The Mobile Data Evolution
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How Is The Industry Changing?

The Mobility Revolution

- Mobile Internet Experience
- Plus “Context” and “Always Connected”
- Wireless Connectivity in Everything
- Mobility Integrated into Business Processes
Demand for mobile data is growing exponentially ...

... 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.
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.
**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

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Network Vision – Multimodal Site Strategy
Network Vision – Building Blocks to Evolution

- **Site Modernization**
  *Single Cell Site Platform*

- **RF Performance Enhancement**
  *Reduce intra-footprint roaming*

- **Capacity Increase**
  *Augment 1x voice*

- **Core Network Modernization**
  *Consolidate MSC’s / Update Infrastructure*

- **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**
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
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
<th>Time to Infect</th>
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</thead>
<tbody>
<tr>
<td>2001</td>
<td>CodeRed infected 250K hosts</td>
<td>Over three days</td>
</tr>
<tr>
<td>2003</td>
<td>Slammer infected 100K hosts</td>
<td>Within 10 minutes</td>
</tr>
<tr>
<td>2010</td>
<td>Academic worms are designed to infect 1M hosts</td>
<td>Within .5 seconds</td>
</tr>
<tr>
<td>2011</td>
<td>Google removed infected apps from about 260,000 Android phones (Droid Dream)</td>
<td>Less than 1 day (zero day attack)</td>
</tr>
</tbody>
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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