



## Story of BYOD Evolution and Revolution

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## IBM in a snapshot



435,000 employees  
(+ contractors)



50% of  
employees are  
“mobile”



600,000 managed  
laptops/desktops  
(5% personally  
owned, 11k Macs)



100,000 managed  
mobile devices  
(80% personally  
owned)

### BYOD @IBM

IBM has been supporting “BYOD” for many years, good & bad  
Mobile and consumerisation of IT is simply accelerating

Key lesson: today's employees simply expect it

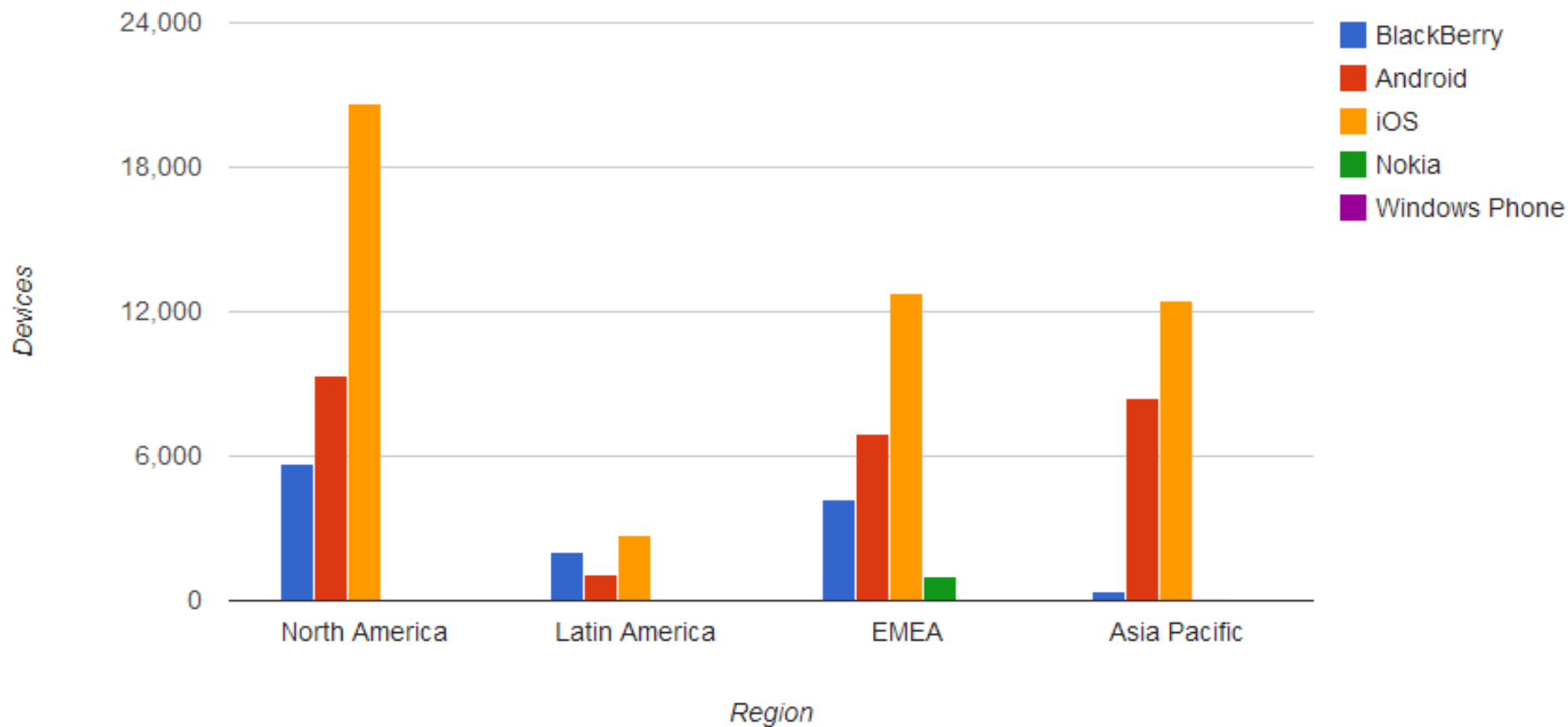
- you can not stop it
- if you don't enable it, employees will self enable

- 50% workforce has less than 5 years of service
- Strong dependency on collaboration and social tools



