



# BYOD - Realita alebo ďalší mýtus v poradí...(?)

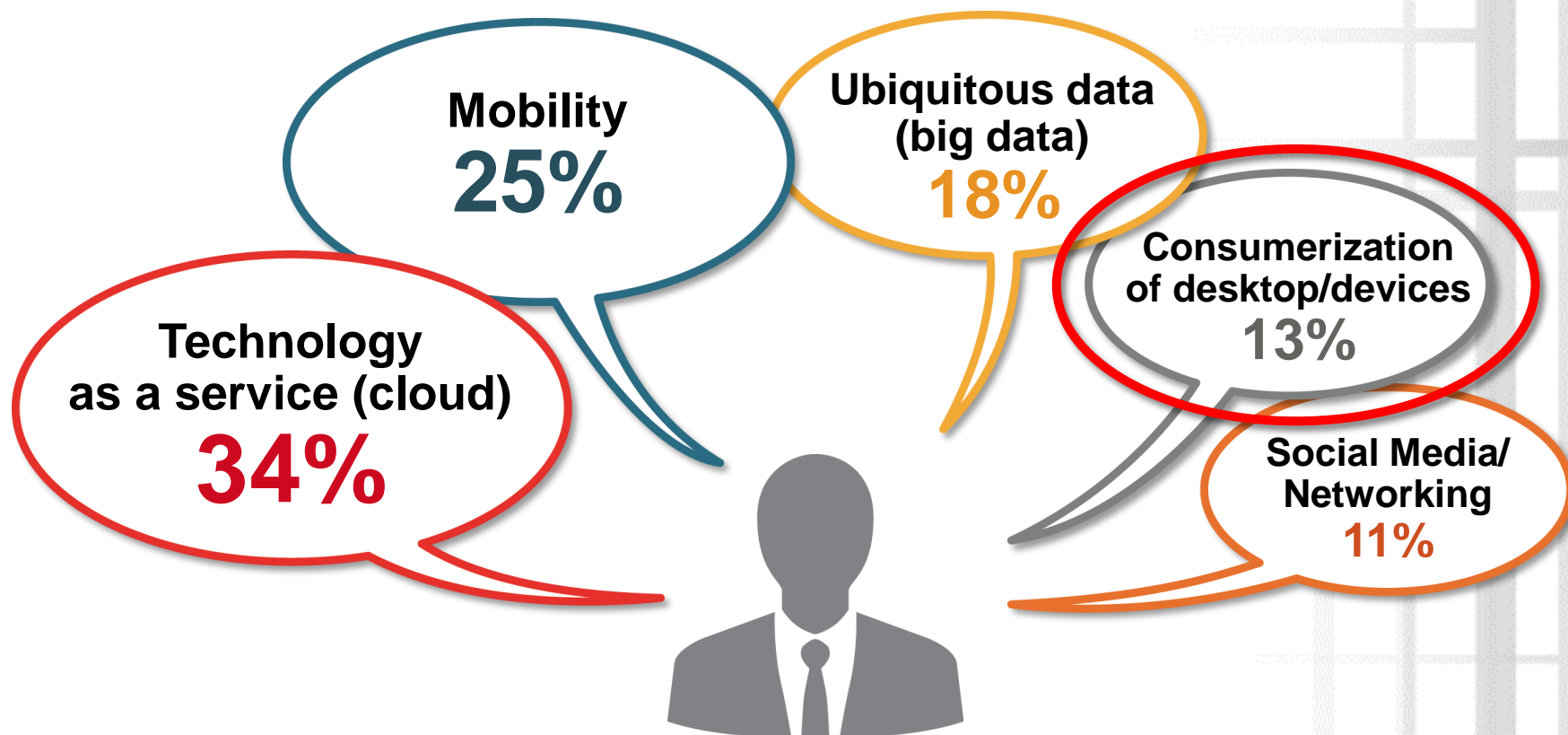
**e**FOCUS

**Roman Janovič, CCIE #6805**

[rjanovic@cisco.com](mailto:rjanovic@cisco.com)

Bratislava 17. Máj, 2012

# Disruptive Technologies



# Agenda

- BYOD Drivers & Benefits
- Architecture
- Possible Implementations
- Cisco Any Device
- Summary



# BYOD Drivers & Benefits



# Cisco Connected World Report

## THE SECOND ANNUAL CISCO CONNECTED WORLD TECHNOLOGY REPORT

1400



COLLEGE  
STUDENTS

(18-23 YEARS OLD)



1400

YOUNG  
PROFESSIONALS

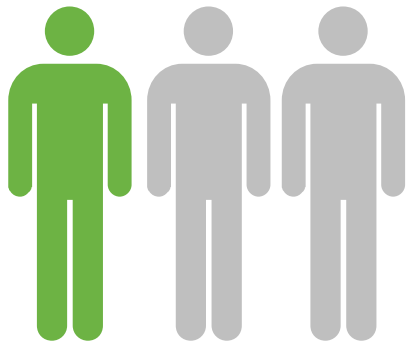
(UNDER 30 YEARS OLD)

- The survey was translated into local languages and fielded in 14 countries to gain approximately 100 completes for each subgroup in each country
- Countries: United States, Canada Mexico, Brazil, United Kingdom, France, Spain, Germany, Italy, Russia, India, China, Japan, Australia

