Data Center Business Opportunities

NECA 2009
Seattle, WA

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Market Segments
Private
Owned and operated by the enterprise offering goods and services

Collocation / Managed Services
Provide infrastructure and other services primarily to small business

Grew 14% in 2006
Growing at 14-16%

Data Center Application Drivers
• Business Operations and Services
• Government Regulation
• Video
• Storage
• New IP Applications and Hardware
• Web 2.0
• Healthcare
• Smart Grid

Market Opportunity
$12.5 billion annually
renovation, expansion, relocation

53% will expand
45% will make improvements
32% will relocate

50% will require some action in 12 months

25% CAGR Hard Disk Drives data storage

Server installations have doubled in just a few years.

Energy consumption has doubled in last 5 years. Increasing at 8-16% per year.
Data Center Fact

• “EMA believes that organizations will increasingly turn to automation as a means of doing more with less - - especially in the data center and storage arena.”
  • Enterprise Management Associates (EMA)

Data Center Fact

• 2009 IT Department Budget Contraction
  • 43% budgets decrease
  • 28% budgets increase
  • 29% budgets remain the same
  • Source: Network World Magazine reader survey
  • Good news – We should get a good reception over 50% of the time

Data Center Fact

• Global spending on IT products and services will drop 3% in 2009, .......but subsequently rebound by 9% in 2010.
  • Source: Forrester Research

Data Center Fact

• By 2010, for every $1 spent on hardware, 70 cents will be spent on power and cooling
• By 2012, for every $1 spent on hardware, $1 will be spent on power and cooling
• 46% of data center managers don’t know how much they spend on power and cooling

Data Centers Will Spend Money to Reduce Energy Consumption

–The Data Center Hot Button
–A C-Level conversation (be a hero)
–Baseline power consumption and then monitor
–Quantifies energy saving activities

Construction Mix

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost ($)</th>
<th>Cost/sq. ft. ($)</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical</td>
<td>15,633,437</td>
<td>370.99</td>
<td>41.99</td>
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<tr>
<td>Mechanical</td>
<td>7,819,063</td>
<td>185.29</td>
<td>21.00</td>
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<td>Raised Floor</td>
<td>759,600</td>
<td>18.00</td>
<td>2.06</td>
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<tr>
<td>Fire Protection</td>
<td>1,207,296</td>
<td>23.00</td>
<td>4.07</td>
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<tr>
<td>Security</td>
<td>400,000</td>
<td>18.00</td>
<td>1.70</td>
</tr>
<tr>
<td>Data Cooling</td>
<td>1,098,000</td>
<td>43.00</td>
<td>0.00</td>
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<tr>
<td>Engineering / Design</td>
<td>5,000,000</td>
<td>188.89</td>
<td>9.99</td>
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<tr>
<td>Contractor Fee</td>
<td>1,986,100</td>
<td>43.00</td>
<td>0.00</td>
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<tr>
<td>Commissioning</td>
<td>1,098,000</td>
<td>43.00</td>
<td>1.99</td>
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<tr>
<td>General Construction</td>
<td>2,907,832</td>
<td>84.49</td>
<td>12.67</td>
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<tr>
<td>Total</td>
<td>24,562,208</td>
<td>819.92</td>
<td>100.00</td>
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</table>

Source: Gartner 2016
1 and 2U Servers

Blade Servers

Millions of kW hours wasted on inefficient cooling and unused capacity

Sources of Energy Consumption

Energy Trends

Millions of kW hours wasted on inefficient cooling and unused capacity

Source: EYP Mission Critical

Source: EPA
Increased Energy Consumption is Very Real Concern for Data Center Operations Managers and Facility Managers

The Problem is Big and Will Not Change Any Time Soon.

Addressing This Need Is The Number One Talking Point Required To Penetrate the Data Center Market Opportunity

Power Consumption and Cooling are Closely Connected

Power Costs

Many Data Centers are moving

Cost and availability of electricity is a factor

Hot Markets for new Data Center Construction

Rural 2nd and 3rd tier cities

Central Washington, Oregon, New York "Doughnut", Manassas, VA, Michigan, Minnesota, Kansas, Nebraska, Georgia, Texas

Emerging Trends in Racks

• Self contained
• Modular
• Up to 1,500 watts per square foot
• Existing environments
• Raised floor or slab

Emerging Solutions

IBM — PMDC
Rackable Systems — ICE Cube
Sun Microsystems — Black Box
Verari Systems — Forest Container

• Fully functional data center often with multivendor support
• Portable — easy to relocate
• Targeted for temporary and remote data centers
• Rapidly deploy in 12-14 weeks
• Level 3 design; energy efficiencies

Green

EPA
Energy Star
USGBC
LEED
The Green Grid

Data Centers consume nearly 2% of the total U. S. power grid.
Data centers will go greener for economic, not environmental reasons!

Cost reductions and helping secure power availability

Tearing Down the Wall Between IT and Facilities

- Budget reduced or eliminated for new data center
- CFO mandate to reduce operational costs
- Corporate pressure to increase energy efficiency
- Urgent project to increase data center capacity

Measuring Power Consumption

- PUE – Power Usage Effectiveness
- The Green Grid

\[ \text{PUE} = \frac{\text{Total Facility Power}}{\text{IT Equipment Power}} \]

How Much Energy Efficiency Is Enough?

- Aggressive
- PUE = 1.28
- Conventional
- PUE = 2.0
- Archaic
- PUE = 3.0

Cap & Trade

Industry analysts expect to see between a 20% and 100% increase in utility bills over the next few years, should the legislation go through in its current form.

Source: Sun Microsystems, The Green Grid, Gartner estimates

Measuring Your PUE

Source: Adapted from The Green Grid
**Contractor Strengths**

Broad Solutions Portfolio
- Electrical - Mechanical - Data Cabling - Lighting
- Security - Automation - Services

Logistics
- Experience in managing large projects
- Technical specialists
- Supplier and industry contacts
- Resource Management
- NECA Network

**Influence**

End-User Insiders
- CIO/CFO
- Data Center Operations
- Data Center Facilities

Architects, Consultants, Engineers (ACE)
- Manufacturers/Suppliers
- Integrators - GCs - Contractors

Contractors influence 26% of data center solutions

ACE influence 59.4% of data center solutions

**Key Selling Points**

- Faster End-user Uptime (TCO)
- Reduce Customer’s Operational Expense (ROI)
- Services Maintenance
- New and Renovation Construction
- Material Aggregation
- On-site Services
- Technical Resources
- Trusted Advisor

Approach the market as a single business. Bringing to bear all the technical and specialized resources available.

- Power Specialists
- Networking Specialists
- Security Specialists
- Automation Specialists
- Lighting Specialists
- Business Development Managers

**Solution Management**

- Electrical
- CommData
- Cooling
- Lighting
- Security
- Automation
- Services

Warehouse Services
- Jobsite Services
- Material Management
- Customized Delivery Options
- Constant Communication

Data Center
- Customer

- Improved Productivity
- Increased Efficiency
- Faster Deployments
- Minimum Delays
- Lower Total Cost

**Thank you for your time today**