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The End-to-end reliability forum.



Data Center Cost Containment

AFCOM Midlantic Meeting

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Cost Containment

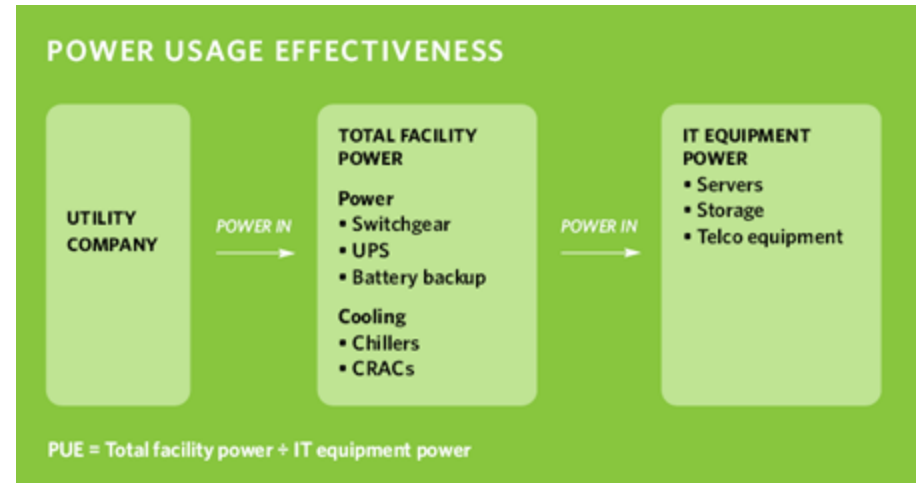
- Steps in PROCESS
 - Understand current costs (MEASURE)
 - Determine which costs (activities/processes) are truly required
 - Select reduction / containment approach
 - Implement chosen reductions / containments
 - MEASURE RESULTS
 - Report results

Understand

- Measure your usage
 - Of everything?
- Measure your costs
 - All costs?
- Understand what you need
 - Match IT to business requirements
- Technology for Technologies sake is a waste of money

Understand (continued)

- Electricity
 - Where is the waste
 - What is using it
- Cooling
 - Equipment
 - Air flow
 - Temperature



$DCiE = \text{IT equipment power} / \text{total facility power}$

Understand (continued)

- Operations
 - Procedures
 - Why do them
 - How to do them better
 - Batch processing
 - yes even in Windows environment
 - Monitoring
 - Reporting

Determine

- IT Management
 - People are 37% of average budget
 - Reduce levels of management
 - Reduce embedded support (contractors)
 - Increase automation
 - Increase centralized support

Determine (continued)

- Software licensing
 - Invoice verification
 - Eliminate unused software / modules
 - Eliminate duplication (functionality)
 - Negotiate better (and then re-negotiate)
 - Introduce competition
 - Best-of-need versus best-of-breed

Determine (continued)

- Infrastructure and Operations
 - Network & Telecommunications
 - Telco expense management services
 - Manage bills for wireless
 - Reduce reliability by one “9” (Save 30%)
 - Level of risk tolerance
 - Risk mitigation versus recovery costs
 - Build your own video conferencing center
 - Deploy VoIP (save 50% to 80% on maintenance)

Determine (continued)

- Infrastructure and Operations (Continued)
 - Hardware & Operations
 - Introduce competition
 - Negotiate ALL purchases
 - Compare products
 - Scale up not out (45% savings)
 - Thin provisioning / desktop virtualization
 - Data de-duplication
 - Consolidate & virtualize servers
 - Centralize and virtualize storage
 - Get rid of old / outdated systems

Determine (continued)

- Infrastructure and Operations (Continued)
 - Engineered infrastructure
 - Introduce competition
 - Negotiate purchases
 - Compare products
 - Scale up not out (45% savings)
 - Measure usage

Select

- Million ways to install a server
- Efficiency
- Effectiveness
 - Repeatable
 - Automation
- Maintenance procedures
- Documentation / Training

Implement

- Carefully plan
- Review plan
 - With vendors
 - With management
 - With SME
- Look for weakness in plan
 - Fix
 - Re-plan

Measure

- How do you know
 - when you are done
 - you succeeded
 - what the benefits are
 - what mistakes you made
 - What needs to change
 - Where other gains can be made