# Food, Water, Shelter...or Internet?

1 in 3

COLLEGE STUDENTS AND  
YOUNG PROFESSIONALS



- ✓ Air
- ✓ Water
- ✓ Food
- ✓ Shelter
- ✓ Internet

CONSIDER INTERNET A FUNDAMENTAL  
HUMAN RESOURCE

55%

OF COLLEGE  
STUDENTS

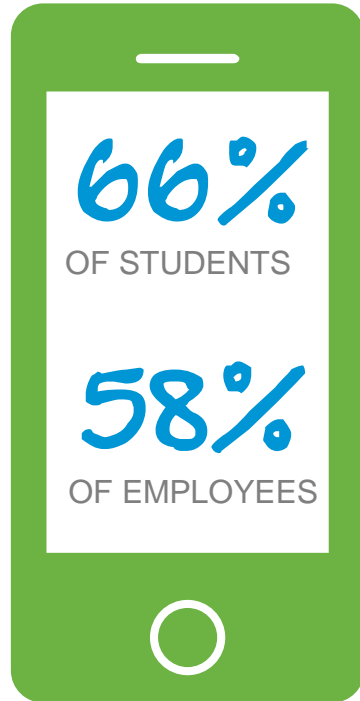
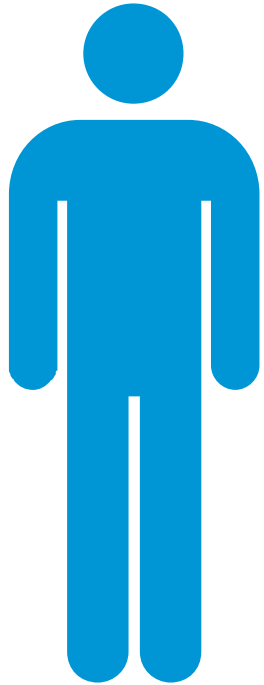
AND

62%

OF YOUNG  
EMPLOYEES

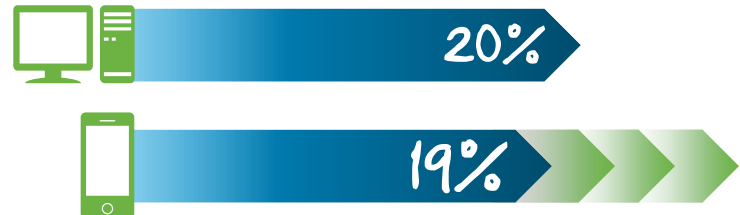
SAY THEY COULD NOT LIVE  
WITHOUT THE INTERNET

# Mobile Devices as the “Most Important” Technology



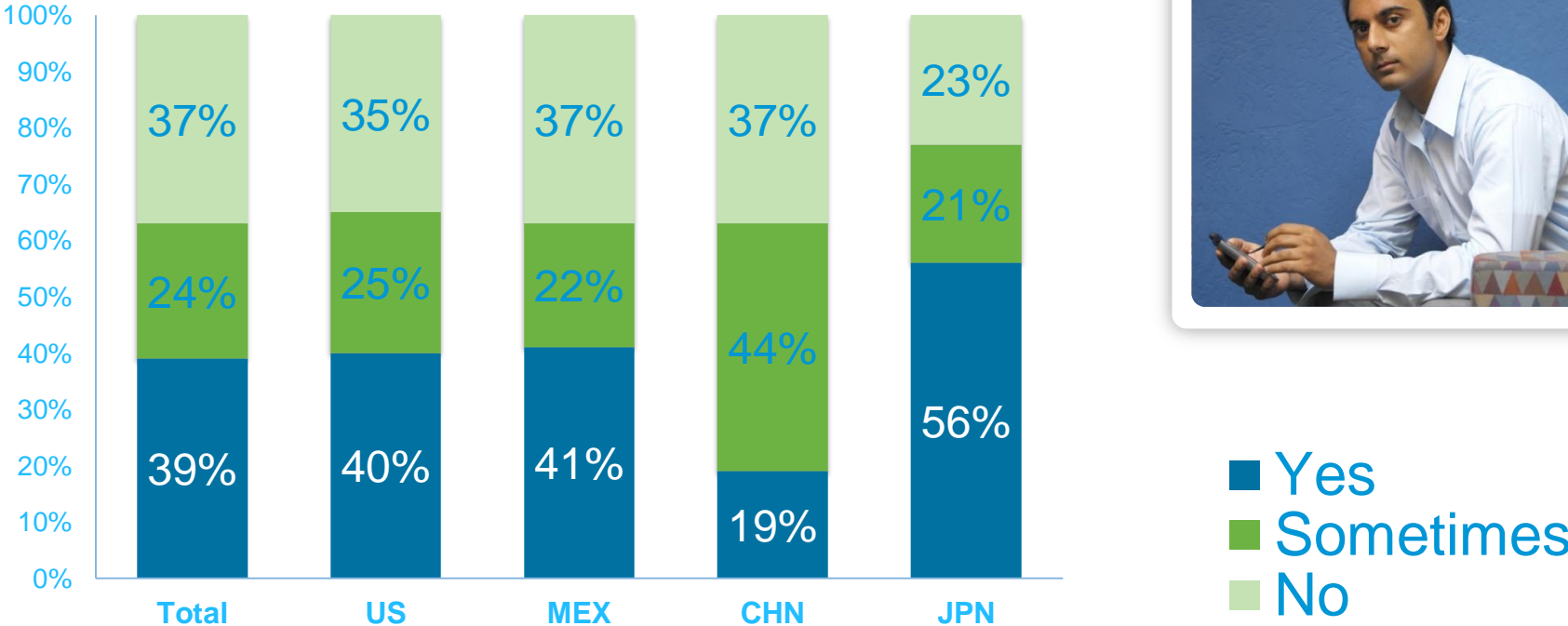
CITE A MOBILE DEVICE (LAPTOP, SMARTPHONE, TABLET) AS “THE MOST IMPORTANT TECHNOLOGY IN THEIR LIVES.”

SMARTPHONES ARE POISED TO SURPASS DESKTOPS AS THE MOST PREVALENT TOOL FROM A GLOBAL PERSPECTIVE



# Work is an Activity, No Longer a Place

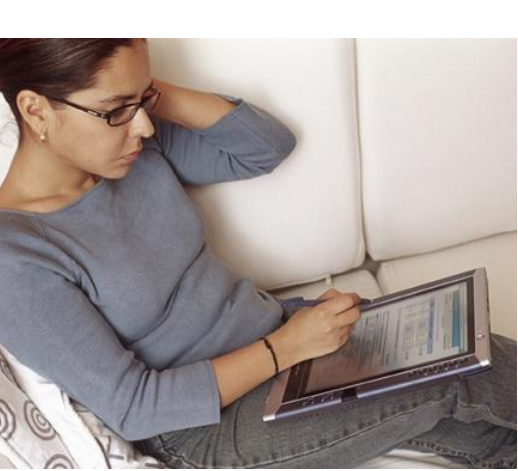
- Q: Do you feel you need to be physically “in the office” to work efficiently?



