The Mobile Data Evolution

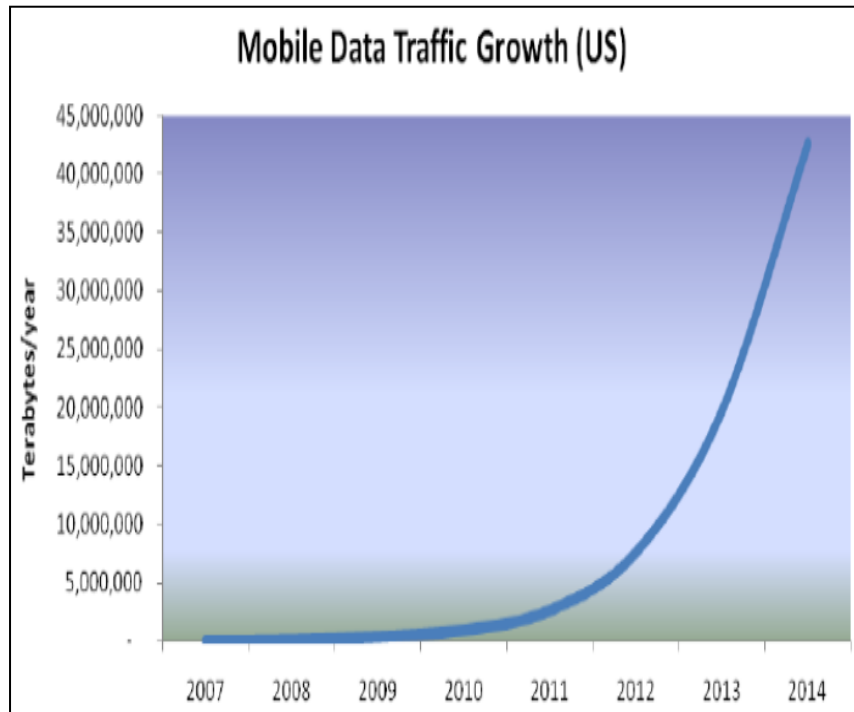**Bob Azzi, SVP Network**

June 14, 2011

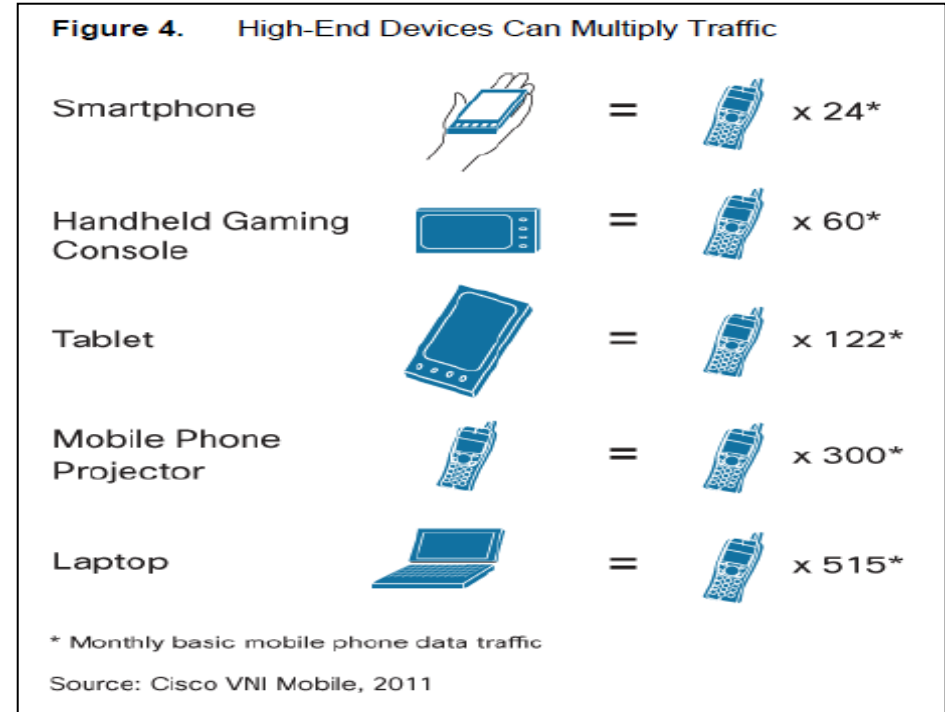# How Is The Industry Changing?

