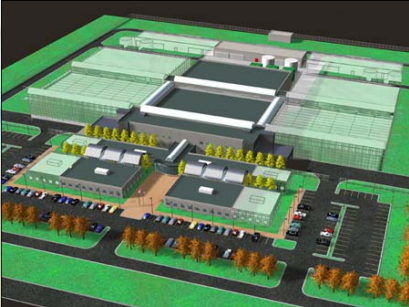



Data Center Business Opportunities

NECA 2009
Seattle, WA

Karl Griffith, RCDD
Director, Enterprise Markets

Big



Confidential



Or Small



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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%




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Data Center Application Drivers

- Business Operations and Services
- Government Regulation
- Video
- Storage
- New IP Applications and Hardware
- Web 2.0
- Healthcare
- Smart Grid



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Market Opportunity

\$12.5 billion annually
renovation, expansion, relocation

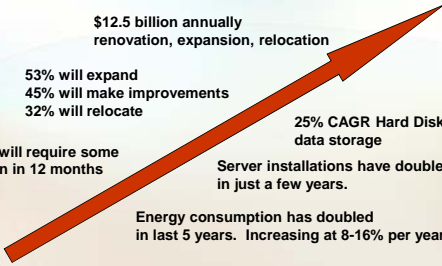

53% will expand
45% will make improvements
32% will relocate

25% CAGR Hard Disk Drives data storage

50% will require some action in 12 months

Server installations have doubled in just a few years.

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

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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)



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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



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Data Center Fact

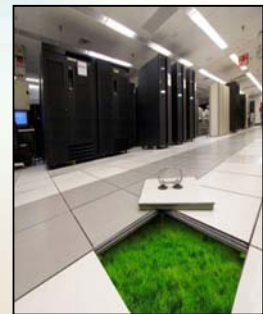
- Global spending on IT products and services will drop 3% in 2009,but subsequently rebound by 9% in 2010.
 - Source: Forrester Research



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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



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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



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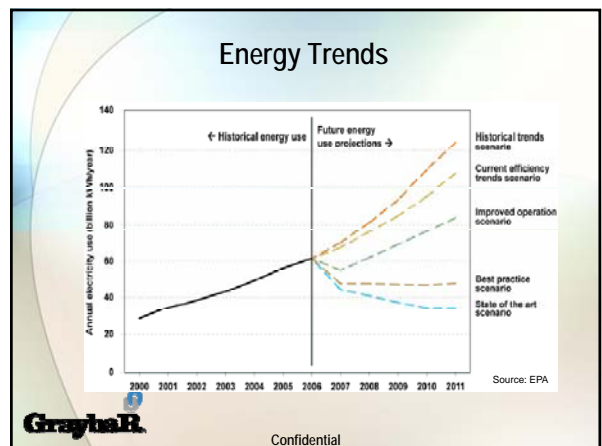
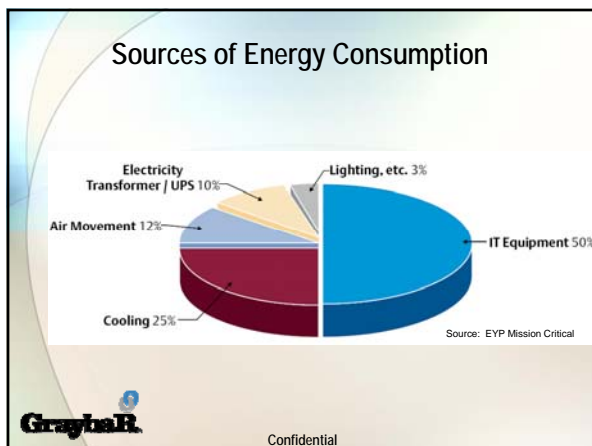
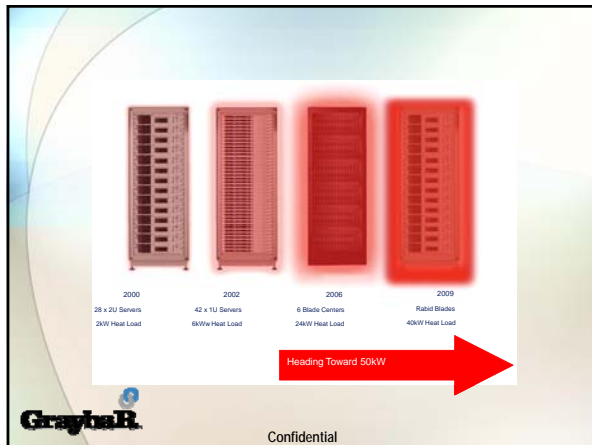
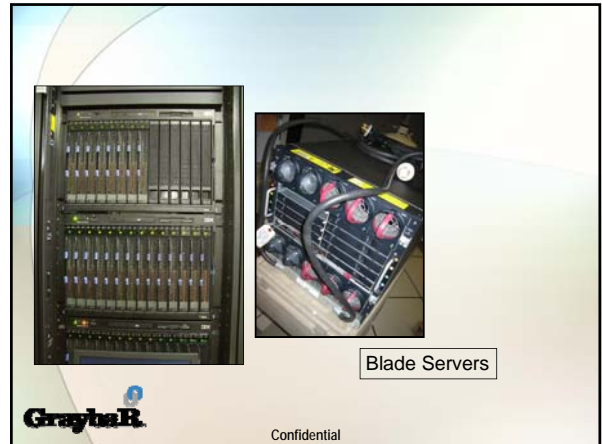
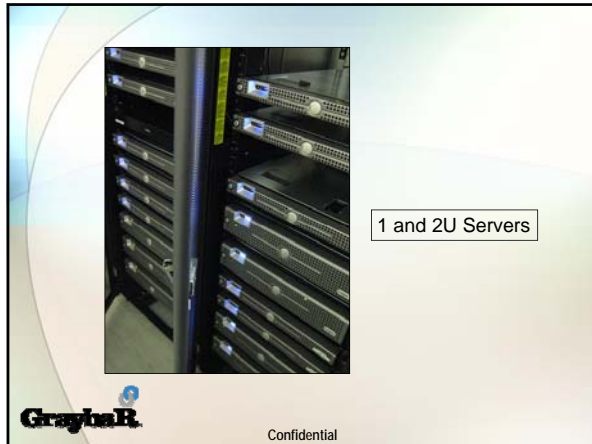
Construction Mix

