

**Meet the BYOD, 'Computing Anywhere' Challenge:
Planning and License Management
for Desktop Virtualization**



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- Traditional desktops
- Desktop virtualization
- Application virtualization

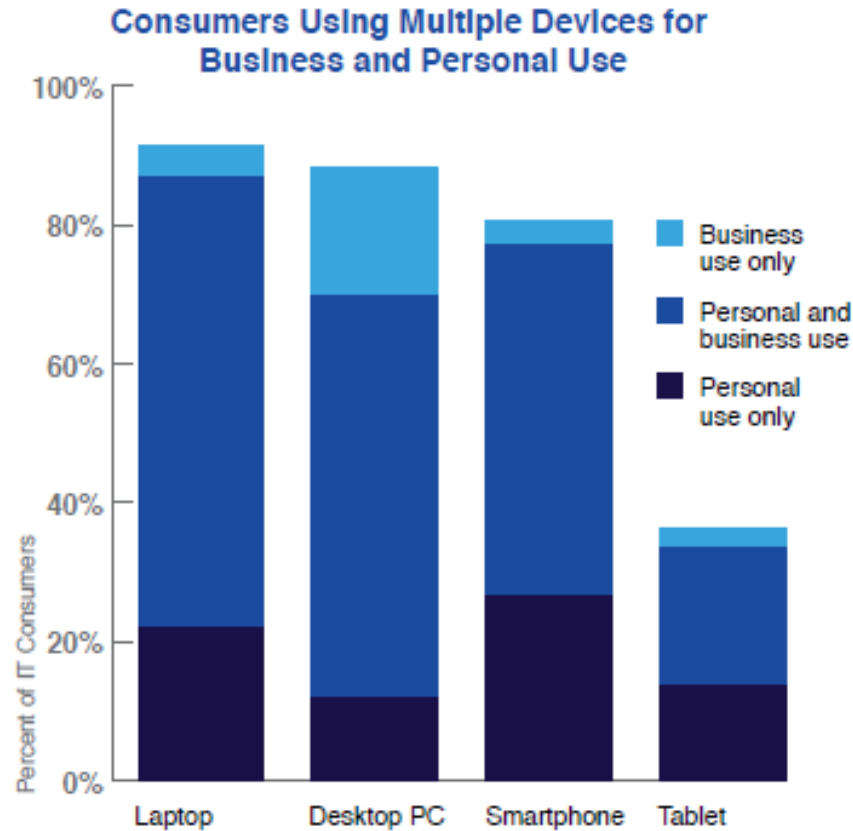
PLUS

- Tablets, Mobile devices, BYOD
- Client hypervisors
- Mobile hypervisors
- Apps within a “modern” browser
- Data/files in the cloud
- Encrypted local data
- Web apps, SaaS apps
- Portable apps
- Desktop as a Service
- App Stores/Enterprise App Stores
- ???



FOCUS Desktop & Application Trends

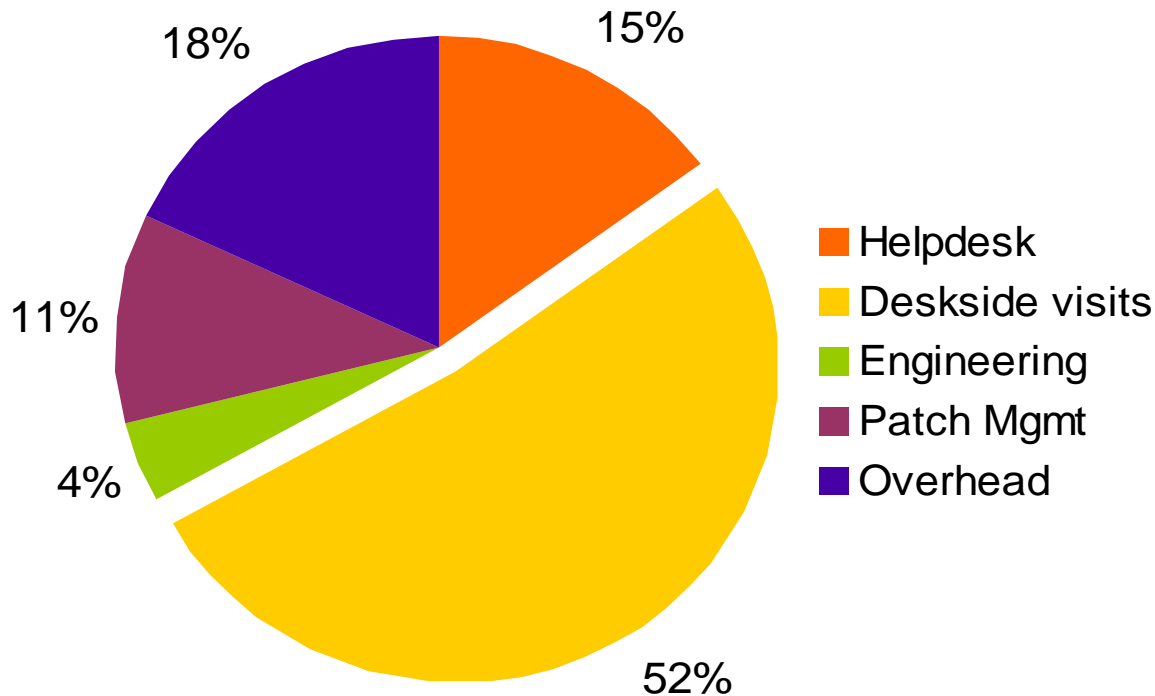
- Consumerization of IT
 - Cool devices, user preferences, instant on, access, response, real time info
 - 67% of employees < 30 feel they have better technology at home (Forrester)
 - Shift from desktop with apps to apps on desktops, laptops, tablets, phones & kiosks
 - Unmet expectations=circumvention
- Endpoint device choices
 - BYOPC/ BYOD - Shift from device-centric to user-centric focus
 - 1.4 B user devices; 1.84 B in 2016 – IDC forecast
 - Average user has 3-5 devices, power users 5 - 7
 - Tablet, mobile explosion, zero, thin clients
 - Client virtualization options
- OS choices
 - Desktop OS - Windows 7 upgrades, Windows 8 emerging
 - Windows XP - end of life - April 2014
 - Windows 7 supported until 2020
 - IOS, Android, Windows Mobile



