Sky Muster™ Satellite Update

nbn Government Relations

Agenda

- A brief history of **nbn**'s satellites
- Technical capabilities
- Recent upgrades and updates
- **nbn's** Get Well Program
- Questions

Technology allocation across Australia

nbn uses a set of business rules when determining the technology for an area to meet the key objectives of:

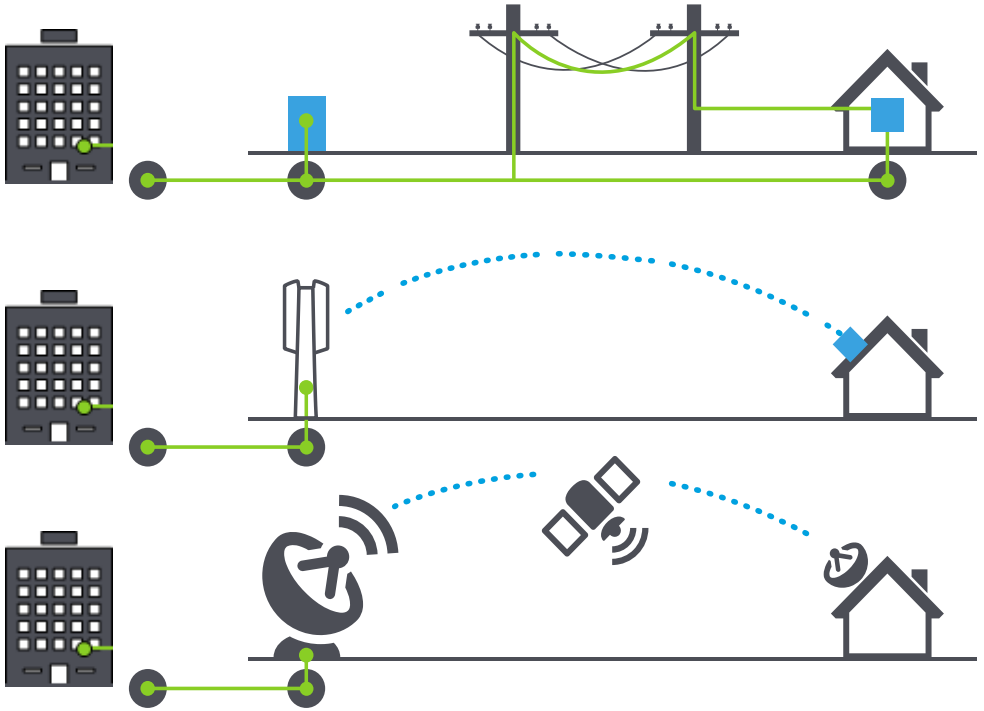
- delivering a minimum wholesale 25/5mbps
- using a mix of technologies best matched to each area
- building the network by 2020

Considerations:

- Density of premises
- Proximity to **nbn** infrastructure – backhaul, transit and exchange availability, etc.
- Existing infrastructure

Technology allocation – MTM

- Fixed line (92%)
  FTTP, FTTN/B, HFC, FTTC
- Fixed wireless (5%)
- Sky Muster (3%)



A history of satellite services

- Contracts signed by Government in 2012 to deliver two satellites

- Interim Satellite service was delivered across existing satellites in 2011
  - Limited total capacity and restricted eligibility requirements
  - Retail speeds of 6MBps/1mbps
  - Oversubscribed experience

Sky Muster I under construction

Sky Muster™ launch

- Launched October 2015 and October 2016
- Services on sale from April 2016
- 10 RSPs in market
- 410,000 premises in footprint
- 240,000 assumed take up
- 76,000 premises currently connected

