

What: Bringing the Latest Technology to Consumers in Washington



People are choosing wireless technologies faster than ever before:

- Nearly two out of five (38.2%) American homes no longer use traditional plain old telephone service, and instead choose to be wireless only.¹
- From 2011 to 2012, consumers increased time spent connecting with their world on social media apps by 76%.²
- According to the most recent figures from CTIA, there are more than 325 million wireless subscriptions.³



Individuals and households are not the only ones who are going wireless.

- Businesses increasingly depend on strong wireless service to carry them and their employees through the work day.
 - 66% of small businesses surveyed said they could not survive - or it would be a major challenge to survive – without wireless technology.
- Public safety is improved by the power of mobile communications as critical tool for first responders in emergency situations.
 - Mobile phones provide caller location and callback information, enabling quick and accurate emergency reporting.

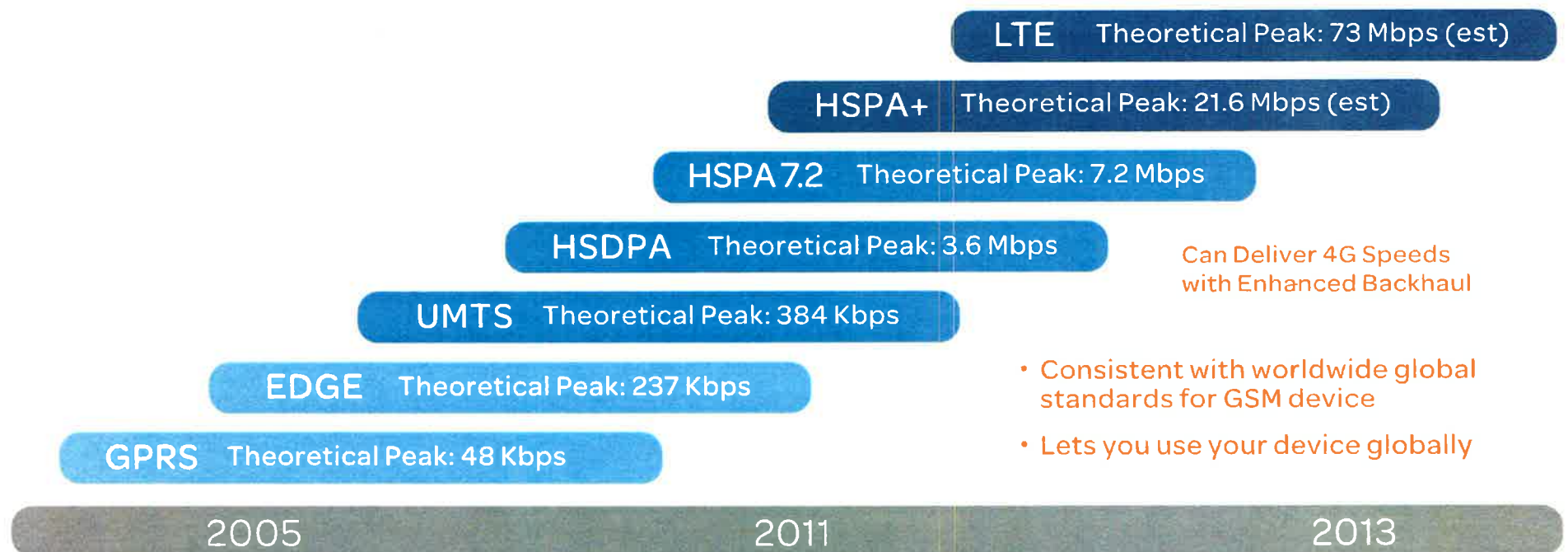


Because of this demand for advanced mobile technology and devices, it is essential that the networks that provide these invaluable services are upgraded and expanded.



Wireless Technology

Cell sites are often supporting various generations of wireless technology. As new generations of technology are deployed, customers migrate over to the newer technology over time requiring their continued support. These cell sites help provide you with the fast network coverage you've come to expect from AT&T.



AT&T: Working to Meet the Demand

AT&T is committed to expanding and improving wireless network infrastructure to deliver the quality high-speed services our customers demand.

- AT&T has invested nearly \$98 billion to improve and expand its wireless and wireline networks over the past five years.