## Where we are today (managed BYOD)

Managed IBM devices by region

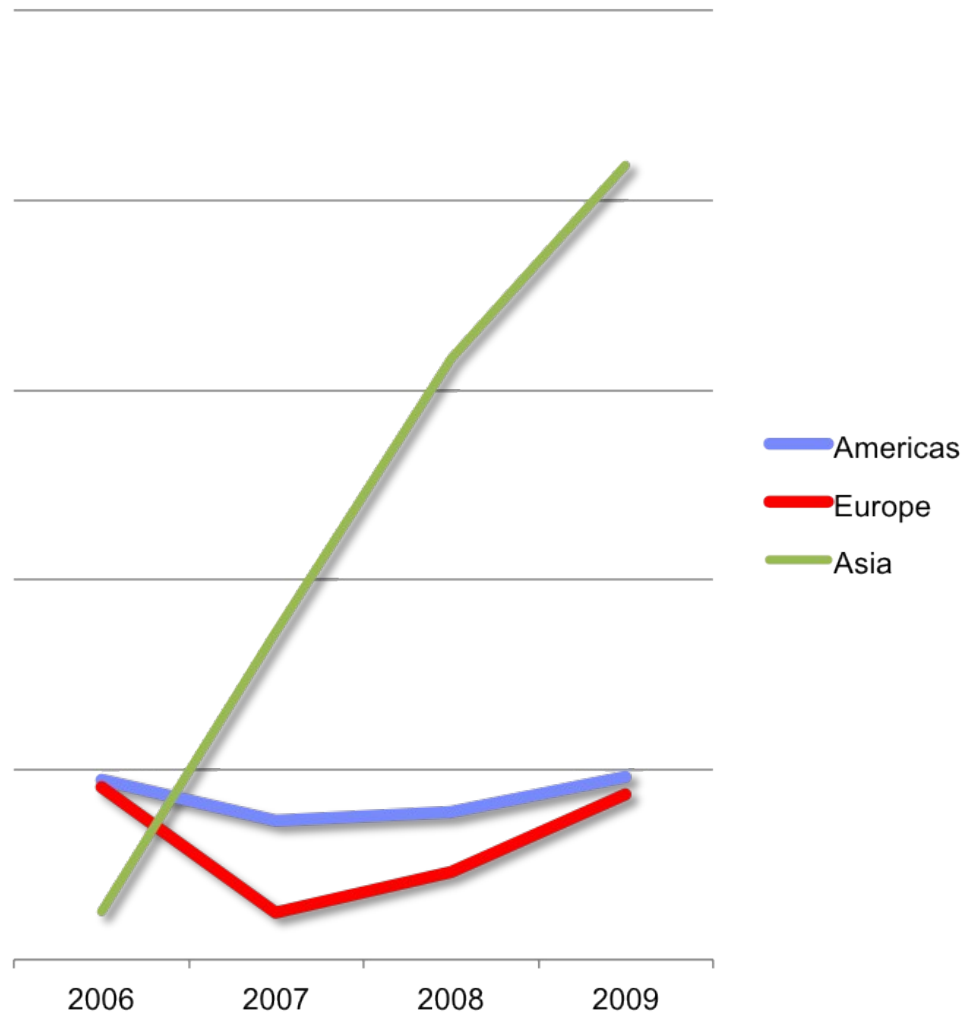


Deployment to 500,000 endpoints (mobile and Laptop) in under 6 months



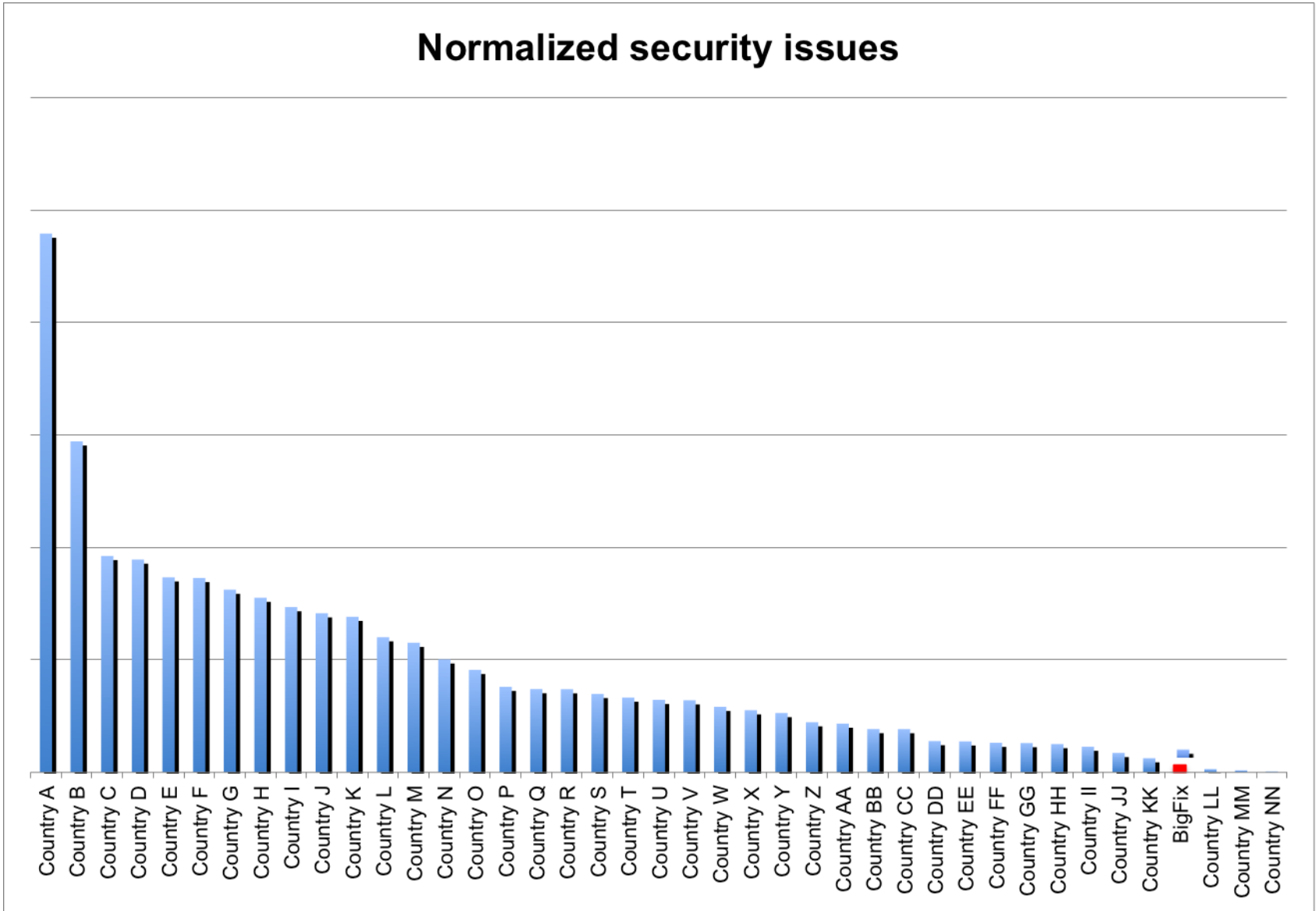
# Something needed to change – mobile and laptop