Report

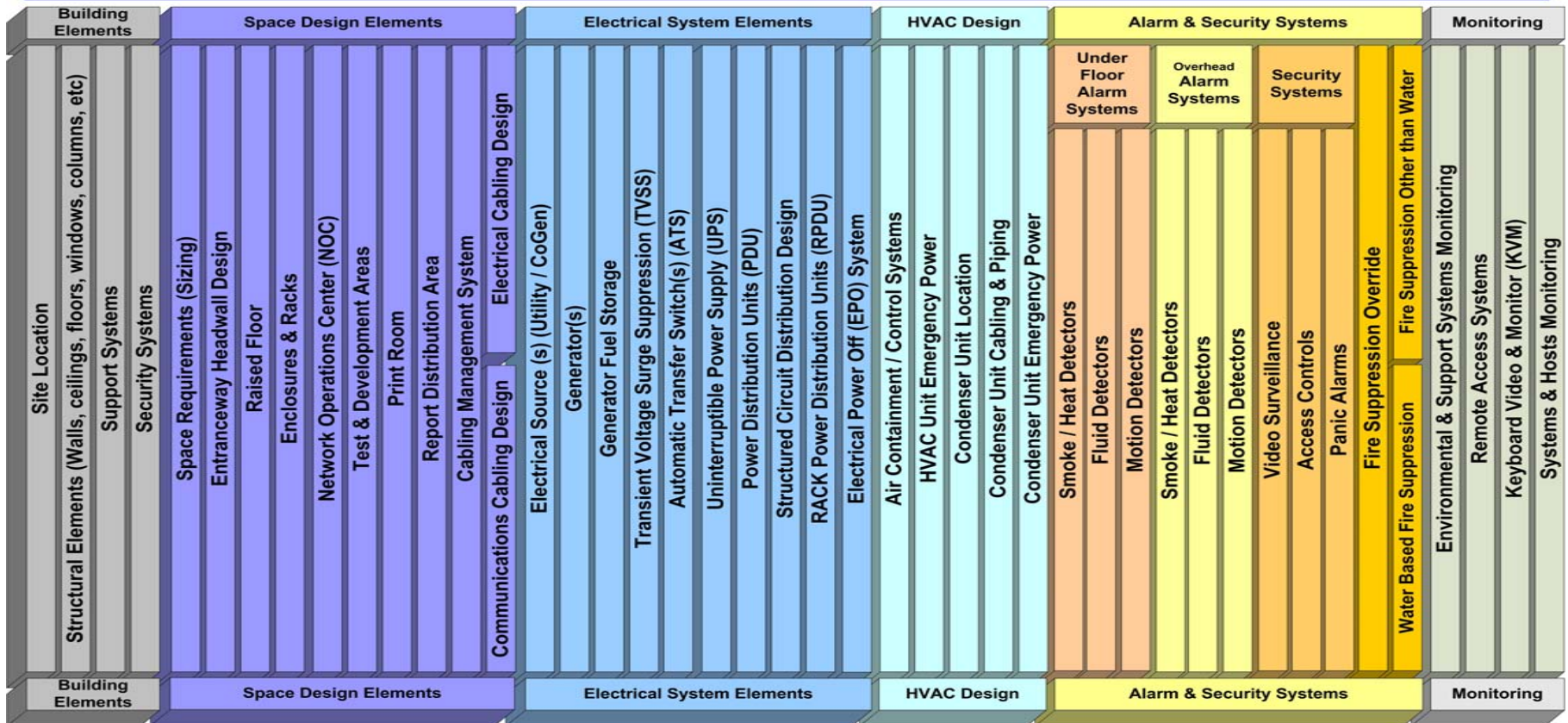
- Bragging is not always bad
- Measuring without reporting is a waste
- Management reporting means you are measuring
- Report the bad too
- **Continuous improvement is a good thing**

