

Data centres – why suddenly so hot?

Presentation to BICSI Breakfast Club

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AGENDA

1. About the BroadGroup
2. State of the market
3. Why data centres pushed up the agenda
4. Saving money and power
5. Disruptive issues
6. Conclusions

About the Broad Group

Events – Data Centres Europe, Power and Cooling, Data Centre Investment forum, Data Centres Asia

Research – Data Centre News (free), country and regional reports, green data centres, power challenges, needs of financial users, dark fibre

Consultancy – strategic and customized works for users, operators, vendors, investors and others involved in data centres. From business and financial modelling to demand drivers and market evolution.

#1 in data centre research and consultancy

State of the market – demand drivers

Data growth

Disaster recovery and business continuity

Compliance and regulation (more to come such as MIFID)

Video and new media

Greater usage of broadband and Internet

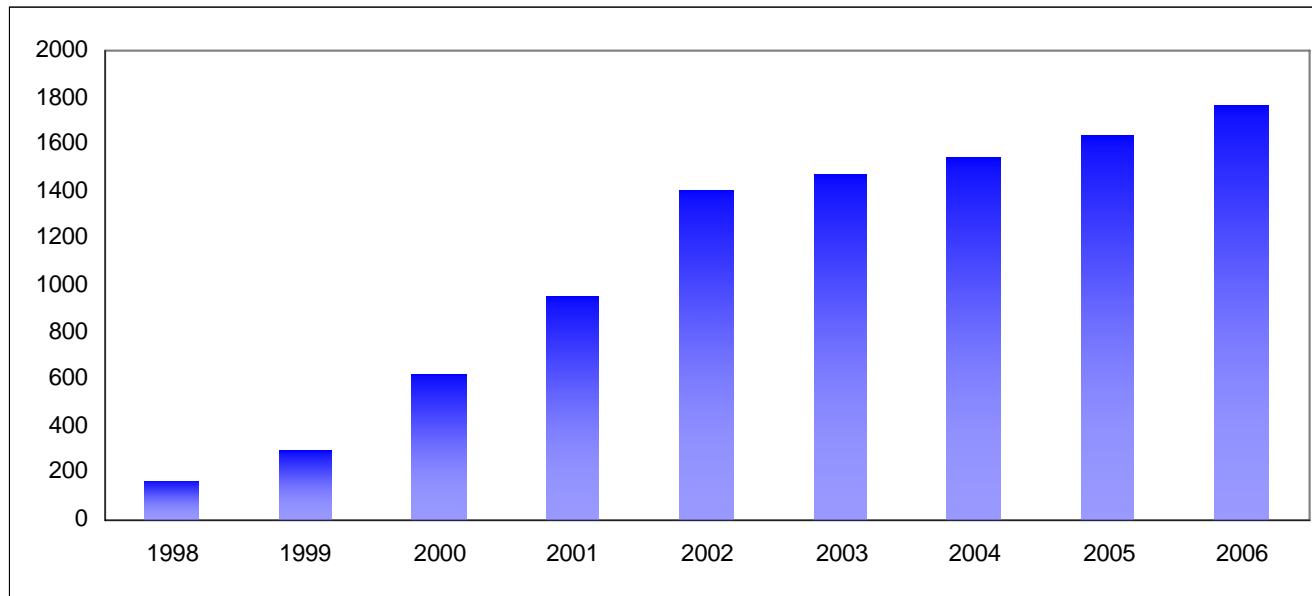
More complex software

Blade servers

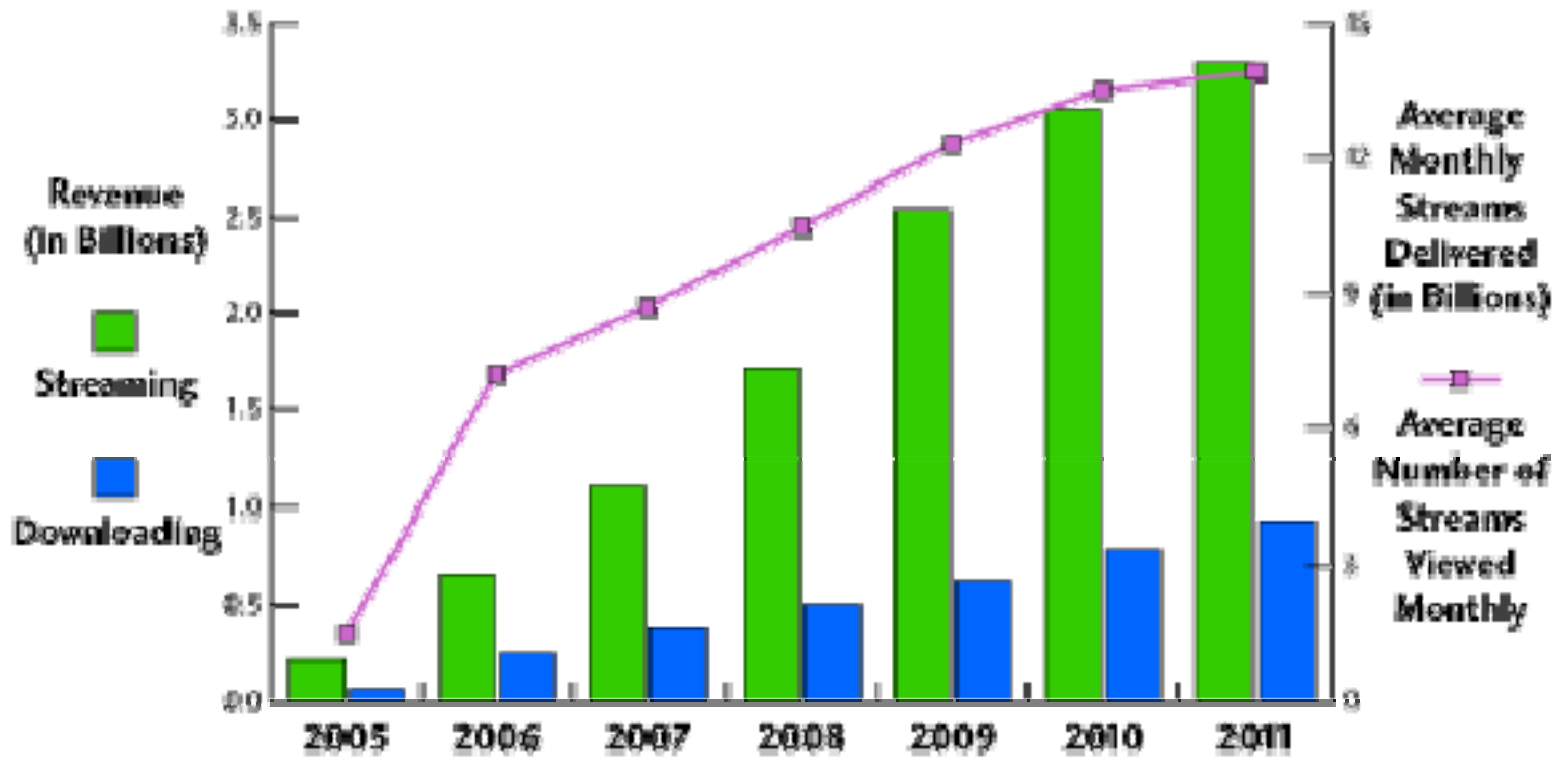
Lack of power, low utilization rates and upgradeability of data centres

