



Integrating NComputing Virtual Desktops with Citrix and VMware

April 21, 2010

Topics

→ Trends & Challenges in Desktop Virtualization

- NComputing Virtual Desktops
- Leveraging “Best of Breed” Technologies
- Cloud Computing: the future is here today
- Conclusion and Q&A

Common quotes from today's IT managers

“Budget Cuts! Where can I slash costs so I can invest in the new IT services my users are demanding?”

“We need a flexible, scalable computing model that allows us to respond quickly to changes in our business environment.”

“Our PC infrastructure is tying us down. I need my IT staff free to focus on strategic business initiatives”

“Our Windows 7 Upgrade is looming. There must be a better way than buying all new PCs.”

“Corporate policies and customers are demanding that we lower our carbon footprint.”

“Everyone’s talking about desktop virtualization – but there are so many options & products, it’s confusing!”

Desktop virtualization: why such a hot topic?

- Financial crisis has put pressure on practically every organization worldwide to lower costs
- Costs of resources to manage & support PCs are more visible today than before
- Today's distributed PCs waste excess capacity and create security liabilities
- Server virtualization has already proven its ability to save money
- The nature of software applications is changing – with a profound impact on the desktop



Applications and desktop evolution

From Simple Terminal Applications to Rich Network Desktops



But... confusion abounds

- Mixed messages about Virtual Desktop Infrastructure (VDI)
 - + Gartner predicts 49 million seats of desktop virtualization by 2013
 - InfoWorld says “VDI remains a solution looking for a problem”
 - + “2010 is the year for desktop virtualization”
 - “Top reasons why VDI projects fail”
- Confusing myriad of approaches, options and terminology
 - Virtual machines
 - Application containerization
 - OS streaming
 - Blade computing
 - Para-virtualization
 - Connection brokers
 - Terminal services
 - Thin clients
 - Zero clients
 - Cloud computing



...and many solutions have daunting roadblocks

- **High costs**
 - Cost more upfront
 - Must be sold on “TCO” & soft costs
 - Minimum deployment >1000 seats
- **Complexity**
 - Complex deployment and mgmt.
 - Require changes to business processes and employee skill-set
- **Technical limitations**
 - Poor multi-media support
 - Inefficient bandwidth utilization
 - Limited peripheral support



So what's the right answer?

A pragmatic approach to VDI:

- ✓ 1st – know the problem you're trying to solve
- ✓ Choose technologies that are compatible with:
 - your existing IT infrastructure
 - your existing IT skill set
- ✓ Start small & get started!
- ✓ Scale up from proven success
- ✓ Leverage and combine **proven** “best of breed” technologies for a hybrid solution

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Core components of NComputing technology



1 vSpace

NComputing vSpace software creates multiple virtual workspaces inside a single Windows or Linux operating system.



*Ethernet
Direct – PCI
Direct - USB*

2 UXP User eXtension Protocol

NComputing User eXtension Protocol (UXP) delivers an efficient, secure, multimedia interface across:



3 NComputing™ Access Devices

NComputing access devices enable ultra-low cost clients that are low-power while delivering rich multimedia performance.

vSpace desktop virtualization software



vSpace Sessions:

vSpace creates multiple user workspaces in a single OS.

vSpace Desktop Virtualization:

Supports and extends rich multimedia workspaces with failover, dynamic provisioning & transparent peripheral extension

Operating System:

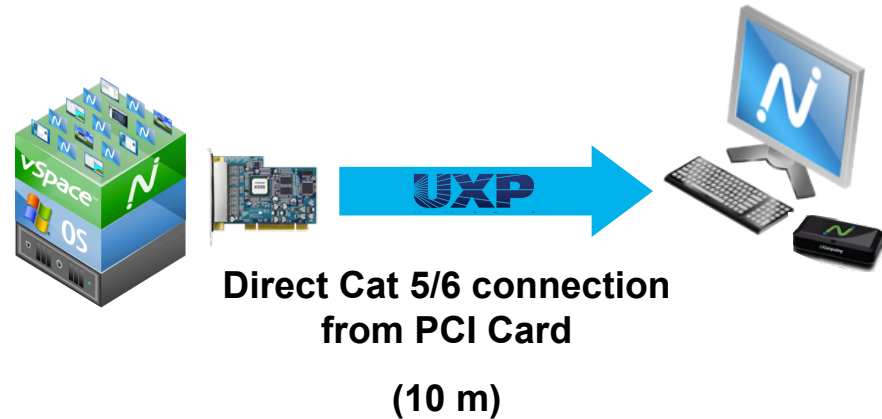
Supports variety of Windows or Linux operating systems.

Host System:

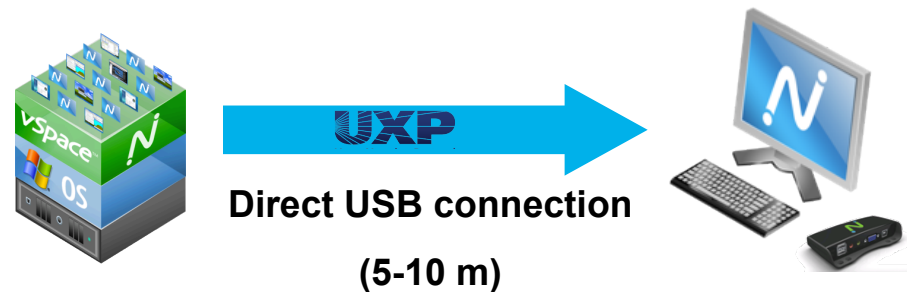
vSpace enables a range of host HW from PCs used as virtualization appliances to full servers

