



# Virtualization: Data Center Directions



David Boyes

Sine Nomine Associates

<http://sinenomine.net/>

# Agenda

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- Transition of Data Centers from Physical Locations to Services Across Locations
  - Focus Moves Away From Platform Affinity to Heterogenous Units with Well-defined Interfaces
  - Impact of Change on Costing Models
  - Over to Kevin...
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# Traditional Data Center Methods

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- Typically bound to physically colocated services for specific applications or services
  - Focused on physical diversity and accommodation of managed server and storage solutions within a single organizational structure
  - Typically dominated by institutional monocultures, or a small genetic diversity of platforms and configurations
  - Implications/Issues:
    - RAS impacted by physical concentration of resources
    - Institutional monoculture architecture limits time-to-market and adaptability
    - Ebb and flow of business requirements create complex demands for technology solutions involving applications and infrastructure components.
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# Migration

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- Transitional structures emerging in previous 5-10 years
    - Outsourced solutions
    - Cooperative processing
    - Timesharing/Utility Purchases
  - Evolutionary designs begin with capturing existing requirements in frameworks of infrastructure and applications interacting as a single service image.
  - Management infrastructure is key to service-oriented architecture
- Areas of Concentration:
    - Facilities and Operational Management
    - TTM/TTD/SLAs
    - Personnel
    - TCO
    - Elimination of Monoculture
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# Evolutionary Data Center

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- Focus on Service Access Points, not Physical Access
  - Services combine platforms and services to deliver tools with clear APIs and UIs
  - Breaking the Vendor Locks
    - Open source gains a place
    - Non-vendor services increasingly competitive
    - Platform-neutral technology dominating
      - C/Java/Linux/EJB
      - Messaging Architectures/Grid
  - Network and Systems Equality
  - Access points to services defined as network APIs
  - Services commonly distributed across physically diverse locations
  - Management often not colocated with services
  - Business impact as a cabinet/Cx0 responsibility
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# Affinity and Convergence

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- While applications may have affinities for certain vendors and OSEs, affinity is no longer a justification for strategic direction.
  - Evolution of connectivity solutions and storage solutions converge toward culture of managed common infrastructure
    - Producer/consumer interplay at demarc
    - Convergence also implies common utilization measures
  - Convergence of technologies and services APIs drive more commonality in infrastructure components
  - Heterogeneous systems bound together by common APIs and common infrastructure dominate
  - Deployment time and management of dynamic reaction to demand dominate
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# Role of Outsourcing and In-sourcing

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- Recent downturn folded services back into the organization, typically outsourcing specific tasks rather than full operations
  - Investment first in people and architecture, not machines and technology
  - Service point approach allows effective choice
  - Virtualization leverages existing demands and investments
  - Buy-as-you-need model adapts well to out-tasking
    - Service by unit
    - Service by locality
    - Service by function
  - “Deploy-on-Demand”
    - Larger role for corporate internal knowledge
    - Capsulizing and packaging key to virtual environment
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# Costing Models Focus on Full-Cycle

- Focus is no longer on hardware/software costing alone
  - Recent shift to value/unit to compensate for lost revenue focus
    - Microsoft
    - Sun
    - Oracle
- People and Facilities dominate costing over time
- Virtualization optimizes for personnel and facilities
  - Interaction with services is identical with discrete model
  - Leverage in TTM/TTD components based on common resources
- Overall IT costing models under far more detailed scrutiny in commodity environment

# Evolution: Back to the Future?

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- Key topics in review:
  - Separation of physical servers from “services”
  - Overall consolidation of components and techniques to deliver clearly demarcated services
  - Single-source solutions decay; choices are key.
  - The flexible survive.

- Cost vs Agility
- SLAs
- RAS

It's back to the future  
all over again....

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