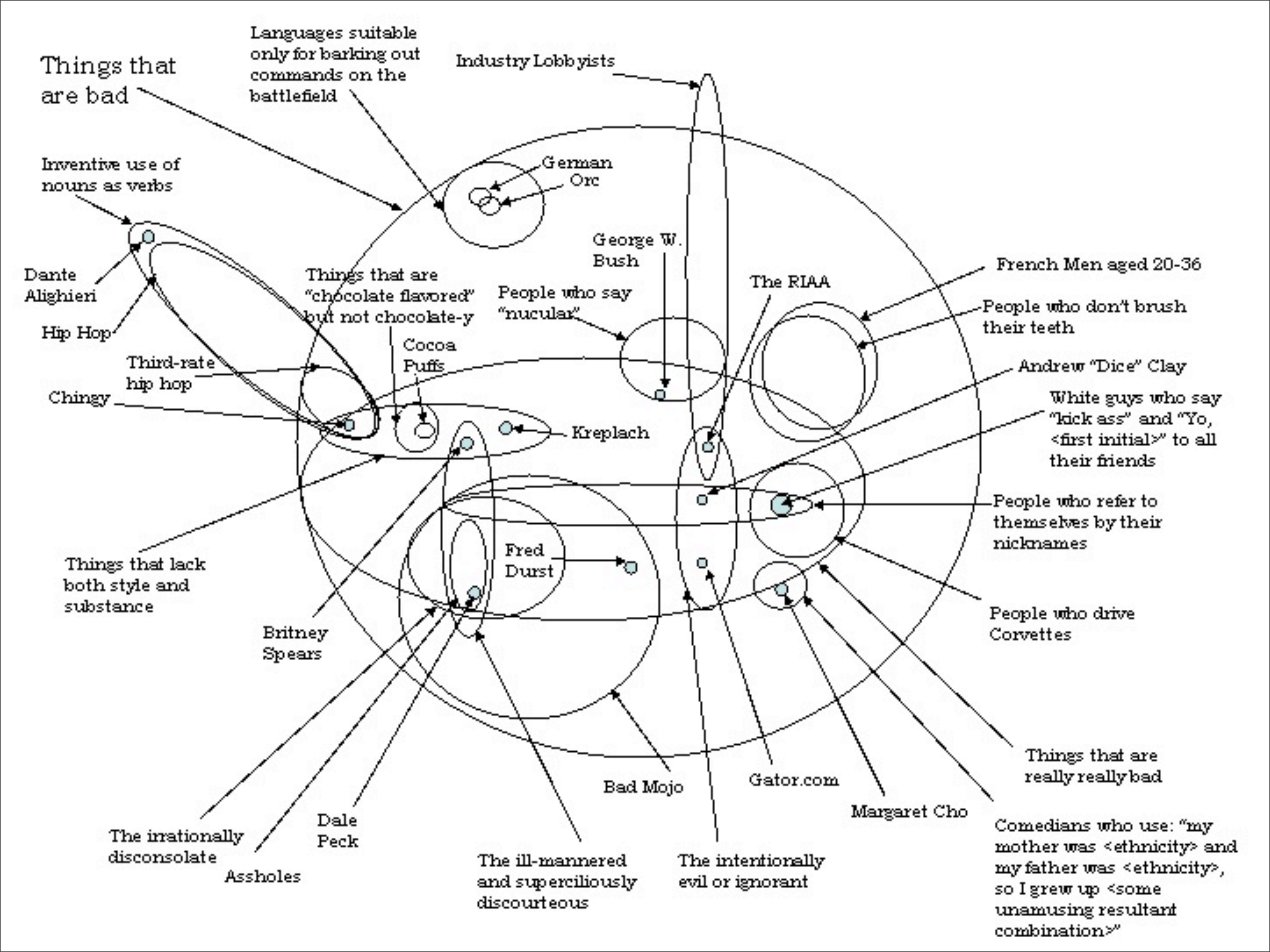
Things that are bad
Languages suitable only for barking out commands on the battlefield
Industry Lobbyists
Inventive use of nouns as verbs
German
Orc
George W. Bush
Dante Alighieri
Things that are "chocolate flavored" but not chocolate-y
People who say "nucular"
The RIAA
French Men aged 20-36
People who don't brush their teeth
Hip Hop
Cocoa Puffs
Third-rate hip hop
Andrew "Dice" Clay
Chingy
Kreplach
White guys who say "kick ass" and "Yo, <first initial>" to all their friends
People who refer to themselves by their nicknames
Fred Durst
Things that lack both style and substance
People who drive Corvettes
Britney Spears
Things that are really really bad
Bad Mojo
Gator.com
Margaret Cho
Comedians who use: "my mother was <ethnicity> and my father was <ethnicity>, so I grew up <some unamusing resultant combination>"
The irrationally disconsolate
Dale Peck
Assholes
The ill-mannered and superciliously discourteous
The intentionally evil or ignorant