Three ways to connect

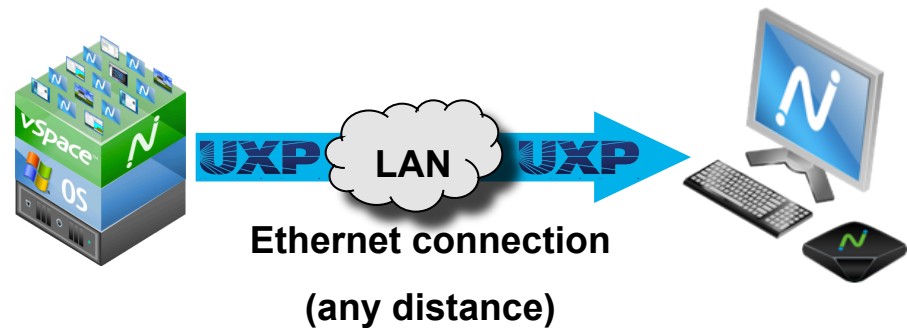
1 Direct (PCI): X-series



2 Direct (USB): U-series



3 Ethernet: L-series



Access Devices

1 Direct (PCI): X-series



2 Direct (USB): U-series

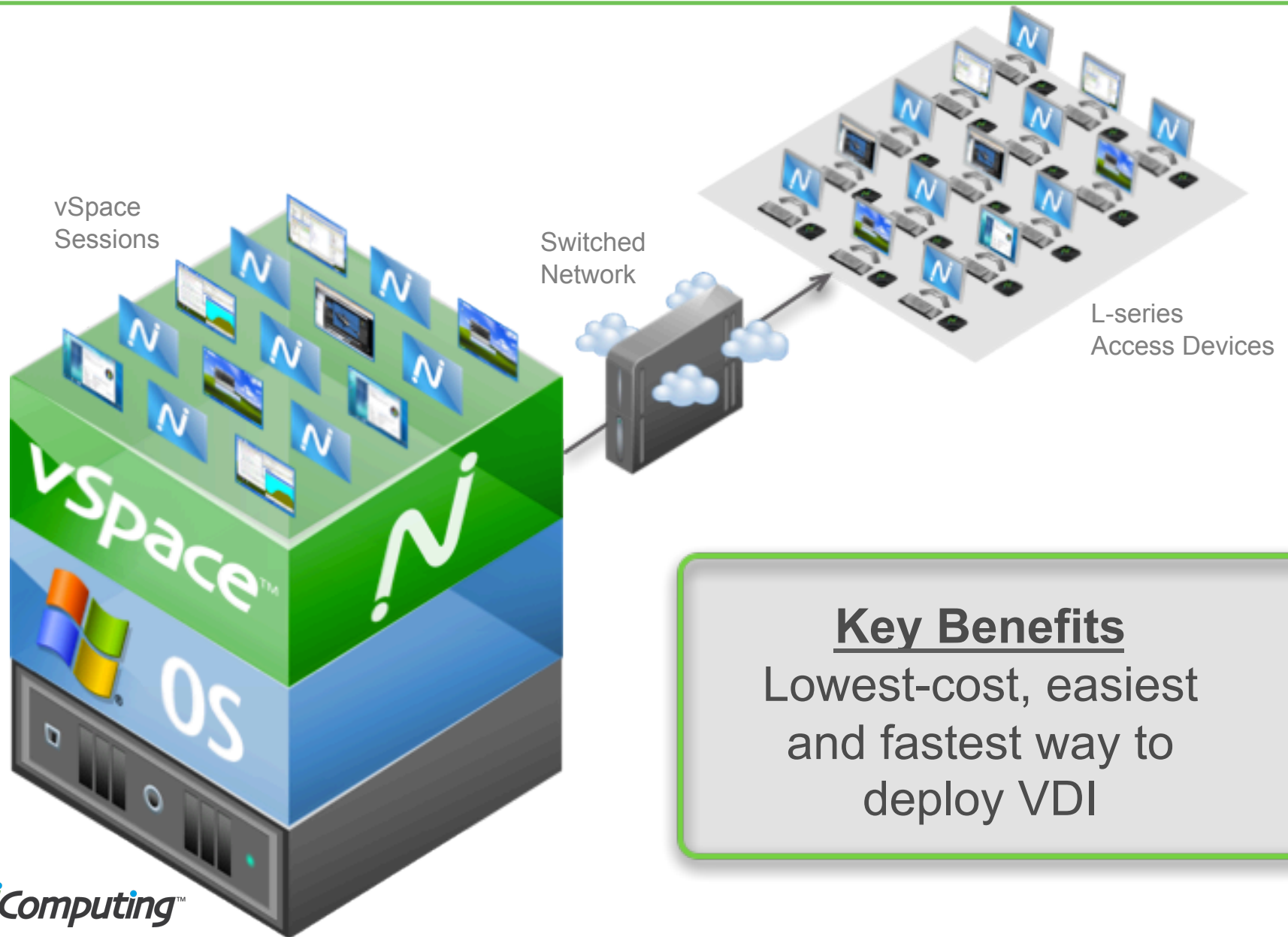


3 Ethernet: L-series



Express VDI:

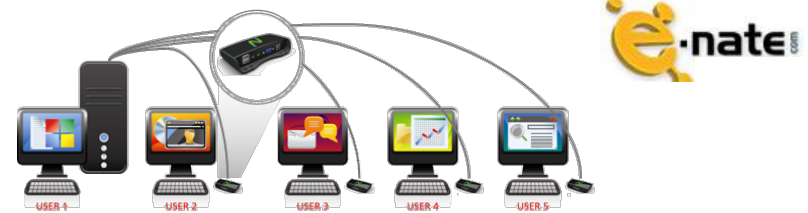
Standard NComputing deployment architecture



Express VDI scales both down and up

Small Business

- e-Nate/Chiropractor Practices
- 2-5 stations per office



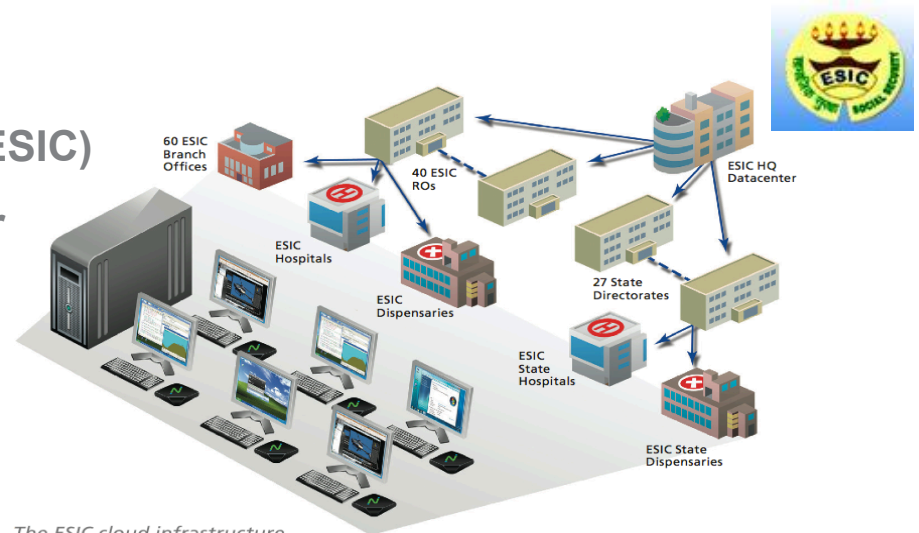
Branch Business

- EcoBank, Africa
- 5,000 stations in 640 branches



Large Enterprise

- Employee State Insurance Company (ESIC)
- Indian healthcare & insurance provider
- 31,500 stations in >3,000 locations
- Hospitals, clinics, admin offices