Mobile Internet Experience

Plus "Context" and "Always Connected"

The Mobility Revolution

Wireless Connectivity in Everything

Mobility Integrated into Business Processes

Sprint

2

Demand for mobile data is growing exponentially …

Mobile Data Traffic Growth (US)

Source:
Chetan Sharma Consulting, 2010

Figure 4. High-End Devices Can Multiply Traffic

Smartphone	=	x 24*
Handheld Gaming Console	=	x 60*
Tablet	=	x 122*
Mobile Phone Projector	=	x 300*
Laptop	=	x 515*

* Monthly basic mobile phone data traffic

Source: Cisco VNI Mobile, 2011

… and satisfying that demand requires a key building block: Spectrum

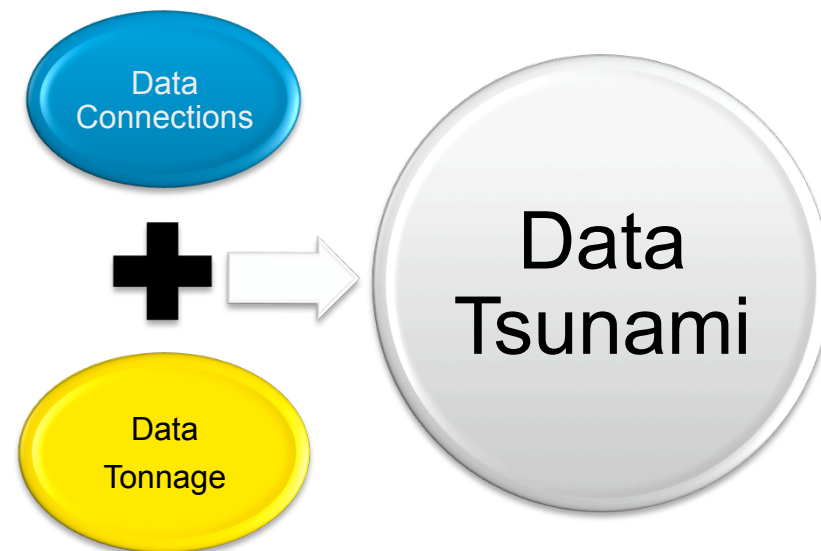**Sprint envisioned this unprecedented traffic growth outlook 4 years ago and began investing billions in an advanced mobile broadband platform.**

3

Sprint

Data Usage is made up of two factors: The number of connections that applications make to the network and the amount of data that the applications transmit across the network

Data connections drive network contention which shows up as latency and slower per user data rates

Data tonnage occupies network resources for the time necessary for the data to be transported and drives demand for additional capacity on the network

Data Connections

Data Tonnage

Data Tsunami

Sprint

Sprint's Network Vision

Key Plan Elements

- Replacement of multiple platforms with a single multi-modal platform
- Integrated chipset on devices
- Technology advancements improve overall performance of radio signals
- Optimization of vast spectrum holdings
- Move from hardware solutions to software solutions
- Integral support for next generation Push-To-Talk network

Customer Benefits

- Expected improvement in coverage and capacity
- Simplicity
- Rapid network deployment and coverage expansion

Sprint Benefits

- Lower cost for Sprint
- Improved operational efficiency and reliability
- Future technology protection
- Environmental sustainability