NBN:

Our future
High Fibre Diet

QuestNet 201
15 July 2011
Simon Hackett
MD, Internode

Internode Background + Context

NBN Background + Challenges

Marketplace Transition Challenges

Internode Background + Context

From AARNet v1 to the dawn of the NBN


Standard
Network
Management
Partner
EPILOGU
TECHNOLOGY COR
"WHY A 4GL TOASTER? I DON'T THINK YOU'D ASK THAT QUESTION IF YOU THOUGHT A MINUTE ABOUT HOW TO BALANCE THE MAXIMIZATION OF TOAST DEVELOPMENT PRODUCTIVITY AGAINST TOASTER RESOURCE UTILIZATION IN A MULTI-DINER ENVIRONMENT."


TGV
MultiNet™

```
Partial AARNET Map of Australian Links.
---------------------------------------

                             +--------ips.oz.au
                             |
                         su.oz.au
                             |
uow.edu.au---------------+   |
nsw.gw.csiro.au----------+   |
ansto.gov.au-------------+   |
une.oz.au----------------+   |
uts.edu.au---------------+   |             (10ms/s)
newcastle.edu.au---------nsw.gw.au--------------------------------unsw.oz.au
mqu.edu.au---------------+   |
uws.edu.au---------------+   |
                             |                       gbrmpa.gov.au-----+
                             |                       aims.gov.au-------+
abare.gov.au--------------+  |                                         |
dotc.gov.au---------------+  |                           +---------jcu.oz.au
ausseis.gov.au------------+  |(2mb/s)                    +--------usq.edu.au
nla.gov.au----------------+  |            (2mb/s)        +----------bu.oz.au
adfa.oz.au----------------+  |            +------qld.gw.au----------uq.oz.au
anu.edu.au----------------act.gw.au       |              +--------ucq.edu.au
bmr.gov.au----------------+  |            |              +--------qut.edu.au
canberra.edu.au-----------+  |            |              +---------gu.edu.au
                             |(2Mb/s)     |
                             +--+         |
cowan.edu.au-----+              |         |                   (512kb/s)
murdoch.edu.au---wa.gw.au-------national.gw.au-----usa.gw.au -----------> USA
uwa.edu.au-------+              |     |   |  |
curtin.edu.au----+              |     |   |  |
                                |     |   |  |
                                |     |   |  +----nt.gw.au--------ntu.edu.au
     +----internode.com.au      |     |   |
     |                          |     |   |
adelaide.edu.au------+          |     |   |
ua.oz.au-------------+   (2Mb/s)|     |   |               +----antdiv.gov.au
flinders.edu.au------sa.gw.au---+     |   +-------tas.gw.au------utas.edu.au
unisa.edu.au---------+                |
     |                                |
```