Endpoint security issues by GEO





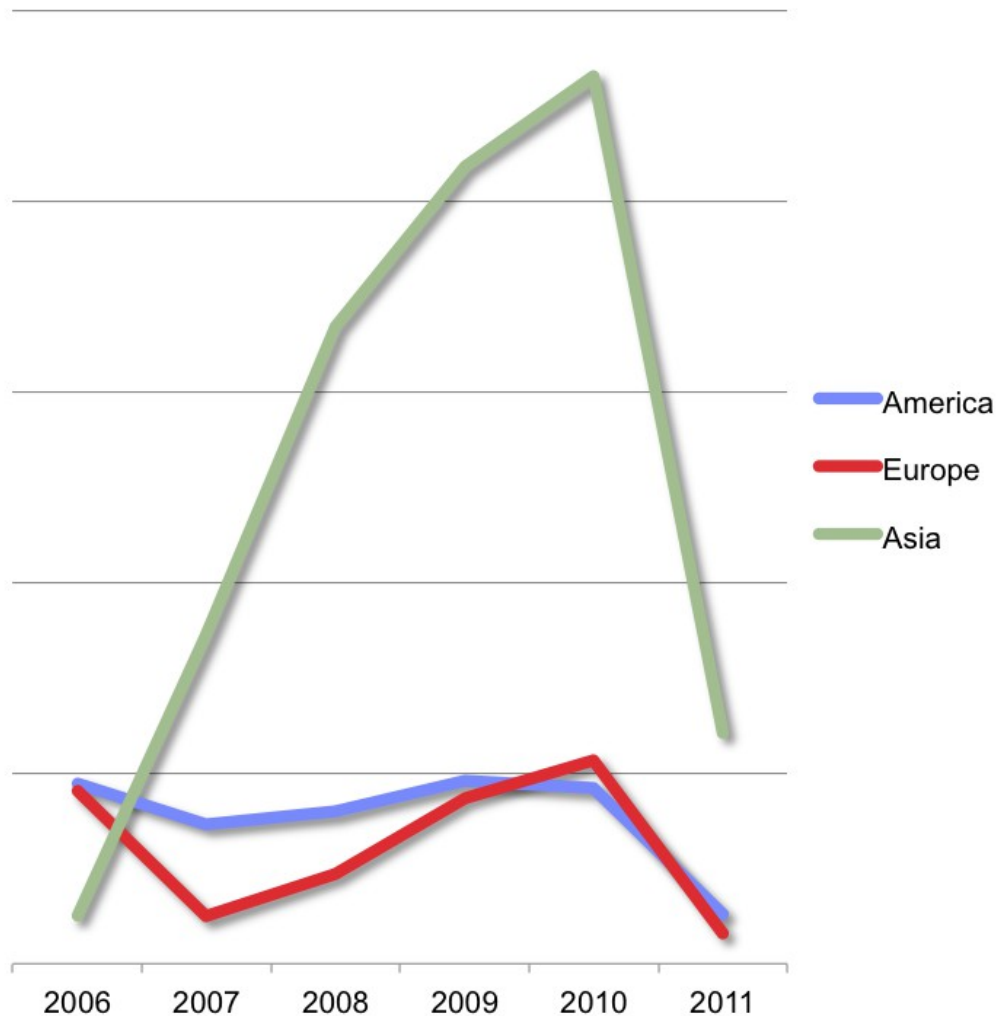
## Normalized security issues





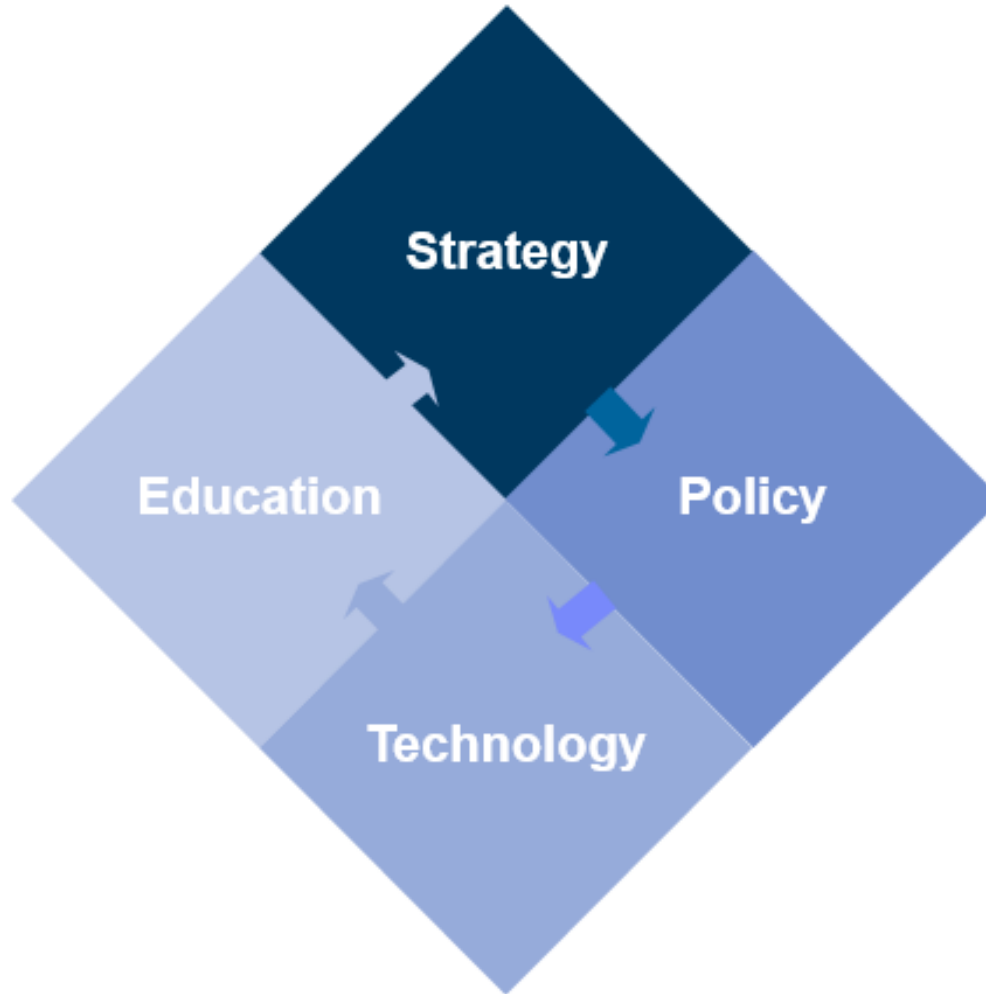
## Something needed to change – mobile and laptop

Endpoint security issues by GEO





## Four aspects of a successful BYOD program





# Strategy – first, define personas

## Approach to Identifying



Determine key IT services necessary for employees to do their jobs



Determine the environment and attitude of employees



Cluster employees with similar IT requirements and work locations in groups



Validate IT requirements and employee segments through a survey or user interviews