63% of employees globally believe they don't need to be in an office to be productive



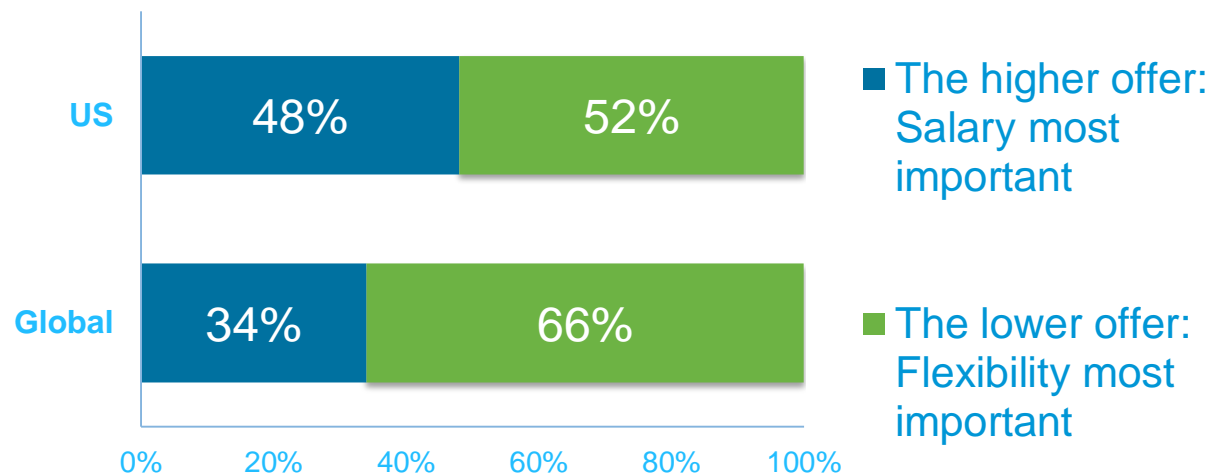
# Employees Place Value on Mobility



Q. You received offers from two organizations that are equal in terms of opportunity and reputation...

Offer A: Higher salary, but no workplace flexibility

Offer B: Lower salary, with workplace flexibility



2/3 of employees globally place a higher value on workplace flexibility than salary

# “Bring Your Own Device”, BYOD



“More than 75% of corporation has a BYOD strategy in place today.”

\*Aberdeen Group

# Spectrum of Customer Requirements

- ✓ Adoption Policy      Restrict, Limit, Allow, Embrace
- ✓ Device Ownership    Corp, Employee, Mix, Guests
- ✓ Support Model        IT managed, IT assisted, Self-supported
- ✓ Support Level        Production, Guest+, Guest, Best Effort
- ✓ Data Security        Written Policy, MDM, Virtual, Advanced



**“We can’t tell people not to use this technology at work. If we did, they would continue to use it and we would be in the dark about what they do.”**



**Brandon Edling**  
**Director of Workplace**  
**Technology, NBC Universal**

# How does BYOD get solved?

It is a **wireless** infrastructure problem

It is a **security** problem and needs a security solution

It is a **device** problem and needs IT friendly devices

It needs **virtualization**

It is a **device** problem and needs IT friendly devices

**Remote** access

# NETWORK

# BYOD Architecture



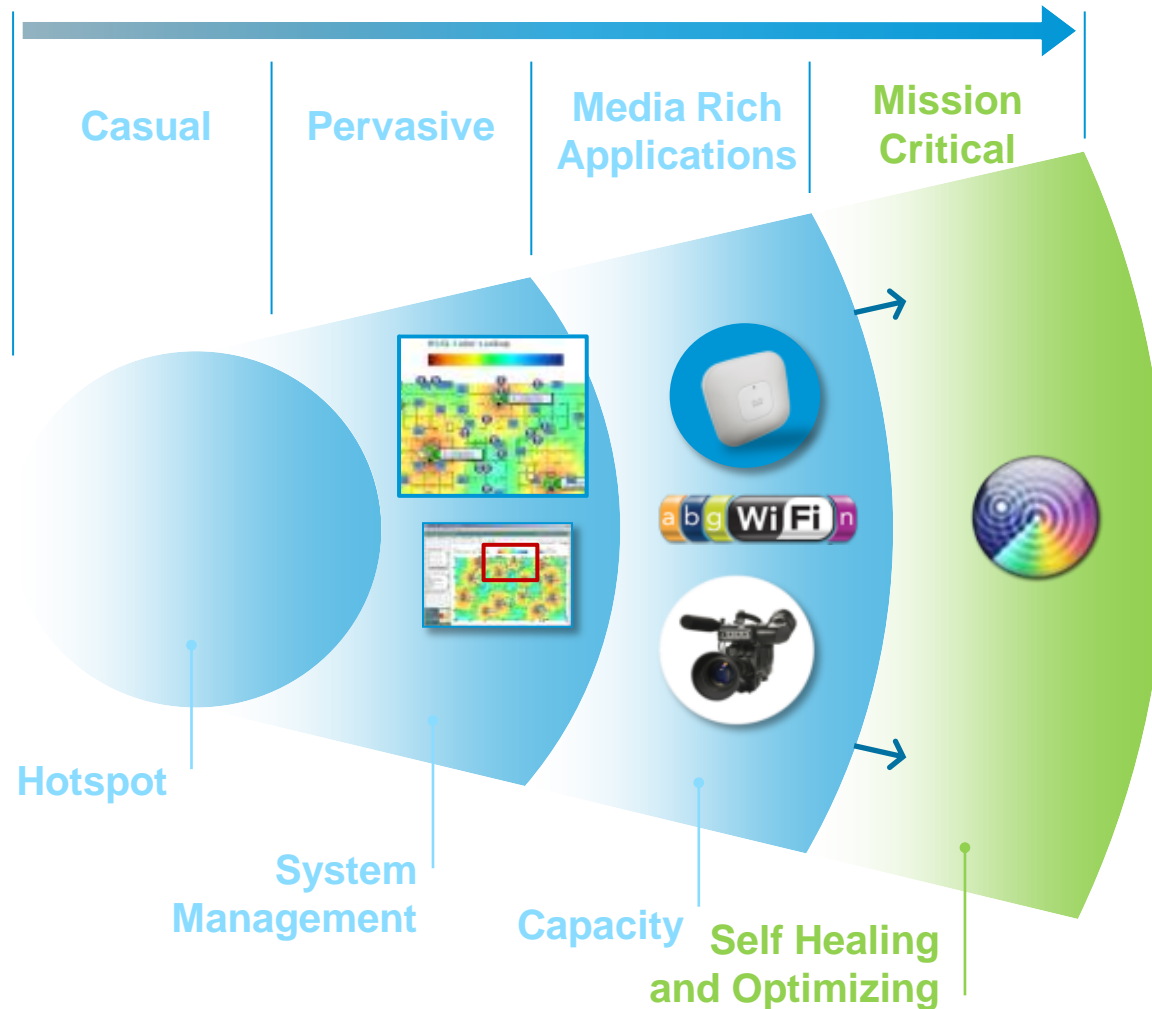
# The 4 Pillars of a Complete BYOD Solution



