

Executive and senior institutional managers

STRATEGIES **for optimising and managing bandwidth in institutions in low bandwidth environments**

Background

Many universities and research institutions in the South are faced with major obstacles in their use of networked information resources. The price of bandwidth is disproportionately high and it is costly and difficult to improve international network connectivity. Effective management and optimisation of bandwidth is widely recognised as being the easiest way in which institutions can improve their access to networked information resources and yet this is rarely the case ...

“...the majority of the respondents [sampled African universities] reported that they did not practice bandwidth management, or seldom did so, thus indicating a critical need for skills training in this vital area. Improving bandwidth management is probably the easiest way for universities to improve the quantity and quality of their bandwidth for educational purposes.”
[African Tertiary Institution Connectivity Survey 2005, <http://www.atics.info>]

There is an urgent demand for institutional development in the areas of bandwidth management and optimisation.

The importance of executive management and leadership

Bandwidth management and optimisation activities are often not undertaken – or when they are, they often face significant problems. Contributing factors include:

- Lack of information, skills, knowledge and actions at a technical level.
- Lack of leadership and direction to help guide actions and policy development.
- A non-supportive wider strategic and policy framework within which the appropriate technical solutions can be implemented.

Executive level leadership is essential to provide the supportive framework within which bandwidth can be managed and optimised. Appropriate strategies and policies need to be developed and implemented to address these challenges. Technology alone cannot provide the solutions.

Leadership, management, strategy and policy development are essential for successful change.

Participation in bandwidth management and optimisation events

Technical training workshops, management seminars and capacity development activities will be run during the period October 2005 – March 2007. Initially, funding has been secured to run institutional, local, national or regional level workshops in the following countries:

Congo, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Malawi, Rwanda, South Africa, Senegal, Tanzania, Uganda, Zambia, Zimbabwe.

Institutions within each country will be invited to participate within the proposed activities and are encouraged to contact INASP for further information (see below). Participating institutions will be

identified by local partners, after national level consultation. The group above represents those countries in which large-scale electronic information resource use is current and in which network congestion is a key issue, and requests for assistance and support in this area have already been forwarded to INASP.

Countries not named above are also invited to participate, as alternative sources of financial support will be sought to extend the activities to countries that have sufficient demand and need for development in this area.

Recommended actions for executive management

- **Make bandwidth management a priority.** Ask questions about Internet and network usage, security, and user behaviour. Reward staff that install the often unglamorous applications that help to conserve and share this scarce resource.
- **Be safe.** Insist on strong network and server security, firewalls, and virus protection. Once an undesirable has access to the system, any nightmare is possible.
- **Respond to demands.** Understand why and how different users make use of the Internet, prioritise among user categories and among applications, and help users to be more effective by providing appropriate training. Expect regular usage reports so that everyone knows what the Internet connection is being used for, and so the right decisions can be made when deciding how much bandwidth to get.
- **Encourage positive behaviour.** Devise a usage policy to be signed by all users before they use the Internet. This identifies good practices and appropriate 'netiquette' and it sets out procedures to be followed. It should be relevant to the average user and it should be enforced. The existence of such a policy (which explains that browsing and other Internet uses can be monitored), can often be a sufficient 'scare factor' to quell selfish or illegal behaviour.
- **Monitor the IT team.** Sometimes the IT experts are themselves the biggest abusers of bandwidth. Competent and dedicated IT personnel are essential, not only for normal ICT functions, but also to keep bandwidth use under control. More broadly, a representative high level governance mechanism or committee can be used to set overall ICT policy goals, directions, and priorities.
- **Give everyone an identity.** Tracking usage requires that each user of the network have an individual identity or logon that confers rights and responsibilities. It is a relatively small step to also provide each with a unique local email address as well as efficient ways to access it from remote locations. Providing such a facility will help to reduce the use of large bandwidth consumers like hotmail and yahoo.
- **Evaluate connection options regularly.** Bandwidth becomes cheaper every year. As prices go down, upgrades may enable a university to provide a better Internet service (and to make it available to more users). Moving to another provider or re-negotiating contracts may provide more bandwidth at lower cost. However, the benefits may not outweigh the cost of changing. It is also important to ensure that the contracted and paid for bandwidth is actually being provided.
- **Join forces.** Explore network integration – create networks between academic institutions within the country that allow for joint bandwidth purchasing, help to keep local traffic local, and lobby for regulatory or other political changes.

Thanks

VLIR: This programme is undertaken as the "Optimization of the use and management of bandwidth at university level" undertaken with financial support from the Flemish Interuniversity Council.

IDRC: This programme is undertaken as the "Supporting training for the optimization of university bandwidth in Africa" undertaken with financial support from the Canada Fund for Africa.

Further information, and how to participate

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

Martin Belcher, Senior Programme Manager, INASP

Tel: +46 (0)46 222 31 88, Fax: +44 (0)1865 251 060, Email: mbelcher@inasp.info