QS6_1. Which of the following devices do you use to access the Internet for either business or personal reasons? n = 1,040, Source: IDC's Custom IT Consumer Survey, April 2011

- Desktop and application support/management has plagued IT since corporate adoption of PCs
- Desktop operating costs and upgrade costs are high
- Rate of change - Mergers & acquisitions/New employees/former employees
- Security issues -- risk of information theft

- BYOD now at all levels – execs to geeks



- TCO for a notebook of a 'somewhat managed day extender' is \$7,151.3, per year (Gartner)

Source: Intel IT Avg. Quarterly Spending on desktop PC support



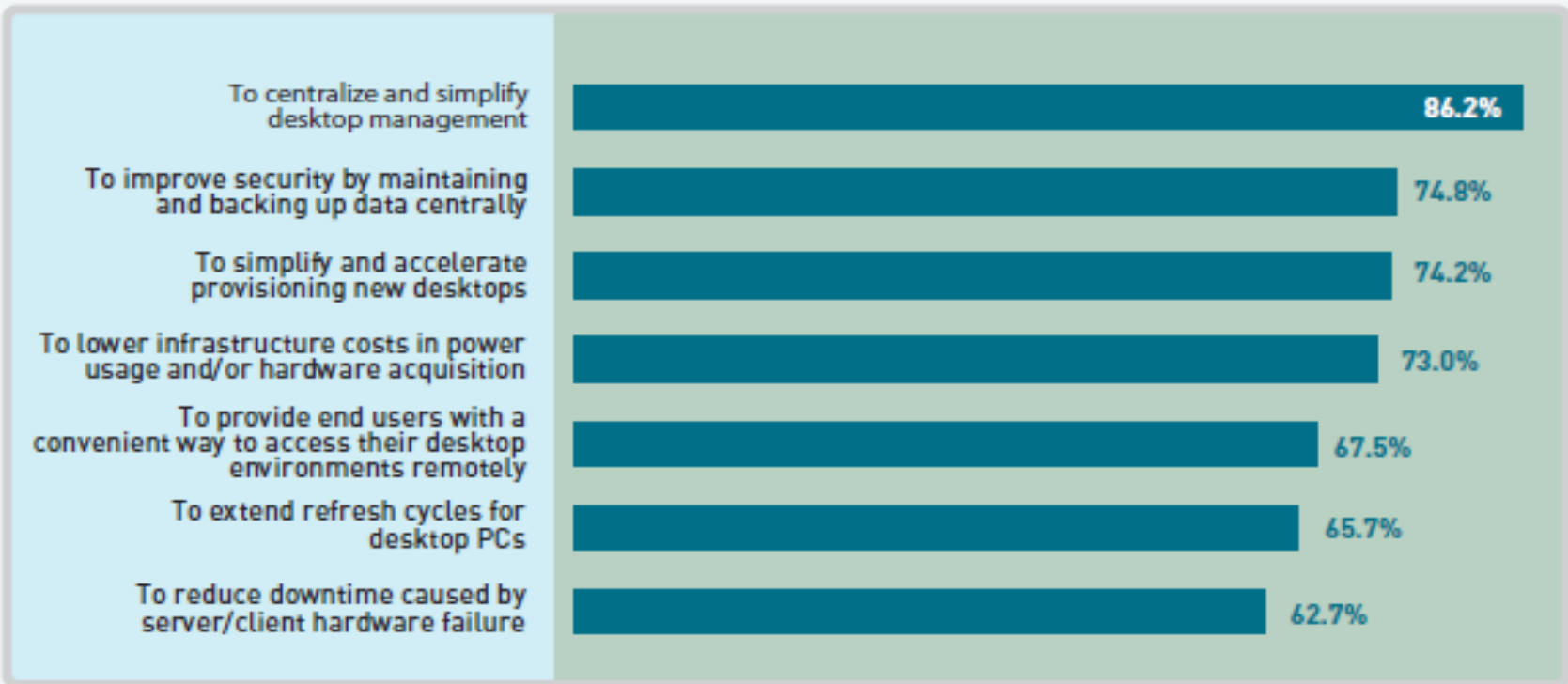
IT can be the problem or the solution.
BUT resistance is futile



Drivers for Desktop Virtualization

(Organizations rating benefits of desktop virtualization "quite or very important")

Percentages based on a 4 or 5 rating on a scale of 1 to 5, where 5 is "very important."



