Many Happy Returns:
Techniques on How to Identify VMware Return on Investment and How to Use it to Justify VMware Expansion

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Agenda

- About Moen
- Tiger Woods and ROI
- ROI through 4 implementation phases
- Project manager techniques
About Moen

- Largest Manufacturer of Faucets and Plumbing accessories in North America
  - Over 1 billion of profitable sales annually
  - 7 North American and 4, 5, 8 international locations
  - Innovation driven & Consumer focused
About Moen
Challenges for the Server Guys

- **Globalization**
  - Lean-mean-fighting machine (or faucet-making-machine)
  - ‘Advertise’ our services to new audience

- **Agility**
  - Rapid Response
  - Opportunities for spectacular success (Or spectacular failure)
VMware Hardware Layout

Remote Sites
- All ESX servers
- Corporate Network

China
- All ESX servers
- Corporate Network

Elyria DR Site
- All ESX servers
- Corporate Network

DMZ Network
- 2 ESX servers

Corporate Network
- All ESX servers
- All ESX servers connect

SAN A
- All LUNs connect

SAN B
- All LUNs connect

EMC Symmetrics Disk
- 200 GB volume
- Purpose: Tier 1 PRD systems

EMC BCV
- Replica of data for backup (planned)

EMC Clarion Disk
- (0) 100 GB Volumes
- Purpose: Tier 2 PRD systems

EMC ATA Disk
- 200 GB Volume
- Purpose: Tier 3DEV ESX systems
  Server Templates

EMC SRDF Disk
- 66 GB Volume
- Purpose: Tier 1 PRD systems
  replicated to Elyria DR site

EMC SRDF replica
- 66 GB Volume (planned)
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Tiger Woods and ROI

![Tiger Woods book cover](image-url)
ROI

- ROI- Return on Investment.
  - Measures economic return on a project investment
    \[ \text{ROI} = \frac{\text{Benefits After Costs}}{\text{Costs}} \]
  - Benefits and costs fall into 2 categories:
    - Tangible- Easily measured and observed
      - Ex: Hardware purchases, Lease cost, Training hours
    - Intangible– More difficult to measure and observe
      - Ex: Perceived system performance, Technician satisfaction
Return on Investment Model

ROI = \frac{\text{Benefits} - \text{Costs}}{\text{Costs}}

1. Estimate Benefits
2. Estimate Costs
3. Use ROI Equation
   - Obtain Costs from Vendors & Suppliers

Intangible Benefits?
Costs

- **Tangible**
  - Hardware
  - Software
  - Maintenance
  - Training
  - Deployment time
  - Taxes Capital

- **Intangible**
  - Technician resistance
  - Learning curve
  - Deployment errors
Benefits

- **Tangible**
  - Hardware avoidance
  - Maintenance reduction
  - Hardware repositioning
  - Tax Depreciation

- **Intangible**
  - Faster server deployments
  - System standardization
  - More Dev and SBX systems
  - Agility
The payoff

- Calculate your ROI for the project,
- And calculate your ‘zero point’
  - ROI = 0 when Benefits = Cost
  - Zero point should be in terms of Virtual machines deployed
- Moen’s zero point =
  - 2.6 Virtual machines deployed on a single ESX host
Example

- Calculate your ROI for the project,
- And calculate your ‘zero point’
  - ROI = 0, when Benefits = Cost
  - Zero point should be in terms of Virtual Machines deployed.
- Moen’s zero point =
  - 2.6 Virtual machines deployed on a single ESX host
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Phases of Implementation

- Pilot
  - 3 ESX Servers
- Production – Phase I
  - 8 ESX Servers in main datacenter
- Production – Phase II
  - 2+ ESX Servers in each remote location
  - Disaster recovery systems
- Production expansion
  - Increase capacity to 30 ESX Servers
Phases of Implementation

- Pilot
  - 3 ESX Servers
    - Goal: Define and justify a strategic shift towards virtualization
    - Success metrics:
      - Performance – Speed of processing, etc…
      - Perception – Is there a perceived difference in performance
    - ROI based on
      - Server budgeting forecast
      - Purchase rate of new servers
      - Maintenance expenses
Pilot Phase

VMware Hardware Layout

Corporate Network

All ESX servers

NOVMWARE3

NOVMWARE5

NOVMWARE7

x 20

x 2
ROI Calculations - Pilot Phase Results

- Costs: $50,000  # Virtual Machines: 27
- # ESX Servers: 3  Benefits: $150,000

ROI = (Benefits - Costs) / Costs * 100%
= ($150,000 - $50,000) / $50,000 * 100%
= 200% ROI