Sprint

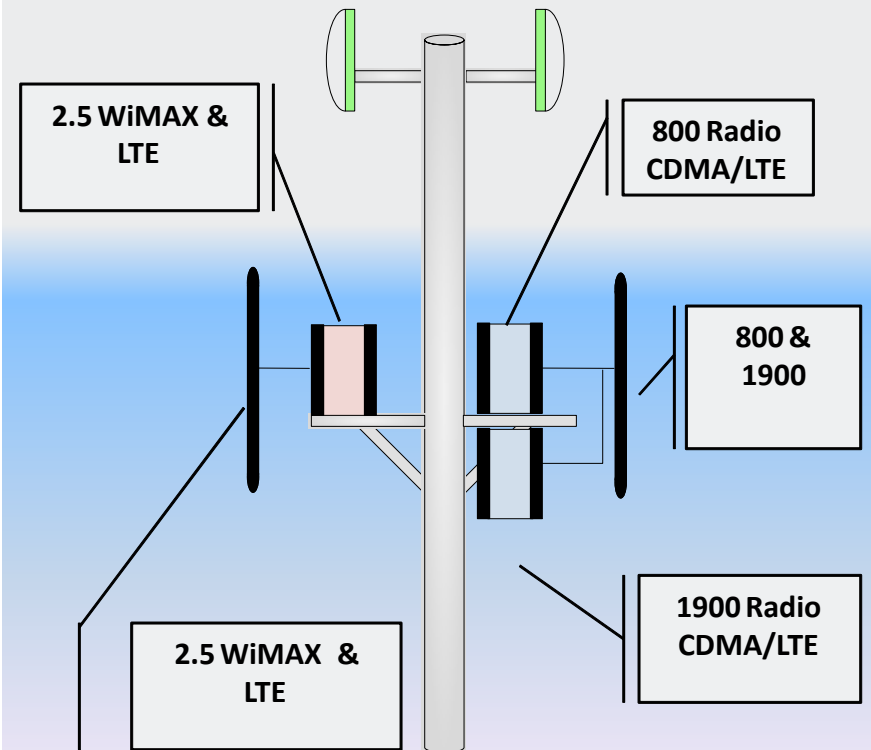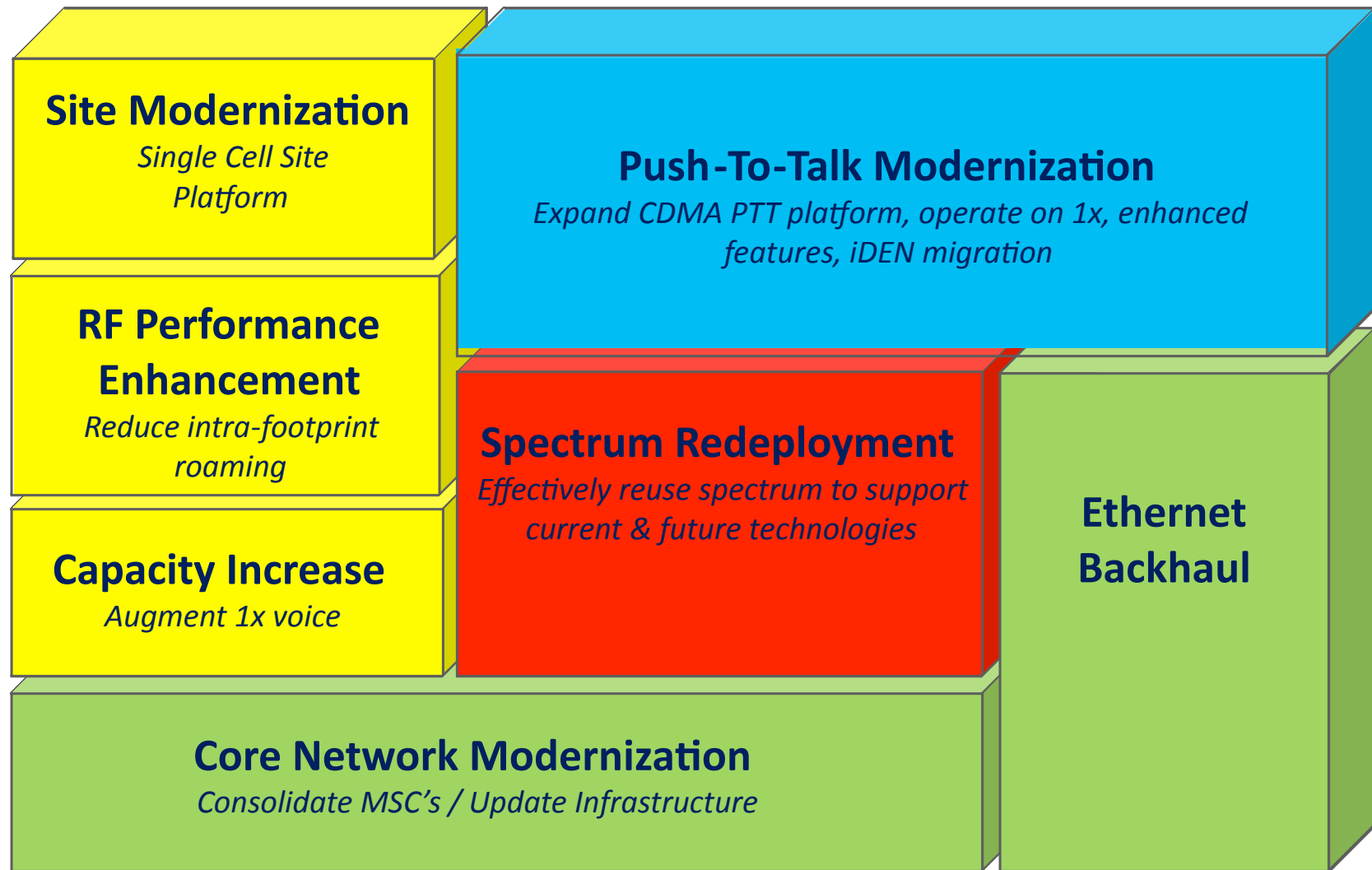# Network Vision – Multimodal Site Strategy

