

# Capacity-on-Demand

A compelling business strategy that  
aligns IT infrastructure directly to demand

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# The Velocity of Change

“The energy source propelling the increased velocity of marketplace change is innovations, but these are merely new tools. The manifestation of this increased velocity is new customer expectations.”

Jim Blasingame, Forbes, October 8, 2012

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“The pace at which technology is evolving is creating risks and making the IT environment increasingly challenging.”

“The velocity of change in technology has moved many IT functions to adopt a new approach to sourcing and managing technology vendors and service providers as part of their overall IT infrastructure strategy.”

Ernst & Young, May, 2013

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# The Velocity of Change

Gartner Study (March 7, 2013)

- Findings
  - Data growth is the largest data center infrastructure challenge
  - Infrastructure and operations leaders have become risk-averse
  - There is a need for greater ability to respond to change
- Predicting by 2015
  - Just 10% of infrastructure and operations organizations will be able to accommodate the changes required by the business processes they enable
- Recommendation: find the best balance between risk tolerance and the velocity of business change

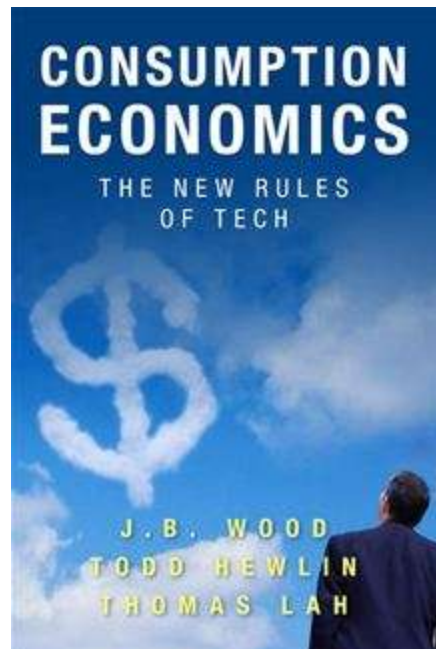
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# Another View

J. D. Wood says today, we

- Cost too much
- Are burdened with too much complexity
- Lack agility and flexibility



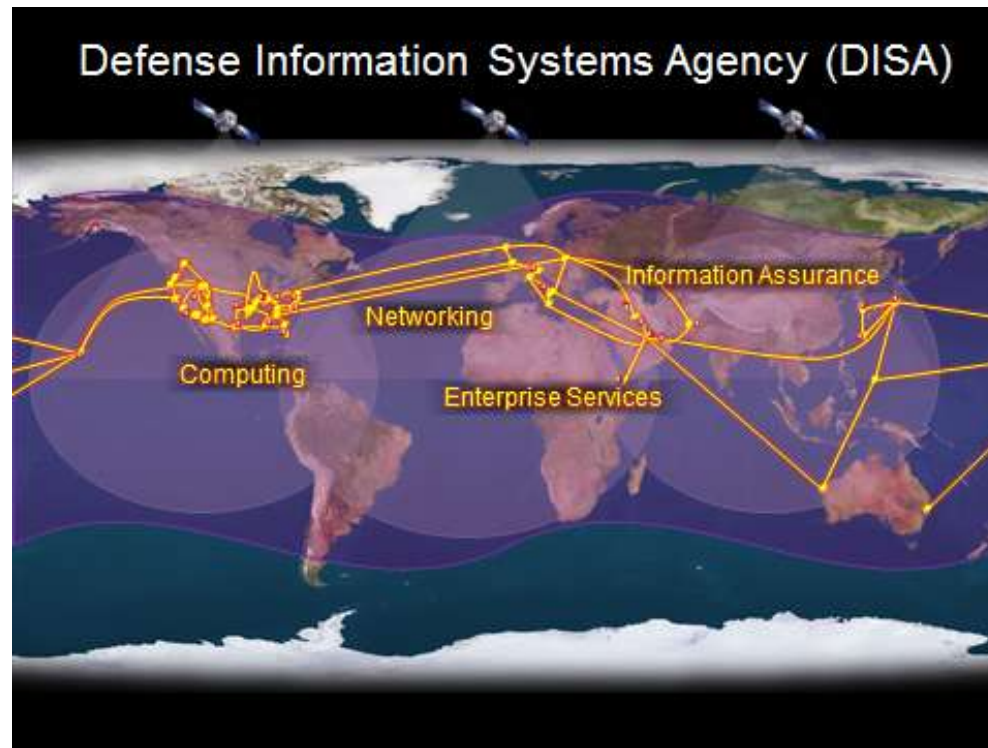
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How can enterprises and data centers better enable their businesses, keep pace, and reduce risk and cost?