Central Management  
(Cisco NCS Prime)

# Enterprise Wireless Evolution

From best-effort to mission-critical – delivering a wired experience over wireless



# Cisco CleanAir Technology

Industry's first chip level proactive and automatic interference protection

## BEFORE

Wireless interference decreases reliability and performance



AIR QUALITY



PERFORMANCE



Wireless Client Performance

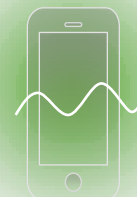


## AFTER

CleanAir mitigates RF interference improving reliability and performance



AIR QUALITY



PERFORMANCE



## Cisco CleanAir – Improves Reliability and Performance

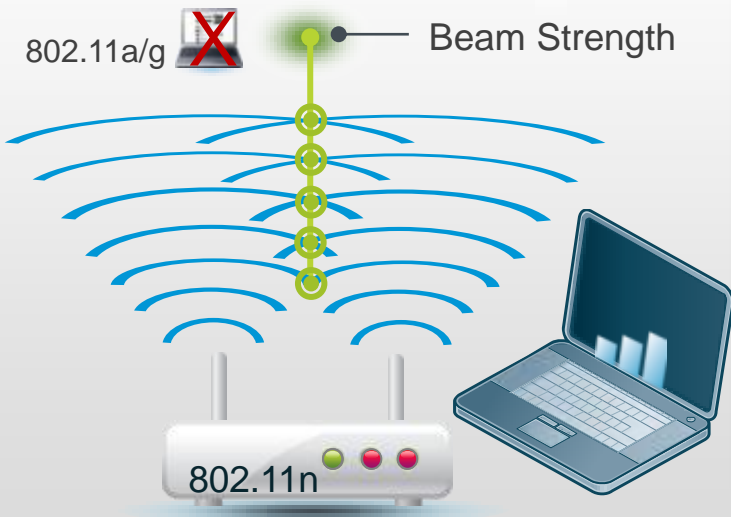


# Cisco ClientLink Technology

Advanced beam forming technology improves wireless client performance

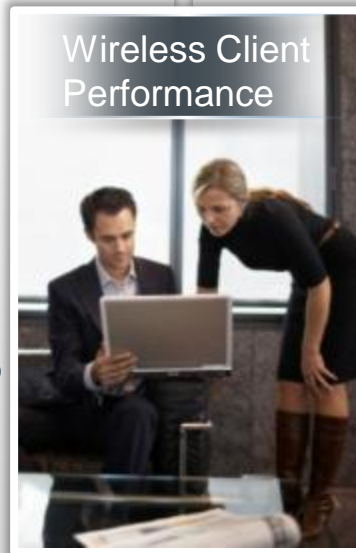
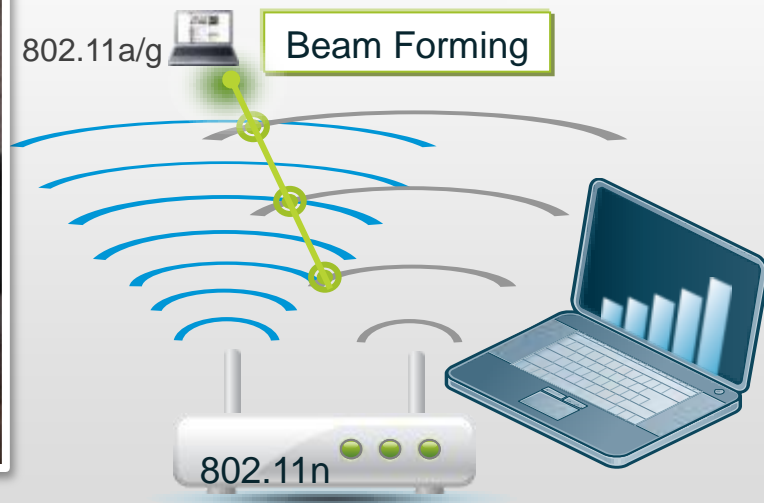
## BEFORE