Map segments to traditional HR demographics such as Job Role and Business Unit



Use employee segments to identify targets for new technology deployments

## Identified Personas

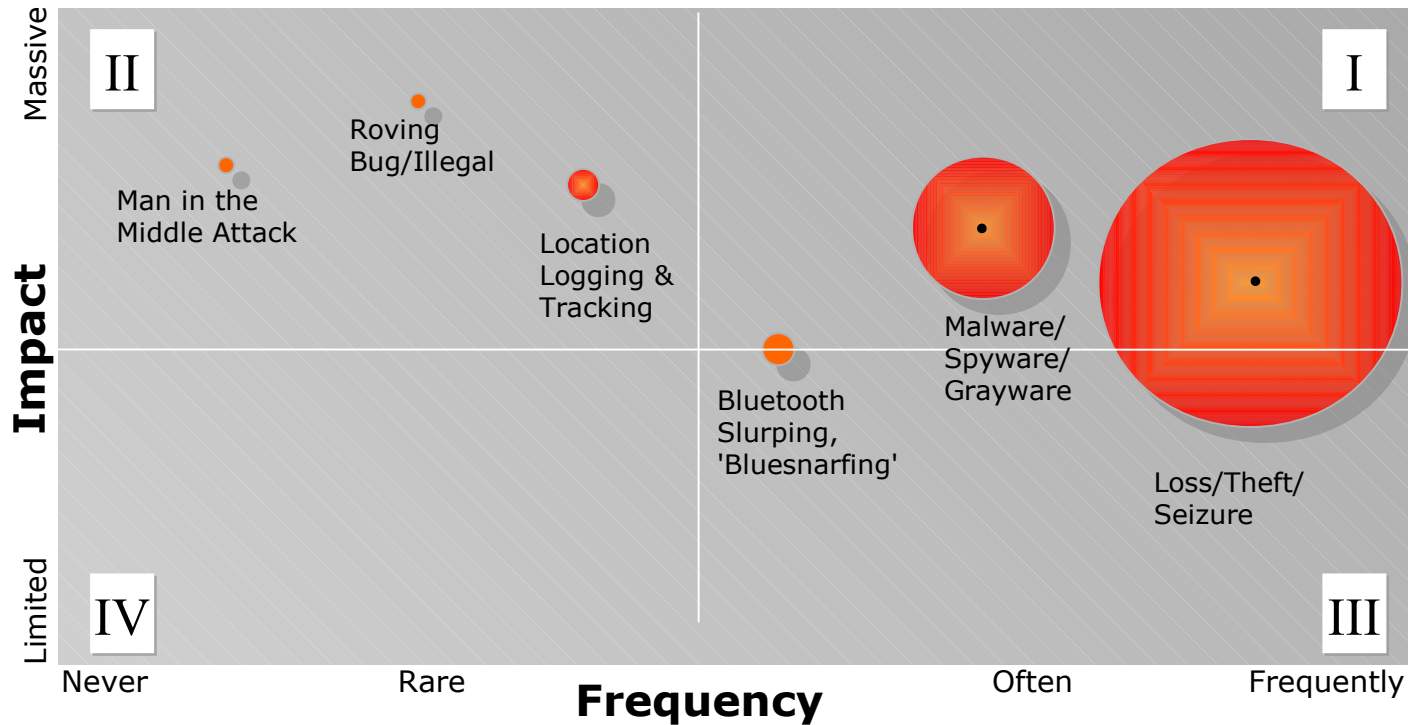
Basic Persona		Priority on Mobile needs
Executive, Leader role		High
Customer Facing ( Sales, Brands & Services )		High
Non-Customer Facing	GMU Global Business Support	Medium to Low
	Manufacturing and Non-traditional office users	Medium to Low
	Researcher, SW, HW development engineers	Low
	Other general users	Medium to Low





# What are we worried about? (mobile device risks)

Based on Gartner, Mobile Security Risks, interviews with members of ISS xForce, and Corporate Executive Board. e.g. Industry (not IBM only) view



**Control Category I:** Focus on risks for all mobile devices used by IBMers for IBM business purposes

**Control Category II:** Focus on risks for targeted populations of IBMers (ex. SVPs)



## Strategy – next, analyse personas (DITL)

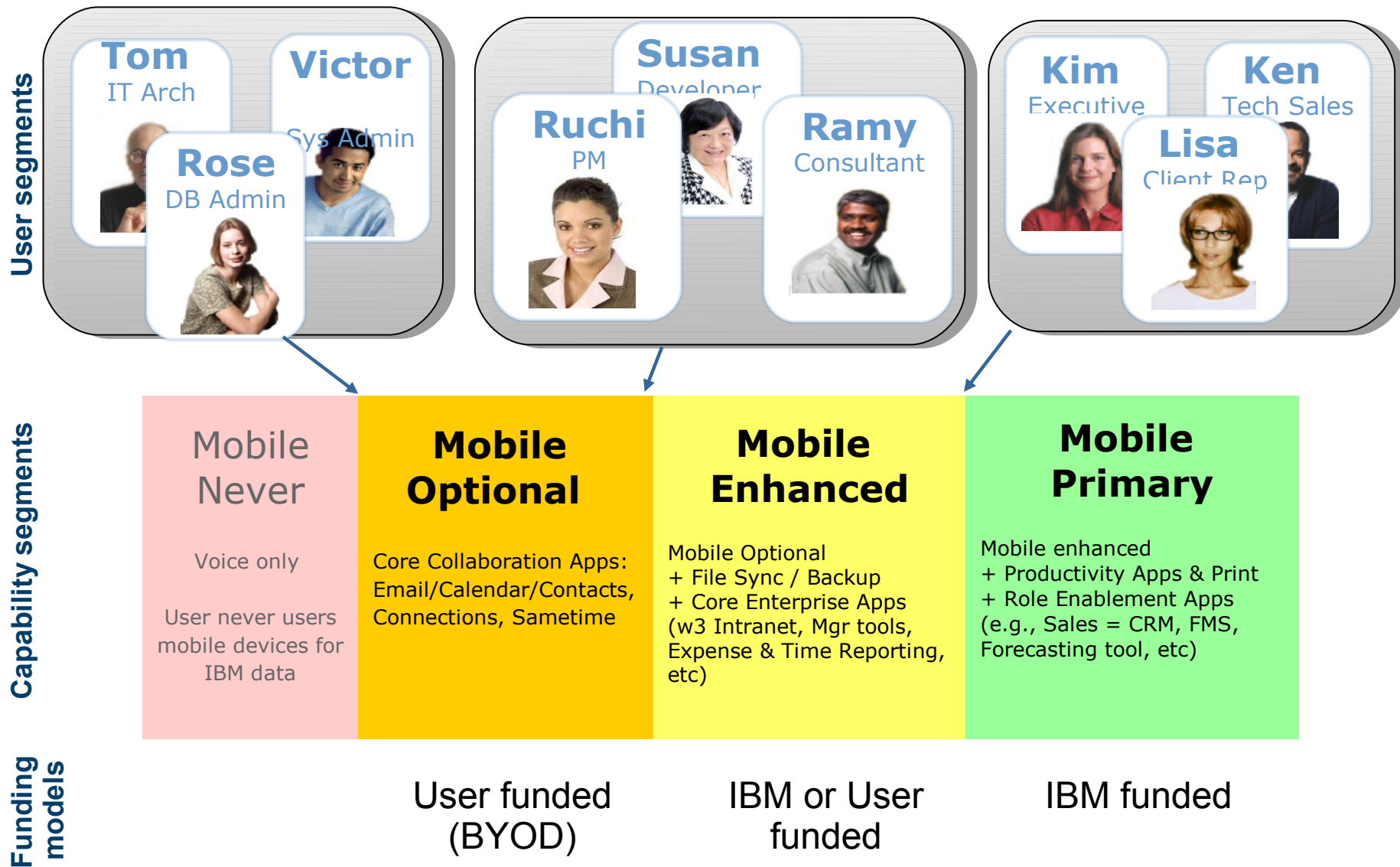
<b>Employment Status:</b> Full-time IBM <b>Country:</b> China <b>Environment:</b> IBM, Client, Home, Public	<b>Equipment used:</b> IBM laptop, personal Android phone	<b>ISSUES</b> <ul style="list-style-type: none"> <li>•No malware protection available for mobile devices; business web usage can spread malware to mobile device</li> <li>•MicroSD cards are not encrypted and can result in loss of IBM data</li> <li>•Using cloud storage services can result in loss of IBM data</li> <li>•Improperly configured mobile hotspot can allow unauthorized access to the device</li> </ul>
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Today (from user interviews)





