



UCISA Managers' Forum, May  
2007

# How going green makes business sense

Simon Tindall  
Sun Microsystems  
Education & Research



# Raw materials consumed by weight.



x 200



x 2





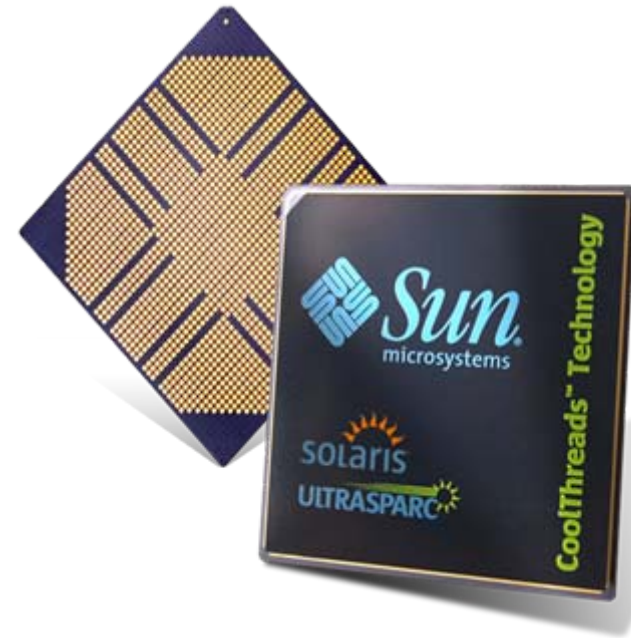
# Google™



# Focus on Performance

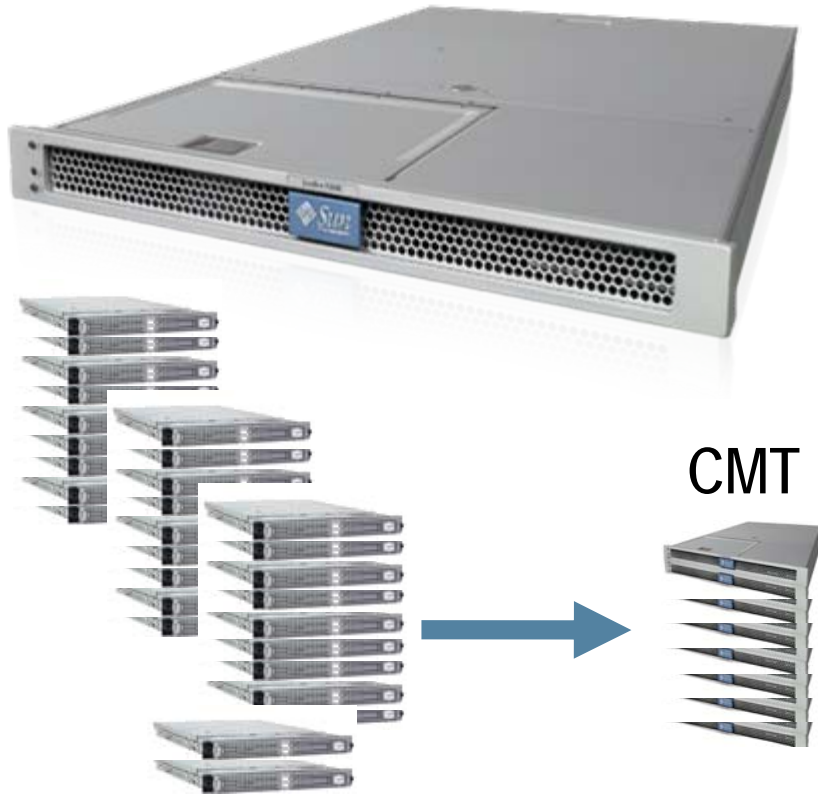


# CoolThreads Technology



# Eco Product Leadership

## Sun Fire T1000



The Power of 32 Servers  
9600watts

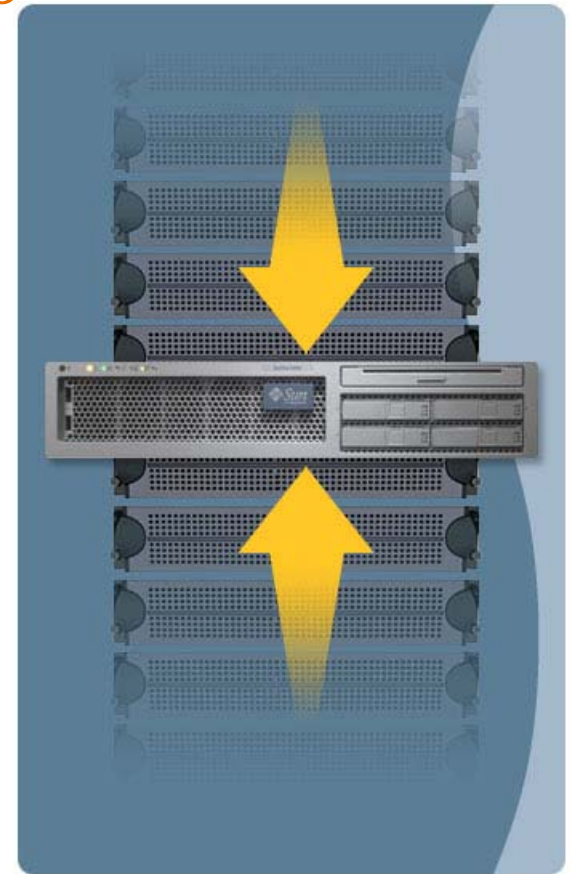
Replaced  
with 7 servers  
using 1900 watts

- 2X the performance
- 1/3 the power consumption
- 1/2 the space
- Comparable pricing

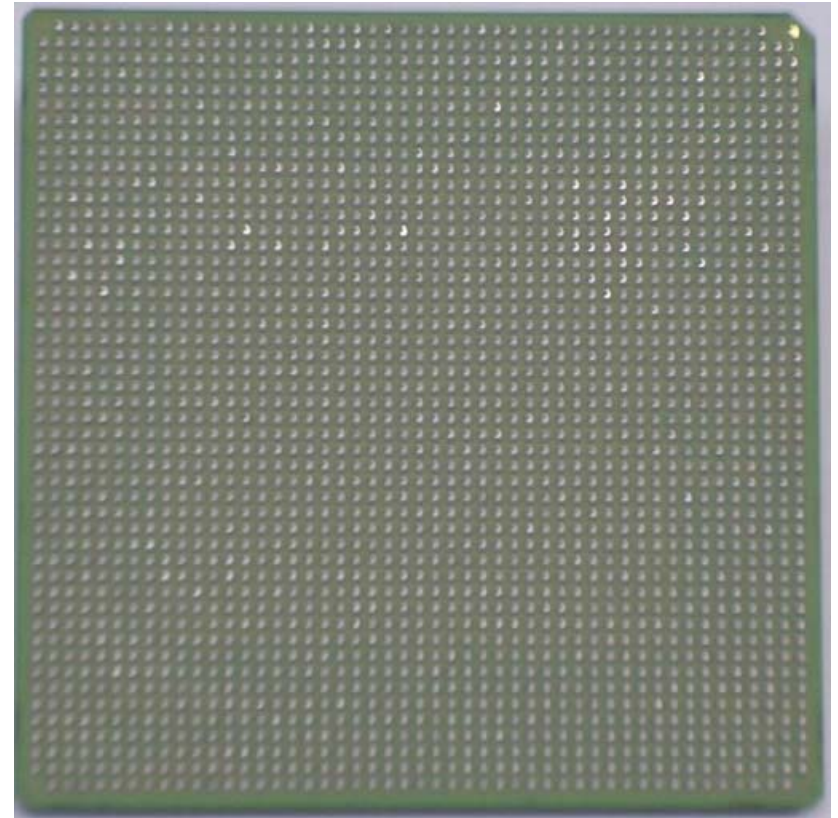
# DigiTar<sup>TM</sup> Messaging Security Service Provider

Replaced HP DL145's with Sun Fire T2000s

- **Faster**
  - > 13.5x higher MySQL performance
- **Cheaper**
  - > 50+% operational savings
  - > 3.6x lower acquisition cost
- **Smaller**
  - > 7x footprint reduction
- **Greener**
  - > 13x power savings



# Rock Arrives



# The Virtual Desktop



- 4 watts
- Up to 100 users per T1000
- ROHS & WEEE compliant
- MTBF of 20 years
- Native RDP
- Stateless
- No client upgrades

# Fat versus Thin

In the following table, we have taken a typical PC and compared it with the Sun Ray™ 2 thin client desktop device.