Beam not directed towards legacy A/G client resulting in lower performance



## AFTER

Beam directed towards client resulting in better performance

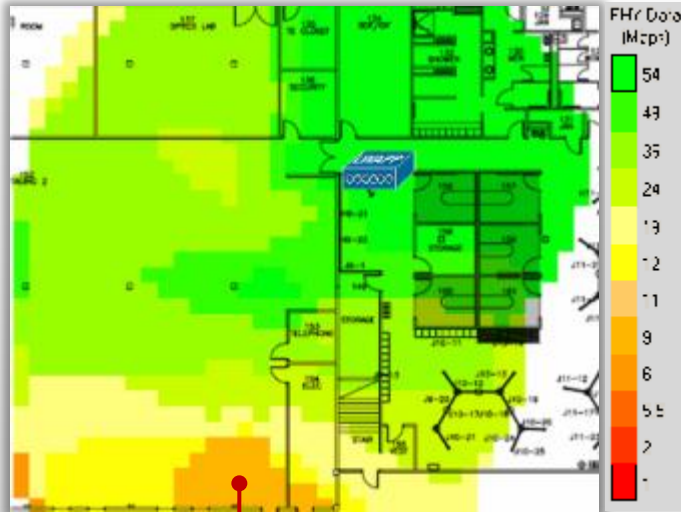


## Cisco ClientLink - Improves Reliability and Performance

# Why Is Cisco's ClientLink so Unique?

Reduces coverage holes and improves client performance

BEFORE  
Client-link disabled

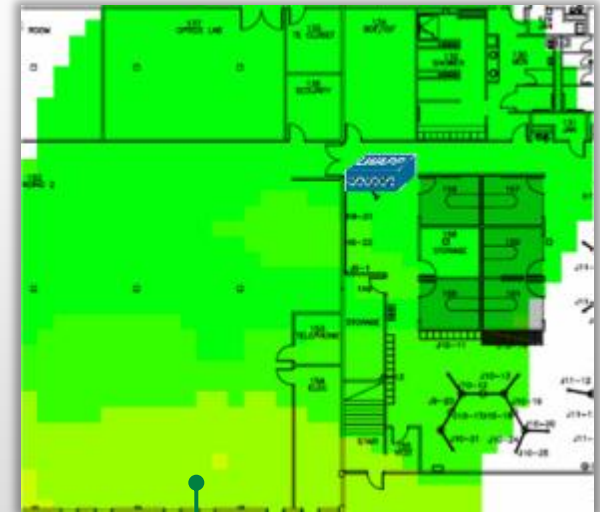


Lower Data Rates

Wireless Client Performance



AFTER  
Client-link enabled



Higher Data Rates

Miercom

## Cisco ClientLink = Up to 65% Improved Throughput

# Cisco VideoStream Technology

Wired-like video delivery over wireless

## BEFORE

No resource reservation, degraded voice and video, cannot deliver multicast

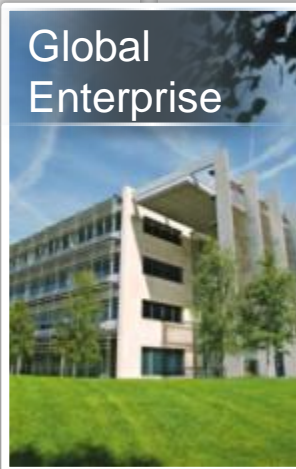


CEO Meeting

M&A Negotiation

Sports Event

## Global Enterprise



## AFTER

Stream prioritization, resource reservation, reliable multicast over wireless



CEO Meeting

M&A Negotiation

Sports Event

## Cisco VideoStream – Improves Reliability and Performance

# Why Is Cisco's VideoStream so Unique?

We optimize end-to-end starting at the Access Point

## Multicast to Unicast Conversion at the AP

Multicast Stream



## Selectable Stream Prioritization



## Resource Reservation Prevents Oversubscription



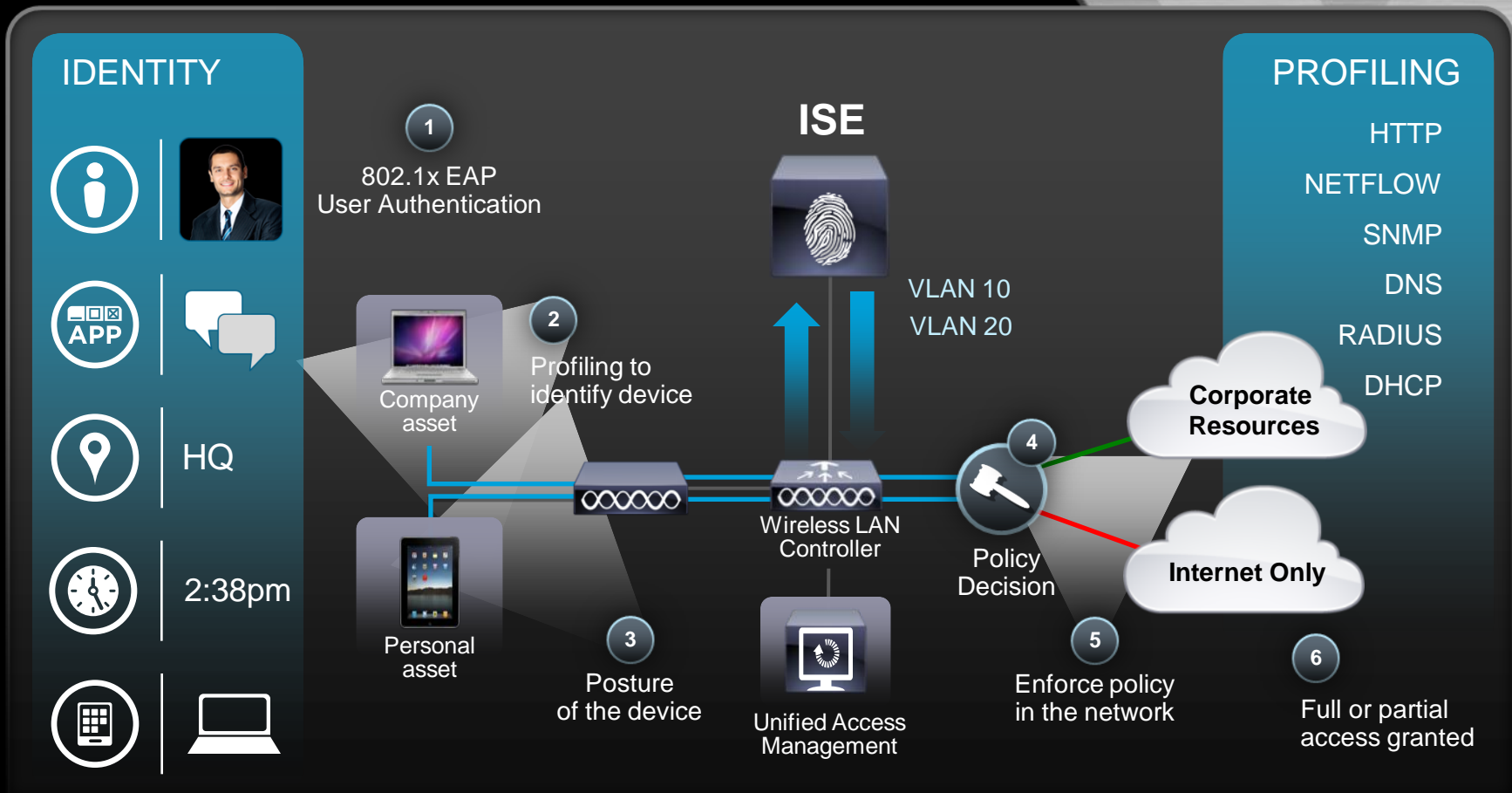
Miercom

Tested for 30X Less Bandwidth Consumed  
and Double the Performance of Competitors