Individual 3G & 4G BTS Today

Multimodal BTS 3G/4G Combined

Microwave Backhaul Antennas

2.5 WiMAX & LTE

800 Radio CDMA/LTE

800 & 1900

2.5 WiMAX & LTE

1900 Radio CDMA/LTE

Sprint

Network Vision – Building Blocks to Evolution

Site Modernization
Single Cell Site Platform

RF Performance Enhancement
Reduce intra-footprint roaming

Capacity Increase
Augment 1x voice

Push-To-Talk Modernization
Expand CDMA PTT platform, operate on 1x, enhanced features, iDEN migration

Spectrum Redeployment
Effectively reuse spectrum to support current & future technologies

Ethernet Backhaul

Core Network Modernization
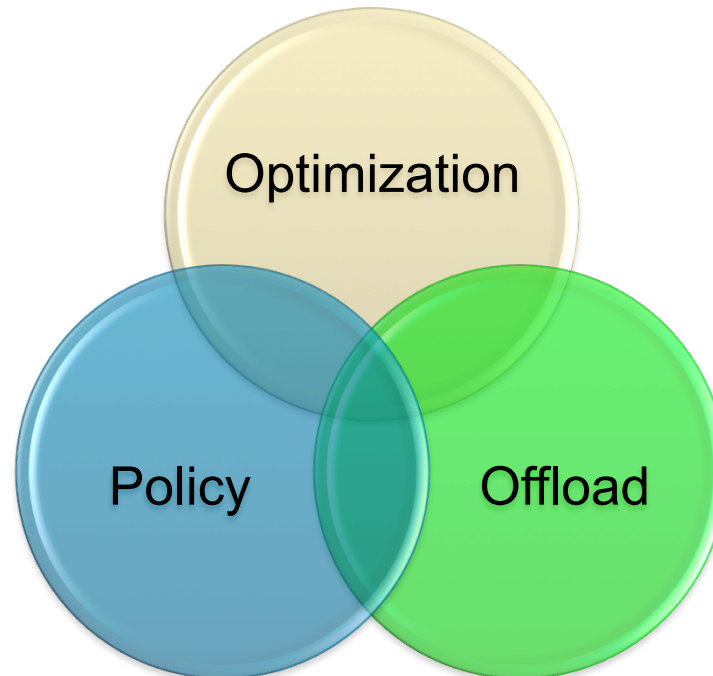*Consolidate MSC's / Update Infrastructure*

Sprint

Holistically Addressing Data Usage

Optimization

- Video Optimization, Compression, Optimization
- Sophisticated approach to bandwidth to provide device and app-specific experience

Policy

- Monitor and address "abusers"
- Differentiated experience depending upon level of service customer is willing to buy.

Offload

- Exploring offload to WiFi or Femto Cells
- Heterogeneous network integration

Optimization

Policy

Offload

Sprint

Increased mobility brings increased risk

Protecting information, inbound and outbound

Security and the mobile data evolution over the next 5 years

Increased risk

- Phishing is primarily occurring via email today – in the future, more will occur via SMS (SMiShing) and QR or barcodes with the "open/read rates" for text messaging at 95% vs. email at 50%
- The evolution of malware from PCs to mobile devices
- The rate/reach and damage of worm infection is increasing
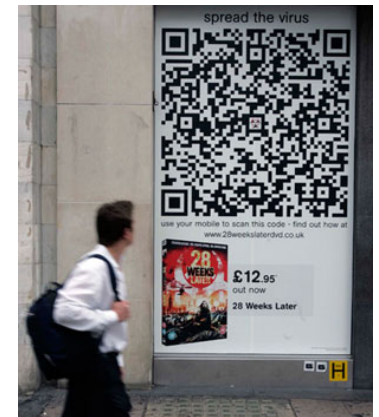- With increased mobile banking comes higher theft

2001	CodeRed infected 250K hosts	Over three days
2003	Slammer infected 100K hosts	Within 10 minutes
2010	Academic worms are designed to infect 1M hosts	Within .5 seconds
2011	Google removed infected apps from about 260,000 Android phones (Droid Dream)	Less than 1 day (zero day attack)

Sprint

Increased mobility brings increased risk

Protecting information, inbound and outbound

Potential opportunity

• Increased privacy and protection
- • Segregate storage and access of personal and company data
- • Segregate private/confidential information
• PC protections will become mainstream on mobile devices
- • Anti-virus software
- • Personal firewall
- • Anti-malware software
•"Self healing" mobile operating systems to include the availability of immediate patch deployment for worms/viruses
•Utilize biometrics (fingerprint identification, voice identifier, retina scan) for power-on
• User/Network based profiles

Sprint

Q & A

Sprint