	FAT CLIENT OR PC	SUN RAY™ 2
Warranty	1 year	3 years
Average Life	3 years	15-20 years
Power	approx 150 watts	4 watts*
Heat Output	750 BTUs	30 BTUs
Noise	5 dbs	0 dbs
Air Quality	Negative	Zero impact

\* If coupled with a 1/100 share of the network services the energy per user is approx 12 watts

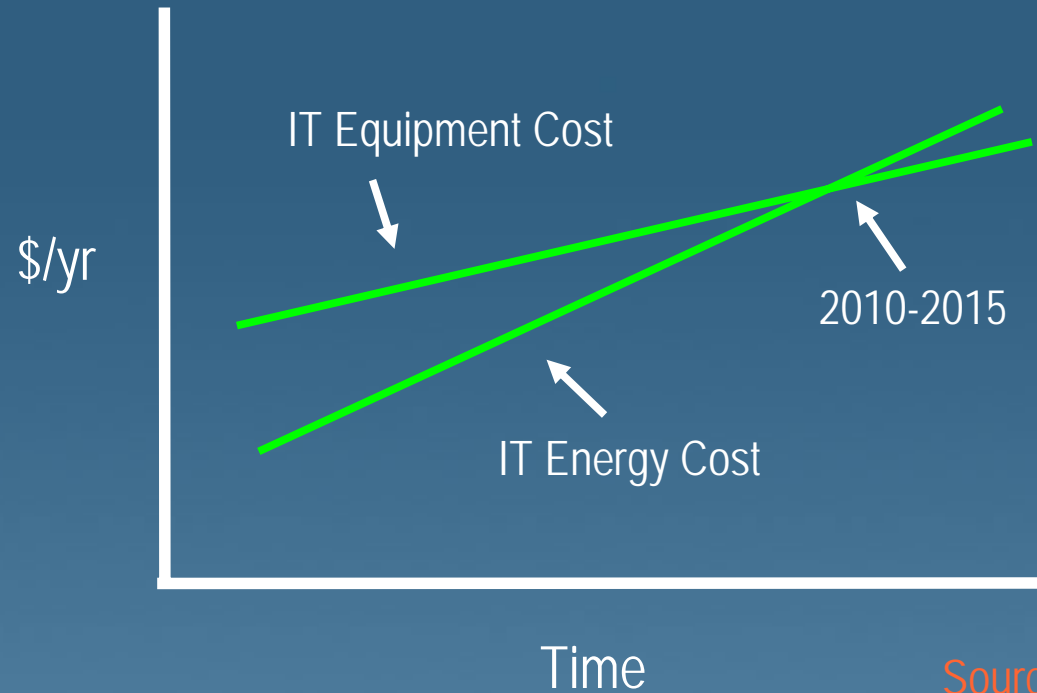
# Break Out Innovation



# The First Virtualized Datacenter

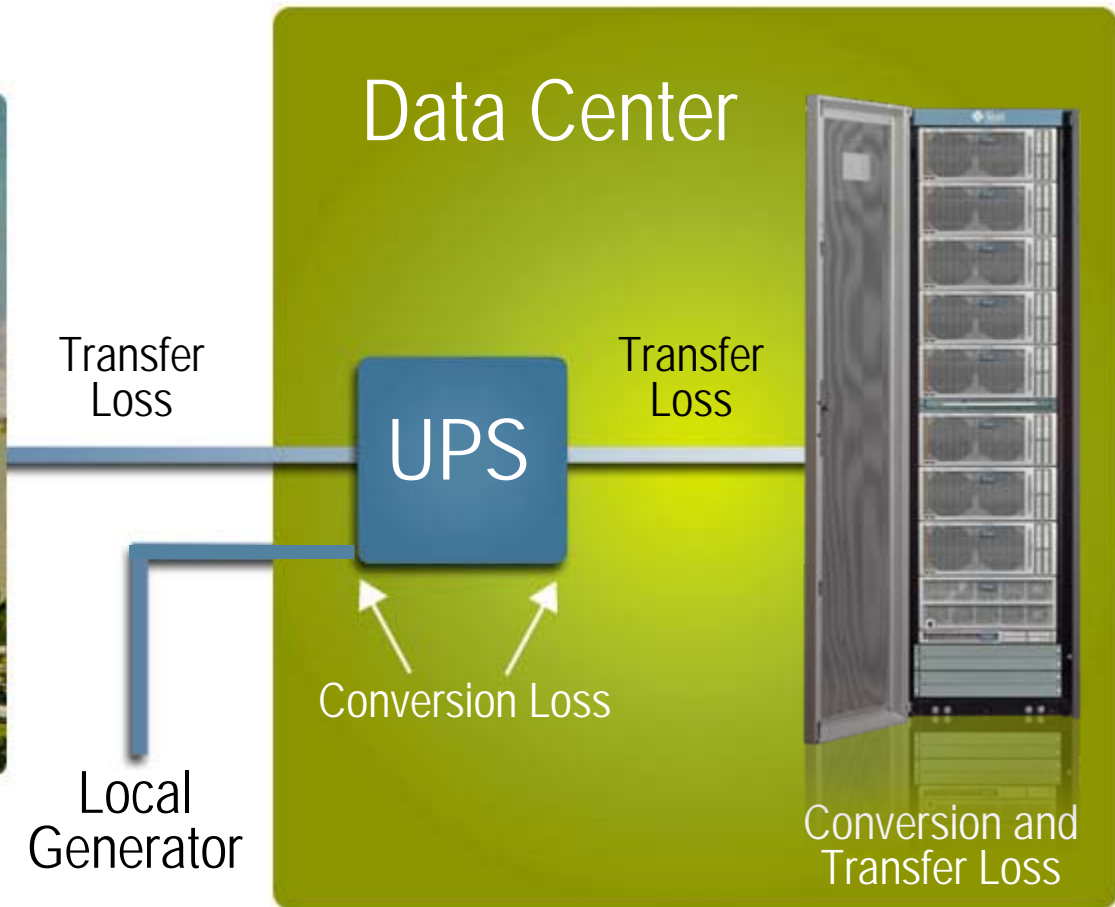


# Sustainability is here to stay.

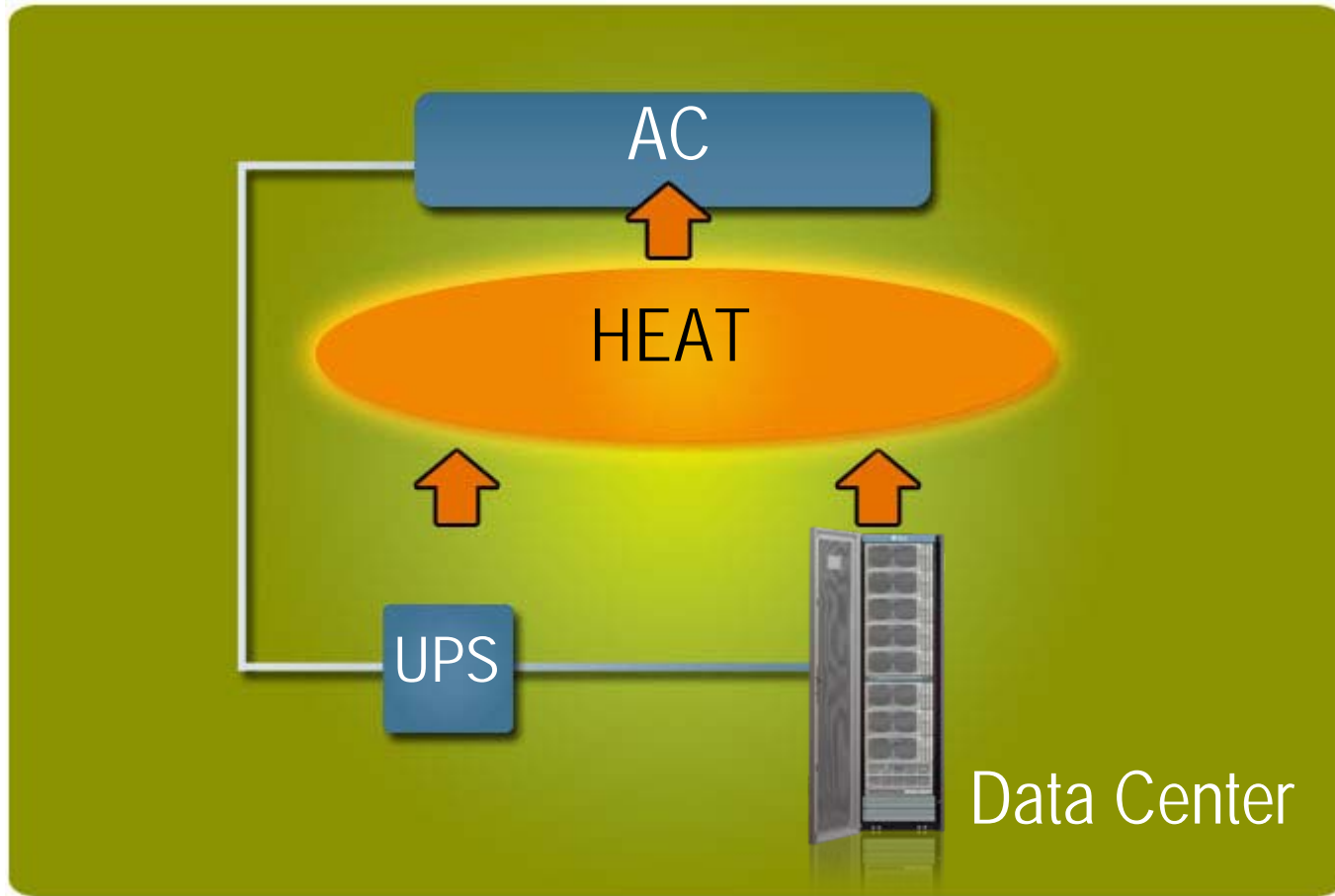


Increasing power density is shifting the balance of cost

# Power Loss



# Local Warming



# Where Server Power Goes



- 5% to 40% lost in power conversion
  - > See [80plus.org](http://80plus.org)