Base: 300 respondents who have implemented, are piloting, or planning to roll out desktop virtualization in the next year.

Data: TechWeb survey of 490 IT decision makers.

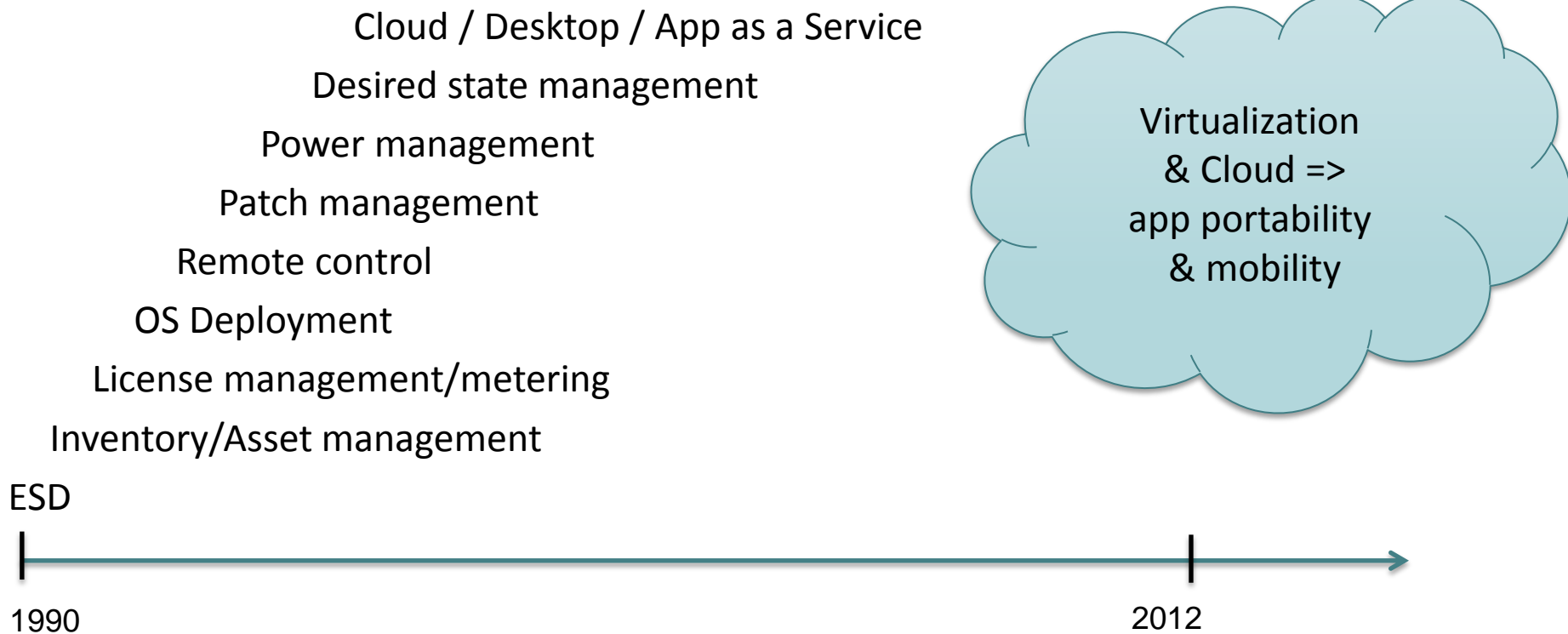


FOCUS Desktop Management Issues

- Discovery /Asset management – What's out there and where?
- Provisioning – Getting the right OS and apps
- Updates – Updating the OS/apps versions & doing patch management
- Configuration management – Keeping it right
- Problem ID/resolution – What's wrong ?

