
The importance of bandwidth management and optimisation in research and education institutions

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The bandwidth challenge

- Available bandwidth is limited and insufficient to meet demand
- Existing capacity is usually running at maximum capacity
- The cost of bandwidth is extremely high
- Expanding bandwidth capacity is limited due to finances, supply, technology
- So, bandwidth is a resource that is...
 - Limited, in high demand, expensive, of high value

But....

- Existing bandwidth is often not managed
- 59% of institutions in Africa do not monitor or manage bandwidth *at all*
- Further examination of the data indicates that this figure is in fact much higher
 - See the ATICS Report: www.atics.info for full details of the situation in African universities

Possible solutions?

- Do nothing??!
- More bandwidth and lower cost
 - Local, national and international consortia, PAREN
- Better management of the existing resource
 - Improved access, no additional bandwidth costs
- Combined approach (management + lower cost)
 - Half price + double usable speed = quadruple access
 - Increased long-term sustainability

ATICS: “Improving bandwidth management is probably the easiest way for universities to improve the quantity and quality of their bandwidth for educational purposes.”

Bandwidth management

- Not only a technology/infrastructure/resource issue
- Three key groups to ensure success:
 - Executive management
 - Senior implementation management
 - Technical staff involved in the day-to-day implementation
- Consider no expansion of connectivity until current resource is well managed?

Executive management roles

- Leadership
 - Authority behind a decision or action is essential
- Supportive policy environment
 - Any developments must be sponsored and advocated
- Strategic direction
 - Bandwidth management needs to be integrated within the university policy

INASP's Bandwidth Management and Optimisation programme

IAP Workshop: "Promoting access and capacity building for scientific information resources"
Dakar, Senegal, 30-31 January 2006

What resources are available?

- Information briefing packs targeted at senior institutional managers and ICT professionals
- Community portal for resource distribution and online information exchange
- Stand-alone training and documentation resources in bandwidth-friendly Email service provision and scheduled download strategies and techniques

What capacity development is available?

- Workshops and training materials on policy development
- Workshops, training materials and software tools on:
 - Network traffic monitoring and analysis
 - Network control and traffic shaping
 - Content caching and filtering and authentication

When and where?

- National and local seminars and training in:
 - Ethiopia, Ghana, Kenya, Malawi, South Africa, Tanzania, Uganda, Zambia, Zimbabwe
- Regional events in Africa:
 - Rwanda, Senegal, Cote d'Ivoire, Congo and at least one other country
- Timetable
 - October 2005 – January 2007

Possibilities for partnerships?

- Where they exist, NRENs would seem ideal holders and facilitators of this information and could host a regional, national or local seminar or workshop events?
- Institutional representatives could participate in the seminars or training workshops?
- Technical partners could get involved in software tool development?
- More funding partners could help extend the support beyond the current funding boundaries?

Further information ...

- More information can be found in:
 - *Optimising Internet Bandwidth in Developing Country Higher Education*
In print and also online: <http://www.inasp.info/pubs> in English, French or Spanish
 - <http://www.inasp.info/training/bandwidth/>
More information about the entire support programme, workshops, resources and publications

Thank you

Further information on bandwidth management and optimisation:

<http://www.inasp.info/bandwidth/>

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