Express VDI meets needs in diverse markets

Enterprise



General office/Knowledge workers

Branch offices



Retail, general office, service

Small to Medium Business



Across all verticals

Tough User Environments



Factories, Healthcare, Call Centers

Emerging Markets



Across all verticals

Education



K-12, colleges & universities

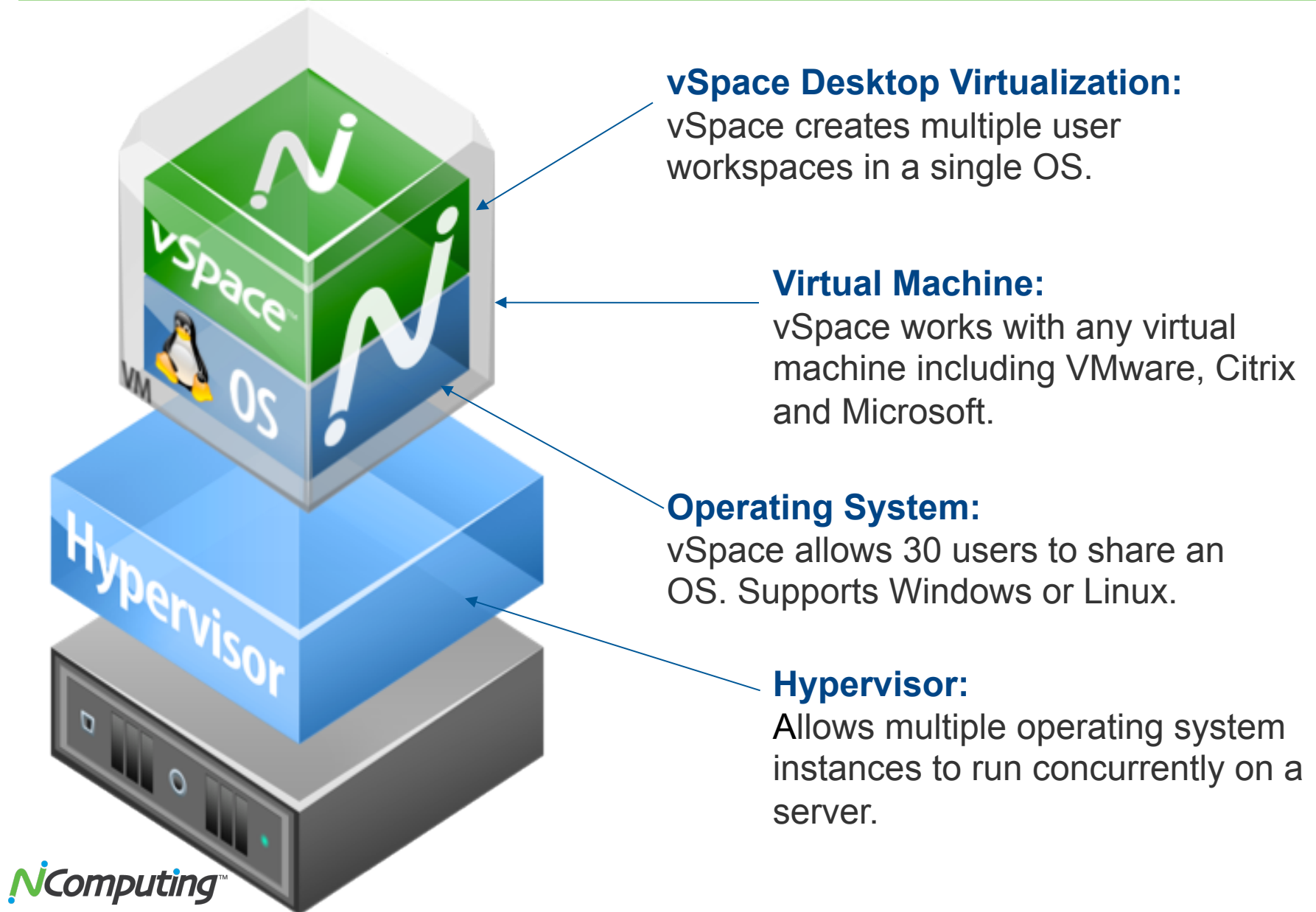
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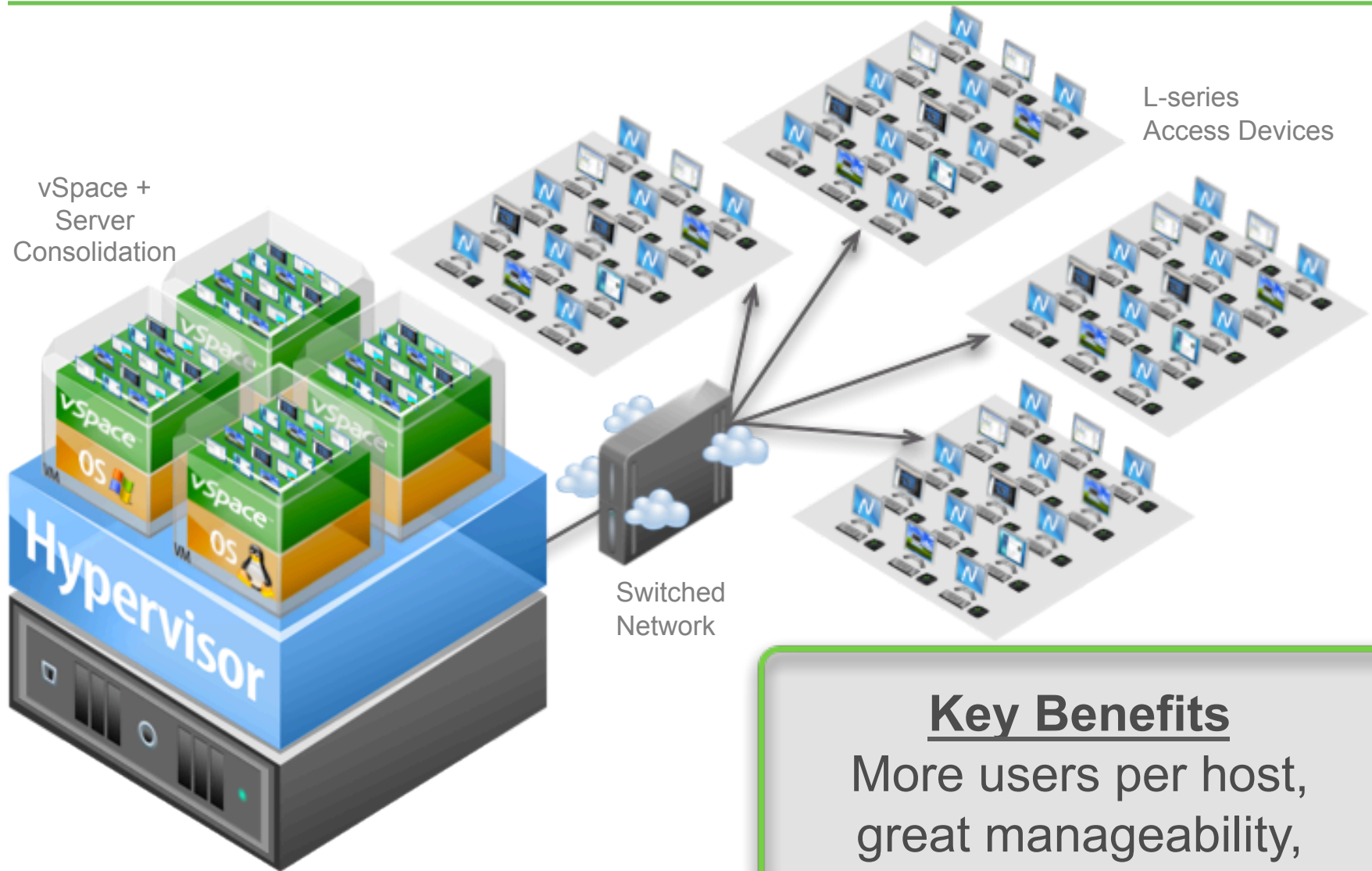
