



# **UKERNA:- Strategic Drivers and Developments**

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# Agenda

- Strategy links
- Stakeholder strategies and targets
- JANET developments
  - implementing stakeholder strategies
- Campus network development issues



## Drivers – JANET stakeholders

- Higher Education
- Further Education
- Research
- + Partners and collaborators
  
- Funding bodies



## Drivers – JISC Funding

HEFCE	48%	TOTAL HE	59%
LSC	35%	TOTAL FE	41%
SHEFC	7%		
SFEFC	3%		
ELWa HE	3%		
ELWa FE	2%		
DELNI HE	1%		
DELNI FE	1%		







# Common Themes

- Widening & increasing participation
- Lifelong Learning
  - More options for learning and modes
- Partnerships and increased collaboration
- High quality education
- Increased use of ICT
- Improving the “wealth” of the UK



## Drivers – DfES Priorities

- Increasing and broadening participation in HE
- Developing the skills of the workforce – particularly the basic skills of some adults.
- Opening up learning- eLearning,
  - UK online centres
  - Digital TV
- Improving primary education
- Transforming secondary education



## **Drivers – funding bodies**

### **HEFCE**

- Promote and support productive interaction between HE and business and the community
- Encourage institutions to increase access to support lifelong learning



## Drivers – funding bodies LSC

- Extend participation in education, learning and training (80% 16-18 year olds in structured learning by 2004)
- By the end of the decade 2010 half of 18-30 year olds should be capable of accessing higher education



## **Drivers – funding bodies SHEFC**

- Look for other opportunities for increased integration with other public sector networks
- Promotion of increased collaborations and strategic alliances amongst higher education institutions, with other parts of the education sector, and with other users of HE.



## **Drivers – funding bodies**

### **SFEFC**

- Create a sustainable funding platform to deliver lifelong learning and wider access
- Improve students' learning experience, by developing an integrated quality improvement framework, supporting learning innovation, and investing in information technology



# Drivers – funding bodies

## ELWa

- Promote collaboration between the further and higher education sectors
- Reduce number of working age adults who don't have qualifications from 1 in 4 to 1 in 8 by 2004



# Drivers – funding bodies

## DEL

- Develop a piloted approach to enhanced linkages between the further education sector and SMEs.
- Introduce an FE/HE MAN (develop e-learning)



# Drivers - Research Councils

- Advancement & dissemination of knowledge
- Promotion and support of high quality basic, strategic and applied research
- Promotion of the transfer of knowledge from scientific research into practice to benefit the UK
- Supporting “world class” collaborative research
- Developing E-Science



# JISC Strategy

- High quality network
- Managed IP bandwidth
  - Flexible automatically bookable network resources between 384Kbs and 20Mbps for teaching
- Interoperability (GEANT, Internet 2)
- High bandwidth for research (GRID)
- “Last mile” technologies to enable student learner and researcher access



# JISC Strategy – content delivery

- Network and Traffic Management
  - Content placement
  - Caching
  - Mirroring
- Security & Authentication
  - Access to copyrighted content
  - Access to network resources



## JISC Strategy - bandwidth

- SuperJANET 5 (100's of Gbps)
- Upgrades to MANs

750 primary connected sites @  
1Gbps = 750Gbps ?



# UKERNA's Key Strategy Drivers

- A quality learning environment
- Increased collaboration
  - For learning and teaching
  - For research
- Lifelong Learning
- Widening participation
- Support for research- E-Science



# UKERNA developments

## Examples-

- QoS
- Peering & linking with other networks
- Investigating last mile technologies
- IP videoconferencing & IP multicast



# UKERNA developments- QoS

- A quality learning environment
  - by delivering applications reliably
- Collaboration e.g. videoconferencing
- E-Science
  - E-Science applications requiring QoS
    - Remote visualisation and control
    - Videoconferencing
    - Reliable shipment of large volumes of data in specified time scales
  - Production service protection



# Peering & Linking to other networks

- Widening Participation & Lifelong Learning
  - Home
  - Workplace e.g. NHS, schools
- E-Science - links to NRENs
- E-University - links to other networks used by learners
- Collaboration with other communities e.g. NHS



## **Last mile technologies e.g. ADSL, satellite, radio**

- Widening Participation & Lifelong Learning
  - Outreach centres
  - Home
  - Workplace