# Gaps mapped personas to funding and capabilities





## Policy - starts with legal & HR



### **Terms & conditions for personal devices include topics such as:**

#### Employee will:

- Understand use of the device is governed by enterprise rules (conduct guidelines)
- Allow installation of enterprise management agents (and freedom of their operation)
- If requested, allow inspection/possession of device by enterprise (or 3<sup>rd</sup> party delegate)
- Understand enterprise can wipe all work data/property off device (at any time)
- Ensure all software on device is fully licensed (including personal software)
- If device is lost/stolen, call in as enterprise security incident
- Not share the device with non employees (unless controls exist to secure work data)
- Must understand enterprise can revoke right to use device at any time (without warning)

#### Company will:

- Honor data privacy laws
- Not wipe full device without asking permission
- Not track users geo-location without permission
- etc



## Policy - needs general policy & detailed controls

### Overall endpoint policy includes includes:



- minimum acceptable devices locks  
(password policies, autolock settings, etc)
- required malware protection  
(antimalware software, firewall, intrusion protection, system currency, etc)
- required data protection  
(minimum acceptable encryption, data loss prevention, url filtering, etc)
- required endpoint management  
(to enforce the above & enable enterprise to respond to change)
- definitions of acceptable use

### Technical controls per platform include:



Details of how to meet general policy, on a platform by platform config basis

Some mobile platform examples @ IBM:

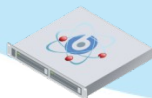
- 8 char, alphanumeric passcode, 30 minute max auto lock, wipe after 10 attempts
- required antimalware software on android, no jailbroken iOS devices
- itunes backups encrypted, siri prevented from bypassing passcode
- device encryption on Android 4.0+ devices to enable full network access
- minimum acceptable OS versions



# Technology Considerations

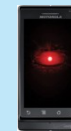
## Traditional Endpoint Management

- OS provisioning
- Patching
- Power Mgmt
- Anti-Virus Mgmt



## Mobile Device Management

- Device inventory
- Security policy mgmt
- Application mgmt
- Device config (VPN/Email/Wifi)
- Encryption mgmt
- Roaming device support
- Integration with internal systems
- Scalable/Secure solution
- Easy-to-deploy
- Multiple OS support
- Consolidated infrastructure
- Device Wipe
- Data Wipe (full OR partial)
- Location info
- Jailbreak/Root detection
- Enterprise App store
- Self-service portal





# Technology Choice

## IBM Endpoint Manager

Network Discovery, Global Properties Inventory, Fixlets, Wake-on-LAN, n-Tier Relay Architecture, Dynamic Bandwidth Throttling  
 SOAP APIs for integration with Service Desk, CMDB, SIEM, GRC, and other IT management, security, and compliance solutions