To scale up, leverage the “best of breed”

- Enterprise-proven technologies can expand on NComputing Express VDI to:
 - Further consolidate resources
 - Drive even better manageability
 - Increase overall efficiencies
- Key Examples:
 - Server consolidation with VMware
 - Application publishing with Citrix

Combining NComputing with server consolidation



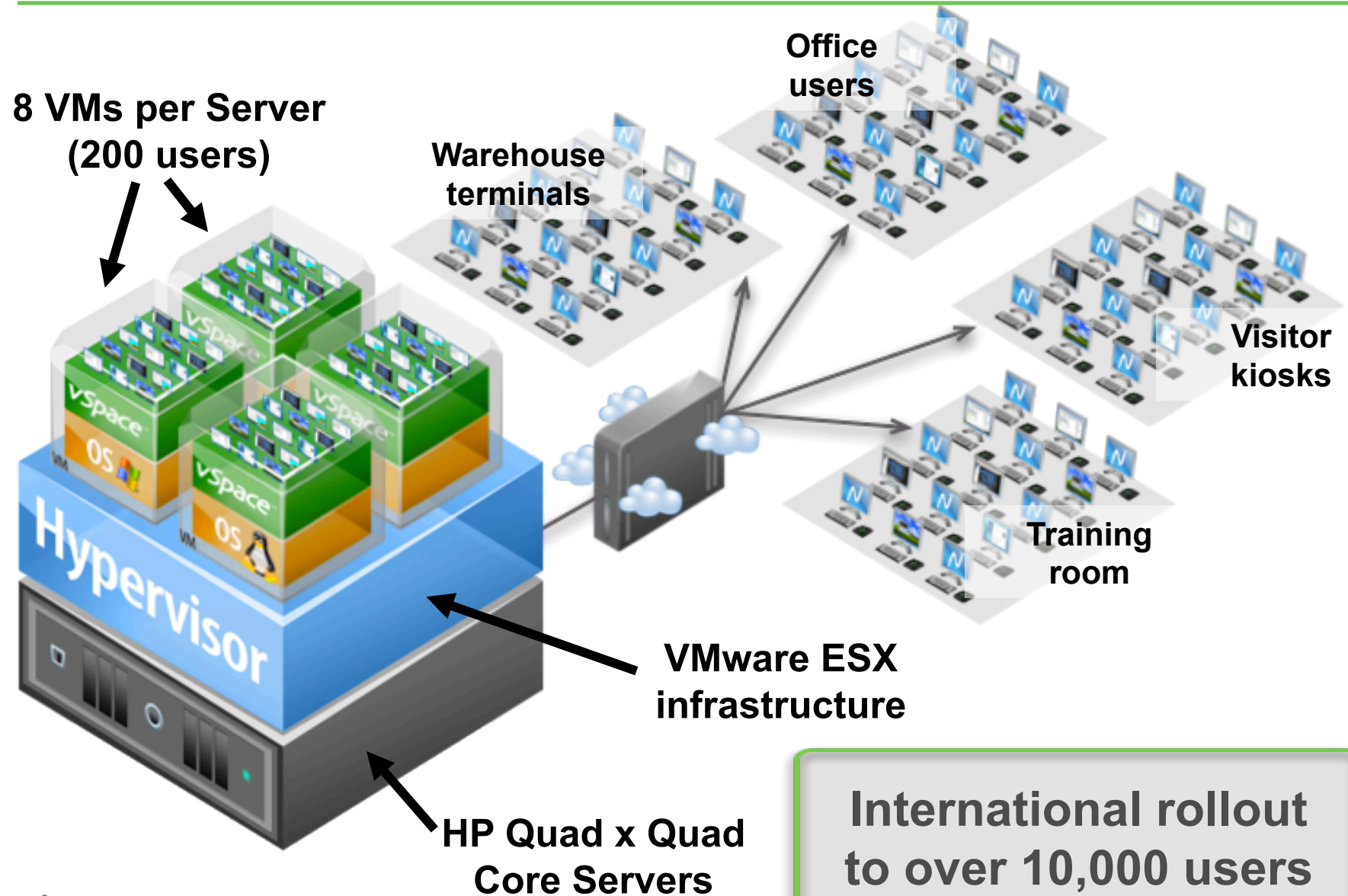
Enhanced VDI deployment (1:many)