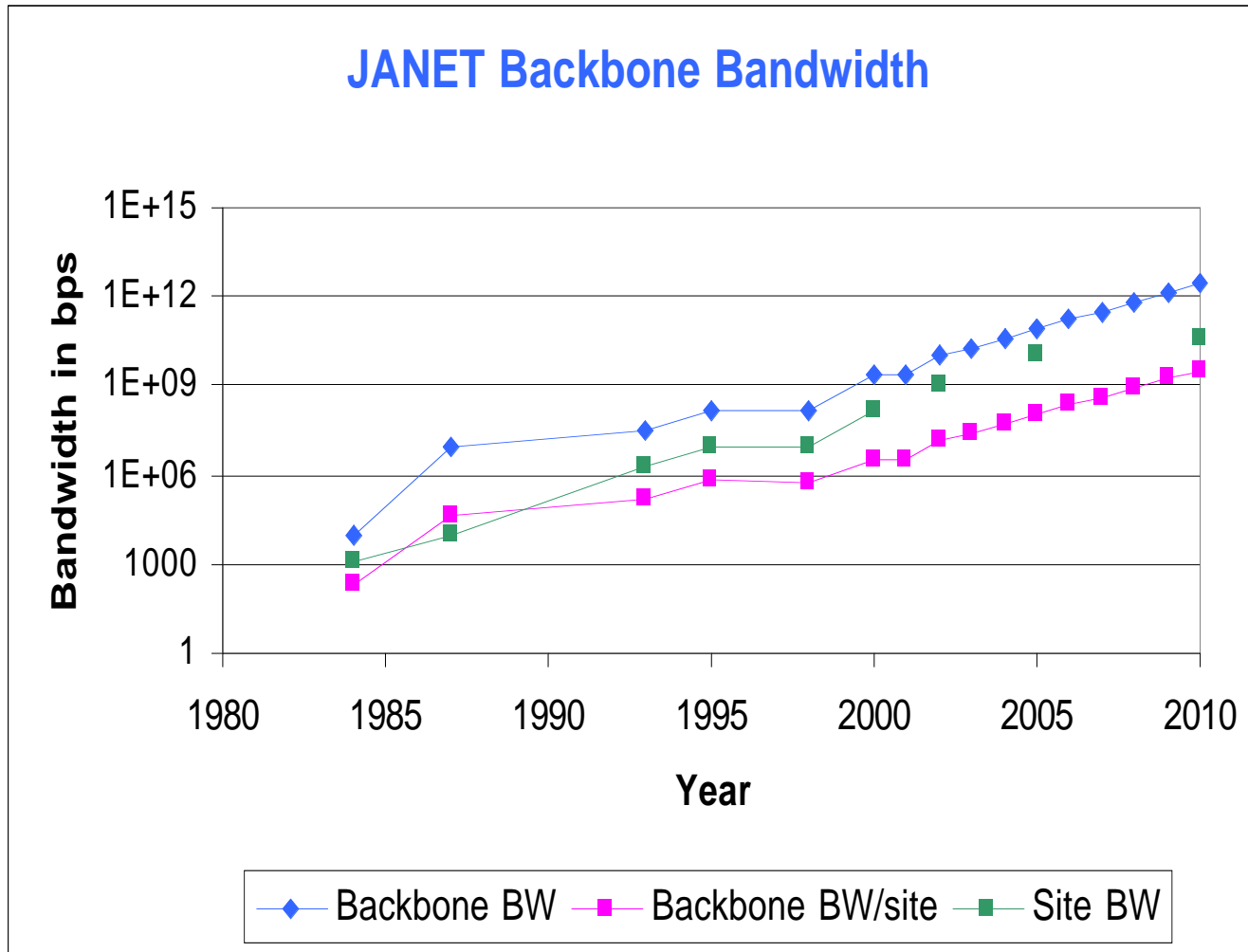
# IP videoconferencing & multicast IP

- E-Science – Access Grid
- Collaboration,
  - Teaching – Lifelong Learning
  - Research
- E-University – facilitating tutor support and learning in groups



# Common Requirements

- Reliability
  - Resilience, redundancy, topology
- Easy to manage, use and support!
- Interoperability
- Guaranteed Application Delivery
- Ability to deliver new applications as they are required
- Scalability (more bandwidth)





