The data centre opportunity

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AGENDA

1. About BroadGroup
2. What is a data centre
3. The data centre market
4. User and DC developer requirements
5. Location issues
6. Power provision and DCs
7. Conclusions

About BroadGroup

ic and customized works for users, operators, vendors, investors and others involved in data centres. From business and financial modelling and commercial due diligence to demand drivers and market evolution.

Research – Focused research reports, multi client studies, Data Centre News (**free**), country and regional reports, green data centres, power challenges, needs of financial users, dark fibre, country reports, managed services, peering exchanges, telecoms connectivity, cloud computing

Events – Power and Cooling **October 2**, Data Centre Investment Forum **3 December**, Data Centres, Asia, Middle East, Dark Fibre,

Portals – datacentres.com, wholesaletelecoms.com, tmtfinance.com, darkfibreconvention.com

#1 in data centre research and consulting

What is a data centre?

Data centres

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om the server room/computer hall

Typically mission critical facilities (or back up to)

Can cost £100m+ to build (typically £7-10m per 1,000m2)

Most data centres – around 70-80% - still company owned

Outsourcing:

- Land (with telecoms and power)
- Shell and core (basic building)
- Co-location
- Hosting
- Managed services/cloud

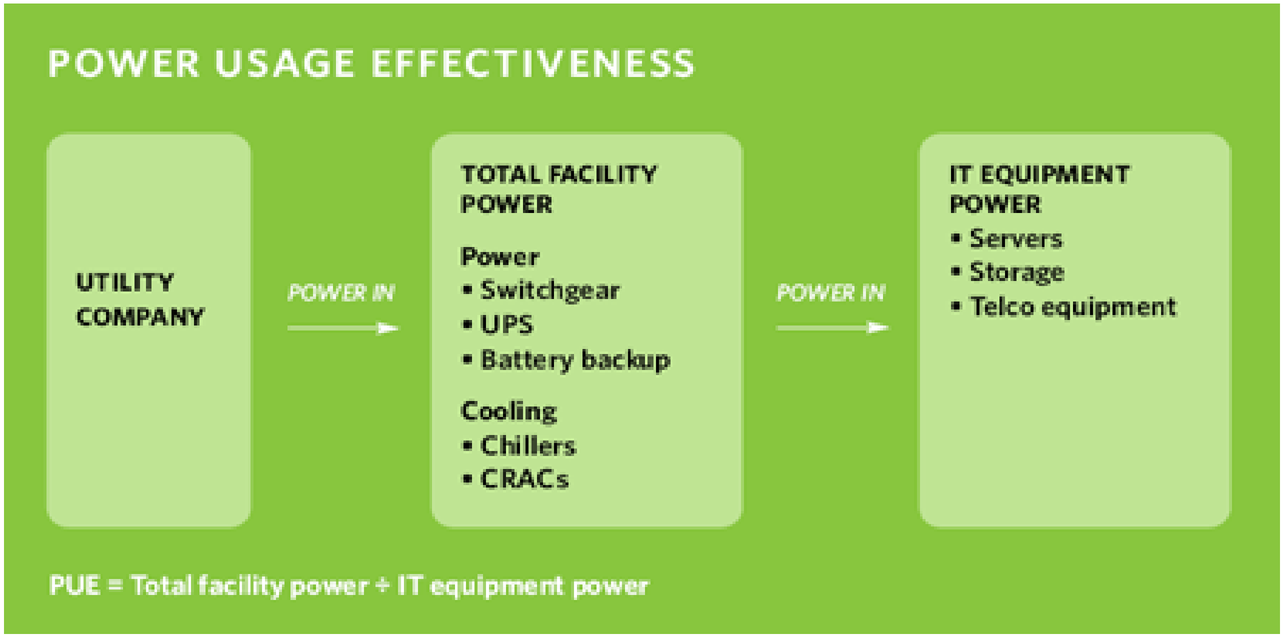
Much of cost is power

Land	11%
Building	19%
Security installation	1%
BMS control	0%
Protective installation	1%
Electrical installation	39%
Mechanical installation	18%
HV infrastructure	2%
IT	9%

Breakdown of data centre operating cost

Cleaning, FM, security	12%
Maintenance for M&E	6%
Pay overheads (pensions, training etc)	4%
Management costs	3%
Operator cost	11%
Power costs	**56%**
M&E manager	1%
Server placement team costs	5%
Supplies	1%
IT maintenance	1%