Vertical specific factors

Lack of new carrier neutral data centre build in London after dot com



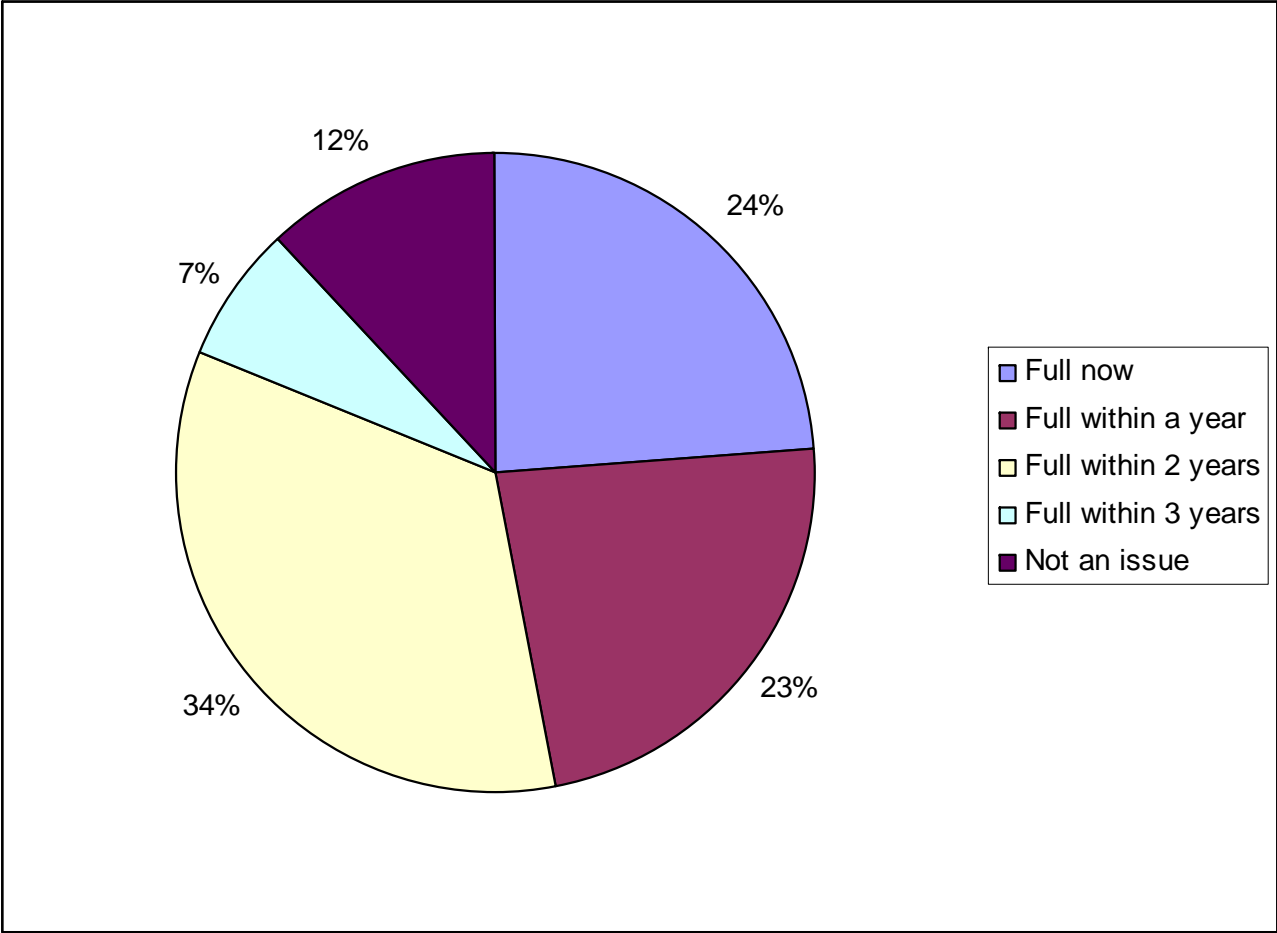
Global market for Internet video (\$ bn)



