BYOD- Tablets and smartphones welcomed!

Dan Gavojdea
BDM – Cisco Systems
Cisco BYOD Solution

• Frame the BYOD Problem
• BYOD Experience
• BOYD Framework
• Conclusions/ Q&A
I can’t imagine my Life without…

- My Mobile Device: 97%
- The Internet: 84%
- A Car: 64%
- My Current Partner: 43%

14 – 29 year old population

Source: BITKOM - Bundesverband Informationswirtschaft, Telekommunikation und neue Medien e.V. 2010
Exploration of Connected Devices

2003
1/10 of a Device per Person on Earth
500 Million

2010
1.8 Devices per Person on Earth
12.5 Billion

2020
6.5 Devices per Person on Earth
50 Billion

Source: Cisco IBSG Research
CEO Care-about
...how to transform in the Networked Economy

1. Growth
2. Profitability
3. Operational Stability
4. Innovation
5. Talent/People
„The real Power is the Interface between Business and IT.“

Thomas Endres
CIO Lufthansa and Chairman
CIO Colloquium
Market Transition wait for no one

Source: NASDAQ, 16/02/12
Increasing Mobility Expectations

High-Quality of Experience

Smooth 2-Way Video

Desktop-Quality Virtual Desktop

Toll-Quality Voice Over WLAN

Voice
What Do Employees Want?

- Flexibility to choose the device based on type of activity, location/mobility, connectivity

- Optimized business application experience across multiple devices for increased productivity

- Separation of work and personal data
What Does IT Want?

- Proactive adoption of consumer/mobile devices
- Embrace BYOD without sacrificing security, management, business standards
- Lower organizational costs
26X more mobile data traffic by 2015

92% CAGR

2010 to 2015
15 BILLION mobile devices in FOUR YEARS
Any Device
Not Just An End-point Challenge

Compliance Ops:
- How do I ensure corporate compliance (SOX, HIPAA, etc.)?

Security Ops:
- How do I protect my network and data assets from unauthorized access, malware, attacks, DLP, device loss/theft, etc.?
- Which users are using what devices? How do I implement multiple security policies per user, device, etc.?

Applications Team:
- How do I ensure consistent App experience on all devices?
- How do we troubleshoot App vs. Network vs. Device problems?
- How do we ensure Application interoperability?

Network Ops:
- What devices are on my networks?
- Which users are using what devices? What apps are being accessed?
- What are the real-time app performance metrics?

Network Eng:
- How do I troubleshoot Access problem?
- How do I separate device issues from network and policy issues?
- How do I ensure user experience?

Endpoint Team:
- How and what do I support?
- How do I handle asset management?
Who Is Addressing These Needs?

It is a wireless infrastructure problem

It is a security problem and needs a security solution

It is a device management problem

It needs a virtualization solution

It is a device problem and needs IT friendly devices

Remote access

NETWORK
Onboarding

- Authenticate User
- Fingerprint Device
- Apply Corporate Config
- Enterprise Apps
- Automatic Policies
Contextual Policy

Apply defined policy profiles based on:

- Device Type
- User
- Location
- Application
Contextual Policy

Access: FULL

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<td>✓</td>
<td>Email</td>
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<tr>
<td>✓</td>
<td>Instant Messenger</td>
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Is Mr. Allen’s lab work ready yet?

Not yet but I will let you know the moment it arrives.
Untrusted WiFi

Roaming Policy

Access: Limited

- Electronic Medical Records
- Mobile Tele-Presence
- Email
- Instant Messenger

WiFi Hotspot
Remote Policy

Access: Limited

<table>
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<tr>
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<tr>
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Electronic Medical Records
Mobile TelePresence
Email
Instant Messenger

Access: Limited
Patient Updates
Sorted by Date

<table>
<thead>
<tr>
<th>Thyroid Test</th>
<th>RESULTS</th>
<th>REFERENCE RANGE</th>
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<td>0.4 to 4.0mIU/L</td>
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Teleworker Policy

Access: FULL

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</table>
| ![checkmark] | ![checkmark] | Electronic Medical Records
| ![checkmark] | ![checkmark] | Mobile TelePresence
| ![checkmark] | ![checkmark] | Email
| ![checkmark] | ![checkmark] | Instant Messenger
People will use multiple devices!
New User Expectations Place New Demands on the Wireless Network

**NEW USER BEHAVIORS**

- Accessing business applications from employee devices
- 40 percent of staff use unmanaged devices
- Using an average of 2–3 mobile devices
- Video calls and access to collaboration applications

**NEW NETWORK DEMANDS**

- Secure connectivity and policy enforcement on any mobile device
- Policy enforcement and data loss prevention on friendly rogues
- Pervasive coverage and simplified management
- Increased network reliability and throughput

**Mobility Challenges**
Complete Cisco BYOD Solution
Gartner MQ Leader in LAN, WLAN, and VPN

BEST-IN-CLASS TECHNOLOGY

Mobility | Optimized Experience on Wireless
Client acceleration and optimized video protected by proactive spectrum management

Security | Protecting Data in Motion
Context-aware VPN and firewall, cloud-based email and content scanning

Collaboration | Rich Experience Across Devices
One platform for voice, video, and IM across Cius, other mobile devices, laptops

CONVERGED POLICY AND MANAGEMENT

ISE

NCS
GARTNER - Important Recognition for CISCO

WLAN

LAN

Unified Communications

BYOD / NAC

VPN

Web Security

Source: Gartner (August 2011)
Q2 CY11 Competitive WLAN Landscape

Not Reporting: Avaya, Brocade, Ruckus (for indoor), Aerohive, Meraki

Notes: As of August 2011, Revenue Based On The Last 4 CQs Reported By Dell’Oro. Threat score source SMO.
Empowering IT to Say Yes

IT CHALLENGE: HOW DO I?

1. Onboard My Users and Their Devices
2. Enable Secure, Reliable Experience
3. Simplify Ongoing Operations
I just bought a new iPad. I want to use it on my enterprise network.

How do I simply and safely on-board new devices?
“My users use multiple devices including their own; they are mobile and need role-based access to the Internet and internal apps.”
“My users use multiple devices including their own; they are mobile and need role-based access to the Internet and internal apps.”
Deciding on a BYOD Adoption Strategy

Denied or Restricted
- Environment requires tight controls
  - Corp Only Device
  - Mfg Environment
  - Trading Floor
  - Classified Gov Networks
  - Traditional Enterprise

Allowed
- Focus on basic services, easy access, almost anybody
  - Broader Device Types
    - But Internet Only
  - Edu Environments
  - Public Institutions
  - Simple Guest

Encouraged
- Enable differentiated services, on-boarding with security but no ownership
  - Multiple Device Types + Access Methods, VDI
    - Healthcare
    - Early BYOD Enterprise Adopters
    - Contractor Enablement

Supplied
- Corp native apps, new services, full control
  - Multiple Device Types, Corp Issued, MDM
  - Innovative Enterprises
  - Retail on Demand
  - Mobile Sales Services (Video, Collaboration, etc.)
Simplified On-Boarding and Policy
Industry's First Context-Based Wired+Wireless+VPN Policy Management

BEFORE
Separated Policy Management

AFTER
Context-Based Policy for Employees and Guests Across Network


Unified Policy

Wired | VPN | Wireless

Simple | Unified | Automated
I want a good experience on my new iPad.

How can I provide a seamless experience with high performance?
Optimized Experience for Mobile Clients
Protecting Performance and Accelerating Clients

BEFORE
Best-Effort Network

AIR QUALITY
PERFORMANCE

Unpredictable Difficulty supporting mobile devices
Difficult Connectivity issues from interference
Low Performance Spotty video performance

AFTER
Mobility-Optimized Experience

AIR QUALITY
PERFORMANCE

Accelerated up to 30% faster for all clients
Reliable Interference protection and diagnostics
Optimized High performance multicast video

ClientLink
CleanAir
VideoStream

Cisco Wireless LAN with CleanAir and ClientLink
Secure Mobility with Always-On Security
For All Combinations of Devices, Locations, and Users
Seamless, Automatic Security
Protection from Malware and Automatic VPN Connection

BEFORE
Unsecured Data

AFTER
Simple Access, Seamless Security

- Difficult to use
- Inconsistent access
- Risk of Malware and misuse

- Automatic VPN connection
- Identity-based access control
- Data loss protection and acceptable use policy

Secure Mobility

AnyConnect, Cisco ASA, ScanSafe
Cisco Borderless Networks Access Portfolio

Catalyst Compact Switches
Great for Secure, Manageable Ports
‘At the End of the Wire’

Catalyst 2960-S
Full Feature Set at Compelling Prices
Basic Borderless Network Services

Catalyst 3750-X, 3560-X
Industry-Leading Fixed Switching
Full Borderless Network Services

