



SABRENet

Looking forwards

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July 2007

Overview



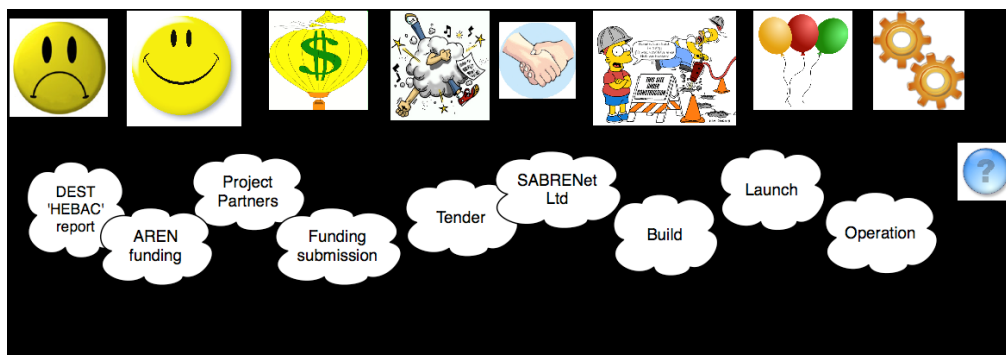
- About us
- Where we've been
- Where we are today
- How we see the future
- A taste of the future...

SABRENet Ltd



- Public Company Limited by Guarantee (Sep 2005)
- 'Public good' R&E Objectives built into Constitution
- Partners
 - Flinders University
 - University of Adelaide
 - UniSA
 - SA Government
 - DSTO
- Non-profit
- Small & simple

Where we've been



A Model for Development



Where we are now and where
we're going

■ Sites

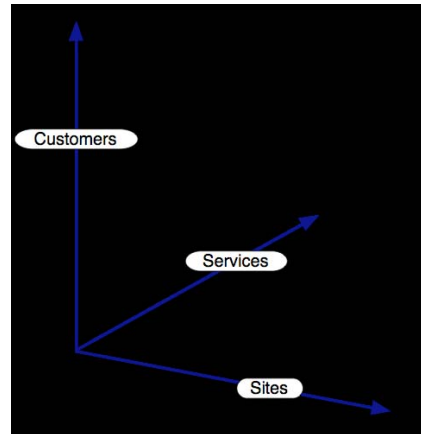
■ Where we deliver
to

■ Customers

■ Who we deliver to

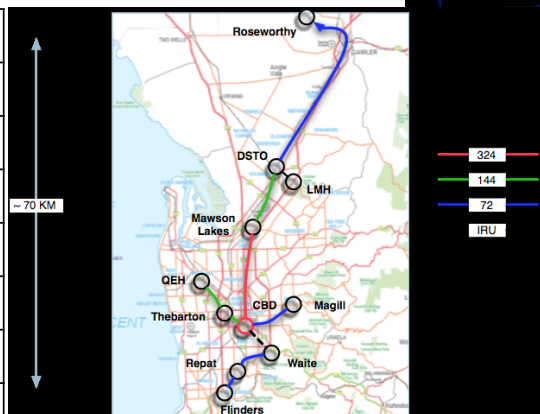
■ Services

■ What we deliver

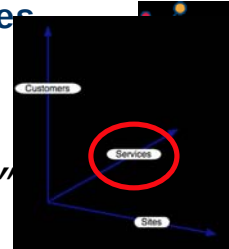


Where we are today - Sites

2	AARNet POPs
10	University Campuses
6	Teaching Hospitals
6	TAFE Colleges
6	High Schools
1	DSTO site
4	R&D Precincts
3	Others



Where we are today - Services



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"The same - only much better"

■ **We offer one service** - Point-to-point dark fibre 'circuits'

- No active services - including optical (WDM)

■ **Primary use** - Upgrade from Layer 2 carrier ethernet

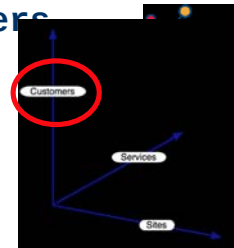
- Inter-campus / WAN links
- AARNet POPs
- Mainly 1 Gigabit ethernet

■ **Some new 10 Gigabit ethernet**

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Where we are today - Customers



■ **Universities**

- University of Adelaide
- University of South Australia
- Flinders University

■ **Commonwealth**

- Defence Science and Technology Organisation (DSTO)

■ **South Australian Government**

- (Teaching) Hospitals
- Schools (trial)
- TAFE colleges
- Government R&D - SARDI

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Where we're going - Taking Stock



- Significant asset for South Australia
 - #2 (underground) metro fibre network
 - Very visible State Government / University collaboration
- State Government is a 'first class' Member
- Strong, clear R&E charter
 - Well understood in SA
- Strong, engaged governance
 - Small, settled Board - incl University IT Directors
 - Appetite to push the envelope
- Goodwill

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- We did what we said we'd do - on time,

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Commercial Arrangements



- Amcom Telecommunications Pty Ltd
 - Perth-based carrier, expanding eastwards
- Won SABRENet build tender - and...
- 'Operations & Maintenance' Agreement
 - Maintenance, fault response, help-desk, DB4YD
 - Nominated Carrier Declaration
 - Commercial access to some fibres on all backbones
 - (but SABRENet Ltd still owns the network)
- Which means...
 - \$0 net fixed maintenance cost
 - Commercial services available wherever SABRENet goes
 - Potential to bridge public/private usage

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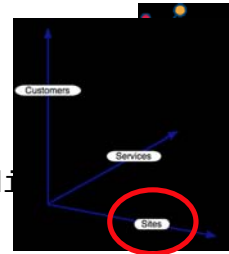
Where we're going - Sites

■ New metro sites

- Respond to demand & available funding
 - Defence - SA Government 'pre-announce'
 - NCRIS - new facilities
 - TAFE & schools - beyond pilot
 - We expect significant expansion.