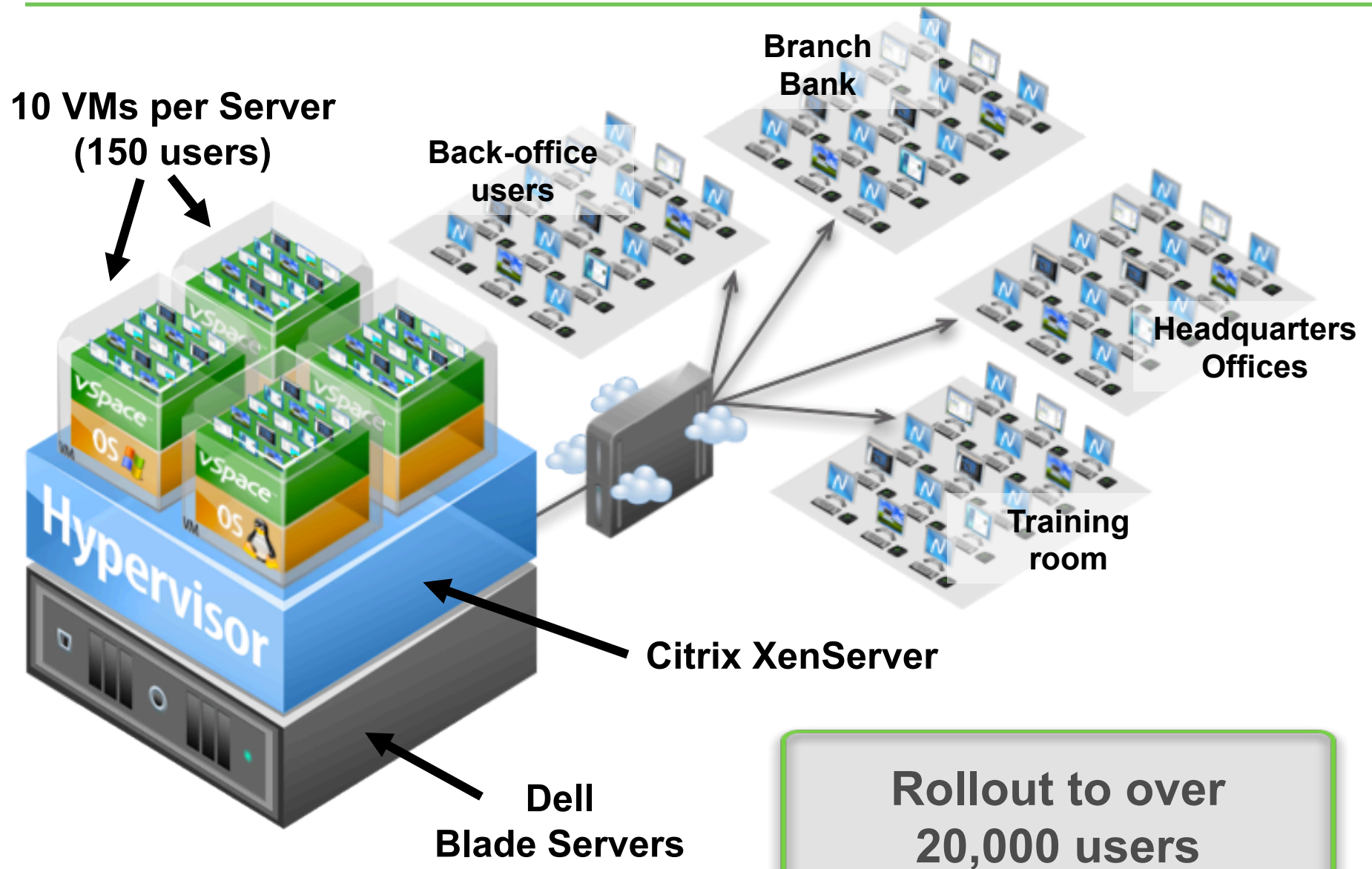
Key Benefits

More users per host,
great manageability,
and lower overall cost

Example: Consumer goods manufacturer

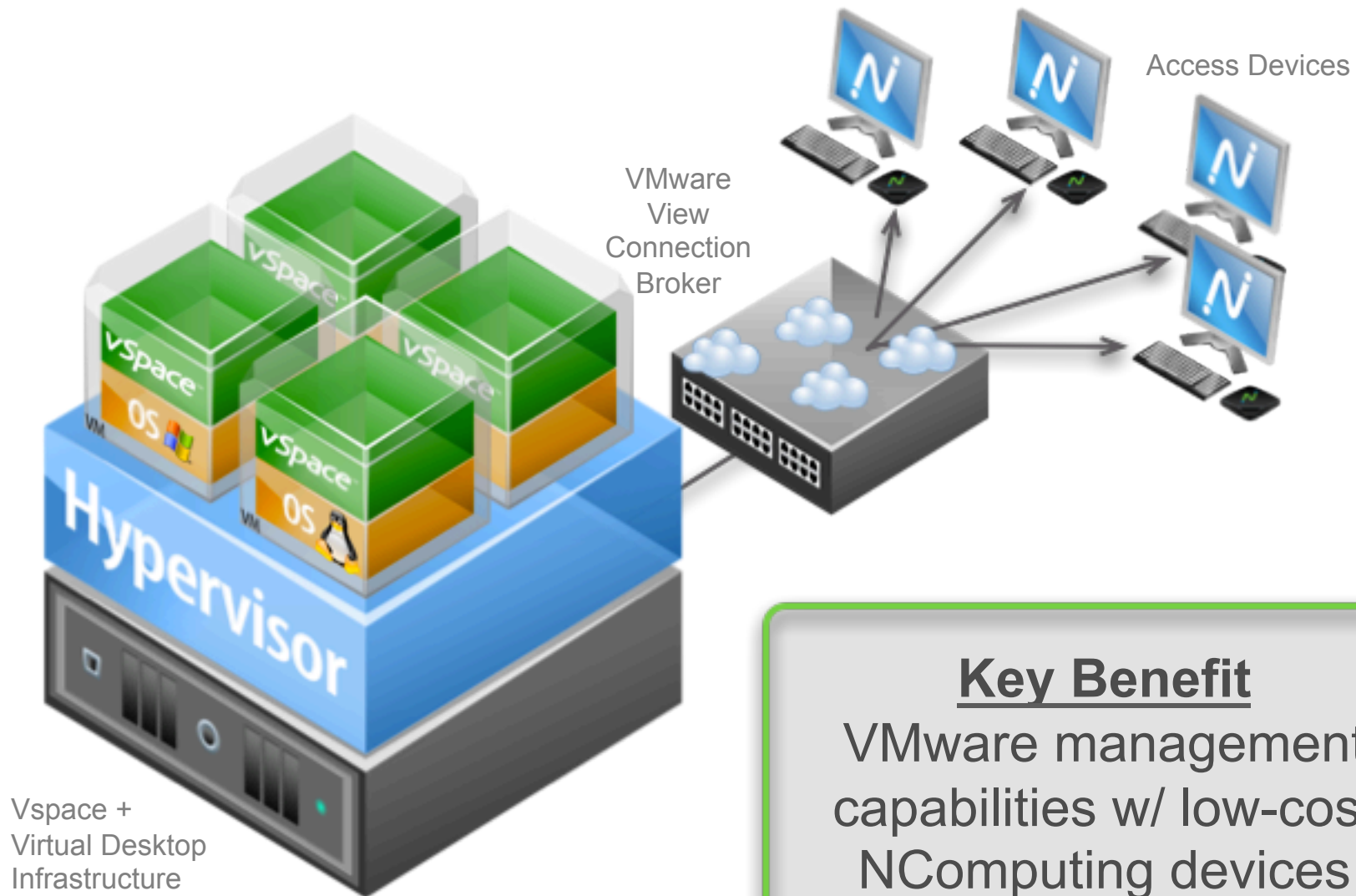


Example: Central American bank



**Rollout to over
20,000 users**

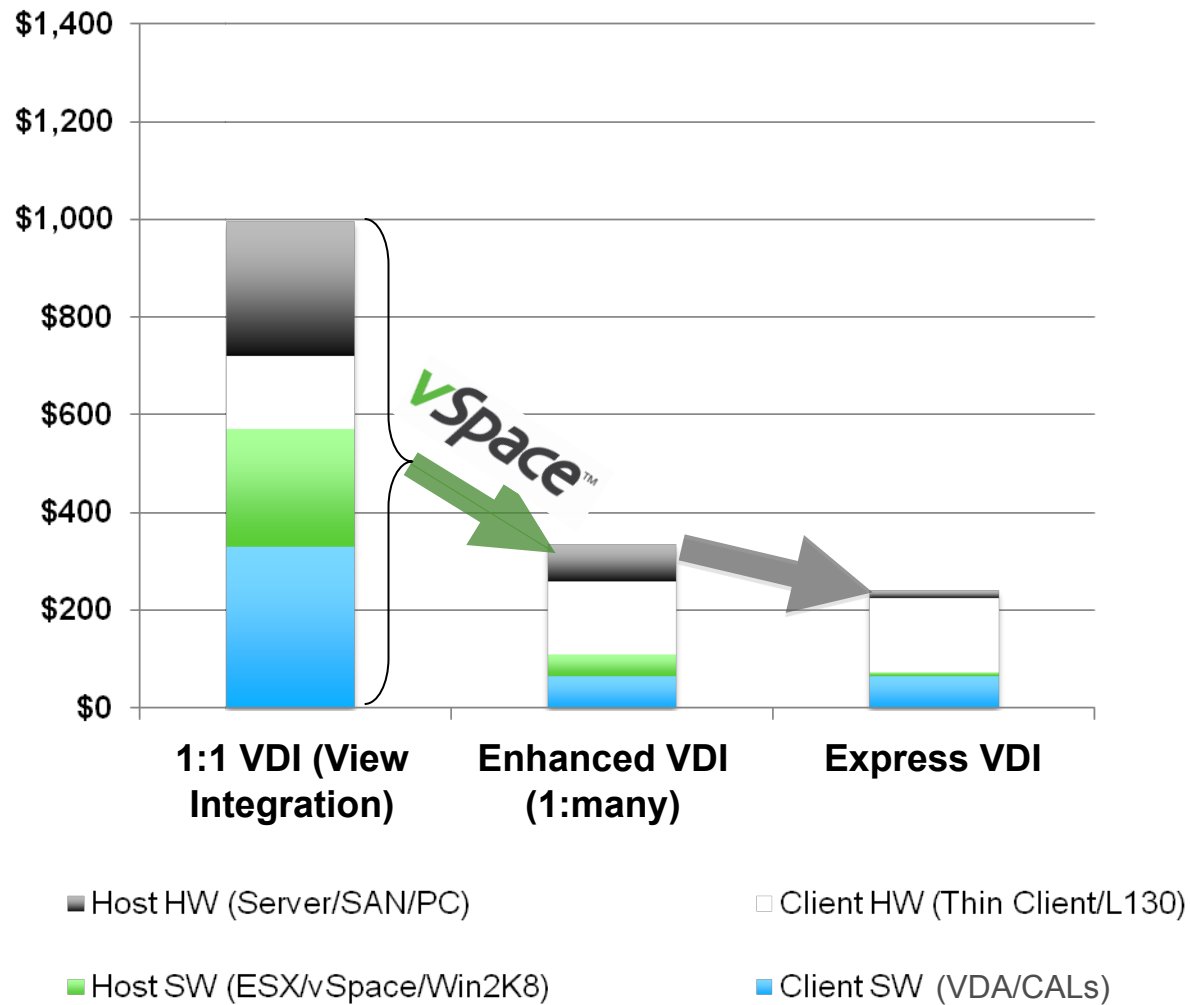
VMware View integration for 1:1 VDI (coming)



Key Benefit

VMware management capabilities w/ low-cost NComputing devices

VMware + NComputing makes TCA affordable



Combining NComputing with application publishing



vSpace Desktop Virtualization:

vSpace creates multiple user workspaces in a single OS.

