE) Whitepaper; Nokia Siemens Networks; 2009.

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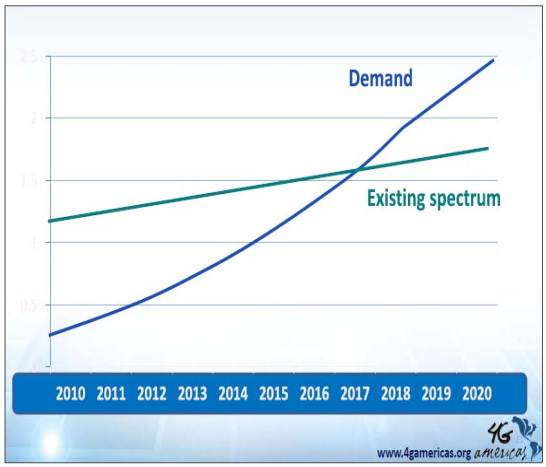
Other Risk Factors (cont.)

Spectrum vs. Demand in the U.S.



Per the FCC's National Broadband Plan:

"The Mobile Industry will need an additional 500 MHz above the existing spectrum base by 2020."

Source: The Evolution of Mobile Broadband and Regulatory Policy; Chris Pearson, President, 4G America, Presentation at LTE North America, Dallas Texas, November 21-22, 2013.

New Stuff

- AT&T Using a derivative of the Google model in its U-verse GigaPower Austin build
- Leap Acquisition – Cricket brand for pre-paid & no contract
- Voice Over LTE in 2014
- LTE Advanced in 2014
- Sponsored Data – Wireless customers will not pay for the data delivery for information providers that choose to pay
- Incentives to switch carriers. Carriers offer to pay Early Termination Fees (ETF) of $450 to $650
- End of device subsidies
- Wireless price war potential
- Digital Life, connected car and, in business services, cloud, security, Big Data, mobile solutions and others.