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Partial AARNET Map of Australian Links.
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                             +--------ips.oz.au
                             |
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uow.edu.au---------------+   |
nsw.gw.csiro.au----------+   |
ansto.gov.au-------------+   |
une.oz.au----------------+   |
uts.edu.au---------------+   |             (10ms/s)
newcastle.edu.au---------nsw.gw.au--------------------------------unsw.oz.au
mqu.edu.au---------------+   |
uws.edu.au---------------+   |
                             |                       gbrmpa.gov.au-----+
                             |                       aims.gov.au-------+
abare.gov.au--------------+  |                                         |
dotc.gov.au---------------+  |                           +---------jcu.oz.au
ausseis.gov.au------------+  |(2mb/s)                    +--------usq.edu.au
nla.gov.au----------------+  |            (2mb/s)        +----------bu.oz.au
adfa.oz.au----------------+  |            +------qld.gw.au----------uq.oz.au
anu.edu.au----------------act.gw.au       |              +--------ucq.edu.au
bmr.gov.au----------------+  |            |              +--------qut.edu.au
canberra.edu.au-----------+  |            |              +---------gu.edu.au
                             |(2Mb/s)     |
                             +--+         |
cowan.edu.au-----+              |         |                   (512kb/s)
murdoch.edu.au---wa.gw.au-------national.gw.au-----usa.gw.au -----------> USA
uwa.edu.au-------+              |     |   |  |
curtin.edu.au----+              |     |   |  |
                                |     |   |  |
                                |     |   |  +----nt.gw.au--------ntu.edu.au
     +----internode.com.au      |     |   |
     |                          |     |   |
adelaide.edu.au------+          |     |   |
ua.oz.au-------------+   (2Mb/s)|     |   |               +----antdiv.gov.au
flinders.edu.au------sa.gw.au---+     |   +-------tas.gw.au------utas.edu.au
unisa.edu.au---------+                |
                                      |
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INTERNODE SYSTEMS