The Velocity IP (VIP) plan: Even better things to come...

To expand access to high-speed Internet service and bring new mobile services to customers, AT&T launched the VIP plan to:

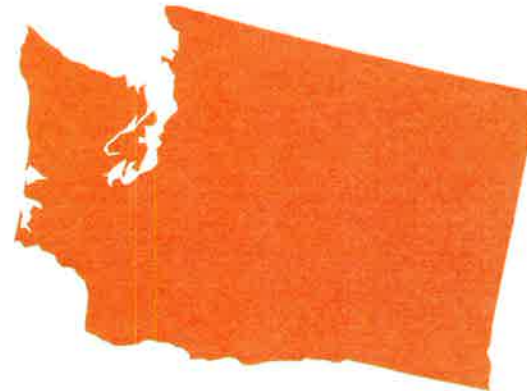
- Deploy more than 10,000 macro sites, 1,000 distributed antenna systems and 40,000 small cells.
- Expand 4G LTE to cover over 300 million people in the U.S. by year-end 2014.
- In Washington during 2013 – network upgrades involved roughly 1,000 sites in over 250 jurisdictions.



AT&T: Investing in Washington

From 2010 to 2012, AT&T has invested more than \$1.8 billion in its Washington networks. We also invested nearly \$250 million in Washington in the first half of 2013.

This investment will support future Internet-based growth, new products and services and local businesses.



These upgrades will help provide the reliability and performance you expect from the nation's fastest and most reliable 4G LTE network.



Why new cell sites are needed

A new cell site could be needed for multiple reasons.

- **Coverage:** An area may have not been previously served by our network.
- **Capacity:** Consumer demand in a certain area has grown and additional capacity for better service quality.
 - To add capacity to a wireless network we often add additional cell sites within a given area, enhancing our ability to offer best-in-class voice and data services. This is known as densification. When the same number of users is spread over more sites, they each get better service and more consistent data speeds.
 - Through the Velocity IP plan, AT&T expects to deploy 40,000 new small cells, 10,000 macro cells and additional 1,000 distributed antenna systems (DAS) to increase the density of its wireless network, which is expected to further improve network quality and increase spectrum efficiency.
- **In-Fill:** Needed where signal strength no longer meets current customer demands.



Factors Considered When Upgrading and Expanding Our Network

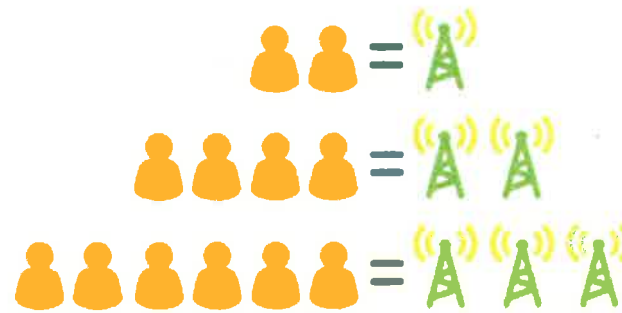
- **Network Data:** Our internal data may show where capacity needs are high or gaps in coverage may occur.
- **Customer Input:** We may discover capacity or coverage gaps when customers report problems.
- **New Cell Sites:** We invest time, capital and other resources to address capacity or coverage gaps.
- **Snapshot of current average use** and forecasts of future use.



Factors Considered When Upgrading and Expanding Our Network



Topography: If an area is very hilly, more sites are needed to cover the area since there is shadowing from terrain. Consider how a hill blocks the sun's rays at sunset.



Distribution of demand: In more dense traffic and population areas, we also need to have more sites in order to provide the necessary capacity.



Variability of traffic: The more people in an area, like an arena, the more facilities needed to ensure strong reception and capacity when needed. Towers can be as close as a few blocks, as far away as a few miles, or supplied in the arena through DAS systems.



Types of cell sites

Macro Cells

Most common type of site that's used for voice, text and broadband communication in large geographic areas with high capacity.

Small Cells

New technology, generally used in urban areas, that improves network performance in areas not effectively served by traditional sites.

Distributed Antenna System

Alternative antenna that provides coverage over specific target areas

Wi-Fi Hot Zones

Deliver high speed Internet access, mainly for outdoor coverage.



Steps for Building a New Cell Site:

