Personal Devices in Corporate Networks
Toys or Productivity Enablers?

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Agenda

• Why So Much Talk about BYOD?
• What Is BYOD?
• Where Are the Benefits?
• Our Own Experience
• Summary
Why So Much Talk About BYOD?
Industry Trend: Evolving User Workspace

**BYOD**
- Secure access
- Customized experience
- Guest access

**Mobility**
- Seamless roaming
- Optimal client performance
- Cloud access/VXI

**Video**
- Multicast streaming
- Video conferencing
- Reliable performance

Deliver an Uncompromised User Experience on Any Workspace
500,000 Daily Activations
#3 Country in Terms of Population
48 hours of video per minute
Demand for Mobility

15 billion
new networked mobile devices by 2015

56%
of information workers spend time working OUTSIDE THE OFFICE

3/4
of employees uses MULTIPLE DEVICES for work

100%
of IT staff STRUGGLE to keep up with mobile needs (source: Gartner)

Mobility is driving a transformational change in IT

Device consumerization is driving a transformational change in user experience

Will transform how every business delivers IT to its employees

Will change how every business interacts with its customers
Demand for Mobility

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Users
- Freedom
- Flexibility
- Convenience
- New Apps
- Productivity
- My devices

IT
- Control
- Security
- Quality
- Performance
- Reliability
- Business rules

MORDAC, I NEED TO ACCESS COMPANY DATA FROM MY IPAD.

IF I HELP YOU, EVERY EMPLOYEE IN THE COMPANY WILL WANT THE SAME THING!

THEY'LL WANT TO DO THEIR JOBS MORE EFFICIENTLY?

I CAN'T ENCOURAGE THAT SORT OF THING.
Network Users Have New Expectations

Previously

• Enterprise provided mobile devices
• Work is a place you go to—limited off campus access
• IT visibility and control into user devices and applications

Today

• Anywhere, anytime, any device usage
• Work is a function—globally dispersed, mixed device ownership
• Change in IT control and management paradigm
What Is BYOD?
BYOD: An Enterprise Wide Project
The 4 Pillars of a Complete BYOD Solution

- **Pervasive Access**: High Performance Wireless
- **Mobile Ready Network**: Application Ready for Voice, Video, & VDI/VXI
- **Policy Management**: Policy Based Network Access
- **Device Protection & Management**: Mitigating threats to Mobile Devices

**Central Management**
Cisco’s End-to-End BYOD Solution

Cisco BYOD Smart Solution: www.cisco.com/go/byod
The BYOD Spectrum

**Deny or Restrict**
- Environment requires tight controls
  - Corp Only Device
  - Mfg Environment
  - Trading Floor
  - Classified Gov Networks
  - Traditional Enterprise

**Allow**
- 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

**Bought In**
- Corp native apps, new services, full control
  - Multiple Device Types, Corp Issued, MDM
    - Innovative Enterprises
    - Retail on Demand
    - Mobile Sales Services (Video, Collaboration, etc.)
Network Access vs. MDM? The Power of The “And”

MDM Solutions
- Device inventory
- Device provisioning and deprovisioning
- Device data security
- Device application security
- Cost management
- Full or selective device remote wipe

Network Access
- User and device authentication
- Posture assessment
- Policy enforcement
- Context-aware access control
- Threat defense
- Web use policy
- Web application DLP
- Secure remote access

MDM is network-blind – Control of non-MDM registered devices? Compliance enforcement?, Visiting devices?
ISE 1.2 and MDM Integration

- MDM device registration via ISE
  - Non registered clients redirected to MDM registration page
- Restricted access
  - Non compliant clients will be given restricted access based on policy
- Endpoint MDM agent
  - Compliance
  - Device applications
- Device Action from ISE
  - Device stolen -> wipe data on client
Where Are The Benefits?
Enterprises deploying Borderless Network Architecture realize cost and benefits across multiple services.