# Issues for Campus Network Developments (1)

- Managing more complexity
  - Multiple interoperating domains - MANs
  - QoS, authentication, DEN
  - Content delivery
  - End to end reliable application delivery
- Policy formulation for resource allocation (who gets what and when?)
- More emphasis on monitoring and control

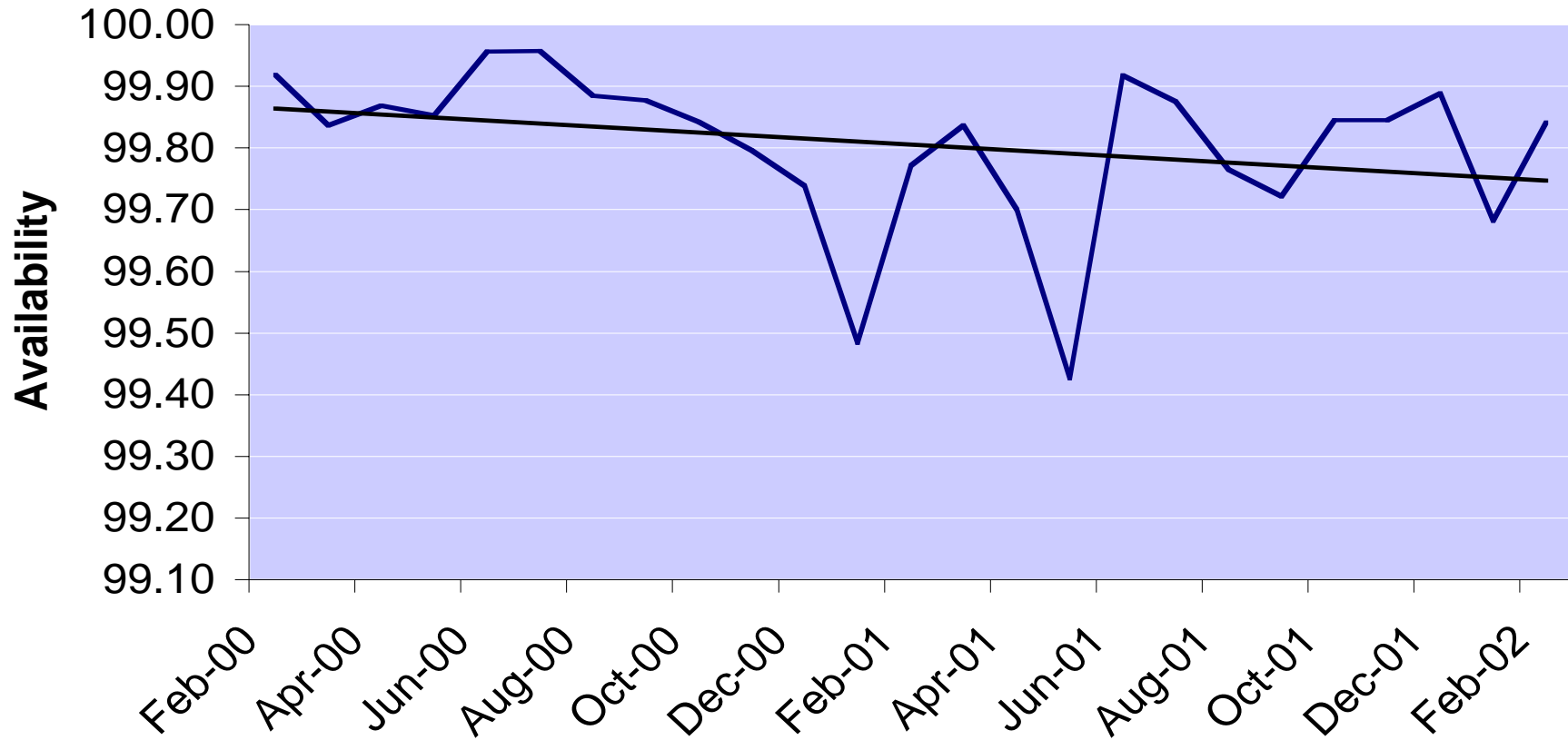


# Issues for Campus Network Developments (2)

- 24 X 7 support
- Designing for networks for reliability on a limited budget!
- Self-healing self adapting network systems
- Mixed & hybrid delivery modes
- User expectation
- Improve supplier “management” – telcos