■ Regional SA

- Demands a different approach
- Very sparse - dark fibre probably not justified for now



Where we're going - Services

■ Infrastructure services

■ Active Services - "the cloud"

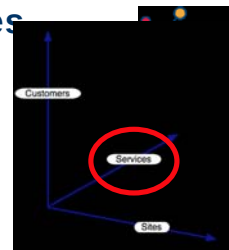
- Recurring theme
- Simplified anywhere-to-anywhere connectivity
- ...but much greater complexity

■ Applications- stimulate/facilitate

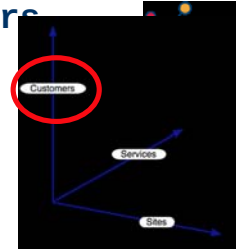
- HD Video
- E-Research

■ Professional services

- Consulting
- Public / private liaison



Where we're going - Customers



■ SABRENet Access Policy

- Who can use SABRENet - and for what

- www.sabrenet.edu.au/doc/access_policy

■ Government Research Agencies

- CSIRO et al

■ Private sector - commercial R&D

- Research partnerships with SABRENet members

- Incubators - e.g. Bioinnovation SA

■ Private & VET education - potential

- Australian Technical Colleges

- Private schools

Open question - 'Acceptable' use



■ Access Policy

- "who?" vs "what?"

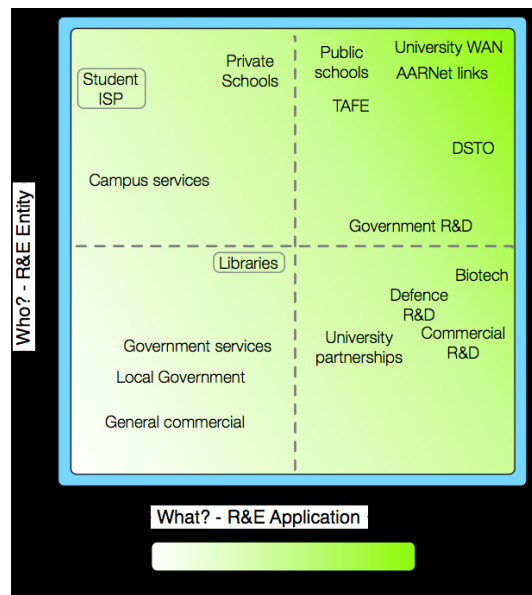
■ Private sector use

- What is 'commercial use' and what isn't?

- (We don't want to be the traffic cop)

- Where/how does SABRENet Ltd fit into the picture?

- Competitive neutrality



Open question - Flexibility vs Simplicity



- Dark fibre model - simple, robust, maximum bandwidth
- Ain't broke - But will it scale?
- Logical extension - managed network
 - A **big** step

Example - Where we're going



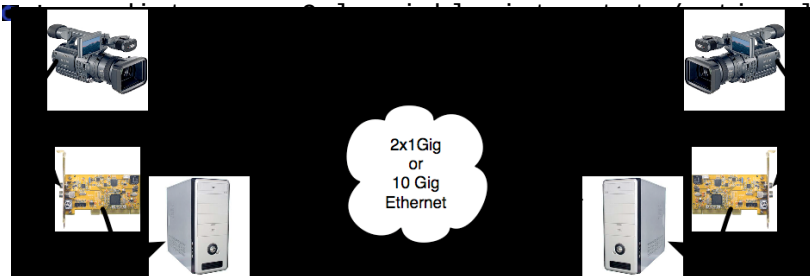
- 'Real' HD Video : SMPTE 292M (HD-SDI)
- Uncompressed - 1.4Gb/sec
- Low latency
- Amazing...

HD Video : SMPTE 292M over IP



■ General approach - Layer 2 (IP)

- Convert to/from native video protocol
- Requires low-latency (dedicated) fast IP link(s)
 - 1.4 Gb/sec
- Involves computers!
- Requires careful software & hardware tuning



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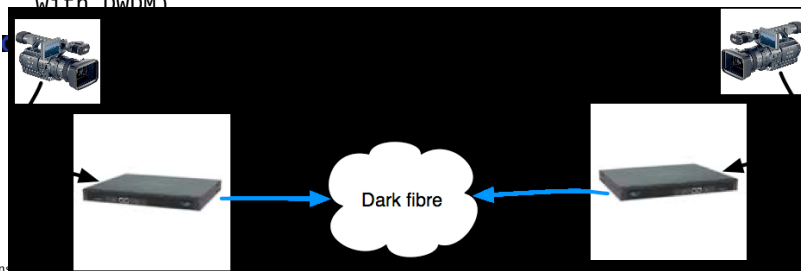
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HD Video : SMPTE 292M over fibre



■ Optical network approach

- Native video protocol end-to-end
- Requires point-to-point dark fibre (or a raw wavelength)
- Plug-and-Play - no computers!
- Just works (or not)
- Medium distance - Up to 70km (Long distance possible with DWDM)



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A taste of the future...



- SABRENet 'distributed' launch - 9 March 2007
- Mawson Lakes and Flinders University - 40 km apart
- Two-way uncompressed 'real' HD video
- 2 x 1.4Gb/sec
- ~20 ms latency
- Finale:
 - Lydia Sharrad (flute) and Nicolas Storrie (clarinet)
 - Handel's Sonatina and Lacome's Passepied
 - Here goes...

Lydia and Nick



See
http://www.sabrenet.edu.au/launch_music_01

Thank You



Questions?