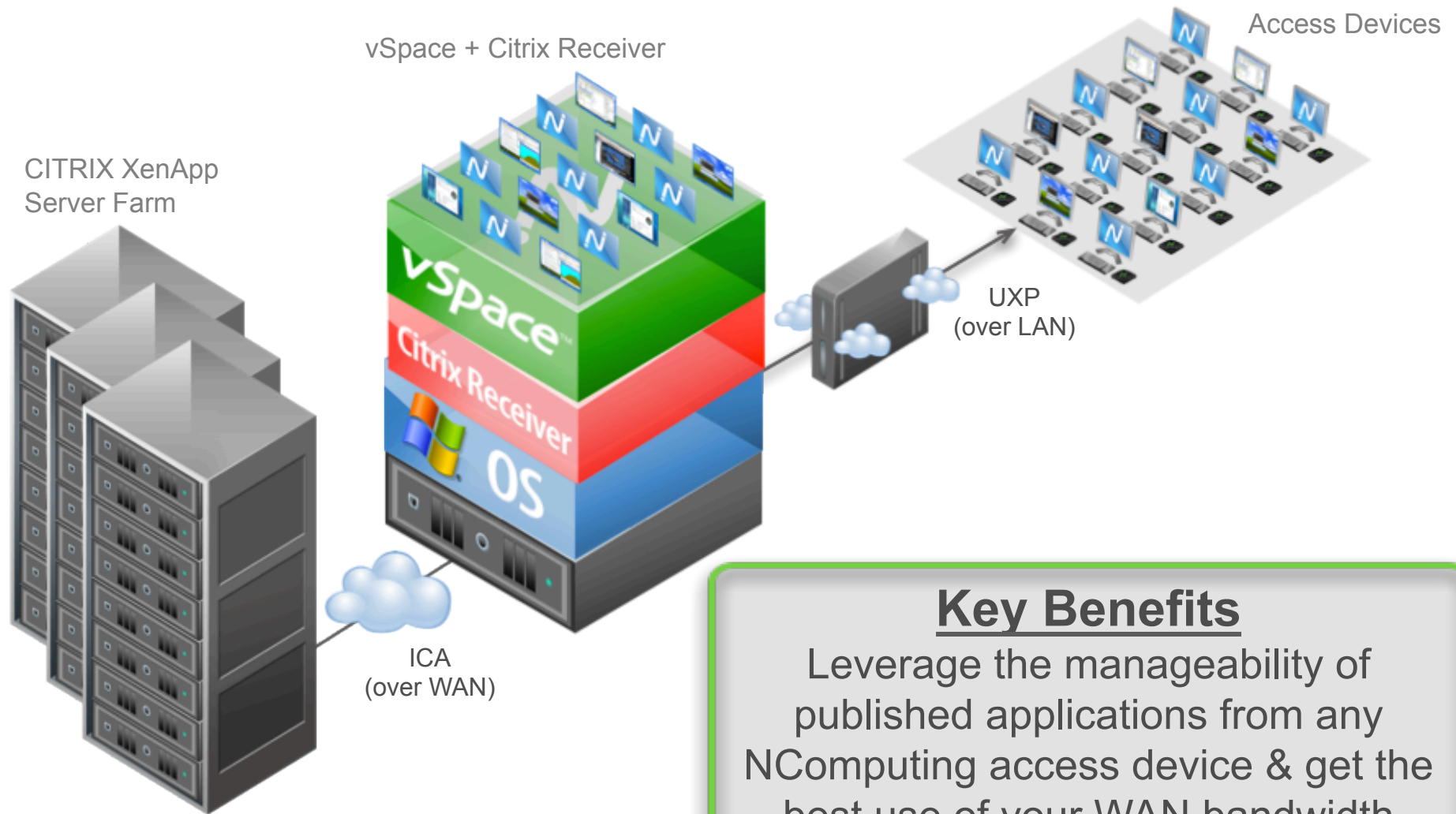
Citrix Receiver:

Installed on the host OS – giving every vSpace session access to Citrix-hosted applications

Operating System:

Windows or Linux.

Integration with Citrix published applications



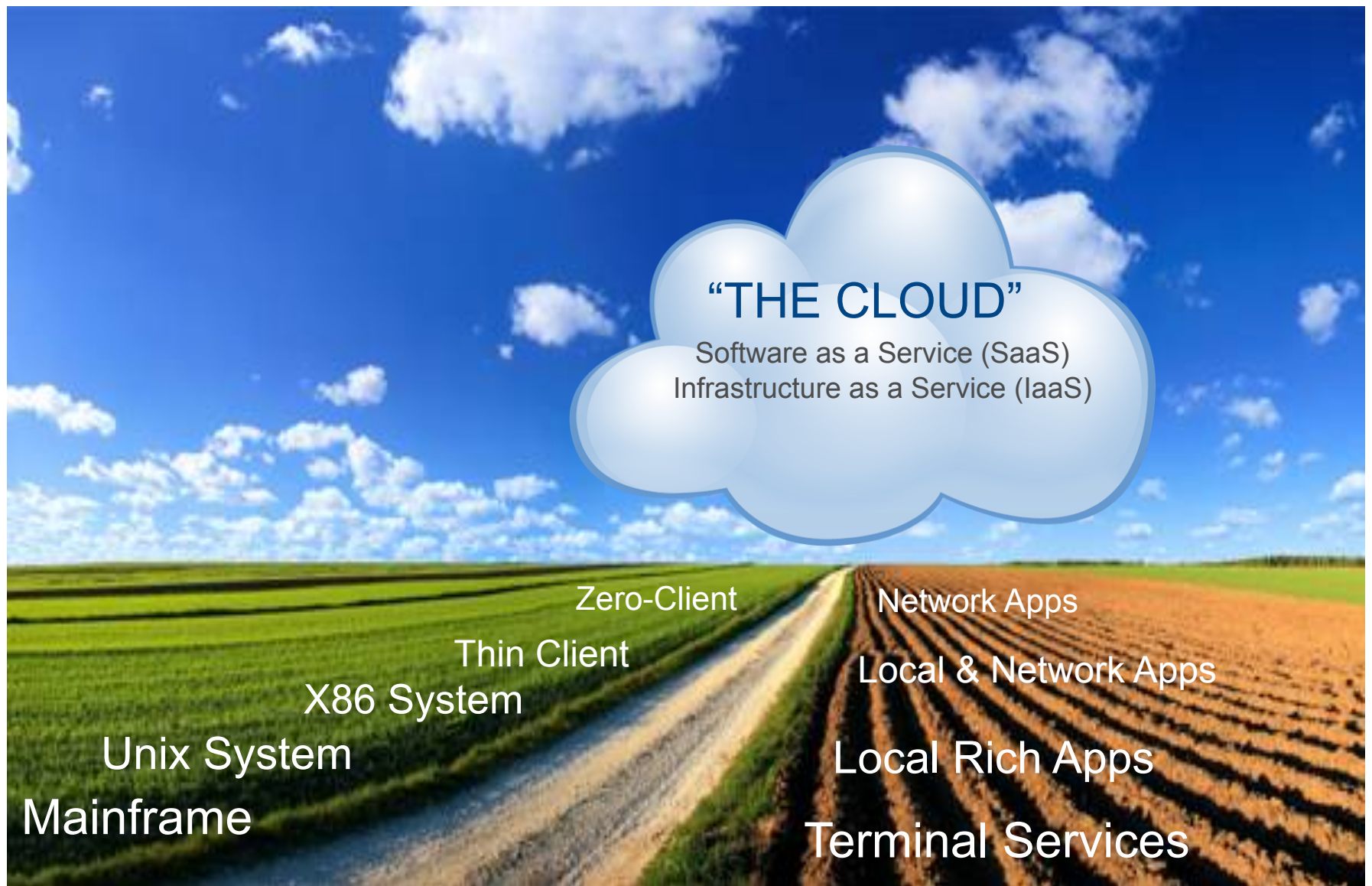
Key Benefits

Leverage the manageability of published applications from any NComputing access device & get the best use of your WAN bandwidth

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The world is changing



Cloud Computing Example: India Social Security System



ESIC Profile:

- . Largest Insurance & Health Care Provider
- . Assists over 12 million beneficiaries
- . Operates 144 hospitals and 1,388 clinics
- . Runs 620 insurance branches
- . Largest Commercial IT Project India 2009

CHALLENGE

- Build state-of-art IT system on Cloud Computing model
- Deploy computing stations at over 2,000 hospitals, clinics, and offices