Catalyst 4500E
Industry-Leading Modular Access
Full Borderless Network Services

LOW COST
LOW PORT DENSITY
Starts at $799

OUTSIDE THE WIRING CLOSET
Education, Retail, Manufacturing

VALUE SWITCHING
Starts at $1,995

TRADITIONAL WORKSPACE
Data, Voice

SUPERIOR INVESTMENT PROTECTION
Starts at $5,200

NEXT-GENERATION WORKSPACE
Any Device, HD Video, VDI

MODULAR CHASSIS, EXTENDED LIFESPAN
Maximizing Business Opportunities
Feature-Rich and Rock Solid Service Delivery

BEFORE
“Good Enough” Network, Poor Work Environment

- Unreliable Outages and sluggish performance
- Missed Opportunities Poor service delivery and agility
- Higher Total Costs Downtime, low efficiency and high maintenance

AFTER
Next Generation Workspace

- Critical Services Security, Video, HA, POE
- Operational Advantages Smart Operations, Flexible NetFlow
- Lower TCO Compared to “Good Enough” networks

Cisco Catalyst 3750-X and 3560-X

Any Device  HDTV  VXI

Cisco Catalyst Switches
IT Challenge: Efficient Operations

I want to stay productive everywhere I go.

How do I simplify troubleshooting and management?
Cisco Prime Network Control System

CONVERGED MONITORING AND TROUBLESHOOTING FOR WIRED AND WIRELESS NETWORKS

Wireless | Wired | Security Policy | Network Services

Unified Management

Users

Policy

Operations

Improved Network Visibility | Faster Troubleshooting | Eliminate Configuration Errors
Unified Management
Find and Solve Problems Quickly to Keep Employees Productive

BEFORE
Many Windows, Fragmented View

Wireless
Identity
Wired

✗ Siloed Inefficient Operational Model
✗ Repetitive Manual correlation of data
✗ Error Prone Consumes time and resources

AFTER
Comprehensive User and Access Visibility

Wireless
Wired
Policy

✓ Simple Find and solve user problems fast
✓ Unified View of all devices by user, across networks
✓ Lower Opex More efficient use of IT resources

Cisco Prime NCS—Simplified Network Management
The Cisco Advantage
A Better Mobility Experience for Users and IT

Cisco Mobility + Security + Collaboration

SAFE ACCESS
Automated on-boarding with flexible policy to match business needs
Virtual and physical implementations

INTELLIGENT NETWORK
Secure, reliable access with up to 30 percent faster tablet performance
Seamless communication across devices and locations

SIMPLIFIED OPERATIONS
Single source of policy across organization
Unified management for wired, wireless and VPN

Rich Experience, BYOD Without Compromises
BEFORE
Disparate Wired and Wireless Networks

- Scalability & Performance: Bottlenecks, instability
- Inconsistency: Different wire & wireless policies
- Higher Costs: Duplicated management and support for wired and wireless

AFTER
Better Together: Cisco Switching and Wireless

- TCO: Simplified installation and operations
- Scalability: Centralized policy, distributed enforcement
- Visibility: Network insight with single pane of glass management

Cisco Unified Access
Cisco-on-Cisco Realized Gains

- 59% more devices
- 32% more users
- 20% fewer cases
- 30 minutes per day more productivity
- 25% per year savings using VXC devices
- 17 weeks faster acquisition integration
Extend The CapEx Discussion To TCO

Use Cisco Capital to turn Capex into Opex

Use Cisco benefits for Opex reduction:
- Bandwidth/WAN savings
- Service contract costs
- Provisioning and administration costs
- Training cost
- Recruiting cost
- Longer Lifetime

Position other benefits:
- Employee productivity
- Business continuity
- Time to market
- Attracting talent

Beyond TCO

Managed Service

TCO

Capex

80%
The Right Way To Evaluate Network Economics: TCO not CAPEX

Incomplete view of IT cost – captures only a part of network cost

Full view of IT cost, including services, labor, bandwidth and energy costs

Additional Business benefits e.g., savings on energy and facilities, network uptime, user productivity
Cisco's true value is not just in what we make.

It's in what we make possible.

... the network is the platform on which innovation is built
Additional Resources

- Cisco Borderless Network Architecture
  www.cisco.com/go/borderless

- Borderless Networks Total Economic Impact Whitepaper by Forrester

- When „Good Enough“ Is Not Good Enough
  http://www.slideshare.net/CiscoSystems/good-enough-7723035
Delivered high-performance 802.11n wireless network to increase student and faculty collaboration.

Supported ongoing bring-your-own-device trend and must have need for wireless connectivity.

Easily managed and scaled wireless network policy for users campus-wide.