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Fax (Intl) +61 8 373 4911

1991 - 2011

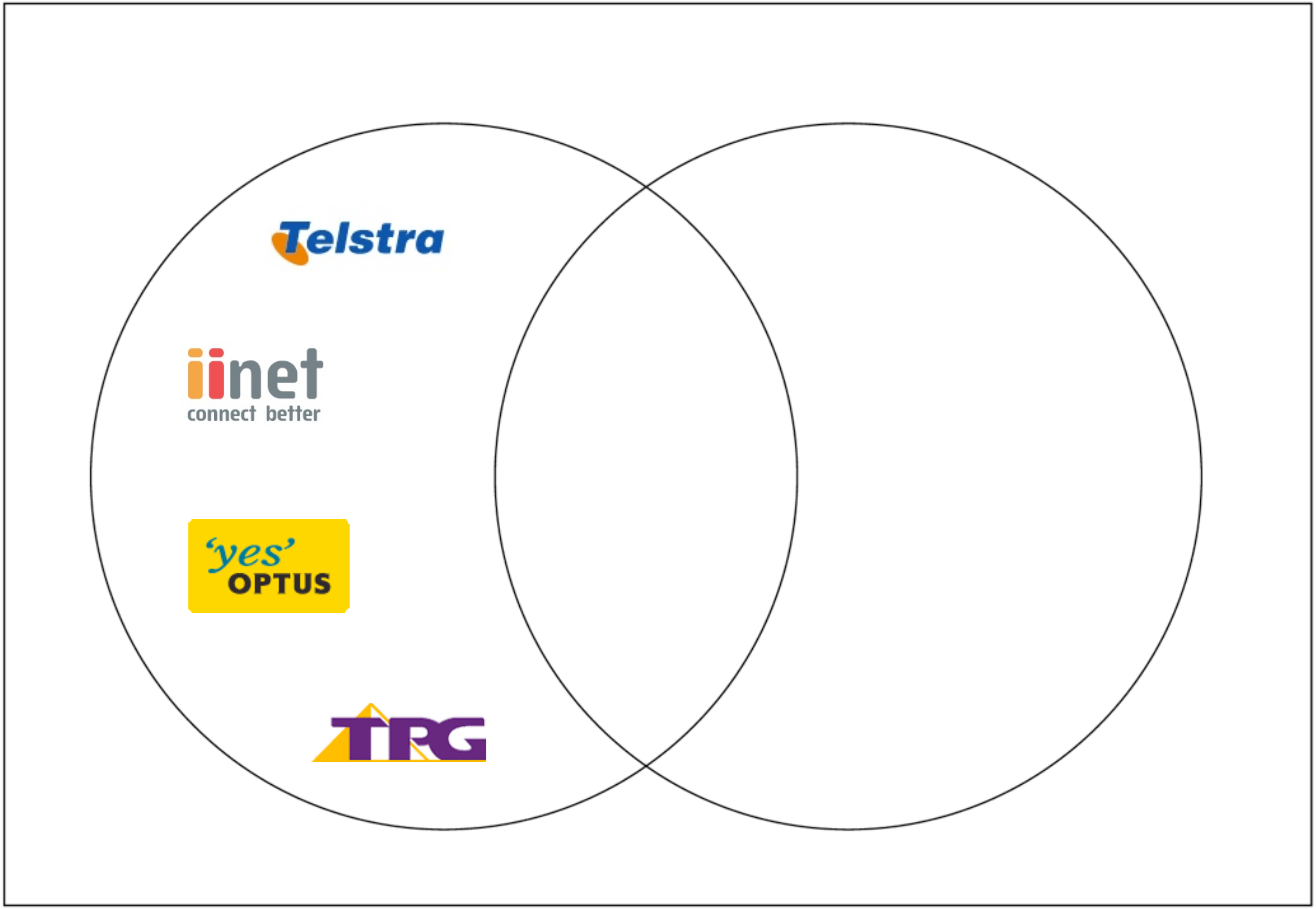
20 Years

Stuff We've Been Up To

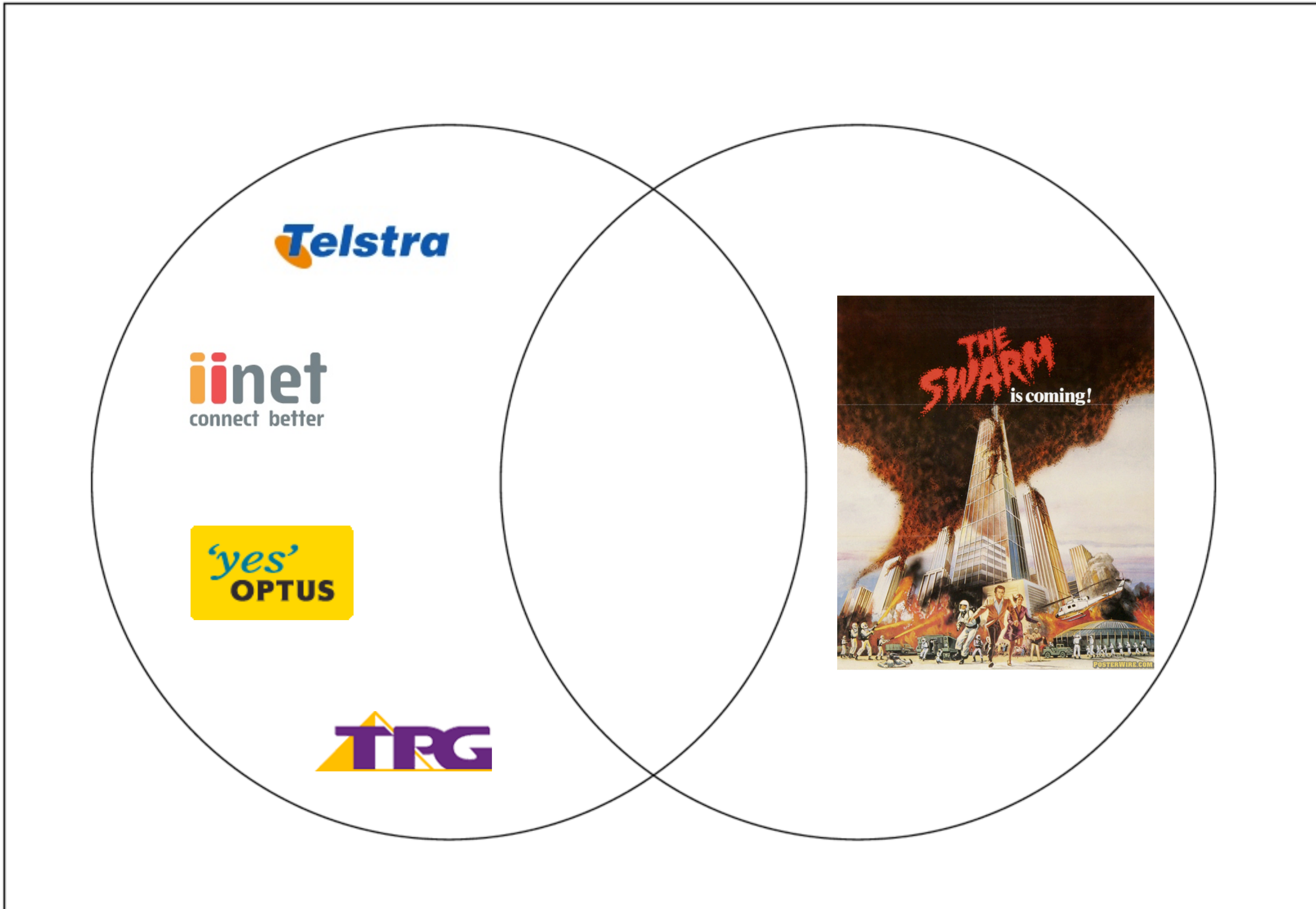
- NBN Leadership
  - First customers in Tasmania (July 2010)
  - First customers in Armidale (May 2011)
  - First customers in Willunga (June 2011)
- IPv6 Commercial ISP Leadership
- Fritz!Box (IPv6 native dual stack) CPE
- FetchTV


