BROADBAND IN UNDER-SERVICED AREAS

The Broadband Advantage

According to the "Broadband Infrastructure and Economic Growth" paper (December 2009 – Czernich, Nina, Falck, Oliver, Kretschmer, Tobias, Woessmann and Ludger), broadband penetration has a direct relationship to economic growth; where the paper indicates that a 10% increase in broadband penetration can raise annual economic growth per capita by 0.9% to 1.5%. The authors of this paper further describe broadband internet as "a general purpose technology, which changes how and where economic activity is organised. It supports new business models, allowing information to be shared more quickly and stored more efficiently. This can lead to lower start-up costs for new companies, greater competition, increased labour productivity and ultimately stronger economic growth."

For under-serviced areas throughout the country, the case for broadband can be made from the benefits that the   technology can offer to Government as a whole, the local business sector and households in the area. Amongst many others, some generic benefits of broadband technology are outlined below.

Application	Beneficiaries	Benefits
e-Government	Government / Citizens	· Government is able to optimise their internal operations; · Government is afforded more channels to communicate and reach citizens and vice versa; · Processes that require connectivity such as applying for or checking the status of Government services can be made electronic and far more efficient than manual based processes.
e-Health	Health Practitioners / Patients	· Patient information (which is stored electronically) is easily accessible in case of emergencies; · Medical practitioners can connect with other practitioners nationally or globally for more effective diagnosis of illnesses; · Communications between practitioners and patients can be strengthened for better health management; · Patients can access a wealth of health information available from local, national and global sources.
e-Education	Educators / Learners & Parents	· Administration and management of learner information and learning material can be made more efficient; · Learners are afforded the ability to access a wealth of multimedia learning resources available from local, national and global sources; · The link between the school, the learner and the parent is strengthened for better communications; · Educators and learners can link with other educators and learners nationally or globally to share experiences and learnings.
e-Agriculture	Farmers	· Farmers are afforded the ability to access instant information on the well-being of their crops and livestock and market information (such as pricing) on agricultural produce; · Farmers are also afforded the opportunity of accessing national and global markets to sell their produce.
e-Commerce	SMEs	· SMEs and Entrepreneurs are afforded the opportunity of global trade of their products and services.
Social Networking	Citizens	· Citizens can connect and communicate with global citizens to share each others' daily experiences.
Voice over IP (VOIP)	Citizens	· Online services such as Skype, Google Voice and others enable free voice communications between citizens, which may lead to cost savings.
Other	Citizens	· Other services such as video-conferencing, video on demand provide Government, citizens and business with possibilities of saving travel, communications and other costs; · There are also machine to machine communications which enable services such as card payments, management of electricity meters and water reservoirs and other similar services.

Broadband in an Under-Serviced Area

The status of ICT in many under-serviced local municipalities indicate a need for an integrated broadband network, which will provide voice and high-speed data connectivity services to address many of the challenges experienced by local Government, local business and citizens of the municipality.

Broadband Initiatives facilitated by USAASA should ensure that the following benefits are realised within local municipalities.

• Anchor clients should have a dedicated bandwidth on the network, enabling voice and high speed data services for On-net and Off-net Voice Calls, Internet, Email and other data driven applications. These anchor clients may include:

- Local and District Municipalities: all offices;
- Education: FET and GET Schools spread throughout a municipality and other Education offices;
- Health: all Health Facilities (Hospitals and Clinics) spread throughout the municipality and the Sub-District office;
- SAPS: all Police Stations within the municipality;
- Justice: all Courts of Law within the municipality;
- Correctional Services: all Prisons within the municipality;
- Other: SA Post Office, SASSA, and other Government departments present in the local municipality.

• Local businesses (SMEs and Entrepreneurs) and households should be provided with voice and high speed data services for On-net and Off-net Voice Calls, Internet, Email and other data driven applications.

• For local businesses and households that cannot afford terminal devices such as computers and CPEs (customer premises equipment), public access facilities should be available to enable them to access voice and high speed data services.

As the broadband network will require a licensed service provider to operate, the appointed service provider should:

• Ensure that all above requirements are met and the "digital divide" minimised.