# Policy: Who, What, Where, When, How?

## Identity Services Engine (ISE) for Advanced Policy Management





# Tying it All Together

## ISE Authorization Policy Definition

**Authorization Policy At A Glance**

First Matched Rule Applies

**Standard**

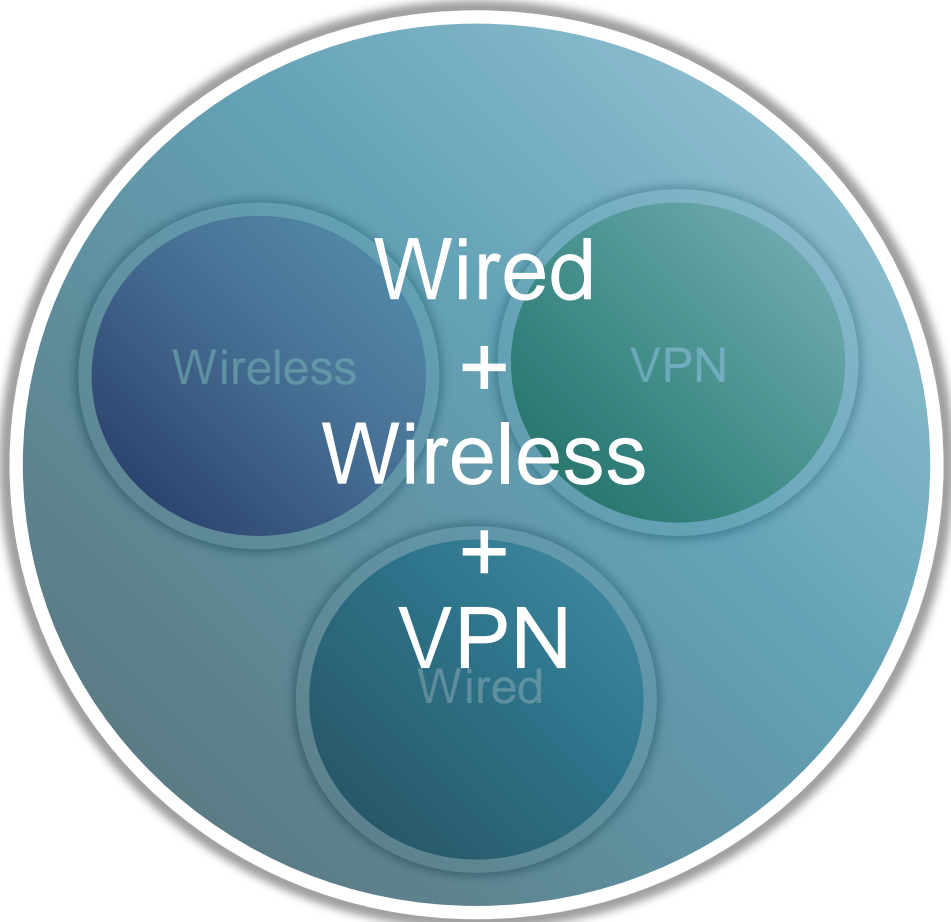
Status	Rule Name	Identity Groups	Other Conditions	Permissions
Enabled	Profiled Cisco IP Phones	Cisco-IP-Phone		Cisco_IP_Phones
Enabled	Game_Console	Game_Console-Registered		Game_Console
Enabled	Domain_Computer	Any	demo.local:ExternalGroups EQUALS demo.local/Users/Domain Computers AND San_Jose_MIT CERTIFICATE:Subject Alternative Name MATCHES.*(demo.local)\$ AND Radius:User-Name MATCHES ^(host).*	AD_Login
Enabled	Employee-Wired	Any	Employee_Wired AND Posture_Compliant	Employee
Enabled	Employee-Wireless	Workstation	Employee_Wireless AND Posture_Compliant AND LDAP1:badPwdCour MATCHES [0-5]	Employee_Wireless
Enabled	Employee-iPAD	Apple-iPad	Employee_Wireless AND Posture_Compliant AND North_America	Employee_iPAD
Enabled	Contractor-iPAD	Android OR Apple-iPad OR Apple-iPhone OR Apple-iPod OR BlackBerry	Contractor_Wireless AND Posture_Compliant AND North_America	Contractor_iPAD
Enabled	Guest-Wired	Guest	Business_Hours AND DEVICE:Device Type EQUALS All Device Types#Wired AND Posture_Compliant	Guest
Enabled	Guest-Wireless	Guest	Business_Hours AND DEVICE:Device Type EQUALS All Device Types#Wireless AND Posture_Compliant	Guest_Wireless
Disabled	Default-Posture	Any		CWA_Posture_Remediation
Enabled	Default	Any		Central_Web_Auth

