

Cloud, Storage and Applications as drivers for Network change.

Gavin McLachlan

Director, Information Systems UCL

Drivers for change

1. Cloud

- Why move to Cloud?

2. Datacentre outsourcing

- Why outsource datacentre?

3. Storage

4. Collaboration and internationalisation in Teaching and Research

Network Implications

Cloud incentives

- Cost savings (free Microsoft or Google email)
- No upfront Capital investment
- Present the service anywhere
- Resilience and DR included
- Low management
- Utility computing “Pay as you go”

Cloud applications & Services

- Email and Dairy (Ex: Microsoft or Google)
- Collaboration apps (Ex: SharePoint online)
- VLEs (Ex: Blackboard)
- CRM (Ex: Salesforce.com)
- VDI – virtualised desktop services (Ex: IBM)
- Web hosting
- Desktop applications (Ex: Google apps, Microsoft Office 365)



Datacentre outsourcing incentives

- Cost of operating the datacentre
- Lack of available power and cooling in central London
- Meets 30 KM best practice rule.

Strategy:

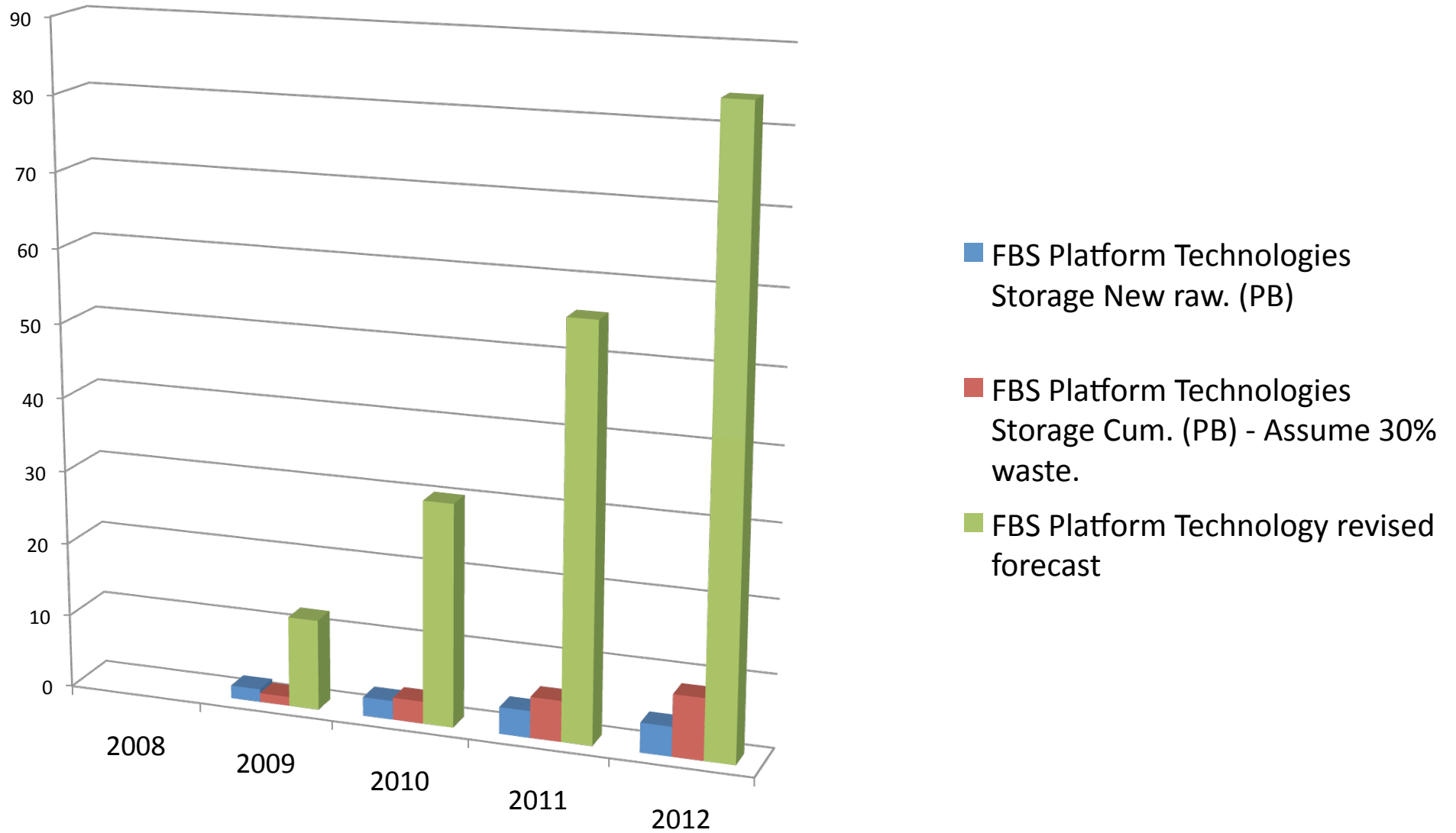
- UCL's long-term strategy is to have one consolidated primary datacentre in Bloomsbury and a secondary datacentre outside of London – either outsourced or shared with other HEs.