• Facilitate the availability of specialised content and applications such as e-Health for medical practitioners and patients, e-Education for educators and learners, e-Agriculture for local farmers to access agricultural markets, e-Commerce for local businesses and other services that will ensure continued uptake and usage of the network.
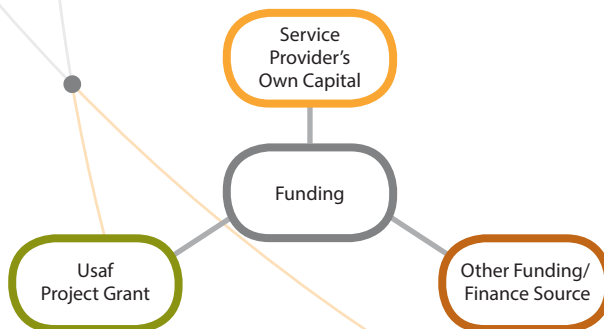
KEY CONSIDERATIONS

Implementation

In the wake of decreased budgets across Government departments and an increasing need to accelerate the implementation of similar initiatives across many other South African local municipalities, a key consideration in the implementation of broadband initiatives would be to spread them over a number of phases, with each phase having specific deliverables. The following phases are proposed.

- **Phase 1:** Construct the network to cover the main towns first, providing services to Government, local business and households in those areas.

- **Phase 2:** Extend the network to reach immediate villages around the main towns.

- **Phase 3:** Extend the network to reach all other villages and farms throughout the municipality.

Funding

In line with Sections 88 and 90 of the ECA, the USAF (managed by USAASA) should be used, amongst other functions, for subsidising the construction and/or extension of ICT infrastructure in under-serviced areas. This therefore means that funding or part thereof should be sourced from the USAF.

USAASA, as part of its facilitation role, should seek to partner with other funding sources to fund part of the required funding for construction and operation of broadband network. As an appointed licensed service provider will be generating revenues from the network, the service provider will be required to also provide part of the funding from their own internal budgets. The cost of operating the network (OPEX) should be funded mainly through revenues that will be generated in the course of providing services. The funding will therefore be structured as per the diagram below.

```
        ┌──────────────┐
        │   Service     │
        │  Provider's   │
        │  Own Capital  │
        └──────────────┘
               │
        ┌──────────────┐
        │   Funding     │
        └──────────────┘
         │           │
┌──────────────┐  ┌──────────────┐
│    Usaf       │  │ Other Funding/│
│ Project Grant │  │ Finance Source│
└──────────────┘  └──────────────┘
```

Uptake and Usage

Uptake and usage of a broadband network is driven mainly by content and applications that run over the network. USAASA's strategy of pre-implementation stakeholder engagements seeks to:

- Ensure support of the network by all stakeholders (mainly Government) within an under-serviced area; and

- Further to the support, negotiate with Government stakeholders to take up services provided through the network as anchor clients. As highlighted above, anchor clients should be allocated dedicated bandwidth (for both voice and high-speed data) on the network by the service provider.

The requirement of the service provider to facilitate the availability of specialised content and applications and the deployment of public access facilities in strategic areas of the municipality will also further ensure continued uptake and usage of services provided through the broadband network.

To ensure that the rest of the citizenry within the area are aware of the initiative and take up and use services provided by the network, a public awareness campaign is required to be implemented, with the mission of driving the message of the "benefits of broadband services in everyday lives for local socio-economic development" and availability of services for uptake.

Sustainability

The sustainability of a broadband network is highly dependent on the number of paying clients who take up and use services provided by the network, on a continuous basis. The network is required to generate a stream of revenues that not only pay for the cost of operating the network, but also ensure profitability of the service provider.

USAASA's stakeholder engagement process, for both support and negotiations with potential anchor clients, seeks to ensure that the network generates revenues to sustain operating costs and achieve profitability.

It is therefore key for all spheres of Government (with direct/indirect interest in the municipality) to support this initiative, not only to ensure the sustainability of the network, but mainly to ensure a decrease in the "digital divide" within the municipality. The local municipality and other Government departments will be continuously engaged so as to acquire their support, politically, technically and financially.

www.usaasa.org.za   Twitter: @usaasa_sa   Facebook: USAASA

Terms & Conditions apply

Broadband In Under-Serviced Areas

usaasa
Universal Service and Access Agency of South Africa