	Cost (\$)	Cost/Sq. Ft. (\$)	% Total
Electrical	15,633,437	370.46	41.99
Mechanical	7,819,063	185.29	21.00
Raised Floor	759,600	18.00	2.06
Fire Protection	1,477,000	35.00	4.01
Security	633,000	15.00	1.72
Data Cabling	1,688,000	40.00	4.58
Engineering / Design	2,949,000	69.88	8.00
Contractor Fee	1,843,125	43.68	5.00
Commissioning	368,624	8.74	1.00
General Construction	3,691,650	87.48	10.01
Total	36,862,500	873.52	100.00

Source: Gartner 2006



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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



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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

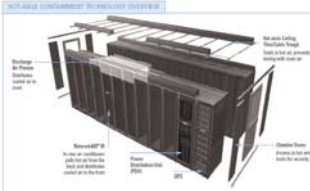

Central Washington, Oregon, New York "Doughnut", Manassas, VA, Michigan, Minnesota, Kansas, Nebraska, Georgia, Texas



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Emerging Trends in Racks

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

Liebert XD Series
HP Smart Cooling
APC InfraStruXure
IBM High Density Zone
Switch Communications

Source: Liebert and APC Web sites

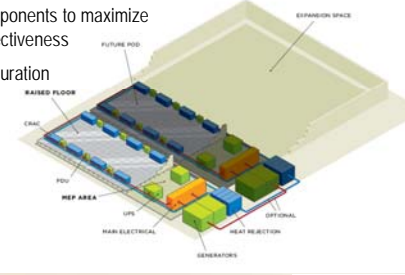



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The Value of Pods and Zones

POD Design

- Incremental build-out methodology
- Use standard components to maximize flexibility, cost-effectiveness
- Component configuration optimized power and cooling to a prescribed amount of raised floor space
- Reduce Capex

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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





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Green

EPA
Energy Star
USGBC
LEED
The Green Grid

Data Centers consume nearly 2% of the total U. S. power grid.

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Data centers will go greener for economic, not environmental reasons!



Cost reductions and helping secure power availability

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Cap & Trade

Corporate Data Center
Estimated Annual Fuel Cost: **\$774,000**

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.

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Tearing Down the Wall Between IT and Facilities

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

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Measuring Power Consumption

- PUE – Power Usage Effectiveness
- The Green Grid

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

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How Much Energy Efficiency Is Enough?

Design	PUE
Aggressive	1.28
Conventional	2.0
Archaic	3.0

Graybar Confidential Sources: Sun Microsystems, Green Grid, Gartner estimates

Measuring Your PUE

Measure Total Power

Measure UPS Output Power

Graybar Confidential 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




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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



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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



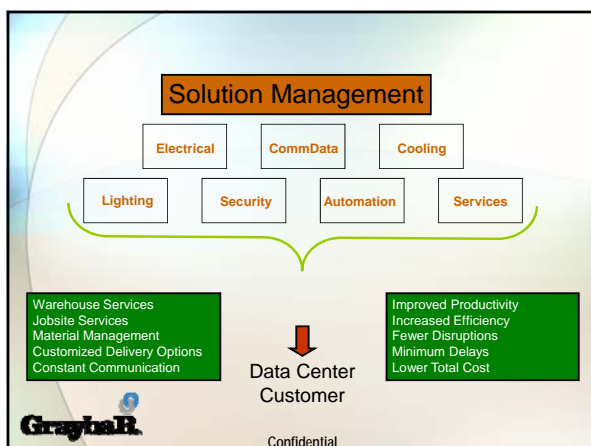
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Approach the market as a single business. Bringing to bear all the technical and specialized resources available.

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



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Karl Griffith
314-573-9322
karl.griffith@graybar.com

twitter.com/data_center
graybar.com/data-centers

Thank you for your time today



Confidential