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# The DISA Example



In 2000, 18 Defense Enterprise Computing Centers (DECCs)  
serving the DoD  
A \$700 million fee-for service data processing business

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# DISA Looked for a Different Approach

- Not smart buyers
  - Our engineers couldn't keep up with the pace of technology change
  - We had to work to separate wheat from chaff – often being at the mercy of vendors
  - All 18 making decisions
- Way too slow to deliver capacity – operators were impatient
- Over provisioning meant way too much idle capacity
  - Servers ran from 6-20% efficiency
  - Storage ran from 10-30 % efficiency
- Maintenance costs way too high
- Aging infrastructure – couldn't keep technology appropriately fresh

Every acquisition was a challenge of  
time and cost

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# Elevated Total Cost of Ownership (TCO)

## Operational “Costs”

- Lack of flexibility – inhibited from rapid change
- Lack of just-in-time capacity
- Technology obsolescence
- Lack of efficiency

## Indirect or Grey Costs

- Little or no economy of scale
- High cost of the procurement process
  - Preparation of RFIs, acquisition packages, draft RFQs/RFPs, etc.
  - Staff time for
    - Preparing specifications
    - Writing acquisition packages
    - Managing the contracting process
    - Handling reviews and protests
- Planning and competing for capital funding against anticipated demand
- Paying for unused capacity
- Paying to refresh technology

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DISA looked at the private sector for ideas

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Did we really have to own our stuff?

Or, could we get scalable infrastructure  
as an on-demand service?

(2001)

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# Our Answer – Capacity-as-a-Service

- A strategy that aligns IT infrastructure directly to demand
  - Provisions infrastructure as needed, when needed
  - Scales up and down – no floor, no ceiling
  - Treated as an operating expense
- The service provider
  - Provides infrastructure on the customer's premise ready-for-use
  - Retains ownership
  - Charges by the day under a pre-arranged, fixed price per unit scheme
- An alternative to
  - Delays in delivery of service
  - Over buying
  - Unnecessary use of capital

# How It Works

## Customer's View

- Issues a contract to procure data center infrastructure as a service
  - Processing, storage, network
  - Includes software, maintenance, tech refresh
- Issues call orders against the contract to scale up and down based on demand – response in days
- Operates the infrastructure
- Shares capacity management
- Sets quality of service desired
- Pays for service based on the measured capacity allocated
- Pays with operating dollars

## Service Provider's View

- Provides data center capacity as a pay-as-you-go service
- Retains ownership of the servers, storage, and network assets
- Locates equipment in customer's data center
- Provides racks, cabling, etc.
- Acquires, installs, maintains, de-installs, configures all hardware
- Provides tech refresh and software – as part of the cost
- Meets SLAs
- Discounts pricing annually

# Comparison of Cost Alternatives

## Costs for the Normal Way of Doing Business

- The hardware itself
- Maintenance
- Software licenses
- Procurement lead times, staff time
- Preparation for use – racks, installation, security compliance
- Tech insertion/refresh
- Improvements in functions and features

## Cost with Capacity-as-a-Service

- Cost per capacity increment (e.g., terabytes, CPUs, ports) per day declining over time

# Highlights

- Operates like a utility – a user controlled, pre-competed source of capacity
- Technology is vendor agnostic
- Capacity increments are provided on a firm-fixed price basis – that decline over time
- Tech refresh
  - Based upon a mix of performance and economics
  - Included in the cost of the capacity increments
- Ordering, billing, and tracking can be tailored
- Service levels are negotiable

