Rural BASH
Broadband Program
A community centric approach to Rural Broadband

Broadband & Application SHowcase

Presented by Robert Brand
Nov 2005
The Rural BASH

- A program to accelerate broadband rollout for rural and regional Australia.
- Funded by the supply of consulting & project management services, products, sponsors and advertisers.
- Consisting of services to:
  - Suppliers
  - Providers
  - Demand aggregators
  - Communities

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The **Rural BASH** Concept

- A commercial approach to broadband
- Sustainable broadband
- Solutions for big and small towns
- Solutions for individuals
- Support all vendors big and small
- Educate and empower communities
- Online portal. Web and news services
- Forum

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Next on the Rural BASH agenda

- On line forum
- Register mapping
  - Community interest
  - 802.11 hot spot
- Demand register
- Supplier register
- Surveys
- Conferences / workshops
- Web conferences
- Web video broadcasts

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Why community centric?

- Small towns can only have one supplier so they had better have the ability to choose.
- Communities will exert more pressure at all levels to get their needs met, eg votes.
- They can leverage their community strengths to attract business.
- They can attract new residents, businesses and stem the flow of residents away from town.
- Look after the disabled and isolated.
Size Counts

- Telstra keen to dump much of the country
- Numbers are low even in big towns
- There is only competition in the big towns
- Rural residential and farms will suffer for the foreseeable future
The Keys to Success for Country Users

- It must be sustainable either without government funding or after the initial subsidy has finished
- It should service the widest footprint possible, not just a lucrative core of users
- The key costs are:
  - End user connections / modems
  - Backhaul
The Current Market

- Stimulated 2 years ago by:
  - Cheaper technology
  - Better technology
  - HiBIS and other funding
  - User demand

- Currently:
  - New government funding
  - WiMAX
  - Community & end user demand
## Facts & Figures

<table>
<thead>
<tr>
<th>Metro</th>
<th>Non Metro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample 5,500 businesses</td>
<td>Sample 6,000 businesses</td>
</tr>
<tr>
<td>Non Computer</td>
<td>Non Computer</td>
</tr>
<tr>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Internet Access</td>
<td>Internet Access</td>
</tr>
<tr>
<td>86%</td>
<td>85%</td>
</tr>
<tr>
<td>Broadband</td>
<td>Broadband</td>
</tr>
<tr>
<td>46%</td>
<td>37%</td>
</tr>
<tr>
<td>Small (1-20)</td>
<td>Small (1-20)</td>
</tr>
<tr>
<td>43%</td>
<td>33%</td>
</tr>
<tr>
<td>Large (21-99)</td>
<td>Large (21-99)</td>
</tr>
<tr>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Very Large (100+)</td>
<td>Very Large (100+)</td>
</tr>
<tr>
<td>68%</td>
<td>68%</td>
</tr>
</tbody>
</table>

Contrary to popular belief, small businesses are the ones that cannot get access to broadband where they want it for affordable prices. Big companies get what they need.

Data: Digital Business Insights 2005
# Who’s Who in the Country

<table>
<thead>
<tr>
<th>Do not need Broadband</th>
<th>Need Broadband</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hairdressers</td>
<td>Franchise Offices</td>
</tr>
<tr>
<td>Pet care</td>
<td>Branch Offices</td>
</tr>
<tr>
<td>Clothing retailers (small)</td>
<td>Clothing retailers (small)</td>
</tr>
<tr>
<td>Fishing services</td>
<td>Diving Centres</td>
</tr>
<tr>
<td>Cafes</td>
<td>Education</td>
</tr>
<tr>
<td>Restaurants</td>
<td>Mining</td>
</tr>
<tr>
<td>Metro and non Metro similar</td>
<td>Property &amp; Business services</td>
</tr>
<tr>
<td></td>
<td>Wholesale</td>
</tr>
</tbody>
</table>

Data: Digital Business Insights 2005
The good, the bad....