**Lifecycle Mgmt**

**Patch Mgmt**

**Server Automation**

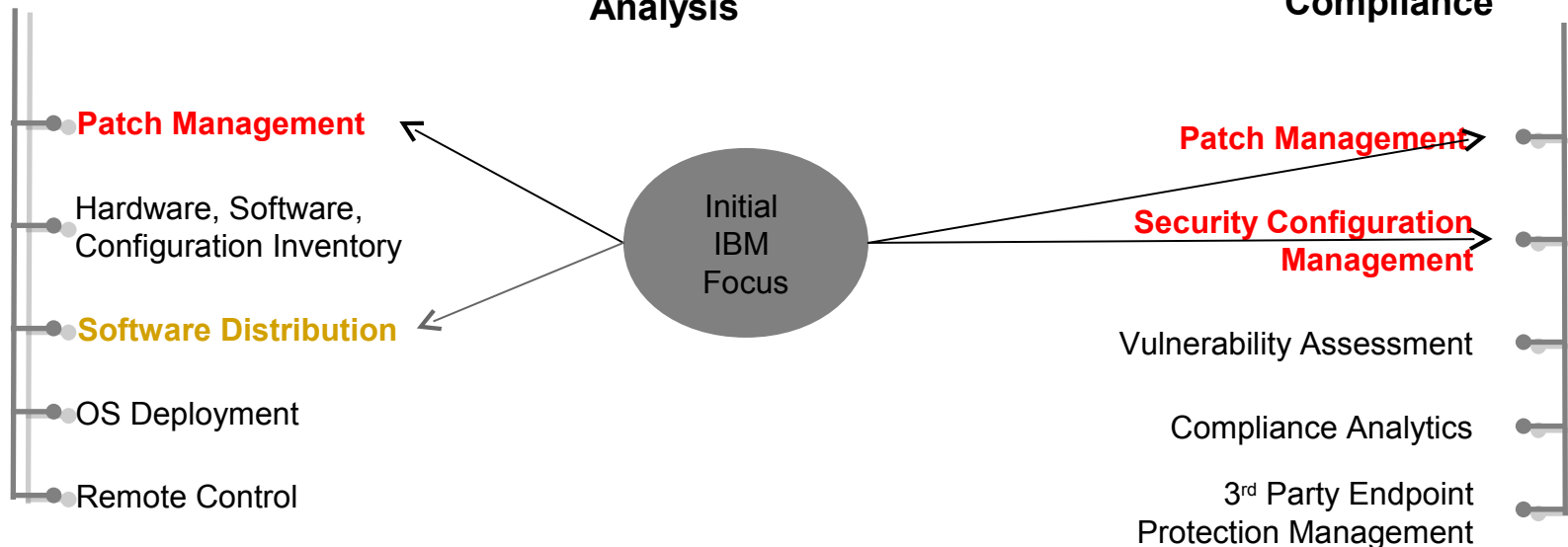
**Software Use Analysis**

**Mobile Devices**

**Power Mgmt**

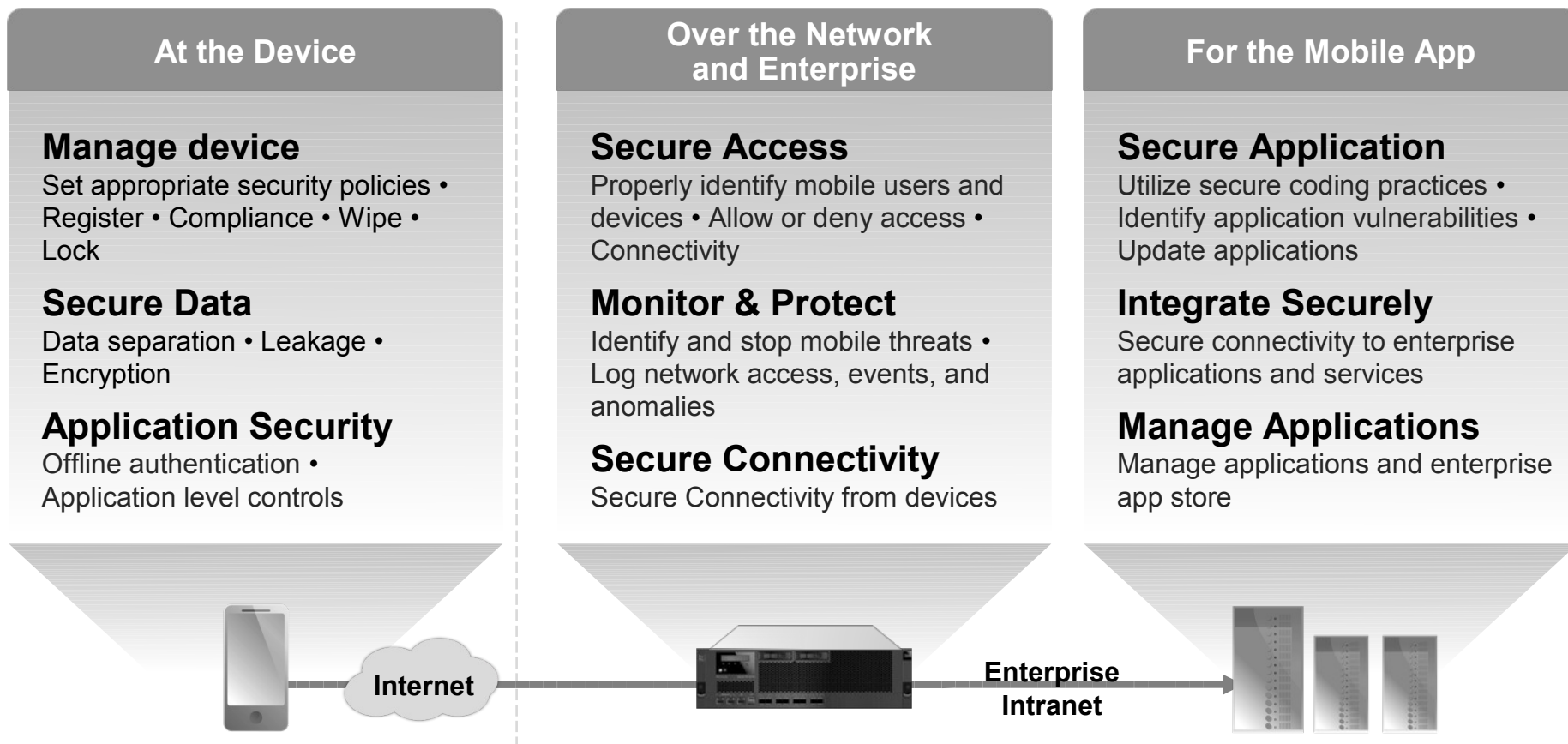
**Security and Compliance**

**Core Protection**





