Victorian Education and Research Network

Population
Victoria | 6 Million
Australia | 23 Million
Only two incorporated regional network operators

SABRENet

VERNet
VERNet began life as a fibre construction project

- 9 universities and the Commonwealth Scientific and Industrial Research Organisation
- Members wanted access to all dark fibre
- Commercial market was unable to construct due to high regional component
- 1118 miles of fibre
VERNet originally designed to construct fibre to two diverse locations per site
Shotgun damage in rural areas
Rock – could increase our costs from $30/ft to $120/ft
The project became an incorporated regional network operator

- Began construction/swaps in 2005
- Network took 4 years to complete
- Thick dark fibre everywhere proved uneconomic
- Nortel/Ciena DWDM 6500
- Began as 1Gbps now 100Gbps enabled – testing 400Gbps
VERNet’s unbundled services provides customers with flexibility and visibility of costs

1. Physical
2. Data Link
3. Network
4. Transport
5. Session
6. Presentation
7. Application
Unbundled products

**Wide Area Network**
1-100 Gigabit Ethernet
STM-64
STM-256
1-10 Gigabit VPLS
1-10 Gigabit Private IP

**Collaborative Network Products**
1-10 Gigabit Private IP Peering
1-10 Gigabit Public IP Peering
Commodity Internet

**Data Centre**
1, 2, 4, 8 or 10 Gigabit Fibre Channel
1, 10, 40 or 100 Gigabit Ethernet Interconnect
1-10 Gigabit IP Interconnect
Product portfolio – offering customers 1 - 100Gbps

[Diagram showing growth in network capacity from 2007 to 2015, with labels for VERNet product and Projected member demand at incorporation]
Hospitals connected to the VERN
The operating model addresses five critical dynamics...

1. Share the network's capacity
   - Members will pay for the cost of circuit capacity they're allocated plus a share of what's unallocated (in a common pool)

2. Share the costs (pricing)
   - Spare capacity can be "sold" to non-member R&E organizations (at a margin above that for members) thereby reducing costs for members

3. Allow access by non-members

4. Foster new investment
   - New investment will be needed to replenish, extend or expand the network (and can be funded by members, government or non-members)

5. Plan collaboratively and cyclically
   - A planning cycle can synchronize network demand, capacity and capital budgeting for members and the company
THE FUTURE
Potential for peering or transit arrangements
Extending the research network overseas
Areas of interest

• Business models for regional network operators
• Benchmarking
• Access to Australian and Antarctic climate data
Thank You