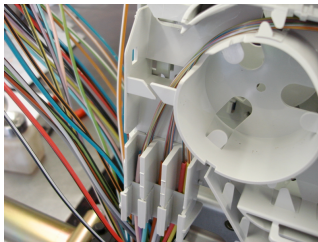




The South Australian Broadband Research and Education Network (SABRENet)

James Tizard
CEO, SABRENet Ltd

July 2006



Overview

"SABRENet is an customer-owned optical fibre network connecting most major R&E sites in Metropolitan Adelaide"

- Background
- Start-up
- The Network
 - Sites
 - Architecture & technology
- Construction tender
- Construction status
- Planned uses
- Business Model
- Challenges & lessons
- Pictures

Background



- 2002
 - HEBAC Report - 'market failure'
- 2003
 - SABRENet Project Board:
 - SA Universities, SA Government, DSTO, CSIRO
 - DEST (AREN) funding - \$5.8m
- 2005
 - RFT
 - Contracts
 - SABRENet Ltd

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Getting Started



- SA Consortium for IT&T (SACITT)
 - Formal oversight - incorporated entity
- SABRENet Project Board 2003-2005
 - UniSA, UofA, Flinders, SA Government, CSIRO, DSTO
 - Informal status, 26 Meetings, grant applications, partner funding commitments.
 - Appointed project manager (SKM)
 - Released tender
- SABRENet Tender
 - Public EOI (December 2004)
 - RFT to EOI respondents (April 2005)
 - Contract with Amcom Pty Ltd (November 2005)
- SABREnet Ltd

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- Public Company Limited by Guarantee (Sep 2005)
- 'Public good' R&E Objectives built into Constitution
- Members: Flinders, University of Adelaide, UniSA, SA Government, (DSTO)
- Board of Directors: University IT Directors + DFEEST D/CEO
- Non-profit - Benefits (tax) and constraints (commercial, tax)
- No direct Member shareholding (or disbursements)
- Very lean operations
- Funded by the Members
- Hosted in SAPAC

The Network What are we getting?



Construction Tender



- RFT Specified 'Primary' sites, core counts & tech spec only
 - Route left to respondents
- Build to boundary pits only
 - Lead-ins ('tails') as variations
- Fixed price (+ allowance for 'latent conditions')
- Underground build only - No power-lines or leased infrastructure
- Dark fibre only - No managed services
- Invited 'innovative' proposals
- Multiple 'serious' proposals
- 12 month construction
- AS4902 standard construction contract
- \$8 million approx

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Primary Sites



- 'Required' sites in RFT
- All major metro R&E sites (but one)

AARNET POPs 1 & 2
DSTO Edinburgh
Flinders University
Flinders Medical Centre
Lyell McEwin Hospital
Mawson Lakes Satellite
Base Station
PIRSA Roseworthy
Thebarton Bioscience
precinct
Uni Adel Nth Tce Campus

PIRSA Waite
Queen Elizabeth Hospital
Repat Hospital
Residential Colleges
Royal Adelaide Hospital
SA Govt CBD POPs
Thebarton Bioscience
Precinct
Womens & Childrens
Hospital

Uni Adel National Wine
Centre Campus
Uni Adel Roseworthy
Uni Adel Thebarton
Uni SA City East Campus
Uni SA City West Campus
Uni SA Magill Campus
Uni SA Mawson Lakes
Campus

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Architecture overview



- Fully passive, dark-fibre network
 - Participants are allocated unlit fibre paths between sites
 - ...which they will 'light'
 - Typically 1/10 GB ethernet
- All SABREnet and member owned duct
- Redundant CBD loop
- No geographic redundancy on backbones
 - 'Linear' nature of Adelaide
- Primary site tails fusion-spliced into the network
- Centrally managed: maintenance, fault response, core allocation etc

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Progress - Where are we up to? (July 2006)



- CBD Loop
 - Complete ✓
- South Backbone
 - Complete ✓
- East Backbone
 - Civil works complete - hauling imminent ✓
- North backbone
 - CBD to Mawson Lakes - civil works nearing completion; some hauling complete ✓
 - Mawson lakes to Roseworthy - scheduled
- West backbone
 - Scheduled

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Planned and potential uses



- On day one...
 - Dark fibre to dual AARNet POPs - extends the AREN
 - University MANs
 - e-Research and HPC (SAPAC)
 - 10 Gb wavelength to VPAC
 - Teaching hospitals
 - State Government research institutions (PIRSA, IMVS etc)
 - DSTO
- And in the future...
 - Schools (gigabit trial)
 - TAFE
 - Commercial R&D ?