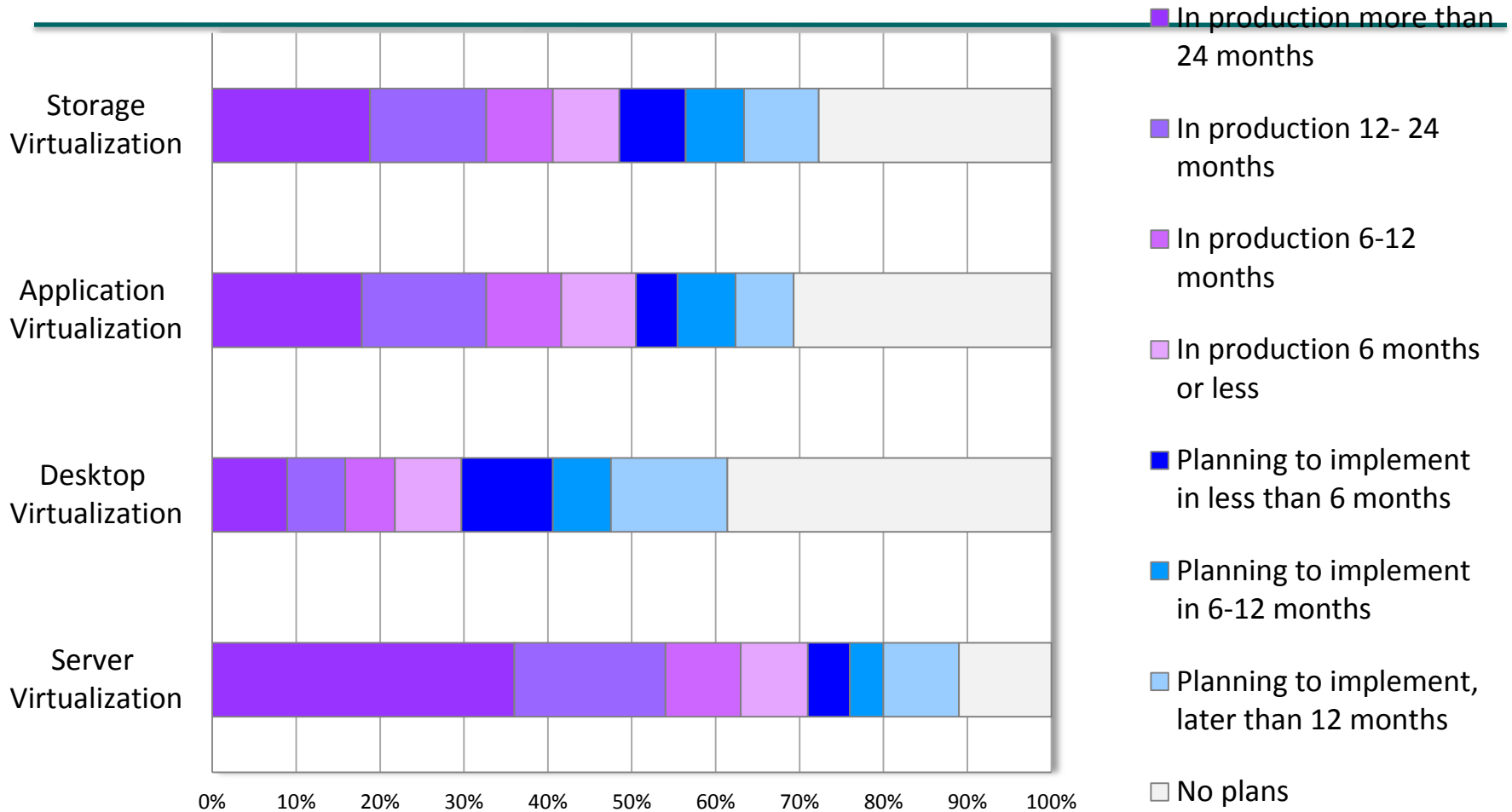


- ▶ User-focused, context aware (device, location, connection), Windows/Web/SaaS, access/control, SSO, compliance, file/data sharing



- Virtualization across the infrastructure
 - Server virtualization => storage, networking, desktops and apps
 - Purpose-built virtualization and turnkey private cloud infrastructure
 - Economics & agility driving performance/capacity mgmt, private cloud
- Desktop and application virtualization progress
 - VDI CapEx more reasonable with improved storage options
 - Technical improvements overcoming previous barriers
 - But VDI is only part of the solution not THE solution
 - VDI will be only 8% to 12% of PC market by 2015 (Gartner)
 - Layering is critical - application virtualization & personalization are key

Virtualization Adoption



Source: FOCUS Interop Survey Sept 2011 (Companies with >100 employees)