**N.B copper phone lines maintained in satellite (and fixed wireless) areas

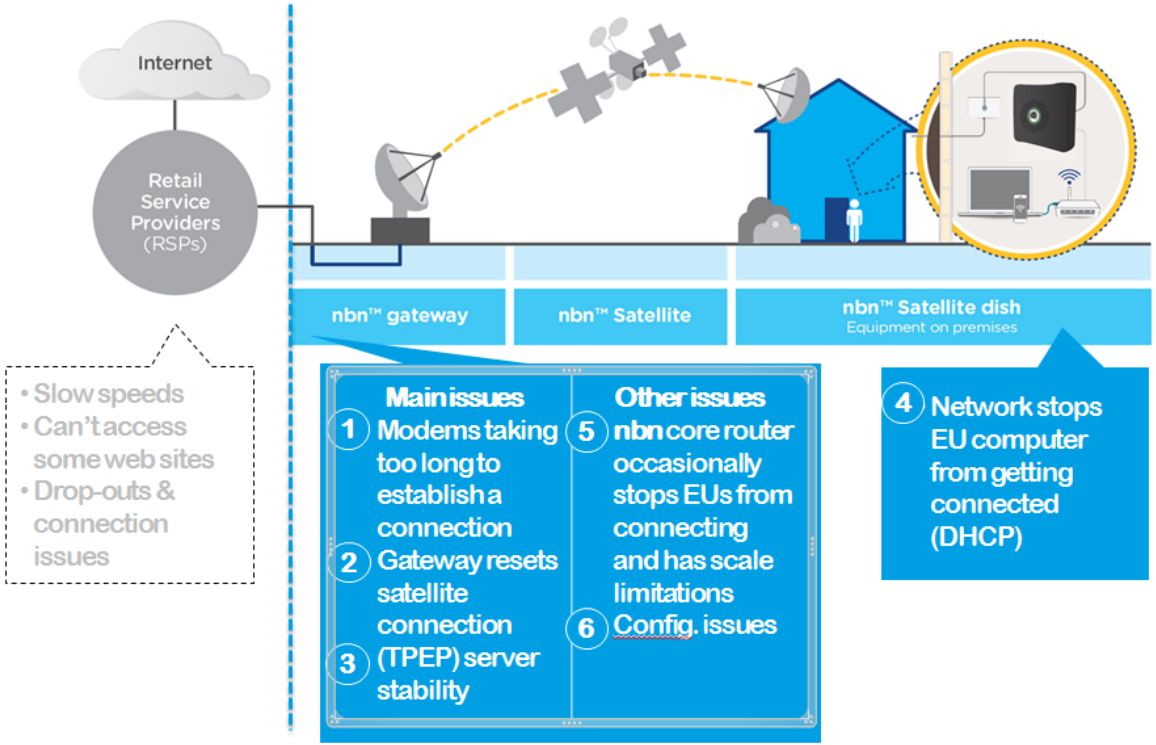
Sky Muster I launch in French Guiana

Technical capabilities of the Sky Muster™

- Largest commercial satellites in orbit
- Located 36,000km above earth
- 410,000 premises in footprint
- Two speed tiers: 12/1mbps & 25/5mbps
- Beam divisions provide focus
  - Use 101 electromagnetic Ka-band beams to focus the service geographically
  - Tailored capacity distribution: smaller beams in higher population areas
- 10 x ground stations located in regional Australia – e.g. Bourke, Kalgoorlie & Roma

Spot beams across Australia

Recap: Sky Muster™ network issues



Focus areas of Get Well Program

- Activations
  - Same day activation of service – 8.3/10 for connect experience
  - Aged orders
  - 92% orders now done right first time

- User experience:
  - Network stability – from 60 outages/week to 1-2/week.
  - Delivery of 147 software upgrades to limit outages and improve experience

- Fixing problems once installed
  - Missed appointments → technicians turning up on time
  - Still some work to do

Sky Muster™ upgrades

- Previous FUP was determined before the satellites were launched
- Engineering improvements = total capacity increase from 130Gbps to 180Gbps
- Peak data doubled from 75Gb to 150Gb
- Total monthly data doubled from 150Gb to 300gb

  = average user should see plans increase by ~50%
- **nbn** has not increased the wholesale price to RSPs - encourage constituents to check with their RSP