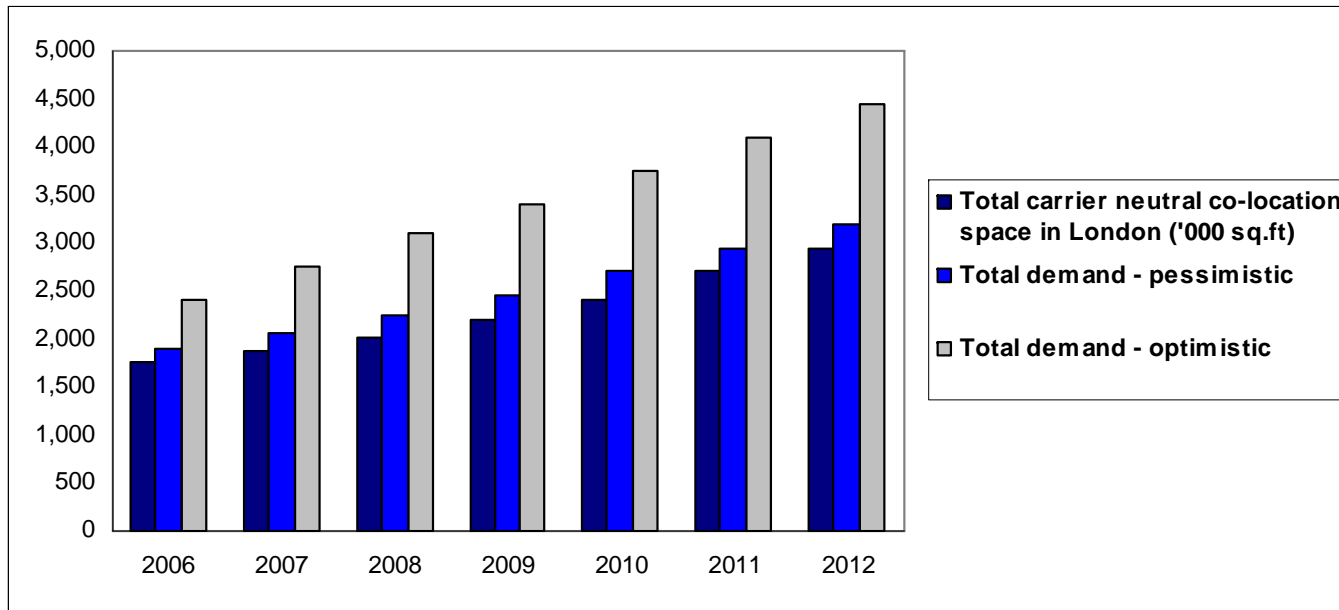
Source: Yankee Group

Cisco: Internet traffic growing 61% a year 2007-2012

State of market – data centres owned by UK banks



The London problem



No new data centre planning permission for 18 months in London

Pushing data centres up agenda – corporate users

Now a pain point - GVA Grimley estimates 4.9m ft² UK-wide data centre demand

Existing facilities ill-equipped for current requirements

Expensive, inefficient and environmentally weak



Data centres no longer stuck between IT and FM

Now an issue for CIO/CTO – and CSR/marketing !

Some US corporates have CTO with power costs as part of bonus scheme

Pushing data centres up agenda – operators

Strong demand – ‘chicken and egg’ as third party offerings previously ignored as of poor quality – new investment grows market opportunity

Investor interest high – Telecity float - £500m+ - 30% premium – IX Europe share price on next slide

Money for new build – Telecity 100,000ft² in London, COLT 210,000ft² in Welwyn etc

Telcos suddenly interested – basis for hosted services?

Utility computing – Google, Amazon, Flexiscale, Alchemy, UtilityServe

Move from co-location to managed services – 3X revenue/square foot?

IX Europe share price



Pushing data centres up agenda – vendors

‘Flavour of the month’

Technology refresh in ‘environmentally friendly’ products

Automate and ‘next-gen’ the data centre

Position themselves as having strong green credentials

Influence standards and best practices in data centres

Develop data centre eco-system such as HP buying EYP

Pushing data centres up agenda – investors

Commercial property investors – see ‘traditional’ office rental market falling – data centres offer long term rentals with yields above bank rates eg Digital Realty 15 year rentals

Despite high costs data centres, £50-100m for 100,000ft², investors see Internal Rates of Return of 30%+ - scarcity helping price increases such as Telecity 60% in February 2006 – BroadGroup see at least 10-15% a year for next 5 years

Few data centre ‘pure plays’ – more than 50% of Telecity London float held by US investors – DuPont Fabros raised \$641m – Equinix \$400m – Gallileo Connect £540m

