Chalan Aras, Ph.D.
VP of Marketing, Wireless Networking

Wired + Wireless – better together / Intelligent services for the borderless Enterprise
In this Session, we will cover:

- The new Mobility Landscape
- Delivering Excellence for Mobility via Borderless Networks
- Intelligent Services through Wireless Networks
A time of Tectonic Shift…
Transformation Underway

Smartphone > PC Shipments Within 2 Years, Global – Implies Very Rapid Evolution of Internet Access

Global Unit Shipments of Desktop PCs + Notebook PCs vs. Smartphones, 2005 – 2013E

2012E: Inflection Point
Smartphones > Total PCs

Note: Notebook PCs Include Netbooks. Source: IDC, Gartner, Morgan Stanley Research estimates.
Market Transitions

**Mobility**
1.3 B new Mobile Devices in the Next Three Years
Transition to 802.11n
Wired + Wireless

**Workplace Experience**
Blurring the Borders:
Consumer ↔ Workforce
Employee ↔ Partner

**Video**
50% of all Cisco Network Traffic Today Is Video

Mobile Devices
IT Resources

Anyone, Anything, Anywhere, Anytime
Higher Education Mobility Challenges

Most students arrive on campus with 9+ technology-enabled devices.

1.3 Billion New Wi-Fi Devices

Wave of Devices  Managing Disparate Networks  Deploying Applications

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Retail Challenges

Applications, Control and Compliance
- Single Number and Voicemail
- Unified Communications
- Inventory Management
- Asset Tracking
- PCI
- HIPAA

Disparate Networks
- Wireless LAN
- Ethernet

Device Proliferation
- Dual Mode Phones
- Wired & Wireless IP Phones
- Tablets, PCs
- Ruggedized RFID Tags

80%+ of IT Resources: Reactive Client Management and Provisioning*

* Gartner Group
Pervasive Mobility in Enterprise

- Client Explosion
- Access Bandwidth Consumption
- Security Risk Migration
- Wired Mgt → Converged Mgt
Borderless Network Architecture

Architecture for Agile Delivery of the Borderless Experience

Borderless End-Point/User Services
- Mobility
- Workplace Experience
- Video

Securely, Reliably, Seamlessly: AnyConnect

Borderless Network Services
- Mobility: Motion
- Green: EneraWise
- Security: TrustSec
- App Performance: App Velocity
- Voice/Video: Medianet

Infrastructure
- Switching
- Routing
- Wireless
- Security
- WAAS

PROFESSIONAL SERVICES:
Realize the Value of Borderless Networks Faster
Cisco Motion

Open platform to deliver superior scale for wireless networks and support for integrated mobility services across networks and devices

<table>
<thead>
<tr>
<th>Unified Wireless Network</th>
<th>Unified Network Transport</th>
<th>Centralized Services Engine</th>
<th>Simplified Device &amp; Services Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scalable, high performance wireless and wired networks</td>
<td>Service Enablement for apps that bring productivity, compliance and convenience</td>
<td>Scaled Management platform with full device and client visibility</td>
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<td></td>
<td>10,000’s clients, 10,000 AP’s, Distributed</td>
<td>Location &amp; Context, WIPS, Clean Air</td>
<td>10,000’s clients with comprehensive tracking</td>
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The Choice is Clear
Only Cisco Delivers True Business Mobility

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<thead>
<tr>
<th>Device</th>
<th>Access</th>
<th>Control and Visibility</th>
<th>Service and Performance</th>
<th>Mobile Applications</th>
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<tbody>
<tr>
<td>Client</td>
<td>Access Points</td>
<td>Wireless LAN Controllers and Management</td>
<td>Wired Network Services</td>
<td>Mobility Services</td>
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<td></td>
<td>Indoor and Outdoor</td>
<td>Centralized management</td>
<td>Unified Security and Management services</td>
<td>Guest Access</td>
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<td></td>
<td>Modular, 802.11a/b/g/n</td>
<td>Flexible, scalable (1000s of APs)</td>
<td>Mobile Unified Communications</td>
<td>Security</td>
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<td>90% of laptops Cisco compatible</td>
<td>Radio resource management</td>
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<td>Spectrum Intelligence</td>
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<td>Voice</td>
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<td>Context-Aware</td>
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<td>Mobile Intelligent Roaming Services</td>
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<td></td>
<td>Mobility Engine</td>
</tr>
</tbody>
</table>

Increase performance, scalability and ease of deployment of your 802.11n WLAN

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Bandwidth for the Client Explosion

11n Performance Challenges
- Client density
- Application requirements
- Interference

802.11n

802.11ac

Avg Throughput/radio (Mbps)

2007 2011 2013

11a/g 802.11n 3ss 802.11ac
Bandwidth Delivered!

Cisco Performance Improvement
- CleanAir
- ClientLink
- BandSelect
- VideoStream

- 802.11ac
- 802.11n 3ss
- 802.11n
- 11a/g

Avg Throughput / radio (Mbps)

2007 2011 2013

11a/g 802.11n 802.11ac

9x 1.4x 4x
Cisco Aironet 802.11n Access Point Portfolio
Enterprise-Class Performance

**Business Wireless**
- Small to medium enterprises, branches
- Entry-level solution with opportunity to scale
- Enterprise-class 802.11n performance

**Rich Media**
- Medium to large enterprises
- Low TCO with flexible scalable architecture
- Enhanced 802.11n for high-performance

**Mission-Critical**
- Medium to large enterprises
- Low OpEx with built in interference avoidance
- Highest performance 802.11n with CleanAir technology for self-healing, self-optimizing wireless
Cisco Unified Wireless Network

Product Description

Wireless LAN Controllers

Catalyst 6500 Series Wireless Services Module (WiSM)

Switch and Router Platforms

Features

- Enterprise scalability and reliability
- Real-time RF Management
- Multi-layered security
- Mobility management
- Standalone and integrated options

Network Unification

Benefits

- Up to 2100 APs per Cat 6K chassis
- Cost-effective solution for main, branch, remote campus and SMB
- Ideal for data, voice, and video
- Wired and wireless integration
Mobility Services Engine

Consumer Apps

- Adding Location To Presence
- Wired Location
- Network Services

Location Services

- Asset Visibility
- Network Visibility
- NW Visibility – Location assisted

Asset Tracking

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Unified User and Access Management

What?

Where?

Who?

How?

-WCS
-NAC
-MSE
-LMS

Single Pane of Glass

Unified Management

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Applications for Wireless in Higher Education

Clemson University and Purdue University

- Instant Replay of Game
- Game Statistics and Information
- Ordering Refreshments and Souvenirs
- Restroom Locators

Mobile Services Available at Sporting Events
Mobility Applications in Retail

- Location for in-store guidance
- Integrated scanner for real-time price check
- Provide information at the point of choice
- Product level advertising opportunity
Summary

- Mobility Landscape bringing new challenges

- Borderless Network Architectures enable any place, any time business

- Wireless Networks deliver Intelligent Services to bring unprecedented productivity