Data Center Types

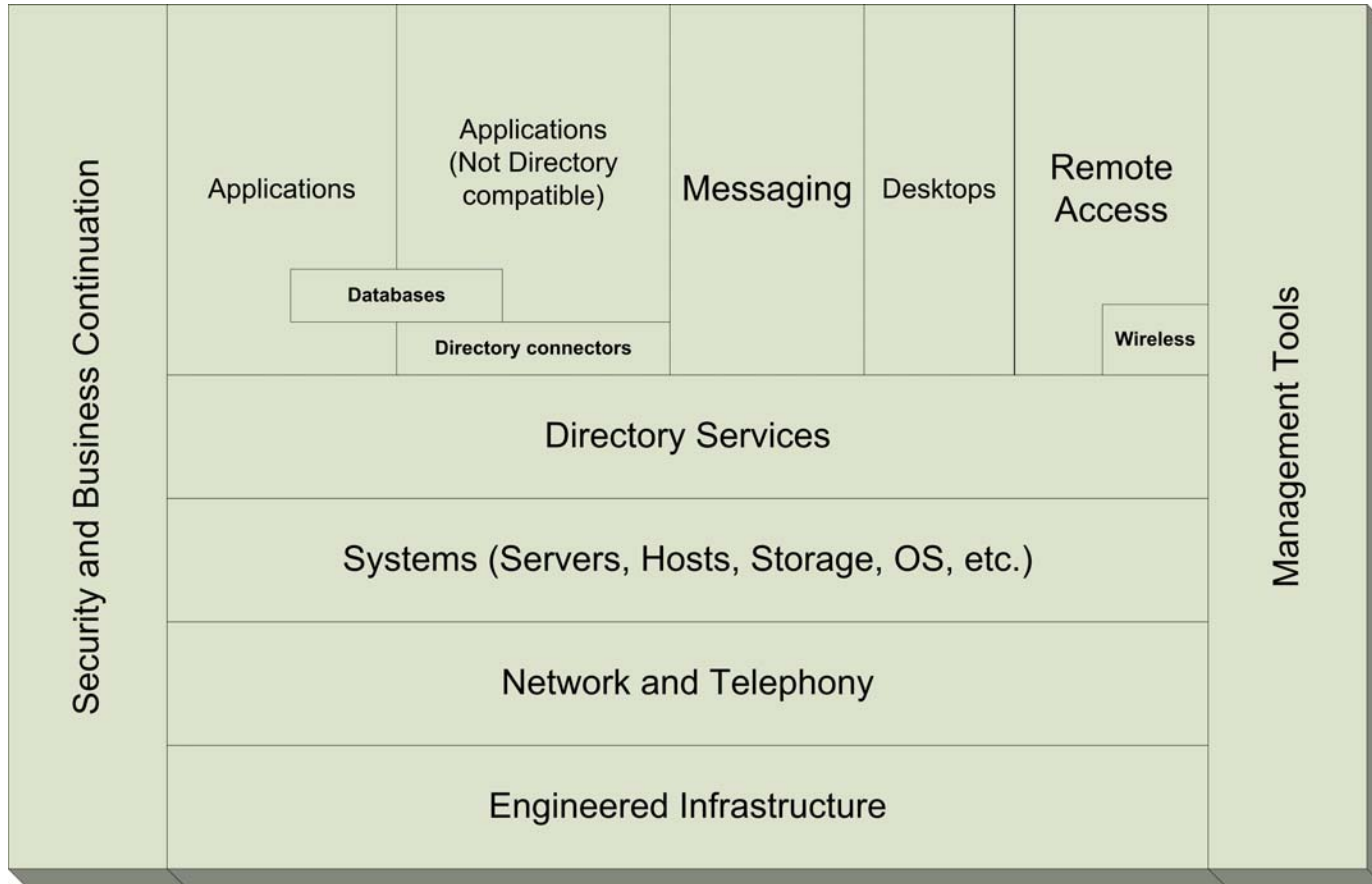
- Mainframe Design
- Pre-2005 Density (standard data center)
- Mixed Density (Pod Approach)
 - Various computer types
 - Storage
- High Density

Data Center Systems

Data Center Infrastructure Systems



Data Center Systems (cont)



Not just the data center

- Forrester report
 - Desktops use 49% of total computer related power consumption
 - Data Centers use 14%
 - Standard Techniques:
 - Power saving settings (monitors / desktops / laptops)
 - Time based approach
 - Turn off printers
 - Automation software



Containing Costs

- Operating efficiency
- Capacity management
- Correct personnel
- Purchasing
- Outsourcing / In-sourcing
- Keep pricing in check!!

QUESTIONS & COMMENTS