Green Data Centers

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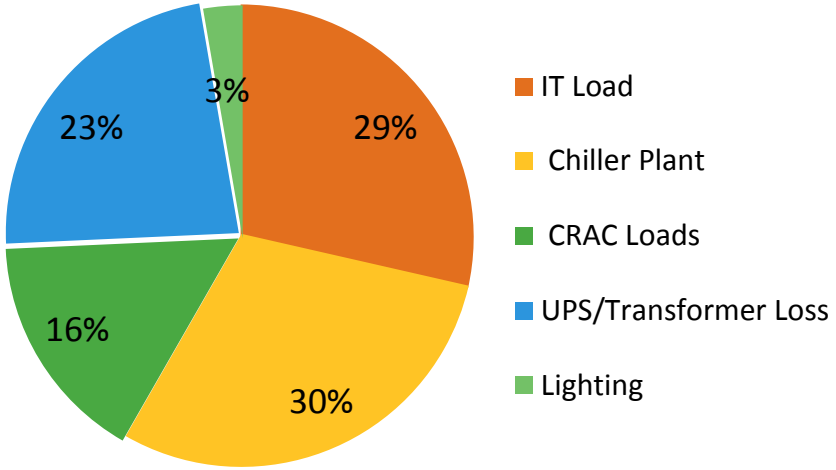
Power Usage Effectiveness (PUE)

Most Data Centers across India has a PUE of 3.5



Load	kW	% of Total Load
IT Load	400	29%
Chiller Plant	416	30%
CRAC Loads	224	16%
UPS/Transformer Loss	322	23%
Lighting	38	3%
Total Load	1400	
Total Support Loads	1000	
PUE	3.5	
DciE	29%	

The 2013 global average is at PUE 2.9

*Industry average : http://www.computerworld.com/s/article/9238364/New_data_center_survey_shows_mediocre_results_for_energy_efficiency
*The table indicates a sample data to represent average PUE

Traditional vs Modular Data Center

Traditional Data Center

Modular Data Center

Key characteristics	
Industry Efficiency PUE 2.9	Optimal Efficiency (PUE as low as 1.03)
Expensive upfront investment	Lower upfront investment; “pay-as-you-grow”
Designed for lowest common denominator	Right sized infrastructure design
1 to 2 year project timeframe	< 6 month lead-time
Lacks agility due to slow infrastructure updates	Preconfigured flexible , scalable solution

Container / Modular Data Center

- Sun Black Box
- Lots of noise
- Low early volumes

< 2007

- Small number of large consumers
- More industry hype
- More vendors

2009

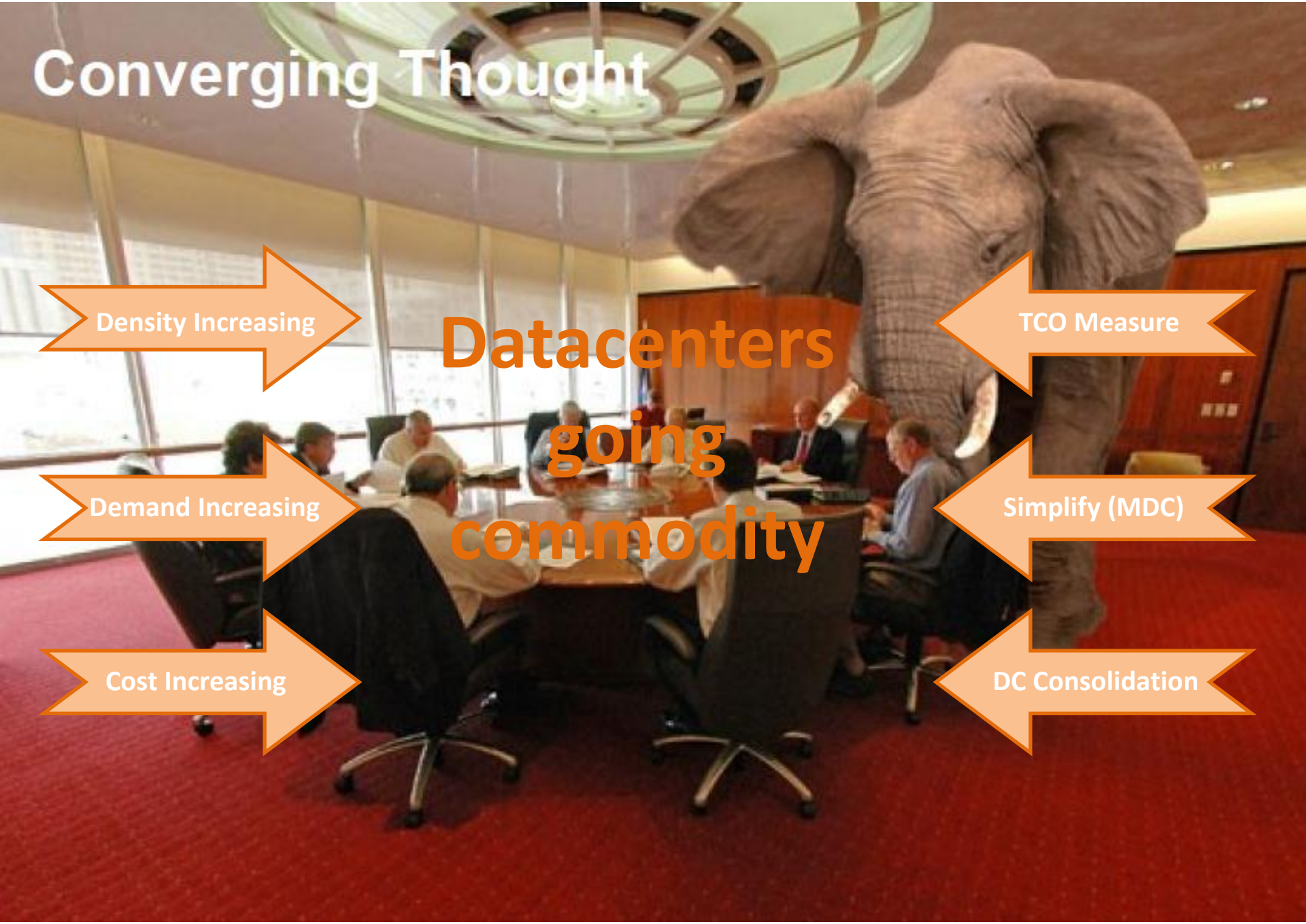
- Larger market acceptance
- More modular solutions (from container type to traditional DC)

2011+

Dell Modular Data Center

- Faster time to operations
- Investments made as-needed
- Unparalleled efficiency
- Right-sized and optimized

Outdoor Modular Data Center


Converging Thought
Density Increasing
Demand Increasing
Cost Increasing
Datacenters going commodity
TCO Measure
Simplify (MDC)
DC Consolidation

Q&A