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# Outcomes for DISA

- Results – solid
  - Services are well delivered – SLAs are tight
  - But...some providers put their hands out for change orders; most do not
- Efficiency – reduced over provisioning and reduced idle capacity
  - Servers and storage ~ 80% efficiency
- Realized the ability to match demand to op tempo
  - Reduced delivery times from 9-18 months to 2-20 business days
- Reduced the contracting workload by 70%
- Reduced total cost of operations by 40%

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# Today

- DISA obtains all data center infrastructure with capacity-as-a-service contracts
  - Compute
  - Storage
  - Network infrastructure
- The services are mature
  - Well understood roles
  - Flexible scope of work
  - Tech refresh on auto pilot
  - Easy change process and solid change management
  - Strong service provider cultures and attitudes
  - Single throat to choke on both sides

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# Port Infrastructure-on-Demand?

## DISA

## Ports

Scalability

✓ No floor, no ceiling

✓ Turn on/off as needed

Ownership of Infrastructure

✓ On premise ready-for-use

✓ Retain ownership and control

Efficiency

✓ Reduced idle capacity

✓ Reduce cost of ownership

Maintenance Costs

✓ Included in price per unit

✓ Reduce operational expenses

Service Delivery

✓ Reduced from months to days

✓ Infrastructure meets demand

Cost

✓ Firm-fixed price per capacity increment

✓ Pay-as-you-go; predictable costs

Tech Obsolescence

✓ Mix of performance and economics

✓ Latest technology to meet changing needs

# Backup

# And....

Might there be a role for some cloud infrastructure-on-demand to

- Gain the financial power of consolidation while maintaining control of your own data and needs
- Have scalable back-up, recovery, and archiving in a private cloud and retain control of your data
- Share infrastructure and cost with other ports and retain total control of individual port data
- Reduce complexity, cost, and duplication by sharing common applications and services with other ports and retain control of your own data

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# Service Provider's Role

- Provides data center infrastructure as a service
  - Acquires technology to meet the customer's demand
    - Vendor agnostic – no vendor lock-in
  - Holds the inventory and provides capacity as a managed service – scales up and down without penalty
  - Provides service on firm fixed price per increment – including tech refresh
- Installs ready for use (RFU) – ready to be put in service
  - Installs equipment to include racks, cables, connectors, etc.
  - Provides and install operating system software
  - Performs initial logical configuration based on customer direction
  - Formats to customer specifications
  - Configures systems to improve performance
  - Provides on-site familiarization
- Does not bill until the customer accepts



# Pricing

- Negotiated into the contract on a firm-fixed price basis per capacity increment, e.g., nominally one terabyte (TB) or CPU per day
- Inclusive of
  - The hardware itself
  - Warranty and maintenance
  - Software licenses
  - Preparation for use – racks, cables, installation
  - Tech refresh
  - Improvements in functions and features
- ViON discounts the price an average of 10% per year while equipment is in service

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# Technology Refreshment

- Governed by SLAs and included in the fixed price for a capacity increment
- Basics – a mix of performance and economics
  - As long as equipment meets service levels, ViON suggests keeping it service
    - Factors include manufacturer support, performance demands, and facility limitations
    - Upgrades based only on manufacturers' new hardware are discouraged
  - Tech refresh recommended when
    - New technology has performance or environmental advantages
    - Improved pricing and/or new features are available
- The latest generation of technology
- Runs on auto pilot
- Eliminates technology obsolescence