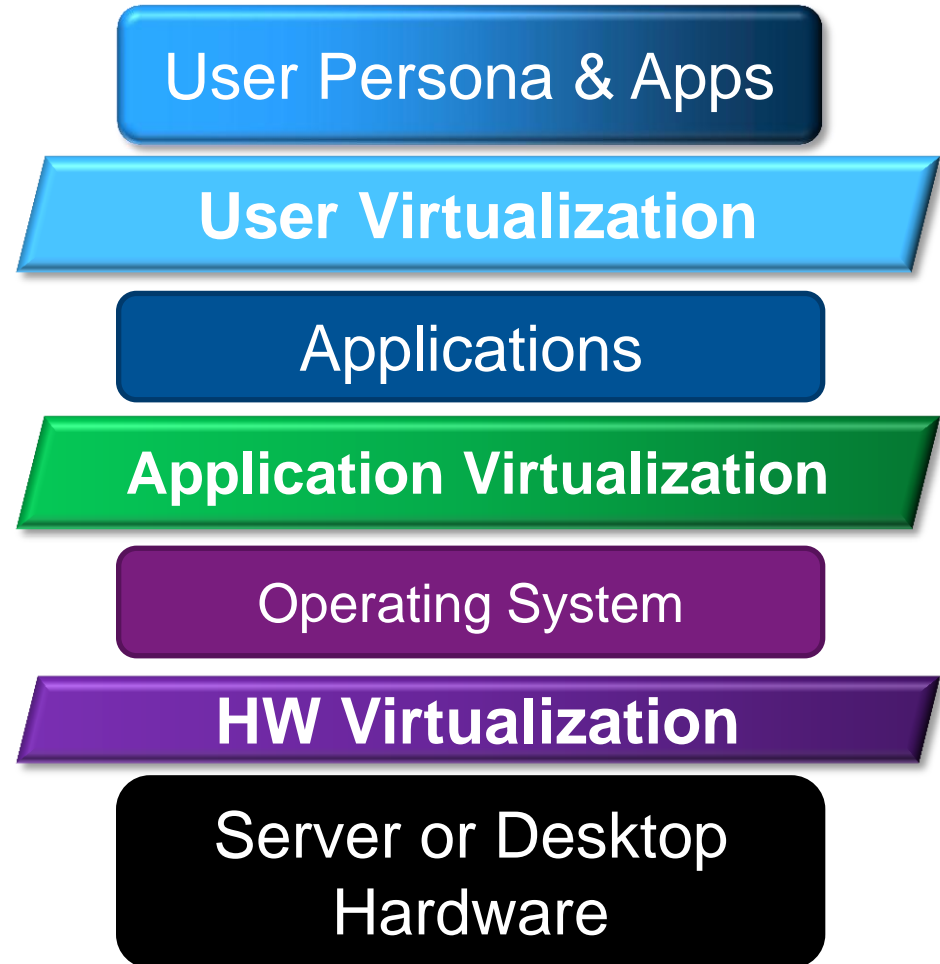
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What is Virtualization?