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Business Model



- Participants Agreement
 - Unlit fibre path allocations – Access Agreements (IRUs)
 - Shared operational costs via annual subscription
 - < \$2k per fibre path per annum
- Operations & Maintenance
 - 20 year O&M Agreement with Amcom
 - Fault repair, DB4YD, documentation, adds/changes etc
 - Nominated Carrier Declaration ✓
 - Some commercial access rights
 - Acceptable use
 - Similar to AARNet - but fewer commercial constraints on SABRENet Ltd
- 'Spare' capacity
 - Strategic asset to pursue Company's R&E objectives
 - Potential for revenue - within non-profit constraints (cost recovery)
 - (but not just yet...)

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Lessons learned



- It can be done!
- Simplicity is a virtue
 - Constitution, Board, Company, Commercial, Services, Technology, Operations
- Land Access
 - Not generally the problem we expected - localised issues only
 - Carrier Powers plus “AB4YD”
 - State Government ‘inside the tent’
- Constructor buy-in
 - Long-term relationship + Carrier powers (NCD)
- Metropolitan Rail Corridors
 - There’s a lot of stuff down there
- AS4902 - pros and cons
- ‘feel good’ project

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Acknowledgements



- SA Consortium for IT&T (SACITT)
- DEST - Funding and encouragement
- Technical Reference Group
- State Government
- SAPAC
- Councils and Utilities
- Directors
 - Paul Sherlock, Clive Martis, Mark Legg, Craig Fowler

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More Information



- www.sabrenet.edu.au
 - Six-month Report
 - News
 - Gallery (cc)
- Me
 - james.tizard@adelaide.edu.au

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Pictures



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The very beginning



January 24 2006

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Project Management



Site visit

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Wednesday, 19 July 2006

Drill Rig



War Memorial Drive

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Drill Head



\$30,000 worth

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Site Visit



On the job...

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River Crossing



Surveying the route

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CBD Loop



Pit installation

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Suburban streets



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DB4YD



Avoiding an electrical main

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No DB4YD



what pipe? ... oh, right.

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Rail Corridor



Not much room...

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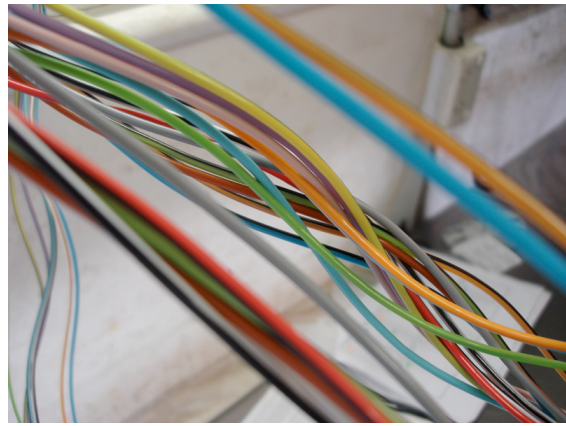
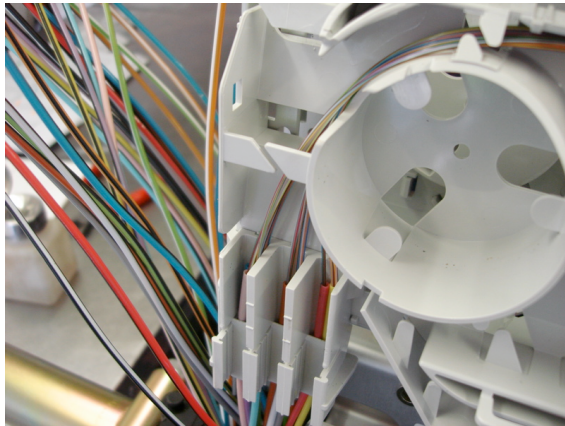
Rail Corridor (SA Water easement)



Slit-trench, conduit ready for installation

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Fibre Enclosure



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CBD



North Terrace

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Wednesday, 19 July 2006

Movies

○ fingers crossed...

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Drill Rig



In the parklands

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Drill Rig



Changing rods

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Rail Corridor



Hauling conduit - part 1

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Rail Corridor



Hauling conduit - part 2

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Thank You

○ Questions?

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