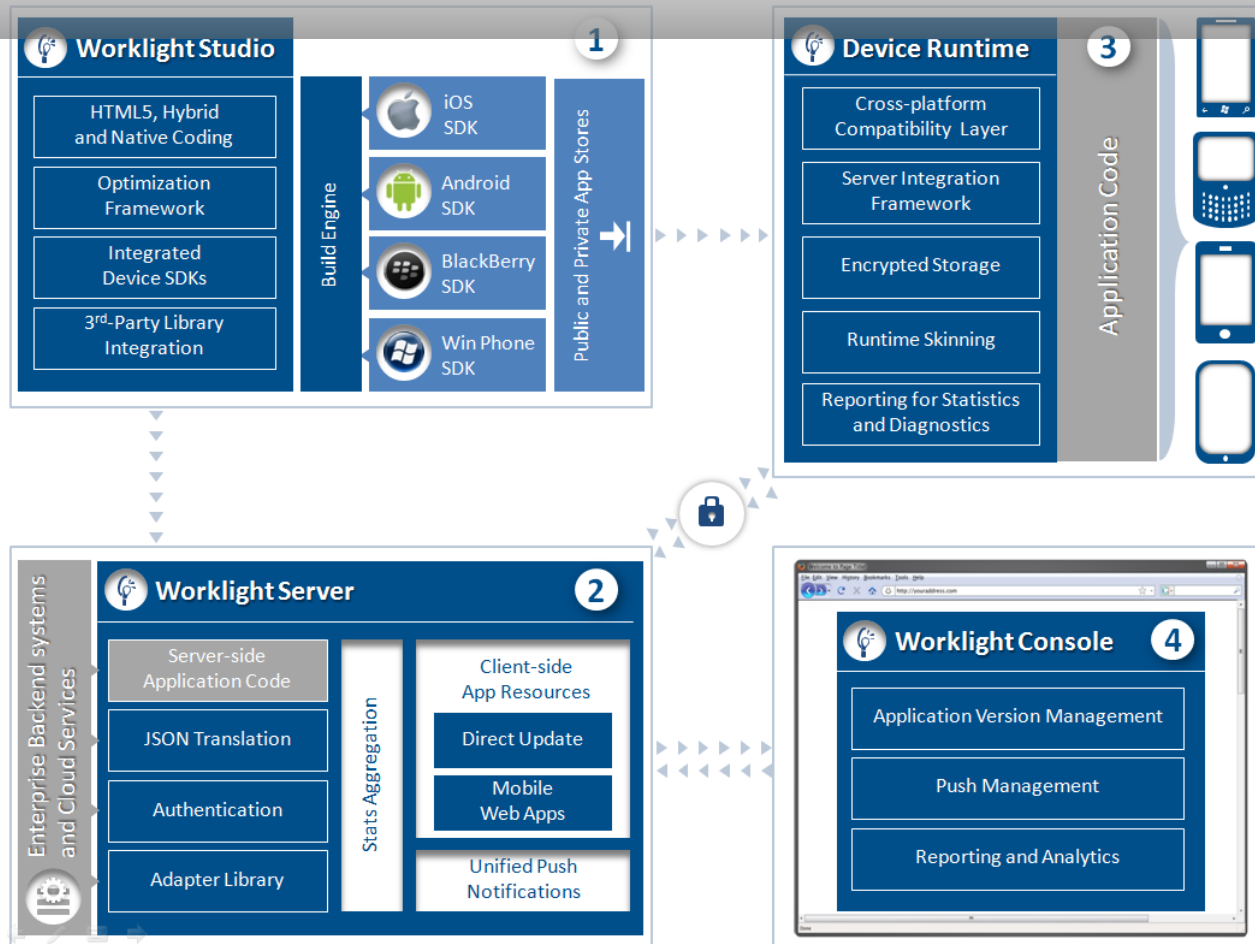
# Technology - mobile security, more than just the device







## Technology - Application Security

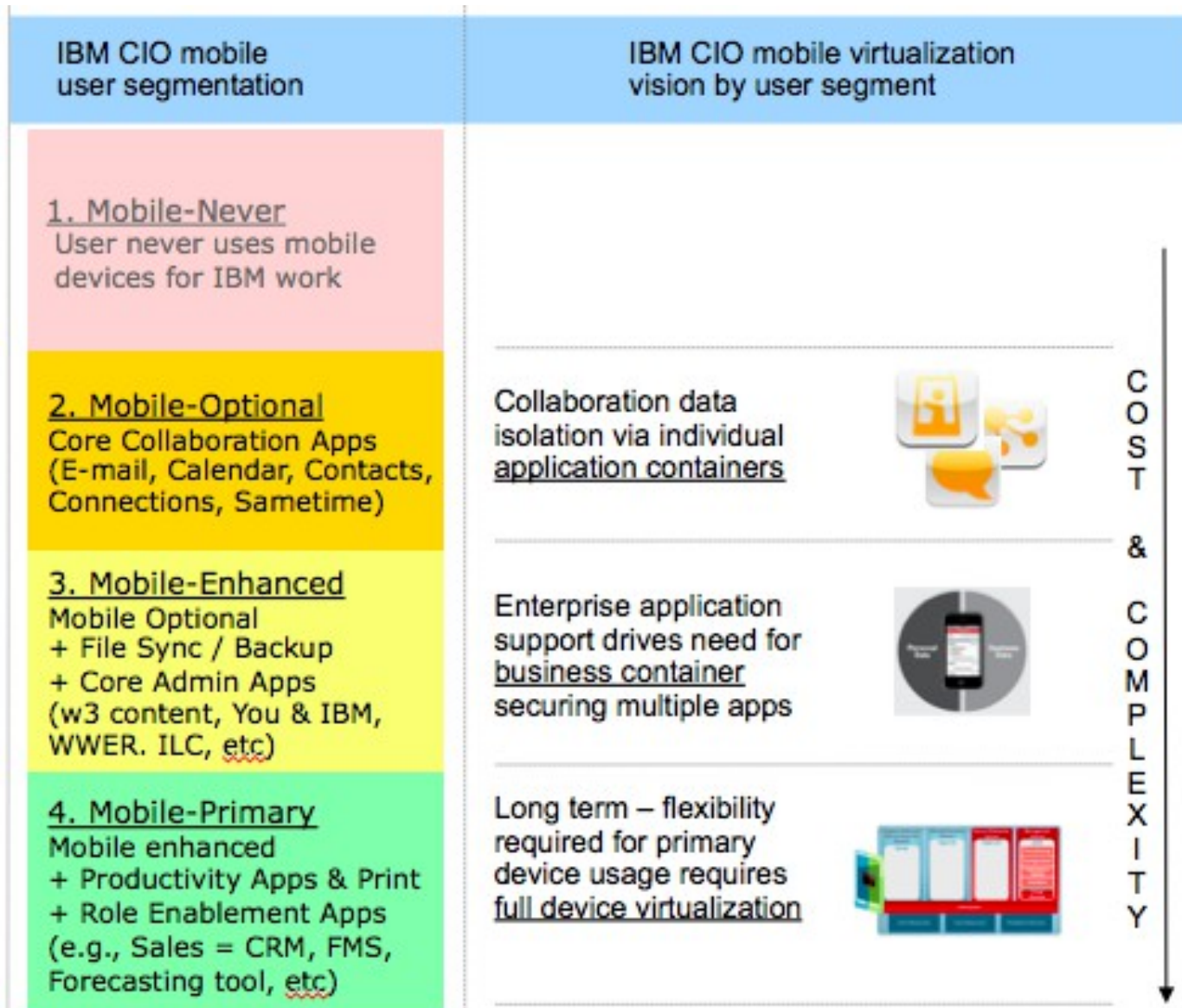


Run-time capabilities provided on the server and device:

- Strong authentication
- On-device encryption
- Back-end integration
- Push notifications
- Data collection for analytics
- Application updates
- Runtime skinning
- Support for B2E, B2B as well as B2C



## Technology – containerisation, virtualisation?





## Education

### Digital IBMer Education

- Designed to help IBMers practice secure computing as a foundation for the effective use of new and emerging technologies – including social, mobile, and cloud computing.
- Course completion and date are automatically recorded in the Learning@IBM system.



#### Module 2: Secure computing Mobile device security

If you use a smartphone, tablet, or other mobile device for IBM business, follow these guidelines.

- Exercise caution and install only well-known applications available through the vendor's official "app" store.
- Do not "jailbreak" or "root" your smartphone or tablet computer, which disables critical security features in the device's operating system.
- Always use an IBM-approved mobile connectivity service such as Lotus Traveler to access IBM's internal systems and infrastructure.
- If you work with [Sensitive Personal Information \(SPI\)](#) or other regulated data, use IBM's encrypted BlackBerry service or approved Apple iOS service. For Android devices, IBM-approved encryption is available for mail and calendar only.
- For cellular wireless devices with Wi-Fi hotspot functionality, including smartphones and portable hotspot devices, WPA2 Wi-Fi encryption security must be enabled and configured with a strong password to prevent unauthorized access to the Wi-Fi network created by the device.
- Smartphones and tablet computers used to conduct IBM business must be restricted from access by non-IBM employees, including family members. This restriction applies to both IBM-provided and personally owned devices used to conduct IBM business.

### Business Conduct Guidelines

- Specify IBM's standards of business ethics, basic values and principles.
- All employees must complete the IBM Business Conduct Guidelines annually





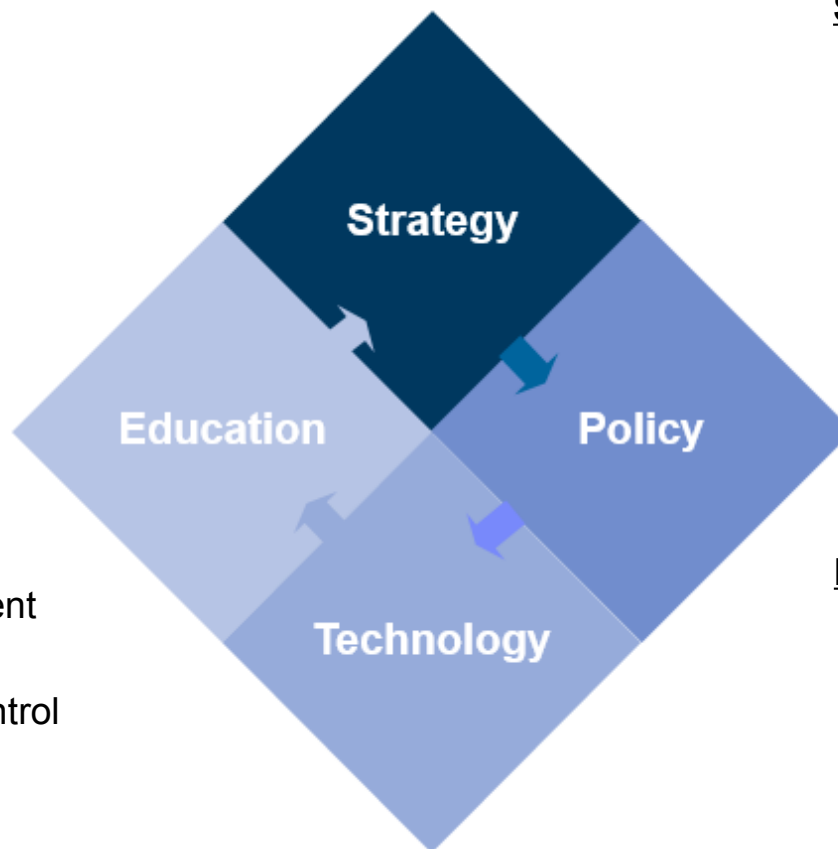
# BYOD @ IBM – Overall Summary

## Education

- Formal
- Casual
- Social
- Developer

## Strategy

- Acceptance
- Personas
- “Day In The Life”
- Funding Models



## Technology

- Endpoint Management
- Anti-Malware
- Network Access Control
- Application Security
- Containterisation / Virtualisation

## Policy

- Legal
- HR
- Technical Controls



## IBM MobileFirst offering portfolio





## Three ways to get started with IBM MobileFirst

1

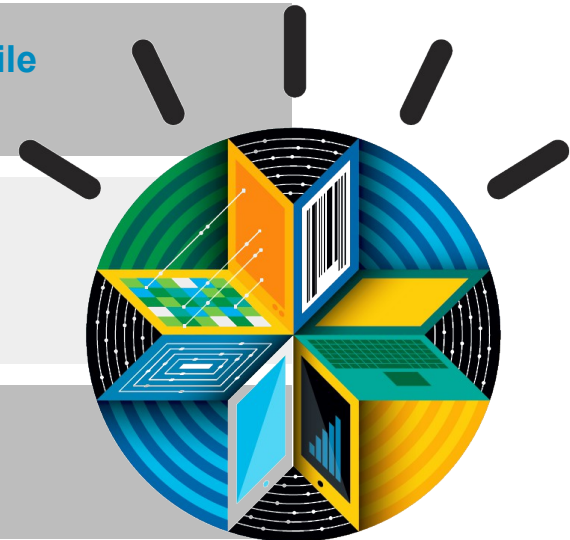
Download the IBM Endpoint Manager for Mobile Devices 30 day trial [ibm.co/EndpointMgrTrial](http://ibm.co/EndpointMgrTrial)

2

Learn more:  
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3

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