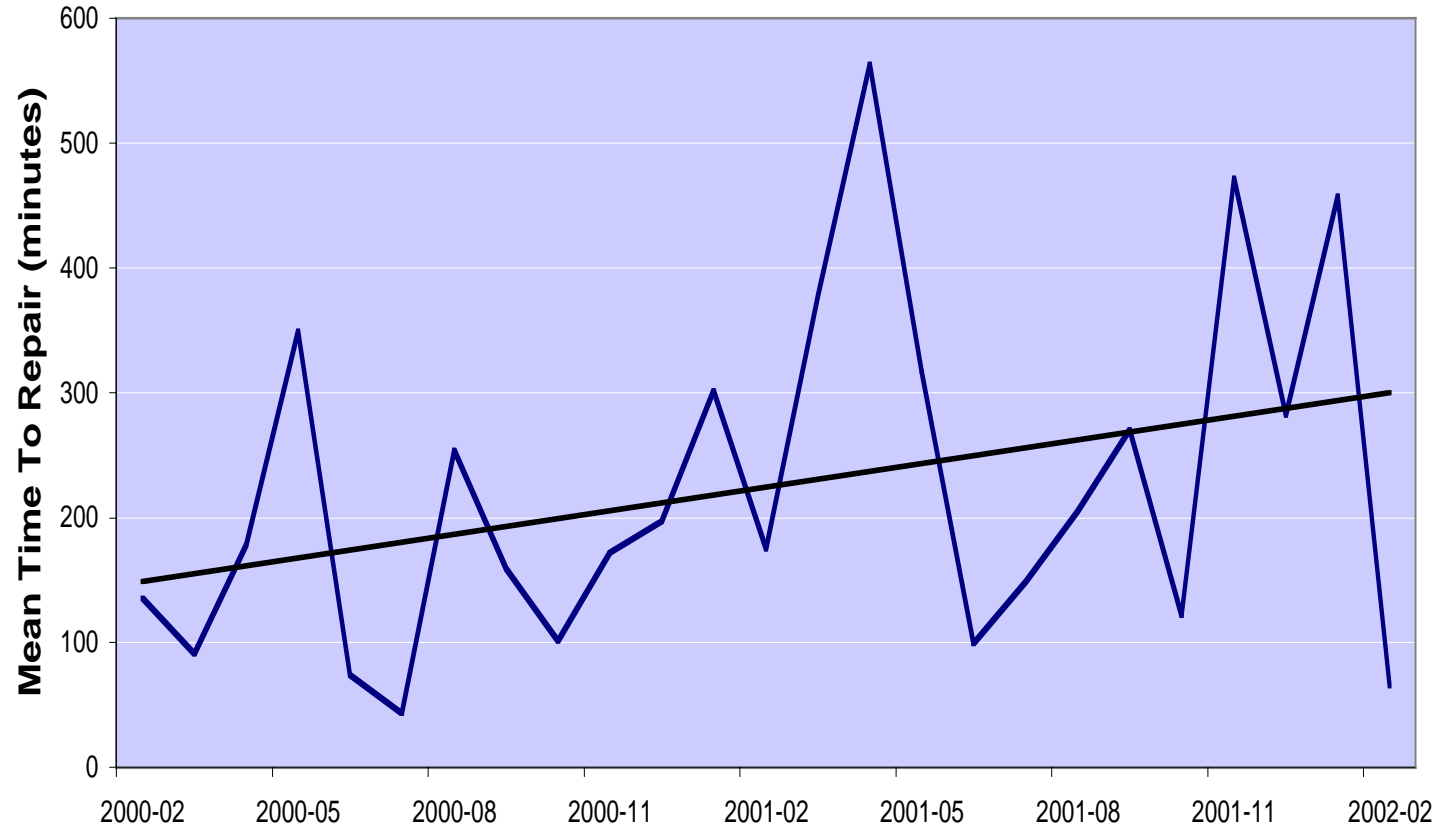


## Overall Availability





## Mean Time to Repair





**Send your telco horror stories  
and performance statistics to:**

service@janet.ac.uk

Subject field: telco problems



# Summary

- The JANET networking community is indirectly driven by government policies
- As policies have changed we have to provide reliable network services to support the policy and strategy implementation programmes
  - Align services with national, regional and institutional strategy implementation