Cost and waste



PUE often over two – more than 50% of power wasted – often in cooling equipment

Why DCs are on the ‘target list’ of many governments

Use 1.5-2% of ALL UK power

Will overtake airlines in emissions in next five years

Within Europe, EC estimates that all DCs use same amount of power as all of Italy

Impacts all large corporates, government

Already EU DC Code of Conduct – based on PUE

Data centre market

Demand drivers

Data growth

Disaster recovery and business continuity

Compliance and regulation

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

Storage

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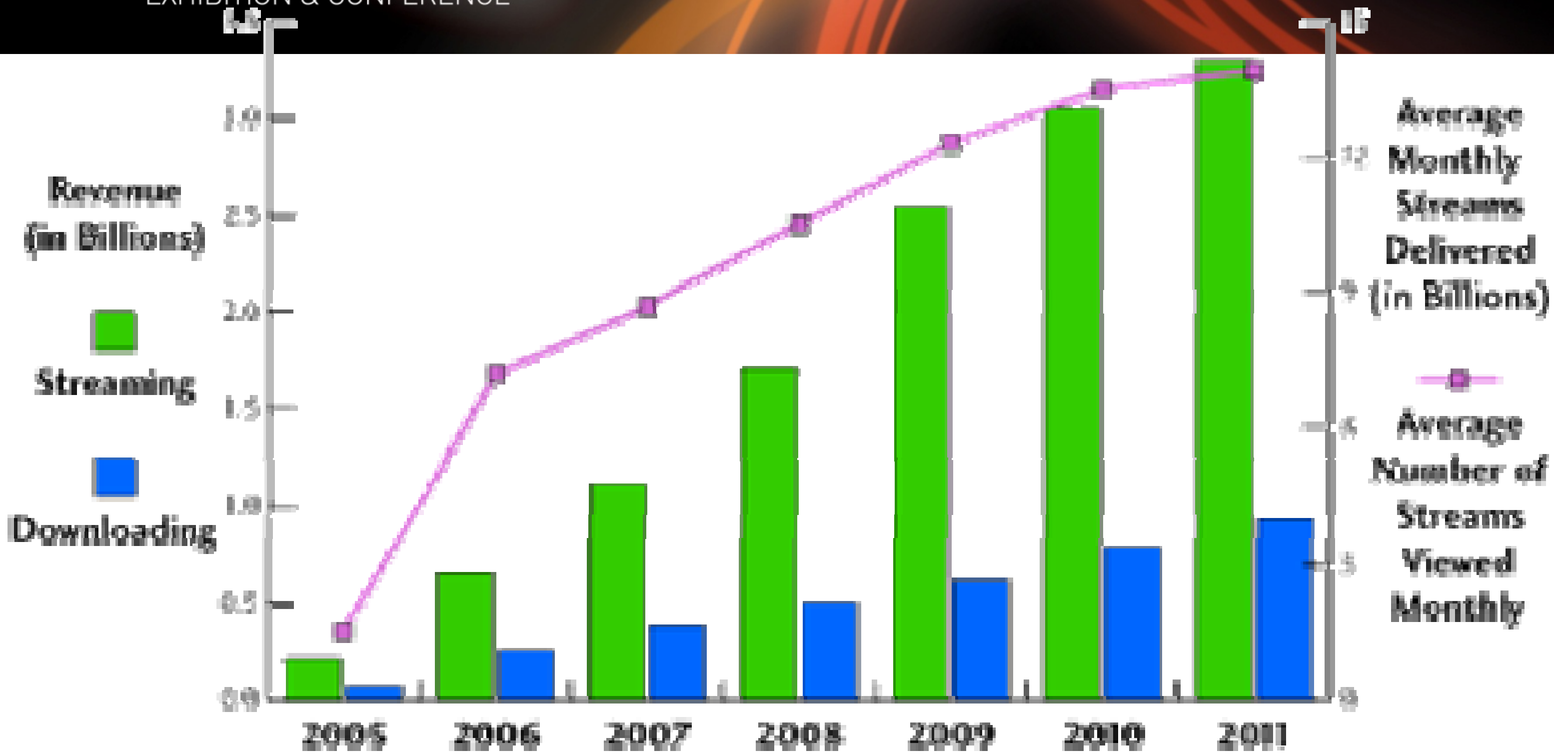
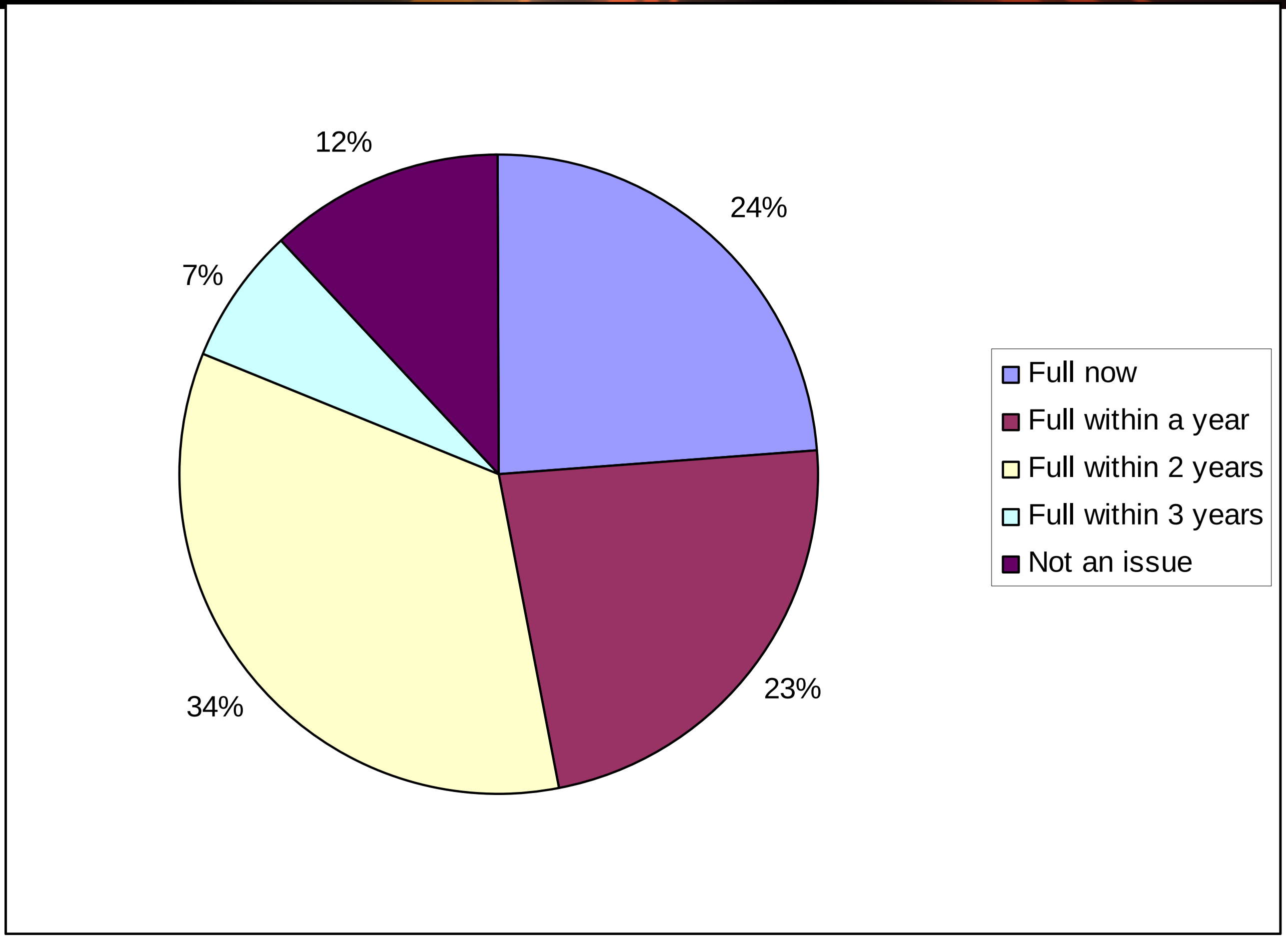
Global market for Internet video ($ bn)