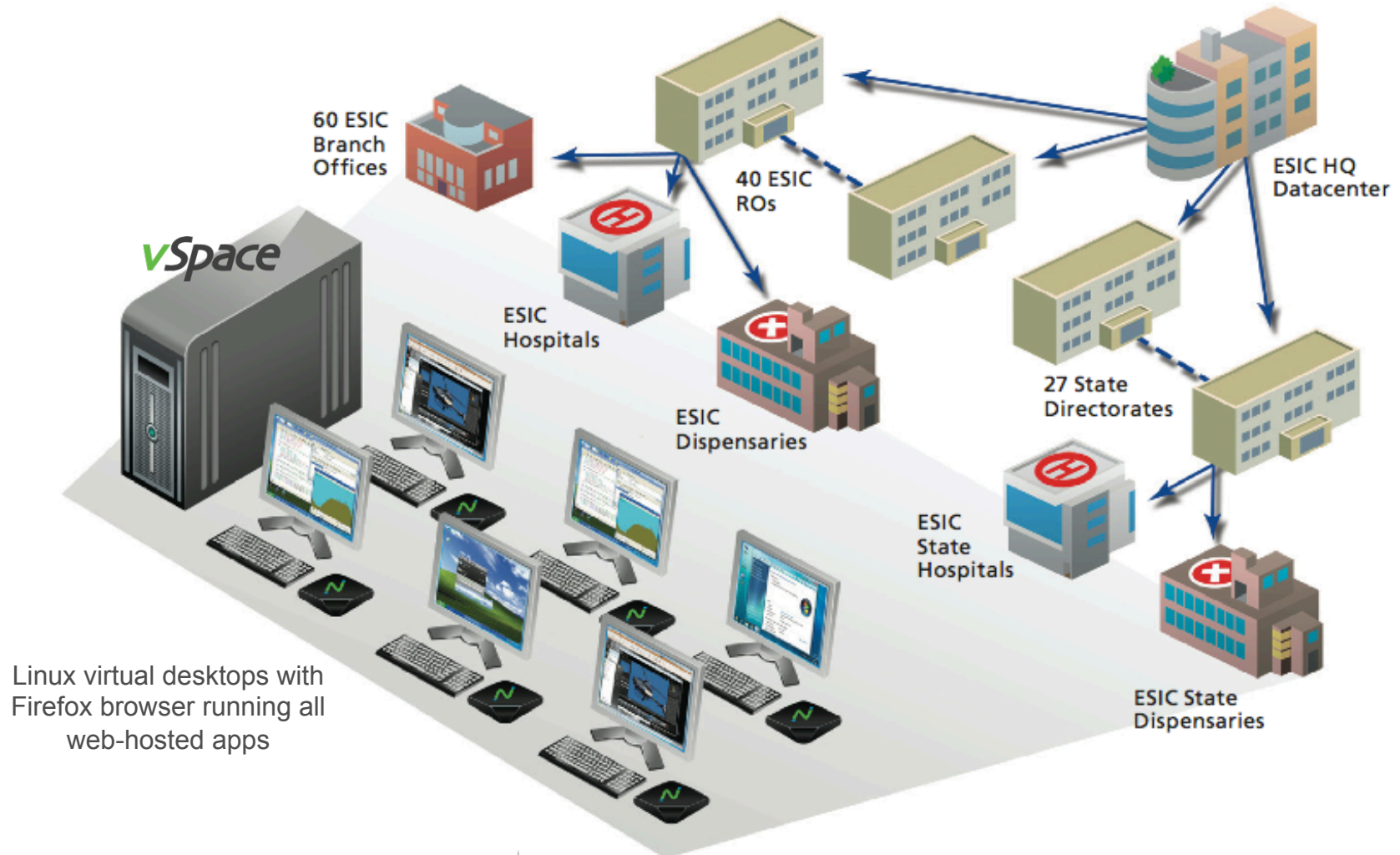
SOLUTION

- 31,000 NComputing workstations across all offices, hospitals, clinics
- Partnership with Wipro InfoTech

RESULTS

- Lowest cost computing
- 5 watt Green footprint

ESIC Private Cloud Architecture



Powering 144 hospitals, 620 insurance branches,
1388 dispensaries/clinics, and 51 regional offices

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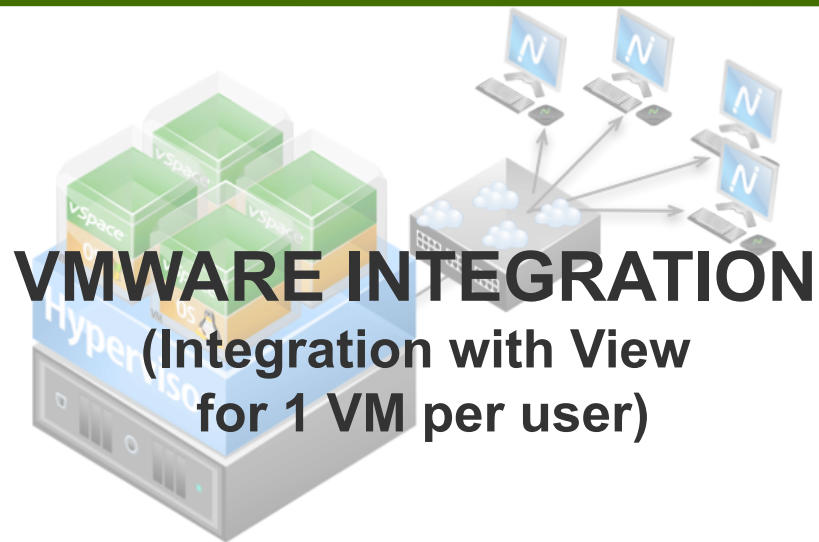
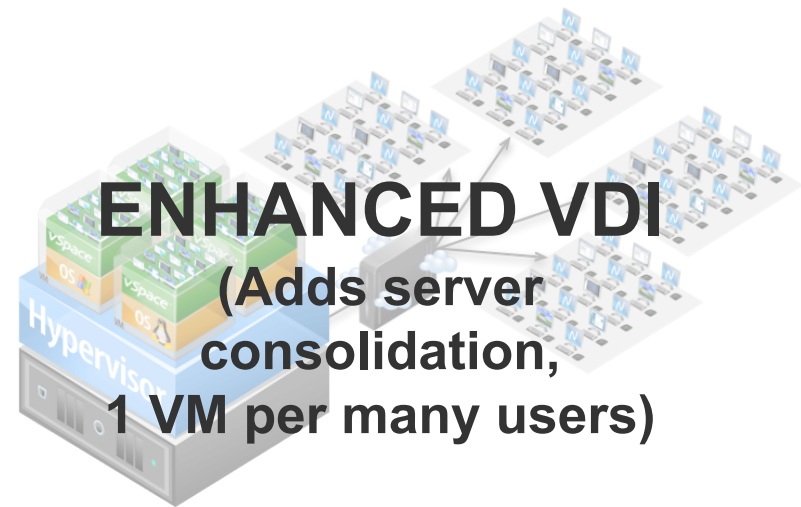
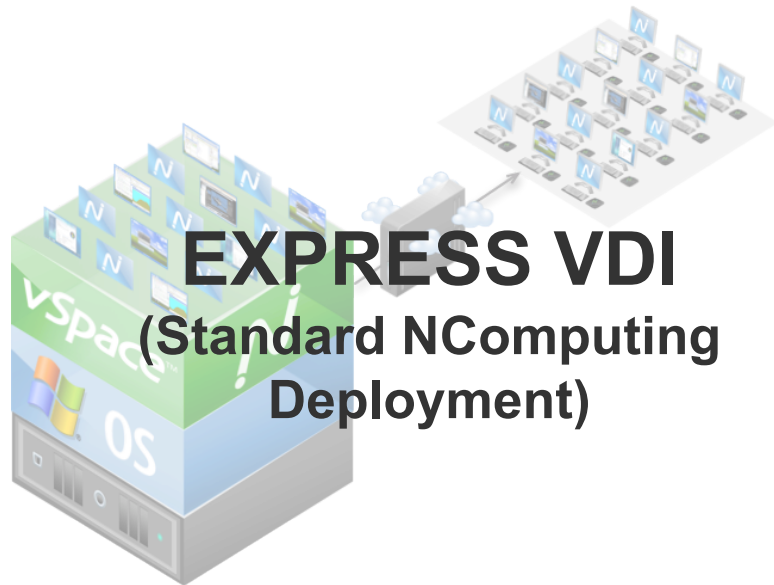
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Review