Zero point = (Cost * # VM deployed) / Benefits
= ($50,000 * 27) / $150,000
= 9 Virtual Machines
= 3 Virtual Machines per ESX server
Phases of Implementation

- Production – Phase I
  - Strategic Commitment to VMware
  - 8 ESX Servers in main datacenter
  - Leverage SAN, VirtualCenter and VMotion
    - Goal: Virtualize 25% of the datacenter. (50 systems)
    - Actual: Virtualized 40% of the datacenter (80 systems)
  - Success Metrics
    - Performance – Speed of processing, etc…
    - Cost reduction
Production – Phase 1

VMware Hardware Layout

- **DMZ Network**: 2 ESX servers
- **Corporate Network**: All ESX servers

**SAN A**
- EMC Symmetrix Disk
  - 200 GB volume
  - Purpose: Tier 1 PRD systems
- BCV
  - Replica of data for backup (planned)

**SAN B**
- EMC Clarion Disk
  - (5) 100 GB Volumes
  - Purpose: Tier 2 PRD systems
- EMC ATA Disk
  - 200 GB Volume
  - Purpose: Tier 3 DEV / SBX systems
  - Server Templates

**Server Templates**
- All LUNs connect
- All ESX servers connect

**Corporation**
- Virtual Center
- IBM Director
- Physical Box
Phases of Implementation

- Production – Phase I
  - 8 ESX Servers in main datacenter
    - ROI based on
      - Cost avoidance
        - Hardware purchases not required
        - Repositioning of existing hardware
      - Moen’s ROI
        - 2.8 virtual machinees
    - Also there, but not calculated
      - Performance increase
      - Tax deductions (donated hardware) / resell value of HW
VMware Savings

- In the first 6 months...
- 20 Server purchases not required
  - Reallocating hardware
  - Provisioning in VMware
  - Savings = $250,000 capital
- Monthly HW support cost decreased by 27%
- Aggregate temperature drop of 3 degrees in datacenter
- $96,000 depreciation write off for 2004
  - = $26,000 tax savings (& many happy charities)
Phases of Implementation

- Production – Phase II
  - 2+ ESX Servers in each remote location
  - Disaster recovery systems
    - Goal: expansion
    - Success metrics
      - Performance, cost reduction
    - ROI based on
      - Server budgeting forecast
      - Purchase rate of new servers
      - Maintenance expenses
Production – Phase 2

VMware Hardware Layout

Revised: 10/20/2004

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replicated to Elyria DR site

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Remote Sites

All ESX servers
Corporate Network

ELVMWARE1

ELVMWARE2

Elyria DR Site

All ESX servers
Corporate Network

ELVMWARE1

ELVMWARE2

DMZ Network

2 ESX servers

Corporate Network

All ESX servers

NOVMWARE4

NOVMWARE5

NOVMWARE6

NOVMWARE7

NOVMWARE8

All LUNs connect

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Replica of data for backup (planned)

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Phases of Implementation

- Production expansion
  - Increase capacity to 30 ESX servers
  - Deploy ESX Server internationally
    - Goal: Operational efficiency
    - Goal: Virtualize 75% of the datacenter
  - Success Metrics
    - Performance, cost reduction
    - Rinse and repeat
Production Expansion

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Corporate Network

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The IRS is your friend

Do a favor for whoever in Finance handles your hardware depreciation tax write off.

20% yearly depreciation for 5 years

Donate or sell before year 5 – take all remaining depreciation

Old hardware was expensive….  
… now it helps you get budget!

$25,000 * 40% = $10,000 tax write off

$10,000 tax write off = $3,000 actual dollars
To: VMware Implementation team  
CC: IT Senior Management  
Subject: We’ve achieved our ROI!

We just implemented our 3rd Virtual server on the latest ESX Server. We’re now in positive ROI territory, we have capacity to add 7 virtual machines and anticipate $50,000 in future cost avoidance.

Good job! Keep it Up, get ready for Phase 2 Planning next month!
Get the Bandits on the Train

How do you keep bandits from robbing your train?
Get the Bandits on the Train

How do you keep bandits from robbing your train?

Get them to ride the train with you, and make them the sheriff.
Thanks for your time

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