Forrester study (end 2010) across 13 companies shows compelling 3-year adjusted costs and benefits:

<table>
<thead>
<tr>
<th>Risk-adjusted ROI</th>
<th>Payback period</th>
<th>Total benefits (PV)</th>
<th>Total costs (PV)</th>
<th>Net present value</th>
</tr>
</thead>
<tbody>
<tr>
<td>163%</td>
<td>12 months</td>
<td>$5,737,156</td>
<td>($2,184,032)</td>
<td>$3,553,124</td>
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</table>

Key sources of benefits:
- Increased productivity of mobile employees
- Customer-facing productivity at remote sites
- Real-time access to information (faster processes)
- Flexibility in employee placement

Key benefiting units and departments:
- Sales (especially remote, mobile)
- Field Services
- Logistics

Mobility = 64% of total NPV
Largest contribution

**Productivity Can Be Impressive – Just Making the Math**

A mobile application bringing 1 hour of working time
- Real time data entry
- Saving time by access to real time data
- Extra working time (cf. plain e-mail)

**Impacting 100 employees in the company**

**Average cost of employee’s working hour: € 20**

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>Weekly</th>
<th>Monthly</th>
<th>Annual</th>
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</thead>
<tbody>
<tr>
<td>Savings/benefits:</td>
<td>€ 2,000</td>
<td>€ 10,000</td>
<td>€ 40,000</td>
<td>€ 480,000</td>
</tr>
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</table>

And even if we impact only 50 employees with cost of hour € 10

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<th>Daily</th>
<th>Weekly</th>
<th>Monthly</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings/benefits:</td>
<td>€ 500</td>
<td>€ 2,500</td>
<td>€ 10,000</td>
<td>€ 120,000</td>
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Only for Fun?  
Camera And Picture Processing Capabilities

- Taking pictures in the field and uploading them to DC
  - Failing devices (manufacturing, services, support)
  - Status of equipment, tools (inspection, repair planning)
  - Proofs, documentation (insurance, construction)
  - Benefits: Saving time, real time data collection, no need for camera

- Graphics codes (bar codes, QR codes)
  - Identification, verification (delivery, logistics)
  - Inventory (marking, instant data collection)
  - Data & text coding for digital reading
  - Benefits: Saving time, no error on data input, direct application links

http://qrcode.kaywa.com/
Only for Fun?
GPS And Positioning Capabilities

- Using built-in navigation functions
  - Optimizing/planning travel time (field personnel)
  - Benefits: Saving time, resources

- Integration with business applications
  - Pre-populating apps with location info (field personnel)
  - Optimal routes/paths (logistics, delivery)
  - Real time resource location tracking (car fleet, equipment, nearest expert/resource)
  - Data entry with location tagging
  - Augmented reality applications
  - Benefits: Productivity, limiting data errors, enhanced data collection
Only for Fun?
Other Interfaces and Functions

• Example: Bluetooth interface
  - Local printing (payment slips, confirmations)
  - Projection (sales, local demonstrations)
  - Benefits: Productivity, cost of transactions

• Example: Video capabilities
  - Sales and marketing (promotions, demonstrations)
  - Operation instructions (services, guides)
  - Benefits: Enhancing field operations
... And Vice Versa: Taking Advantage of Presence

- Location information
  - Traffic information (tapping on existing services)
- Indoor location/positioning services
  - Wireless LAN – see who is on premise
  - Cisco Connected Mobile Experiences (next session)
  - Vertical solutions (retail, airports, healthcare…)
  - See how visitors move, where they spend time…


getmeridian.com
Our Own Experience
Cisco IT BYOD/AnyDevice Roadmap

- Prove with mobile then add desktop

2003-2008
Corporate-Paid Devices
Good Mobile Client

2009
Mobile BYOD Mandate
Mobile Mail and Wi-Fi on iPhone, BlackBerry, Android, etc.

2011
AnyConnect on Trusted Devices
Tablet Support

2012
Virtual desktop on VXI endpoints, laptops, smartphones & tablets

2013+
BYOD for non-Cisco laptops
Cisco IT BYOD/Any Device Strategy

**Scaled Architecture**
- Any Trusted Device
- Industry Standard Platforms
- Cisco AnyConnect and Device Mgmt.
- Pervasive Wireless and ISE

**Flexible Liability**
- BYOD-only Smartphones and Tablets
- Corporate Laptops
- Optional Corporate Mobile Service
- Strong Rules of Use