**Legend:** User, Device Type, Location, Posture, Time, Access Method, Custom



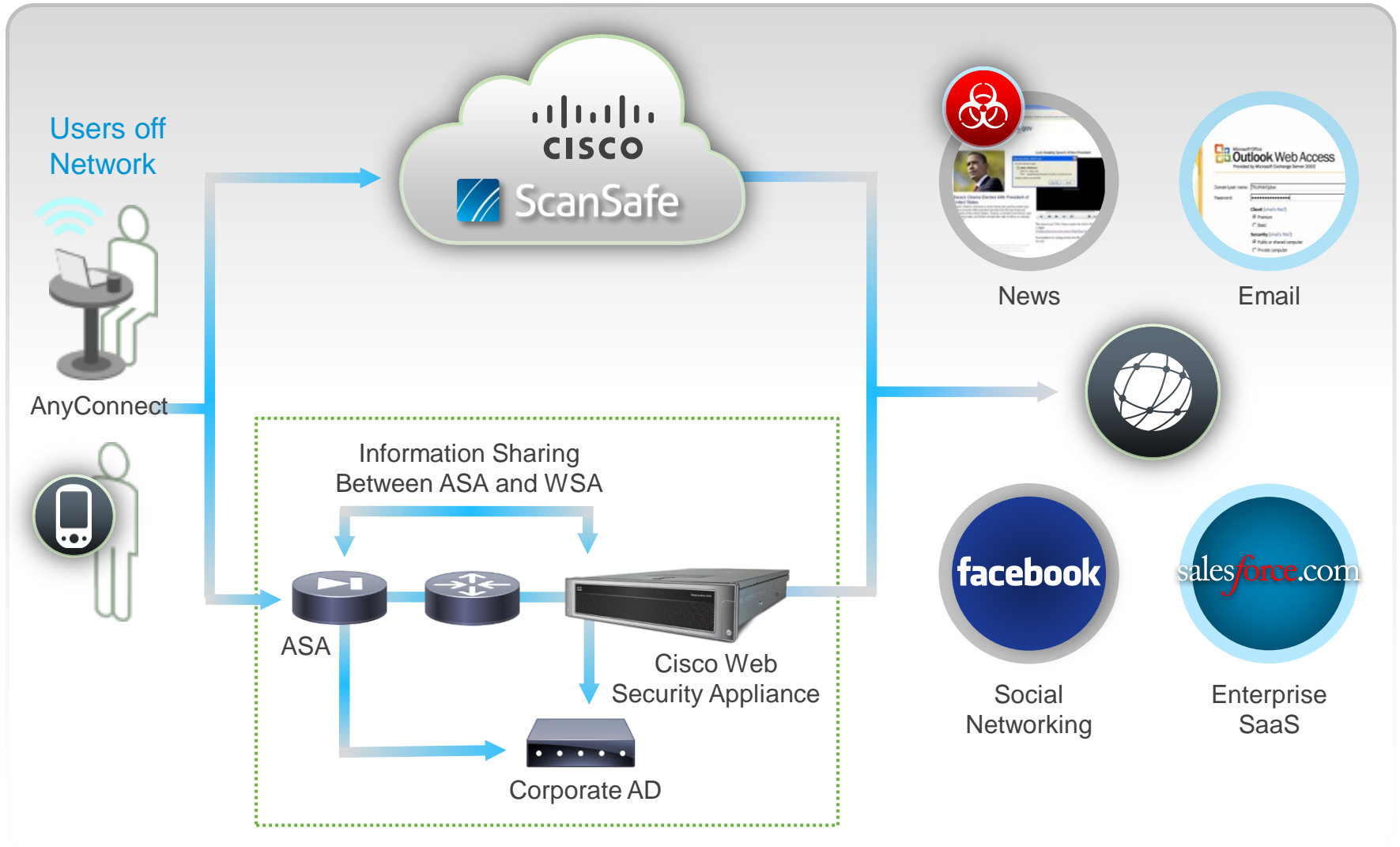
# Unified Network Access

One Network, One Policy, One Management



# Device Protection & Management

## Secure Mobility: Remote Access & Web Security







# Device Management

MDM is a key element but there is more



## MDM Partners

- ✓ Device inventory
- ✓ Device provisioning/de-provisioning
- ✓ Device data security
- ✓ Device application security
- ✓ Cost management
- ✓ Full or selective device remote wipe

## Cisco

- ✓ User/device authentication
- ✓ Posture assessment
- ✓ Policy enforcement
- ✓ Context aware access control
- ✓ Threat defense
- ✓ Web usage policy
- ✓ Web application DLP
- ✓ Secure remote access