Abstraction away from HW or layer beneath

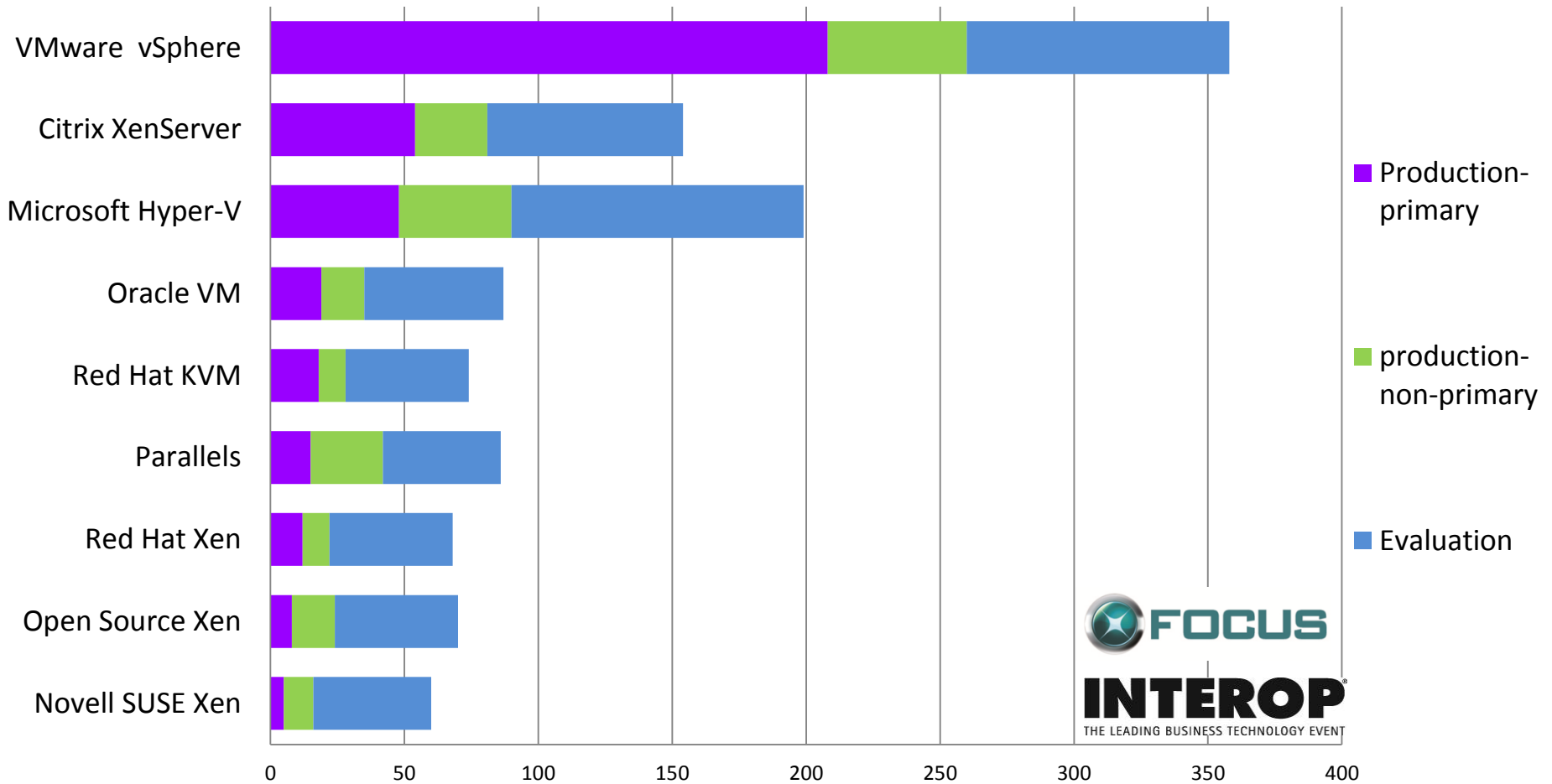
After

Before





Server Virtualization Platforms in Use



Source: FOCUS Interop Survey Sept 2011



Why (Re-)Evaluate Desktop Strategies?

- **Centralized desktops and applications can reduce desktop mgmt/ support costs AND improve user satisfaction**
- Provision/update from shared OS and app images
- Eliminate application interaction support problems
- Reduce application licensing /maintenance costs
- Minimize/eliminate SW on physical desktops
- Increase desktop reliability, availability, serviceability
- Reduce support costs

- Extend lifespan of current desktop hardware
- Reduce power usage

- Increase security
- Backup user data automatically
- Successfully integrate desktop, app, tablet, mobile and BYOD strategies

Provide secure desktop and application access from any device, anywhere

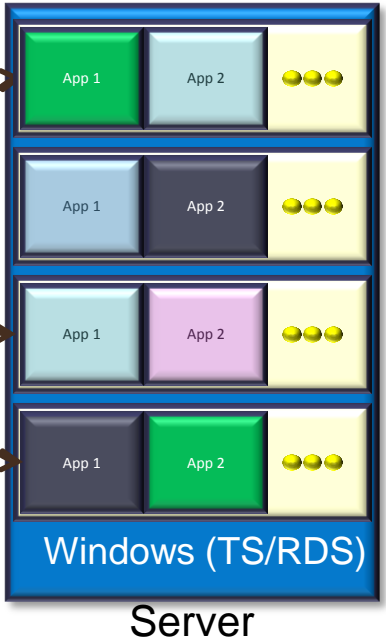
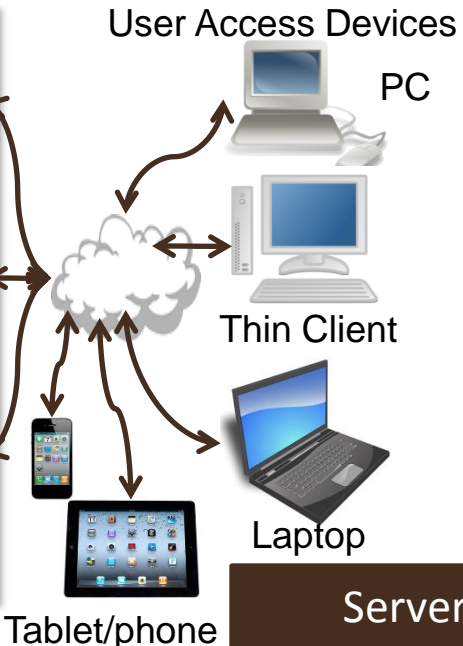
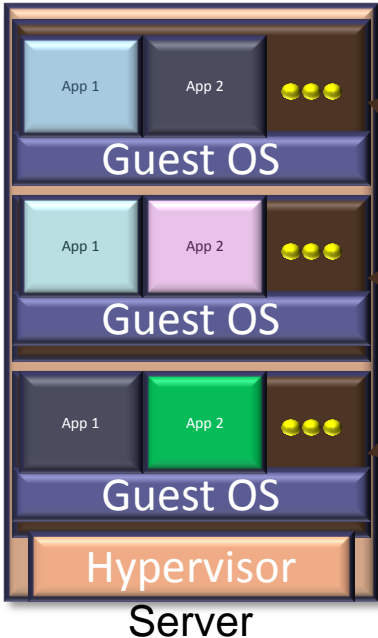
- Many technical barriers have been/are being overcome – addressing many cost, complexity and maturity concerns
 - Storage issues (image management, app virt) \$\$
 - User experience/interface (e.g. graphics)
 - Personalization – layering user info on top of virtual desktops and virtual applications \$
 - Mobile/offline user issues
 - Licensing/cost issues \$

- Desktops
 - Server Hosted – VDI, published desktops/apps (XenApp/TS/RDS)
 - Client Hosted – managed locally or centrally
- Applications
 - Application virtualization & streaming
 - App stores/catalogs
 - Unified communications (voice and video), collaboration
- Clouds
 - Web Apps, SaaS apps, Mobile apps, Data sharing/sync
- Devices
 - Desktops, laptops, thin/zero clients, tablets, smartphones