**Service Providers**
- Pro-active cost optimization strategies
- Global relationships
- Industry-first pricing models

**Robust App Lifecycle**
- User-Driven Progression
- Enterprise and LOB Selection
- Future Enterprise Store

**Social Support**
- Self-Service Content
- One to Many Interactive Support
- Traditional One to One
Creating Consensus

Trusted Devices

- Encryption and Management
- 10 Minute Timeout

Secured Devices

- 4 Digit PIN & Wipe on failed attempts
- Lock and Remote Wipe
Agreeing on the Liability Model

**Bring Your Own Device(s)**

**Corporate Paid Service**
- Subsidized Devices
- SP Ordering Portal
- VP Approval

**Personal Paid Service**
- Employee Discounts
- Multiple Device Support
- Manager Approval

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**Cisco Rules of use**

1. Allows Cisco to remotely wipe the device
2. Requires an acceptable password and 10 minute timeout
3. Require users to immediately report a lost or stolen device.

- All users must accept rules of use when signing up for service
- Trade off between employee trust and IT control
User-Driven Demand Progression

- Jan 2010: I want an **iPhone** with **email**, **calendar**, and **contacts**.
- Jan 2011: I want **WebEx Meeting Center** and **Jabber IM** on my iPhone.
- Jan 2012: I want **AnyConnect** and **Enterprise apps** on my **iPhone** and **iPad**.
### BYOD Mobility Landscape

<table>
<thead>
<tr>
<th>Platform*</th>
<th>October 2010</th>
<th>October 2011</th>
<th>October 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>iPhone</td>
<td>7,886</td>
<td>20,078</td>
<td>27,472</td>
</tr>
<tr>
<td>iPad</td>
<td>1,176</td>
<td>8,017</td>
<td>12,553</td>
</tr>
<tr>
<td>BlackBerry</td>
<td>15,071</td>
<td>12,617</td>
<td>8,669</td>
</tr>
<tr>
<td>Android</td>
<td>688</td>
<td>5,204</td>
<td>7,304</td>
</tr>
<tr>
<td>Others</td>
<td>3,660</td>
<td>1,630</td>
<td>939</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>28,481</strong></td>
<td><strong>47,546</strong></td>
<td><strong>56,937</strong></td>
</tr>
</tbody>
</table>

*Includes devices with corporate plans, personal plans, and Wi-Fi only

**Cisco’s two year mobile device growth rate is 100%**
Cisco’s Any Device Landscape (End 2012)

Traditional Corporate Laptops
- Windows: 79,867
- Linux: 7,530
- Apple: 27,935

Corporate VXI Endpoints
- Cisco: 2,619

Mobile BYO Devices
- Apple: 13,304
- Apple (iOS): 28,597
- Android: 8,020
- Other: 892
- BlackBerry: 8,076
Mobile Cost Savings Breakdown

- **Devices**
  - Eliminated **$500K/year** device spend by mandating BYOD smartphones and tablets
  - Prevented **$850K/year** in device upgrade spend
  - Enabled employees to work your way with multiple devices.

- **Service Provider Spend**
  - **Reduced** gross annual SP spend by **30%** by revalidating company paid service
  - **Avoided 75% growth** in annual SP spend by allowing employees to connect devices with employee-paid service
  - Enabled **15,000 additional users** at marginal per user cost

- **Support Cases**
  - **Lowered gross case load 19%** over two years due to rolling out Social Support on WebEx Social
  - **Lowered per user case load 48%** over two years
  - **Lowered per device case load 56%** over two years
BYOD Mobility Success Metrics

- 96% **more** devices
- 58% **more** users
- 300% **more** data usage
- 38% **fewer** cases
- 28% **higher** satisfaction
- 33% **lower** per user cost

*2 year comparison*
Summary
Summary

- BYOD is a reflection of the pervasive trend of mobility
- Better embrace and lead than prevent and suffer
- BYOD and mobile devices bring business opportunities
  - Productivity
  - Advanced device functions brought “for free” by BYOD
- We still go through learning curve
  - Early adopters get competitive advantage
- Flexible, robust and secure infrastructure is a key for success
Otázky a odpovědi

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