Saving money - first phase

Broad IT audit

Data centre audit

Data centre consolidation

- HP 85 to 3
- Vodafone saving £50m

Server virtualization

Clear reporting lines and focus on data centres

Saving money - second phase

Step change in data centre usage and design

Data centre automation

Storage and application virtualization

Data centres integral part of IT planning and strategy

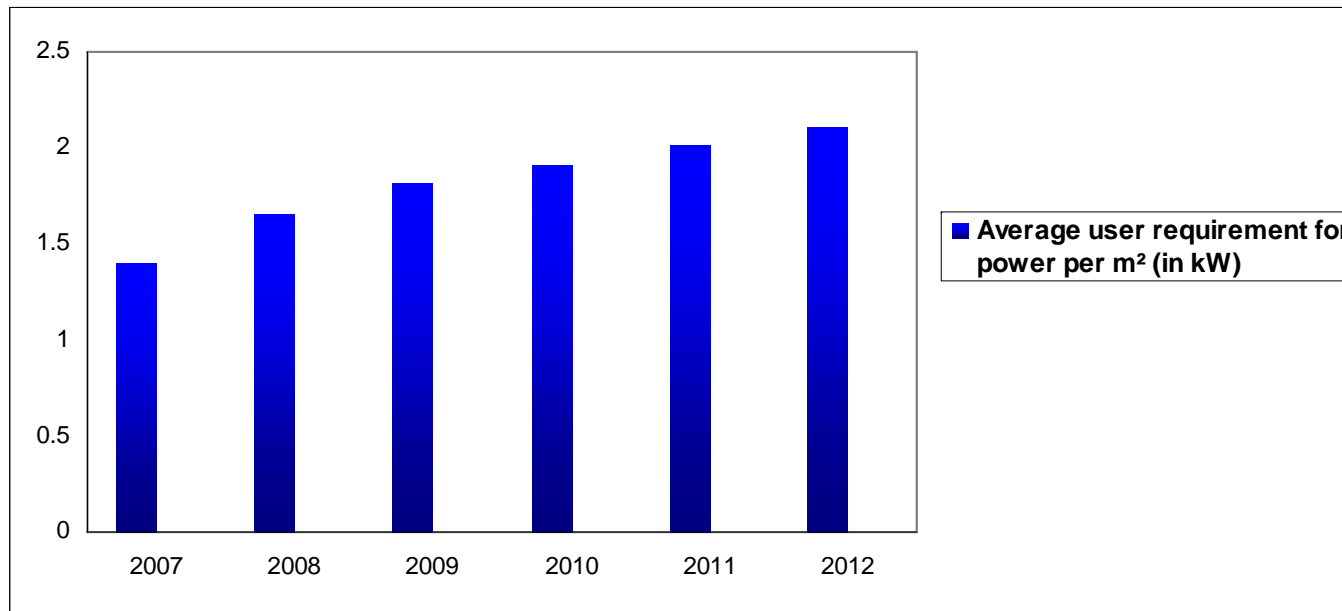
CTO ownership of data centre issues

Power – the blade impact

	Legacy Server Requirements	High-Density Server Requirements
Power per server	2 kW to 3 kW per rack	More than 20 kW per rack
Power per floor space	40 kW to 80 kW per square foot	700 kW to 800 kW per square foot
Cooling needs — chilled air flow around a server	200 cfm to 300 cfm	3,000 cfm

Source: Gartner (August 2006)

Power – the more realistic assessment



Power issues

Virtualization, focus efficiency and better design mitigates problem but, as reported at BroadGroup Power and Cooling:

- No easy answers
- M&E does not follow Moore's Law !
- Demand growing very quickly eg many banks 50-100% a year
- Virtualization creates own issues of management and complexity
- Additional capacity often quickly used up
- Widespread confusion around efficiency measure and best practices (need for BICSI report !)

Disruptive factors

The data centre is dead ! (suspects include Greenpeace and Google)

Why be in the UK

Utility/cloud computing

(caveat – much of this section is questions not answers !)

Death of the data centre

What is the lifecycle of a data centre built today with current technology to meet current IT needs (investors and operators still use 15-20 years)

After server virtualization, with application and storage virtualization, will a next-gen data centre make current build obsolete?

Will new 'products' such as Google 'data center in a box' cause obsolescence?

If an average data centre uses the same power as a small town, and DEFRA/EU legislation is as predicted by pessimists, can anyone justify a new data centre build?

Why should a company run its own data centre?

Why be in the UK

Is latency really such an issue? Can I only ensure reliability by being able to drive to my data centre?

Where does the UK get power from after 2015-2017 (nuclear plant decommissioning)?

For a global company, can the data centres be anywhere in the world?

Favourite tactic of Invest Iceland in the UK: sell to CFO as they see the financial benefit, and to CEO/marketing department as they see environmental benefit – don't go near IT !

Utility/cloud computing

CIO investment bank – “95% of what we do in IT is pretty much commoditized but no-one likes to admit it – there is very little I would not outsource”

Why own all hardware and particularly staff and software (the expensive bits)?

Why pay for peak capacity usage all year?

CIO investment bank – “Why wouldn’t we use the data centres of Amazon or Google in a few years time”

(EDS has been delaying its utility computing launch for the last year while it works out what to call it and how to charge for it – the InfoWatt?? – and this is a good reason for why this is all a long way out)

Conclusions

Data centres becoming far more important for companies

Initial steps often made in cost savings – further and more far-reaching changes next step

Cultural and organizational challenges at least as large as technology ones

Environmental issues not a ‘red herring’ but key

Massive investor interest but some danger of ‘boom and bust’

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