Virtual Desktop Infrastructure

Hosted Apps/Published Desktops/Apps

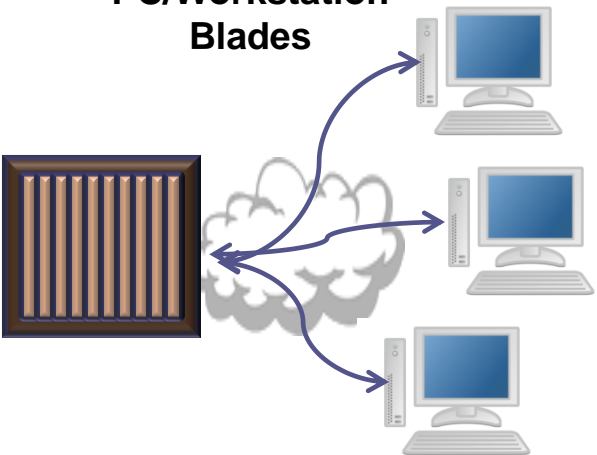
Virtual Desktops (VMs)



XenApp/TS/RDS

Server Hosted

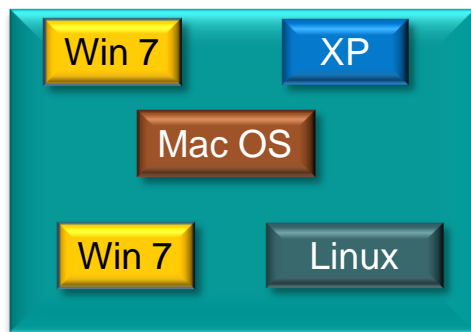
Physical PC or PC/Workstation Blades



HP, IBM, Dell, VMware Wanova Mirage

Client Hosted

Locally Managed Virtual Desktops



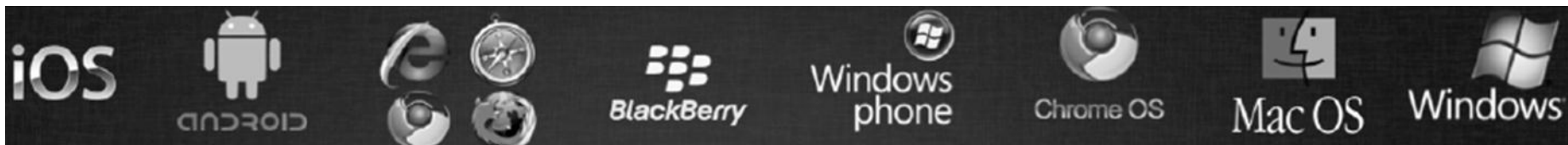
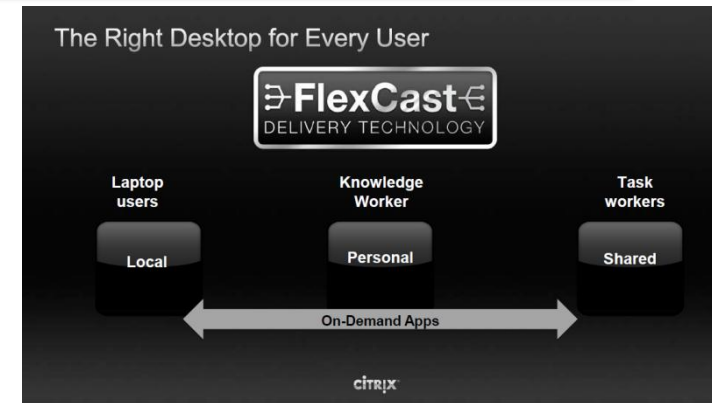
Microsoft Virtual PC, Client Hyper-V, Parallels Desktop, Oracle VirtualBox, VMware WorkStation, Player, Fusion, Xen Client, View Local

Centrally Managed Virtual Desktops



MED-V (Kidaro), VMware ACE, View Local, XenClient Enterprise (Virtual Computer)

- Broadest use case coverage with Flexcast:
 - (SBC, VDI, OS and app streaming, client hypervisor)
- Choice of hypervisor
 - XenServer, Hyper-V, or ESX/vSphere
- Desktop Provisioning – virtual/physical
- Connection manager
- Includes/Integrates with XenApp
- Citrix Receiver – “universal client” (3B+)
- Virtual delivery protocol - ICA, HDX – multimedia, USB devices, 3D graphics, reduced bandwidth, webcam and VoIP support, WAN optimization



To what extent are the following alternative application delivery architectures in use at your organization?