Source: Yankee Group

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

State of market – data centres owned by UK banks



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

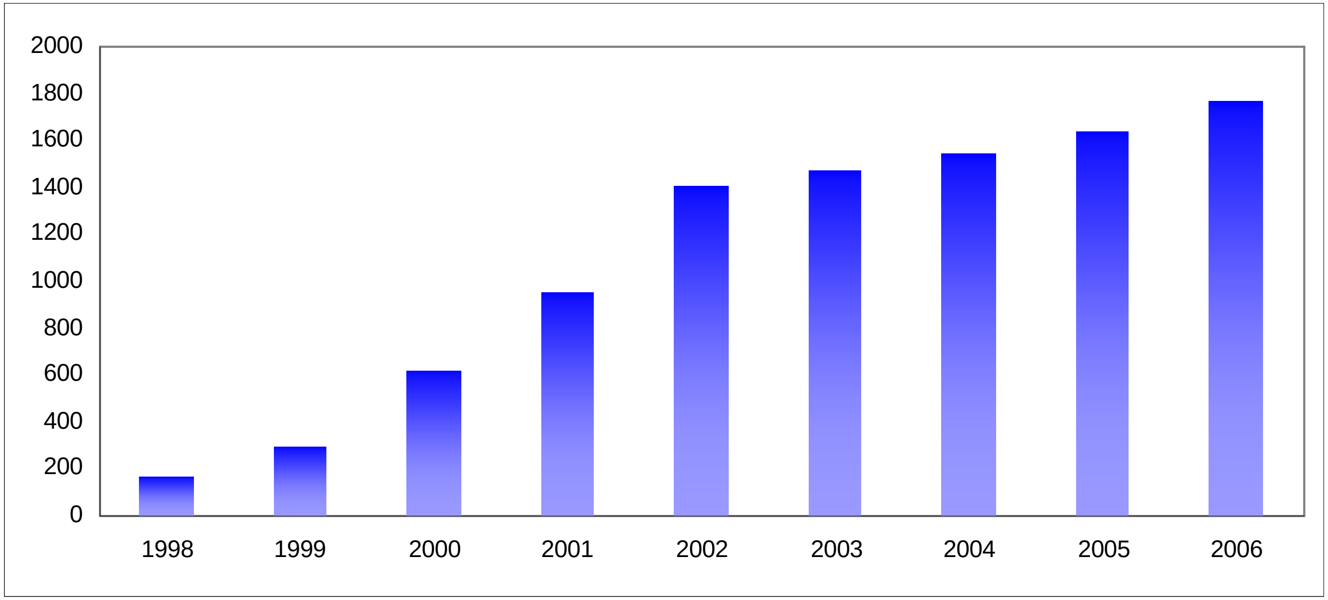
Expensive, inefficient and environmentally weak

Data centres still often 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

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



User and DC developer requirements

Key location issues

1. **Security – no business, physical, climate, environmental risks**
2. **Telecoms – cost, diversity, speeds, competition**
3. **Green credentials – uncertainty, future legislation/taxation**
4. **Ease of bringing people/goods in**
5. **Local skills**
6. **Financial incentives**
7. **Local and governmental support**

Power is #1 issue

A data centre investment is typically at least 15 years – all issues not just in today's market but for next 15 years

Power availability

Power costs

Renewable energy sources

Power competition

Ease of obtaining power/prioritization of supplies

Security of supplies

Location issues

Location issues – moving outside London

- **Much existing build in and around London**
- **Often for proximity staff, perceived connectivity/availability issues**
- **Latency rarely a real issue – often less than 10% applications even for banks**
- **London key challenges in areas from security to planning permission to costs to power availability**
- **Particularly the South East of England very poor for renewable energy**

- **London focus changing quickly**

Location issues – Highlands and Islands

- Linking DC 'essentials' to power and telecoms
- Excellent opportunity in terms of cheaper/greener power
- Cheaper, available land
- 'Free air' cooling
- Renewable energy sources
- Governmental support

Power providers and DCs

What do data centre owners want (and complain about?)

- **Power commitment**
- **Time to market**
- **Low costs - predictable costs**
- **Long term agreement**
- **Renewable commitments**
- **Understanding DC issues - SPoC**

But do they always understand......

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- IT and/or property background
- DC/IT focus (not power)
- ‘Dynamic’ business plans
- Modular/customer dependent growth
- Often unwilling to make long-term commitments
- Lack of advance notice

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Conclusions

Conclusions

- **Even in current market, demand for DC space strong and growing (eg US/European quoted DC providers forecasting 25-35% growth 09)**
- **Power is #1 issue in DCs (increasingly metric for pricing)**
- **DCs need cheap, plentiful, long-term and green power**
- **There has been a focus towards siting DCs in London**
- **But real opportunity to leverage the power and natural advantages of the Highlands and Islands region**

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Thank you !

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