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A pragmatic approach to VDI

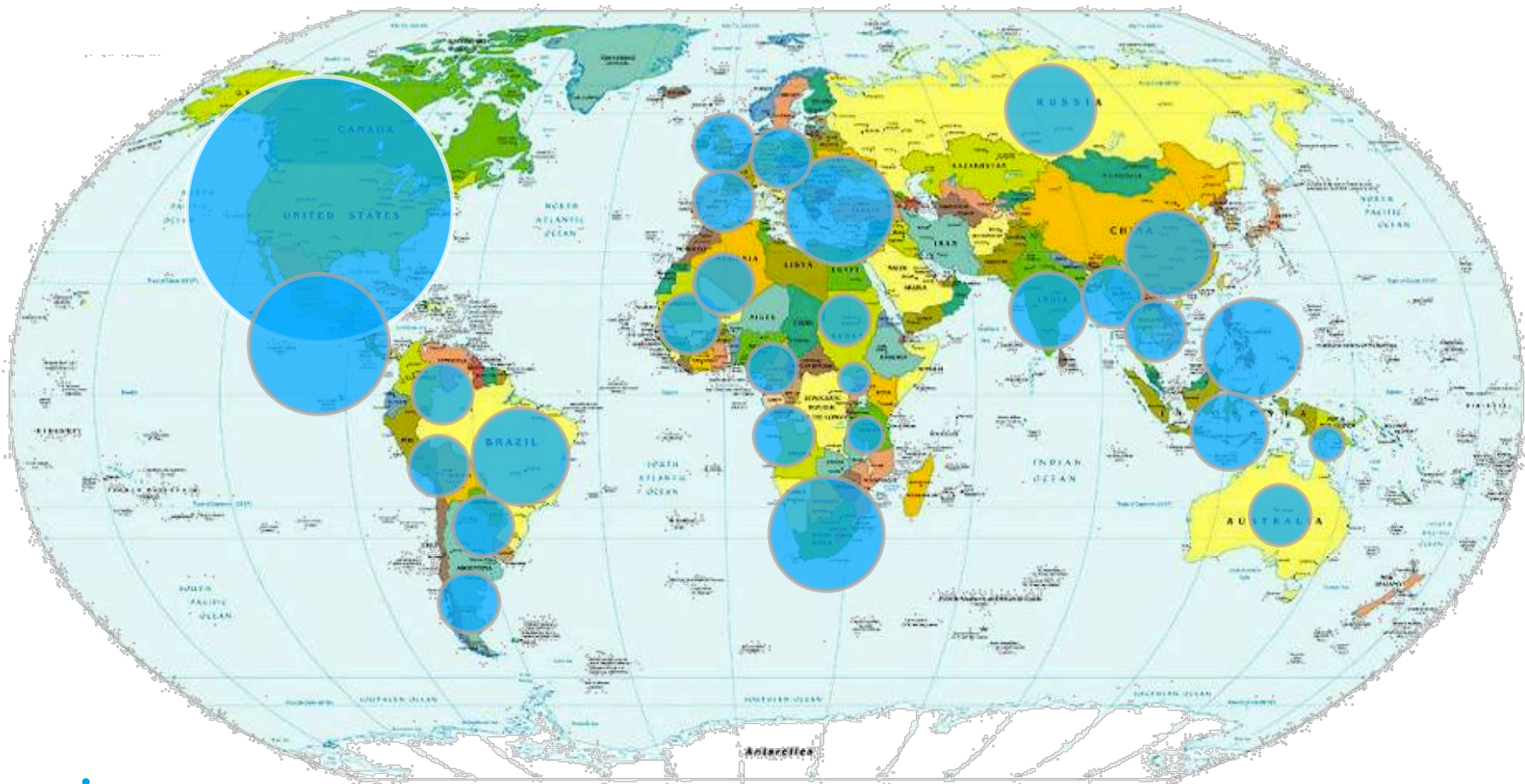


This approach has proven success worldwide...

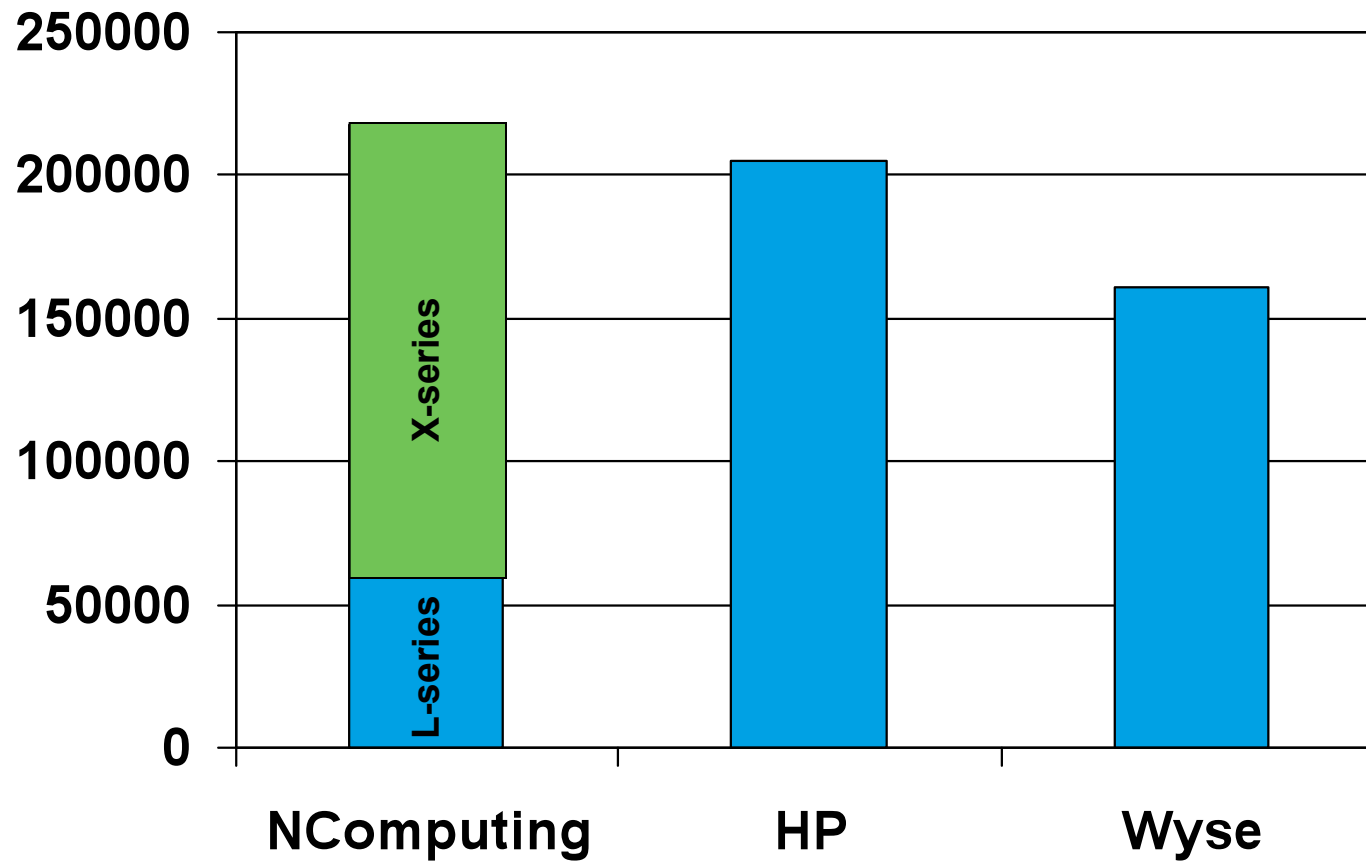
>2,500,000 Virtual Desktops Deployed

>100,000 customers

>100 countries



...it's how NComputing surpassed thin client leaders...



Source: IDC Q2 2009 WW Enterprise Thin Client Q-View

...it's what got NComputing many prestigious awards...

Technology	Business	Education	Social Impact	Economic Growth
  	  	  	   	  Channel   

...and it's how VDI can be affordable, scalable & viable
TODAY.

NComputing VDI solutions combined with other best of breed technologies solve the three key problems faced by VDI:

- 1. Economics: makes VDI far less expensive**
- 2. User Experience: Full multi-media and complete end-user functionality**
- 3. Scaling up AND down: putting power where it belongs, balanced with bandwidth**

QUESTIONS?