ISE



ScanSafe



WSA



AnyConnect

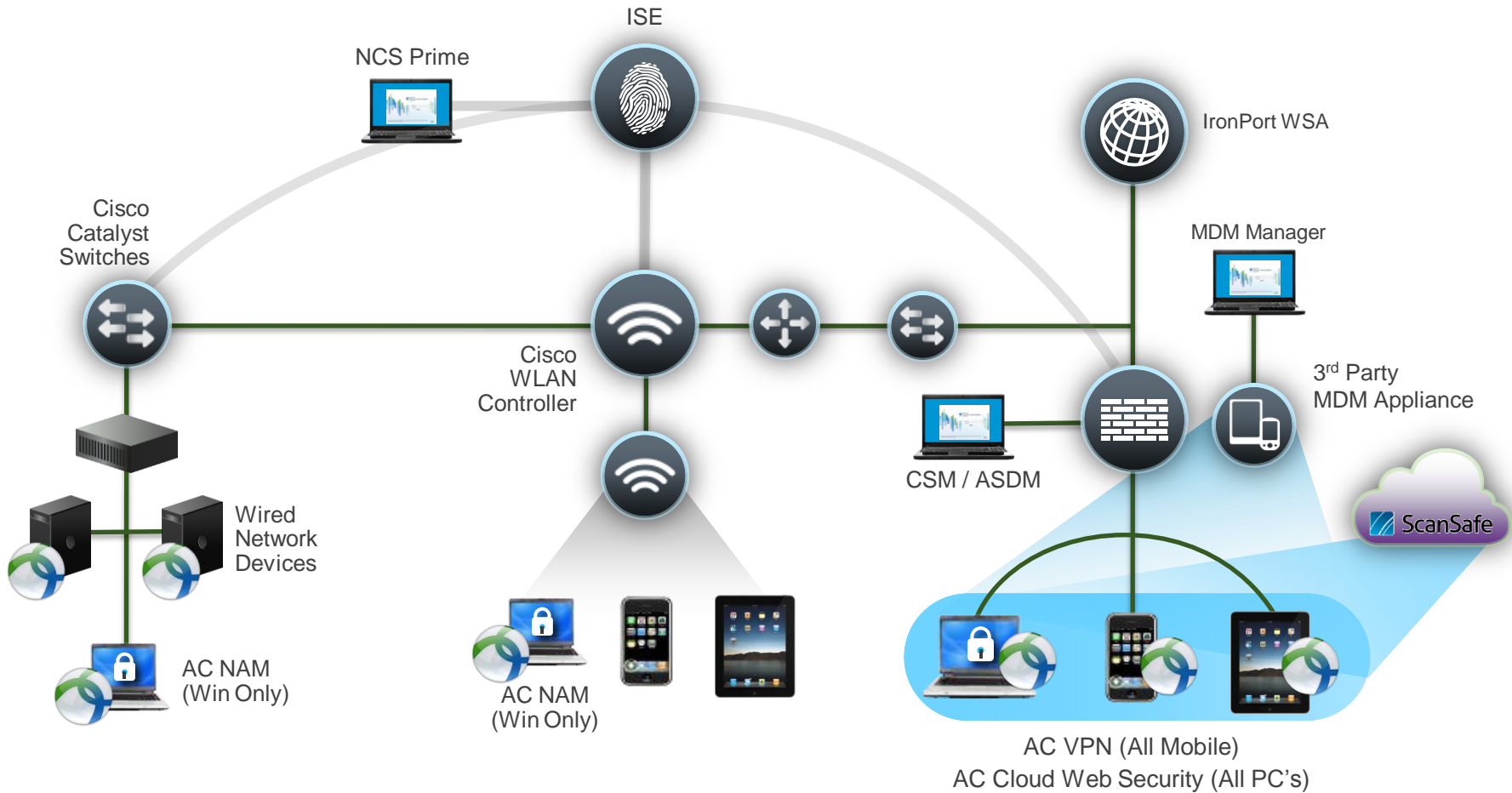


ASA



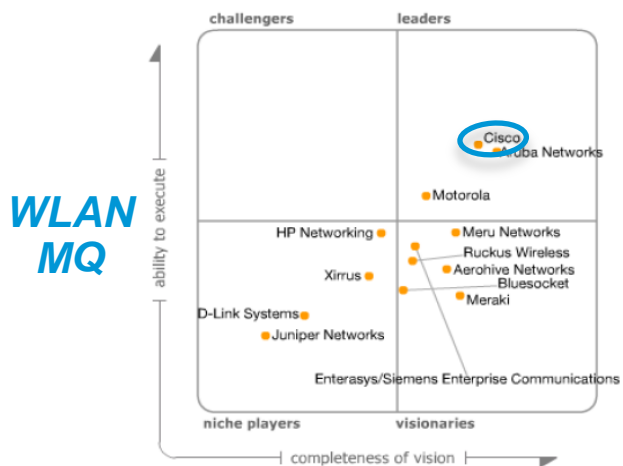
# Cisco's End to End BYOD Solution

Only Cisco can tie all the pieces together!

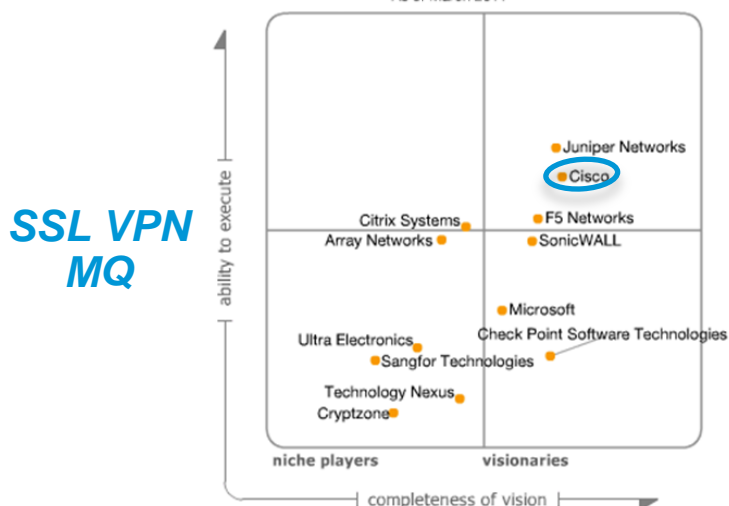


# Gartner Implicit View of BYOD Strategy Leader

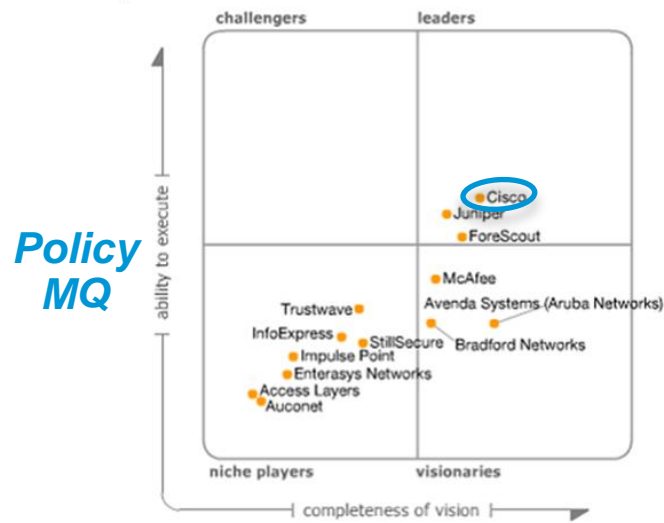
Only Cisco is the Leader in Each of These Key Areas



As of March 2011



As of December 2011



As of December 2011

Only Cisco is listed in all four leader quadrants critical to BYOD / Mobility

# BYOD at Cisco

# Cisco-on-Cisco Client Mix



# Cisco-On-Cisco Realized Gains



**59%**  
**more** devices



**32%**  
**more** users



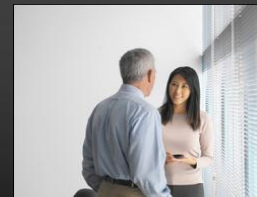
**20%**  
**fewer** cases



**30 minutes**  
per day  
**more** productivity



**25%**  
per year **savings**  
using VXi



**17 weeks**  
**faster** acquisition  
integration

Ďakujem za Vašu  
pozornosť