■ Widespread use
 ■ Limited use
 ■ No use

Browser; i.e., Web applications or SaaS



Virtual desktops/VDI/terminal services



Application virtualization/streaming

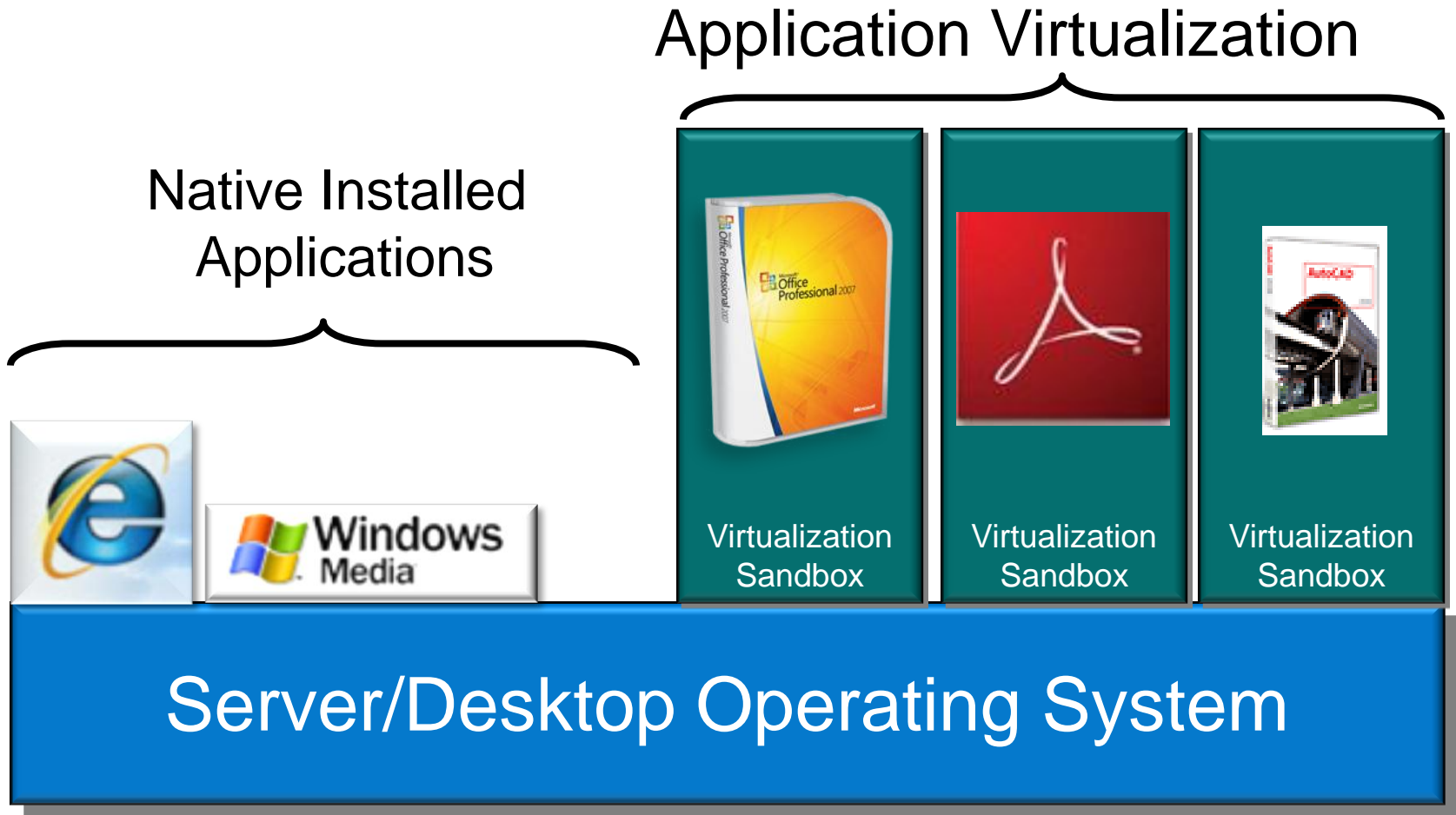


Mobile device (smartphone/tablet) applications



Base: 216 respondents using alternative application delivery methods

Data: *InformationWeek* 2012 Alternative Application Delivery Survey of 483 business technology professionals, February 2012



- Understand your physical & virtual SW inventory – what's there and what's used
- Integration to management tools – Asset, Discovery, Service Desk, Service Automation
- Consider licensing compliance issues – virtual app portability - what runs where, optimize licensing
- Leverage dynamic builds to maximize flexibility, minimize # of images
- Understand full ROI/ TCO of each technology (Storage, Network, Access Point)
- Consider impact of and plans for Cloud, Saas, Daas

- Complexity
- Need for mix of technologies (VDI, session virt, app virt, client virt) for range of use cases adds to complexity/cost
- Storage costs of VDI and performance issues
- Networking issues and impacts
- Some apps hard to virtualize
- Licensing is both a driver and a barrier

- Examine ALL your use case requirements
- Consider all access devices – PCs, thin/zero clients, tablets, mobile
- Consider desktop management and BYOD under a unified strategy
- Build cross-functional team (server, desktop, applications, storage, net, security)
- Consider licensing implications – compliance & optimization
- Evaluate both user experience and IT infrastructure (storage, network and compute) impacts
- Include both CapEx and OpEx in any ROI/TCO analysis
- Don't be afraid of mix and match solutions
- One size does NOT fit all

<http://learn.flexerasoftware.com/content/AR-WP-Desktop-Transformation>

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