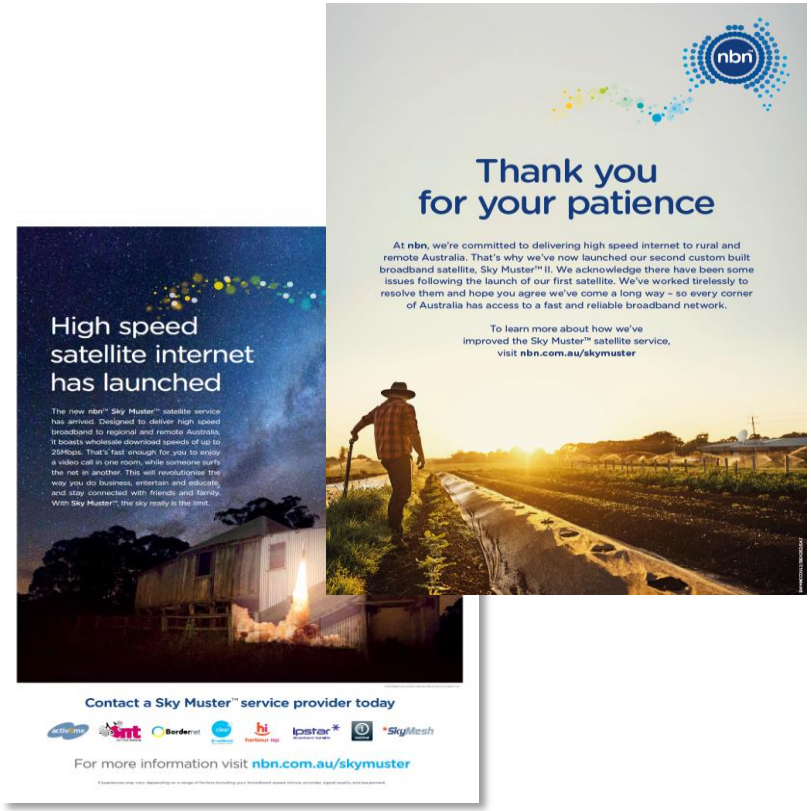
- Where to next…
  - Business and education products over next 12 months

Challenges on Sky Muster™

- Finite capacity: Fair Use Policy
  - In place to help ensure fair access to the services over the new satellites – especially during peak-usage times.
- Pricing structure of plans
- Two speed tiers
- Latency → distance

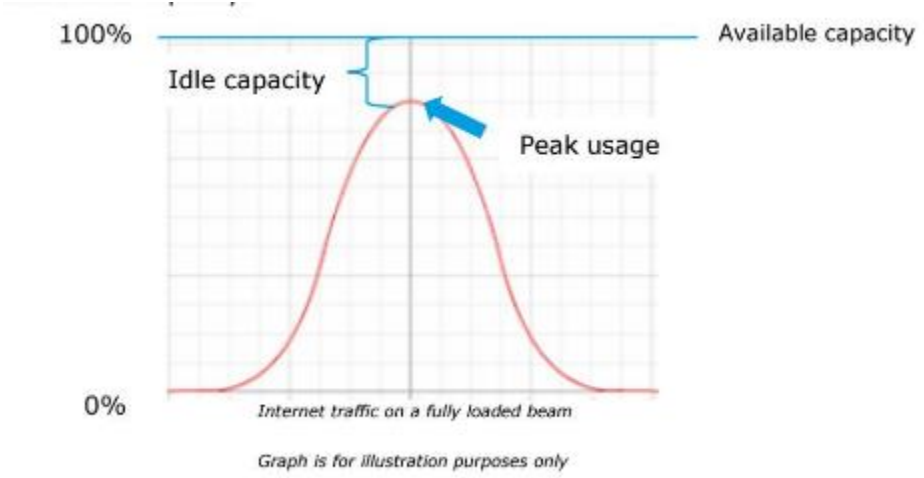
Changes to nbn communications

- Regional Support team in call centre – 1800 687626
- Social media and community engagement optimised
- Improved outage notification
  - Voice recording
  - Outage webpage
- Marketing



How does the Qantas trial fit in ?

- **nbn** working with Qantas to provide inflight WiFi
- Opportunity for quick product development, without diverting **nbn** resources
- Purpose is to develop a mobility product with future uses
  - Nomadic services
  - Royal Flying Doctors
- **nbn**'s #1 priority is bona fide Sky Muster users on the ground
- However, there is idle capacity in each beam



Questions