<table>
<thead>
<tr>
<th>Poor users</th>
<th>Good Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 of 150 ABS categories don’t use computers or Internet</td>
<td>34 of 150 ABS categories are knowledge based workers who use PCs and need broadband</td>
</tr>
<tr>
<td>These are not likely to need broadband any time in the near future</td>
<td>Travel, Advertising, Mining Services, Design, Law, Training, Consulting, Real Estate, etc</td>
</tr>
</tbody>
</table>

Data: Digital Business Insights 2005
The Myth about Rural Portals

- The Myth: Rural Portals do not work because they are designed poorly, etc
- The Reality: 65% are not comfortable because:
  - No PC / Broadband / internet
  - No Trust
  - Unfamiliar
  - No time
- Push needed, not pull (email, newsletters)
Wireless Growth

- The first survey in April, May 2004 had no significant wireless broadband in Non Metro areas.
- By Nov, Dec 2004 10% of all Business broadband connections in Non Metro areas were wireless.
- Sydney Businesses also had 10% wireless supply Broadband at that time.
Rural Broadband Drivers

- Half of **ALL** businesses use On-Line Banking
- Therefore 60% of all businesses with broadband access use On-Line Banking
- Sectors: Education, Finance, Insurance, Communications, Property & Business Services – all high users of ICT & Broadband
Technology for rural Oz

- Satellite
  - Geostationary
  - Low earth orbit
- ADSL
- Wireless
  - Licensed
  - Class licensed
  - Meshed
- Fibre

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Opportunities Abound

- WiMAX, VoIP, IP-TV, 3G, Triple Play
- Telstra operational separation
- Media convergence (telco and media lines are starting to get blurred)
- Connect Australia and Regional Funds - $3 billion
The Solutions Vary

- Small to Large Towns
  - ADSL & ADSL 2
  - Wireless networks
    - Mesh
    - WiMAX
    - Propriety mobile / portable (Navini, iBurst, etc)
    - Propriety fixed (Canopy, etc)
The Solutions Vary

- Single Homes:
  - Satellite geosynchronous
  - Low earth orbit satellite (years away)
  - Longhaul ADSL 27km (Extel) min 8 users
  - Longhaul wireless (one user)
  - CDMA 1x (144kb peak) & EVDO (1Mb/s & up)
  - 3G????
The Solutions Vary

- Small Communities:
  - Although there are many technical solutions, few are commercially viable.
  - Even with Government funding, few models work.
  - The most likely is wireless / satellite backhaul with cheap fixed point to point equipment.
The Cost of Backhaul

- A site 400km from Sydney may cost $4,800 per month per Mb of bandwidth from major carriers.
- It is possible for those carriers to sell for around $350 per month per Mb (or less).
- The lack of competition creates this situation.
Standards - yes or no

- WiMAX and others vs Proprietary
- Footprint
- Spectral efficiency
- Spectrum allocation
- Mobility
- Features
Empowering communities

- Communities need to:
  - Understand their strengths (and weaknesses)
  - If small - agree to what type of BB they want
  - Look for obliging suppliers (eg via the Rural BASH)
  - Fill in demand registers at all sites
  - Estimate the number of likely users
  - Engage demand aggregation brokers through government funds
  - Stay across the news and voice opinions.

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Applications – the reason for the Internet’s existence

- Key, key, key to success!
- Key focus of most workshops, training and conferences
- People need to understand the applications and their benefits before they will or should buy BB
- Applications justify the purchase of BB
- Education about applications needs to be part of the early marketing exercise for both user and supplier to be happy long term
Education – an example

- Conferences
- Lectures
- Web Broadcasts
- Training
- Newsletter
- Forum
- TV
- Press

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HiBIS for providers

- It works, but requires around 200 hours of work to prepare (to protect the consumer)
- **Rural BASH** can assist providers wanting HiBIS accreditation
- $3,000 if no ADSL or ISDN *ex capital cities*
- $1,400 if no ADSL *ex capital cities*
- Must account for the subsidy with costs
- Strong Audit requirement
- **Rural BASH** can assist with operational aspects
HiBIS qualification – ADSL
Capital City Exclusions