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# Service Governance

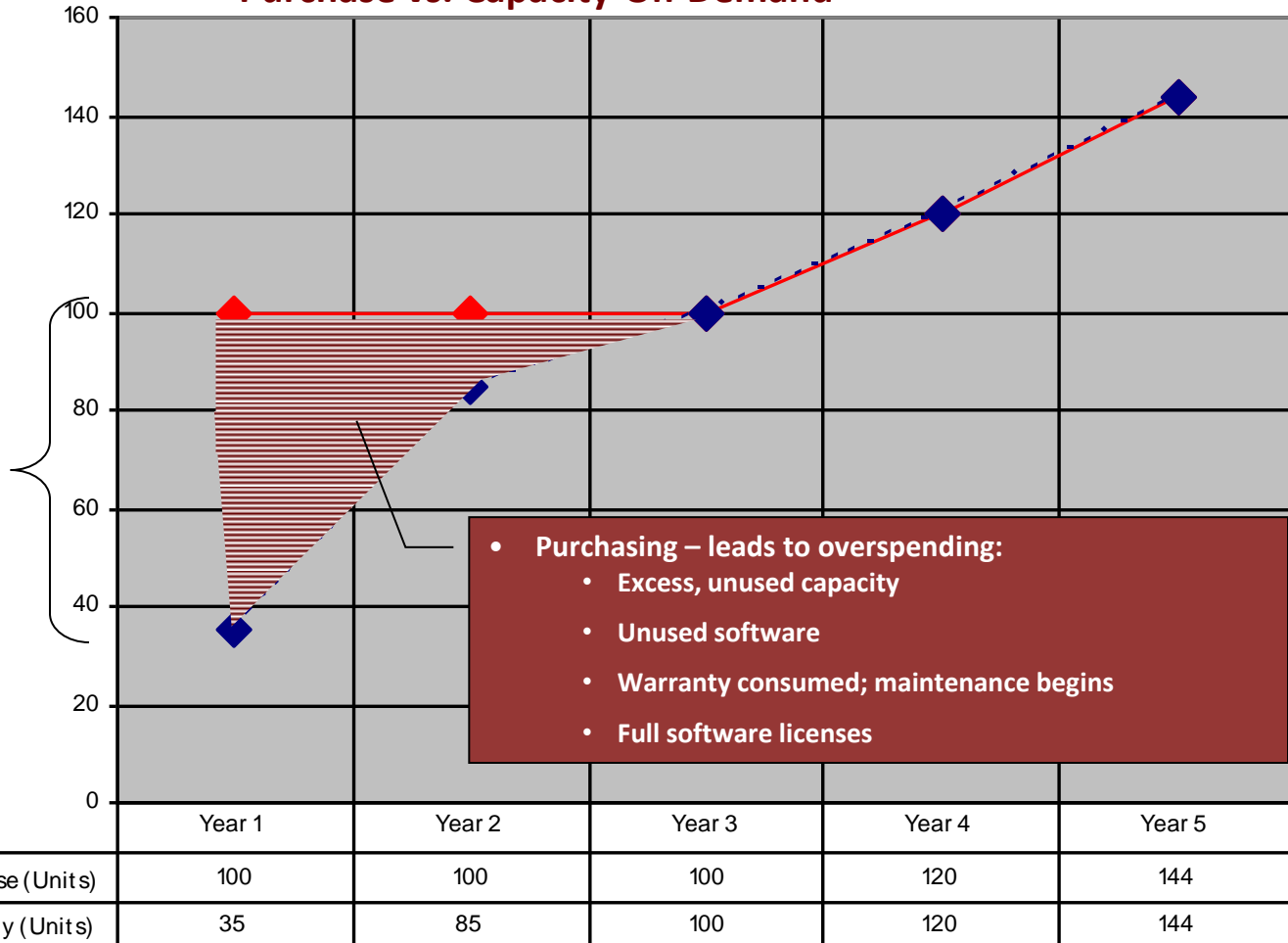
- Governed by service level agreements (SLAs)
- Delivery times – all RFU – ViON does not get paid until the customer accepts the system(s)
  - Deployment of new systems – 25 business days
  - Capacity enablement on site – 5 business days
- Availability – up time
  - Negotiated into the contract and contract pricing
  - Monitored by ViON and the customer



