

Data Center Energy Efficiency Opportunities

- Data centers are energy intensive facilities
 - Server racks now designed to carry 25 kW load
 - Surging demand for data storage
 - Typical facility ~ 1MW, can be > 20 MW
 - Nationally 1.5% of U.S. Electricity consumption in 2006, growing
- Recent research shows DC energy consumption growing 20-30% annually in 2006 and 2007
 - Exceeds EPA's prediction of 9% growth from 2006 to 2010

Sources: EPA Report to Congress (2007); Uptime Institute growth estimate (2008)



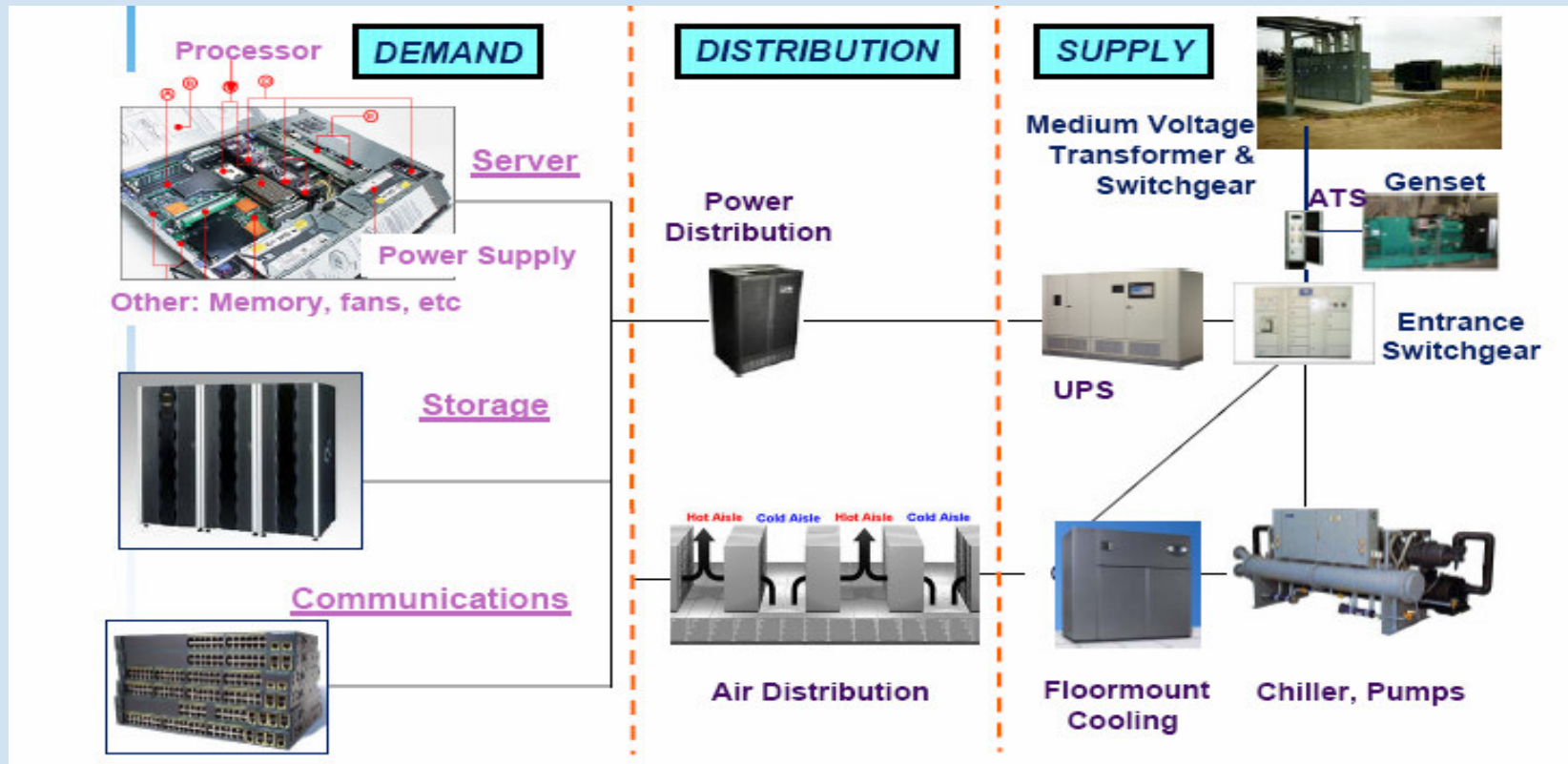
Working Together, Advancing Efficiency

Data Center Energy Flow

IT: 30-50%

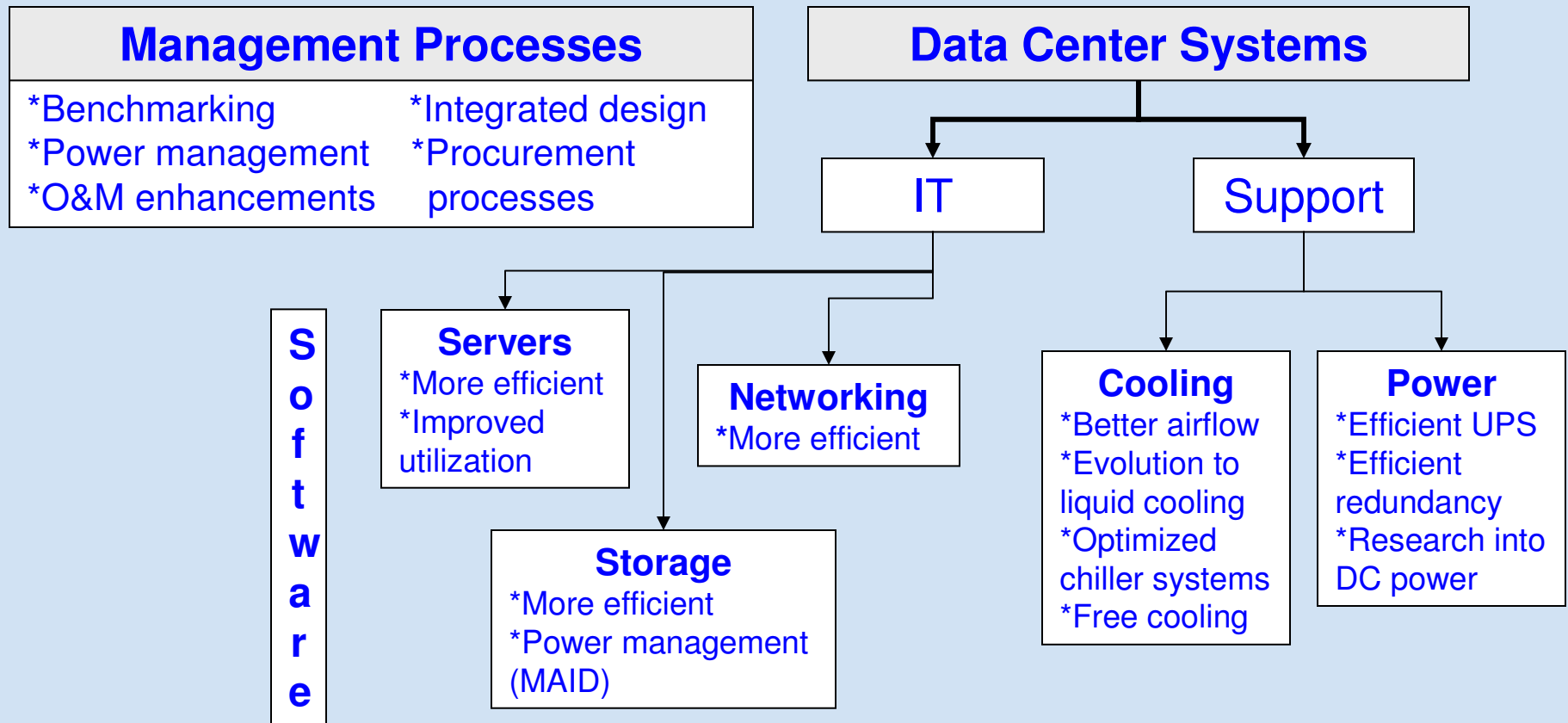
Cooling: 25-30%

E. Distribution: 25-30%



Source: Emerson Network Power, Data Center Users Group 2007

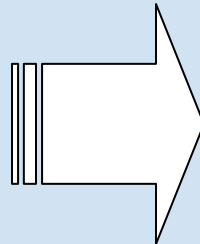
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CEE Data Centers & Servers Initiative

Challenges

- Lack of efficiency definitions and need for consistent metrics and test procedures
- Lack of consistent info for the end users
- Split incentives between IT & facility managers
- Risk aversion and barriers to EE acceptance – reliability and uptime concerns trump others
- Dynamic nature of software and hardware operations



CEE Initiative Objectives

- Developing & supporting consensus-based definitions, performance specs and program guidance
- Facilitating our collective understanding of opportunity, market players & industry motivations
- Identifying recommended program strategies to help move more of the market to a preferred outcome