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HiBIS qualification - ISDN

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Defining broadband

- Cannot be done. We get what is made available and hope that it will do
- HiBIS defines it as 256k / 64k /s
- TV (1 channel) defines it as around 4Mb /s
- TV (2 channels) needs around 8Mb
- New compression standards will help
- The need continues to outstrip its delivery & affordability, especially in rural Australia
The Future

- 2005 – 2Mbps
- 2007 – 6Mbps
- 2010 – 10Mbps
- 2015 – 45Mbps
- All at current pricing for broadband

(Paul Budde 2005)
Defining users

- Who will buy and for how much?
- How many users per town for a good ROI?
- Competition in small towns
- Competition in large towns
- Satellite or terrestrial backhaul?
- Rural BASH has access to quality surveys allowing providers to minimise risk
802.11 and class licenses

- A solution for some
- Works well in isolated areas
- A wide range of products
- Cost effective
- Innovation & simplicity through meshing and other similar smart networks.
- Hots spots for portability and remote access
Hot spots

- Attracting customers to town
- A second stop & purchases normal
- Could be a town funded initiative
- Three main types:
  - Free (sponsored by person, town, shop, association or brand)
  - Conditional on purchase
  - Fee for access
Technology for rural Oz

- **Satellite**
  - Geostationary
  - Low earth orbit
- **ADSL**
- **Wireless**
  - Licensed
  - Class licensed
  - Meshed
- **Fibre**
The Future?

- Lots of promise, but not quite there yet.
- 30 could cover Australia with good overlap
- 20km up but no wireless standards to support them.
- 5 more years could see a serious new competitor.

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Stratospheric Flyers?

Coverage assuming 300km radius footprint

¼ model being jointly tested by NASA and Sanswire to ensure best flight characteristics

27 flyers able to stay on station for 1 year – 3 spare

Cost approx $1b

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Wireless – a disruptive technology – but for how long?

- Good bandwidth now, but how much will we need in the future.
- WiMax and new standards
- Low earth orbit / stratospheric flyer technology may disrupt land based wireless within 5 years
Other potentials for upsetting the “Bandwidth” apple cart

- Low Earth orbit satellites
- Fibre
- WiMax
- Future Wireless advances
- New technology

A meshed wireless solution with almost total redundancy linked by satellite

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People with disabilities: nominated for the Deafness Forum's 2004 Best New Captioning Initiative Award. The nomination relates to our introduction of the use of live captioning over the Internet for our inaugural two day conference.

Free video and audio conference
Broadband drivers

- **The home** – email, filesharing, entertainment, browsing

- **The office** – email, browsing, file transfer, ASP services, e-commerce, video conferencing, VoIP

- **The farm** – email, weather, download farm info, satellite maps, video conferences, farm automation, tracking

- **Transport** – satellite radio, vehicle tracking, RFID checks, VoIP
Rural lessons learned

- The spread of opinions about broadband is broad and polarised – must have vs don’t care
- Often little household money available for broadband
- Provider supply chains are stretched by distance and time to travel / repair
- Networks need basic redundancy
- Users have heard the promises before
- Users more tolerant of poor service
Rural News – what a difference a week makes

- Rural news and broadband now hot topics
- Twice as many news items as this time last year
- ISPs and suppliers need to be well informed if they do not want problems
- The news is more volatile this year
- Health communications a hot topic
Carriers Needs

The unifying factor is that they all have diverse needs:

- Infrastructure vs operational costs
- Rollout from capitals vs remote build
- Secure customers first vs build and they will come
- Backhaul vs Internet connection
- Wireless vs ADSL vs satellite, etc
RuralComms Newsletter

- A news and information service for users and suppliers
- Strong focus on applications
- Education and innovation highlighted
- The only total rural Telco news source

www.ruralbash.com
Thank you

Robert Brand
Director Telecommunications
Manager Rural BASH program

robert.brand@ruralbash.com