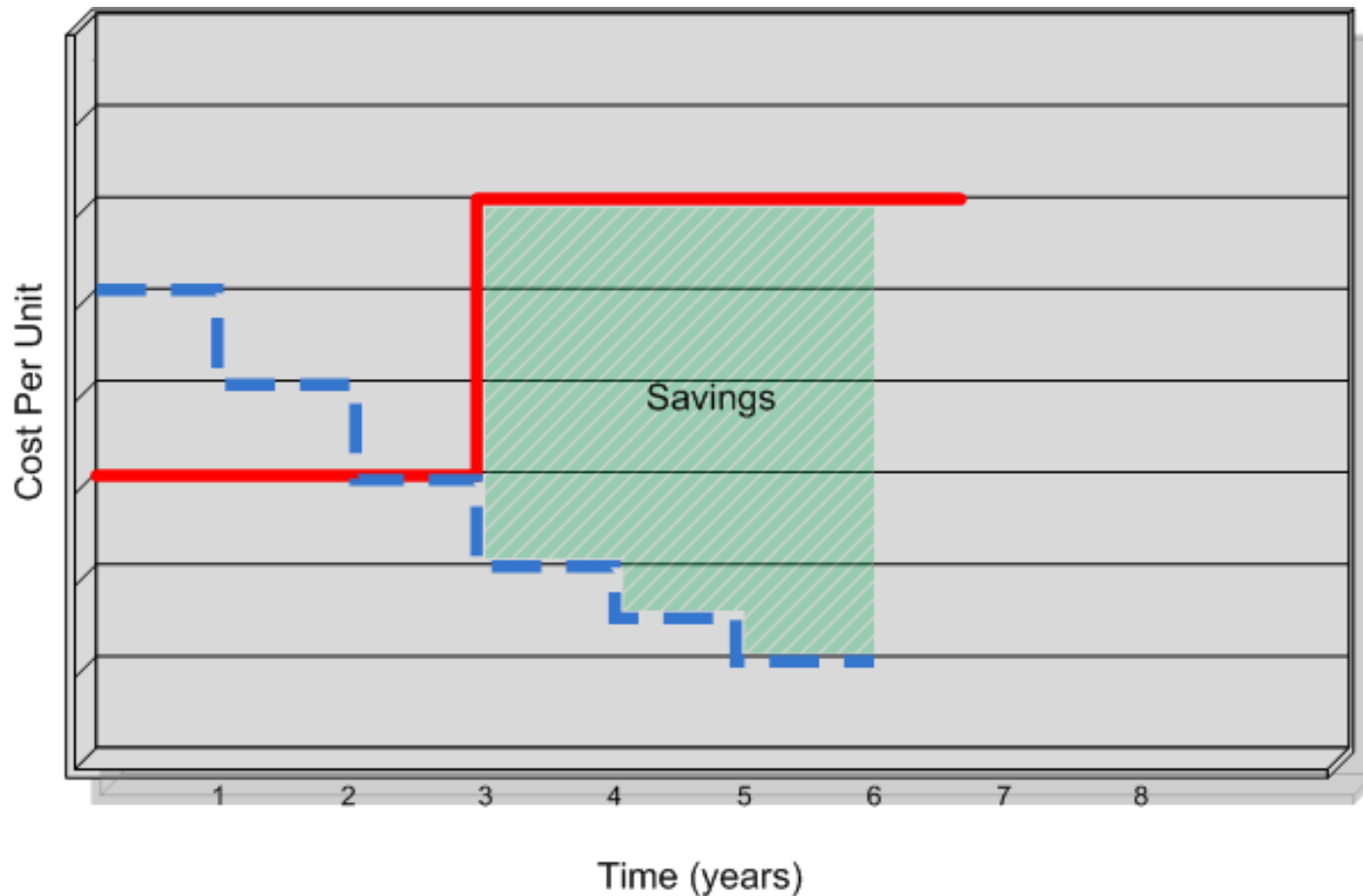
# Efficiency and Cost-Effectiveness

Purchase vs. Capacity-On-Demand

- If you purchase a 100TB system, and
- The actual capacity need is 35TB in year 1; growing to 85TB in year 2 and 100TB in year 3
- Excess capacity purchased in year 1 is 65TB and year 2 is 15TB
- Highlighted region is overspend in advance of actual need



# Efficiency and Cost-Effectiveness



- Traditional capital purchase
- - - Capacity-on-Demand

**Notes:**

- 5 years straight line depreciation
- Warranty ends at 3 years
- Maintenance costs begin in year 4
- Provider decreases price annually



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# Agenda

- The pace of change and challenges of a quickly changing future
- Mitigating and hedging: capacity-on-demand, a different model for acquiring IT infrastructure