UCL's Petascale Research Storage project

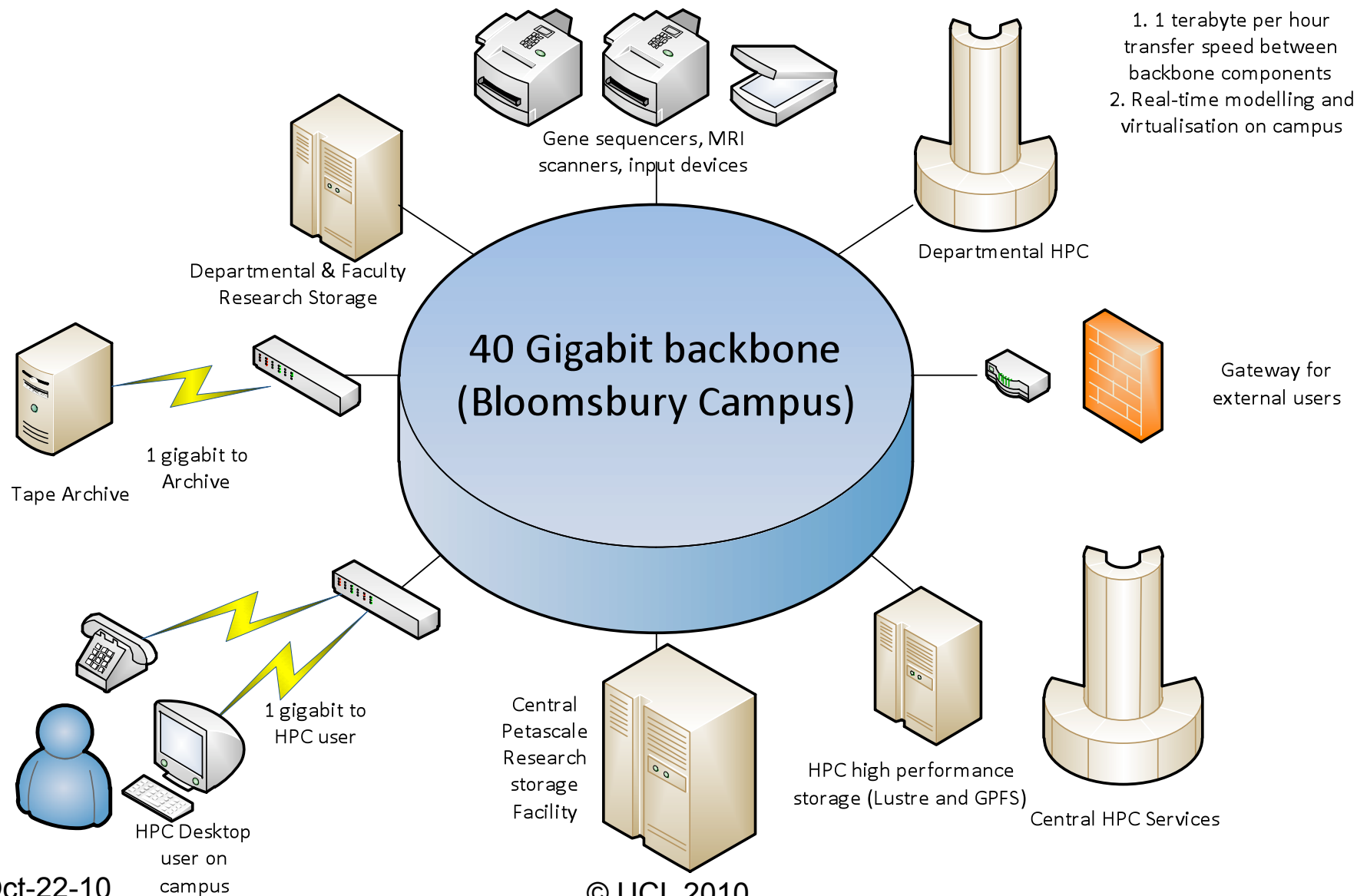
Strategy:

- UCL will be building a federated, “cloud” based, Petascale storage for digital Research material. This is aimed at enabling collaboration, searches, archiving, data management and data curation of digital research material both in its raw and finished form.

Storage Growth – Growth curve (Petabytes)



UCL Petascale Research Storage Project - Concept



- Increasing awards to joint programs
- Need to collaborate with EU, American and Chinese Universities and institutes to leverage their grants.
(Example: UCL/Yale collaboration agreement)
- Move of traditional HEs to online and distance learning
(Example: Open University)
- Need to support overseas campuses (Example: UCL SERAus Campus, Australia)
 - I. - Distance learning
 - II. - Long distance use of central systems

- Capacity
 - Capacity needs to be built in for a dramatic increase in demand.
 - Demand will be spike at certain times as more Admin applications are used online (Ex: Start of session spike, start of working day spike)
- Resilience
 - Critical services are now totally dependent on the JANET network. Need multiple POPs into the HE.
 - Need resilience into key cloud vendors.

- Policy and Security
 - Certain Data needs to be held in the EU (and must not transit outside of the EU)
 - Security of network as it holds personal data and confidential patient data.
- Span of the network
 - Network and its service needs to span internationally.
- Quality of the Network
 - QOS needed for SIP phone services and some good quality distance learning.
 - Latency requirements. (Examples: for real time mirroring between datacentres, virtualisation, real time HPC modelling.)