- The rest gets distributed to components
  - > Disks and fans spin
  - > <1% used for “thinking”
- Approximately all of the power ultimately turns to heat

# Sun's Comprehensive Eco Initiative



## INNOVATE

Eco friendly  
products and  
services



## ACT

Environmentally  
conscious  
operations



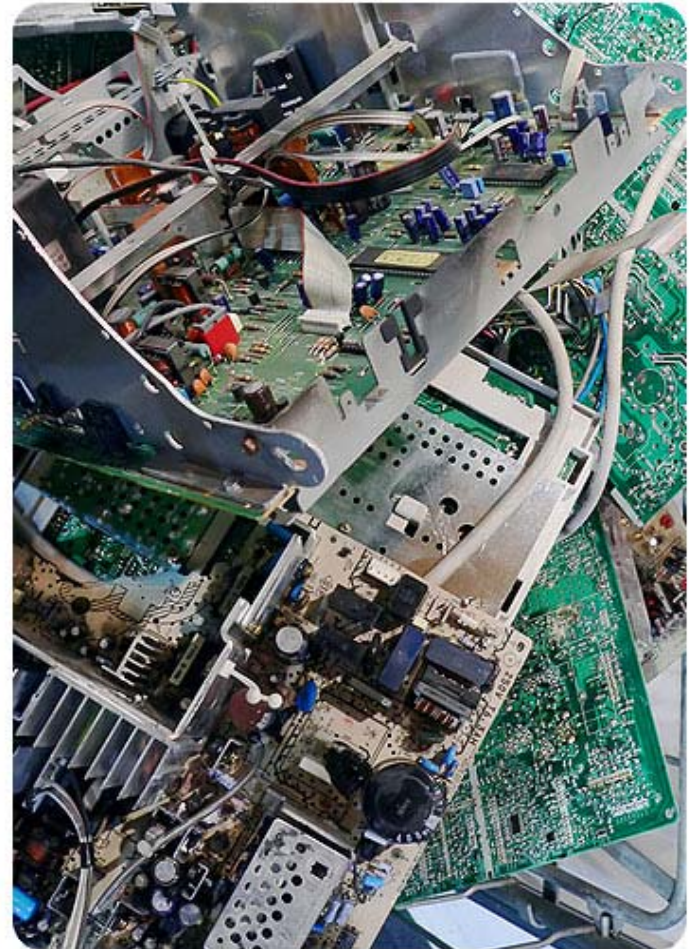
## SHARE

Applying  
transparency  
and open  
source values  
and tools to  
environmental  
challenges

# eWaste at Sun

- Full customer WEEE returns programme.
- > 50% enters remanufacturing.
- All metal and plastic recovered
- Less than 5% enters waste stream
- Fully RoHS compliant

European WEEE Directive sets target that 65% of IT equipment must be recycled\*



\*(EC Directive on Waste Electrical and Electronic Equipment (WEEE) and EC Directive on the restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS))

# Sun's Open Work Program

- *A global, location-independent program providing technologies, workspaces and best practices*
- *2006 EPA Award: 1st in nation for commuter friendliness*

## Participation

### Flex Location Workers

15,000+ Participants  
50% of Work Force

### Flexible Offices

127 Locations Worldwide

## Benefits

### Real Estate

6,600 Seats Saved/Avoided  
in FY06 = \$67.9M

### Sun Ray - thin clients

Over \$24M Saved Annually  
No-Cost Moves and Energy Savings

### Carbon Reduction

30,000 tons/year and growing



THANK YOU

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