Stress-free Internet.
Internode
.com.au

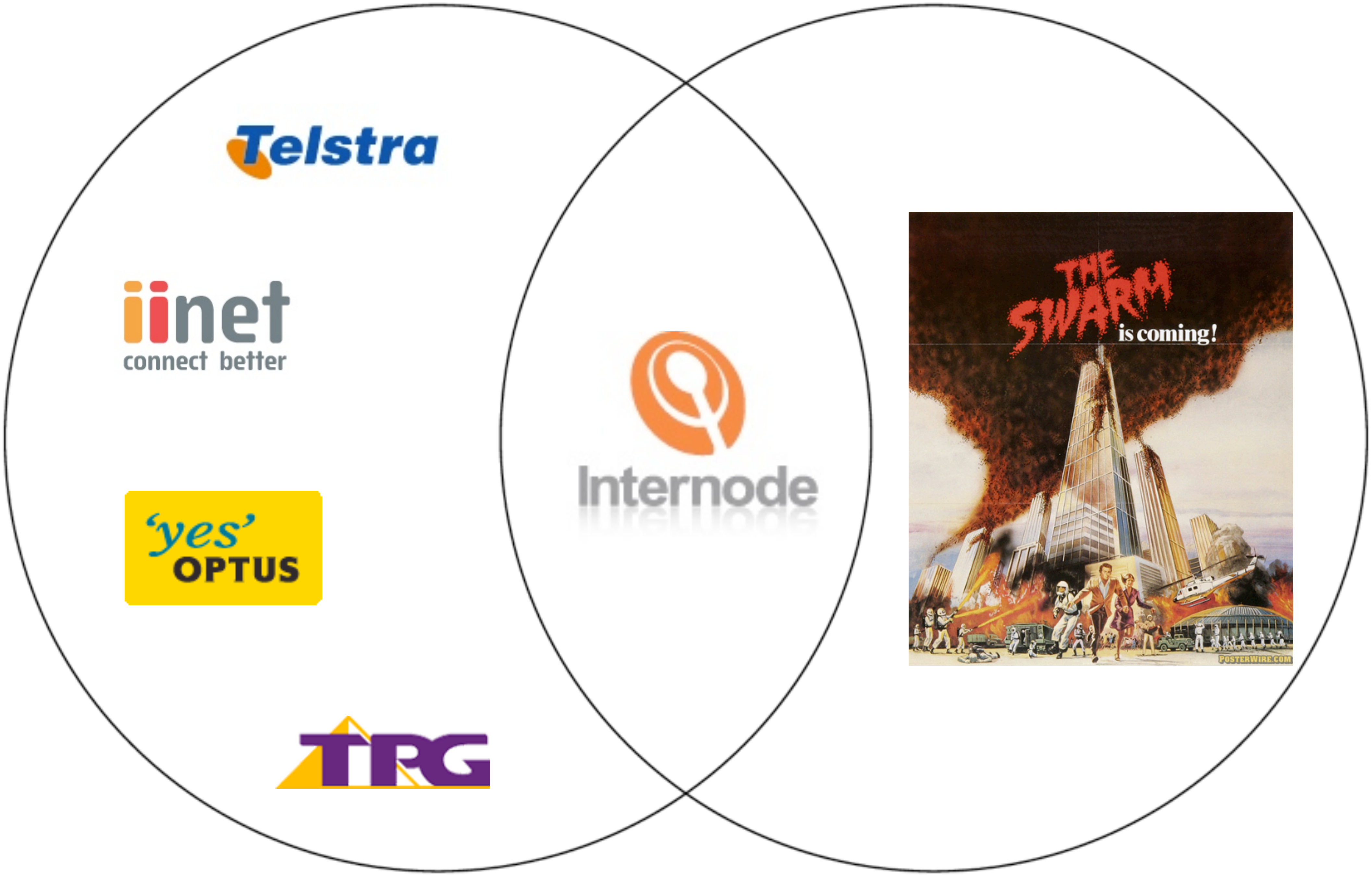
Market Position



Market Position



Market Position



Largest of the Small

Smallest of the Large

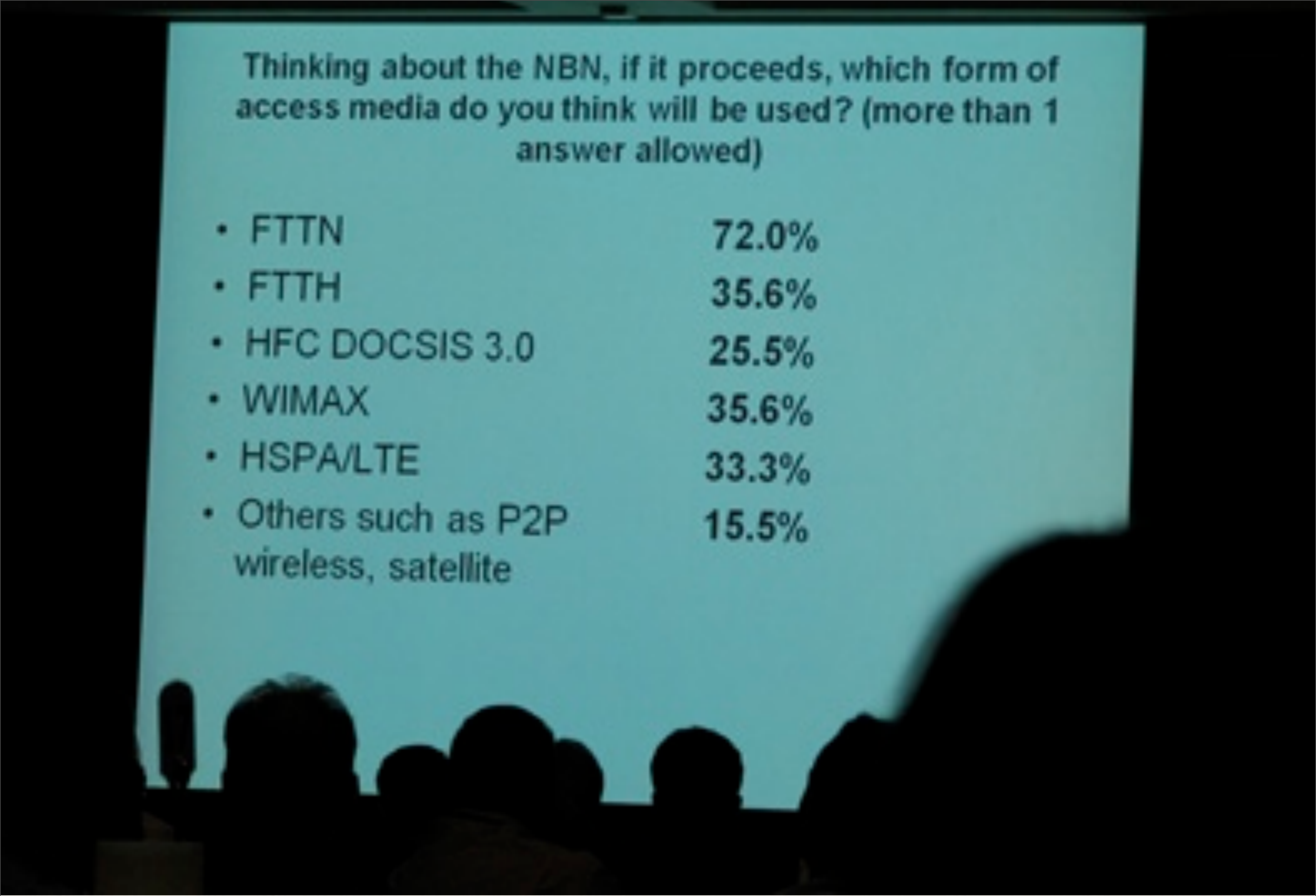
Its *all* about bundling

NBN

Background

+

Challenges



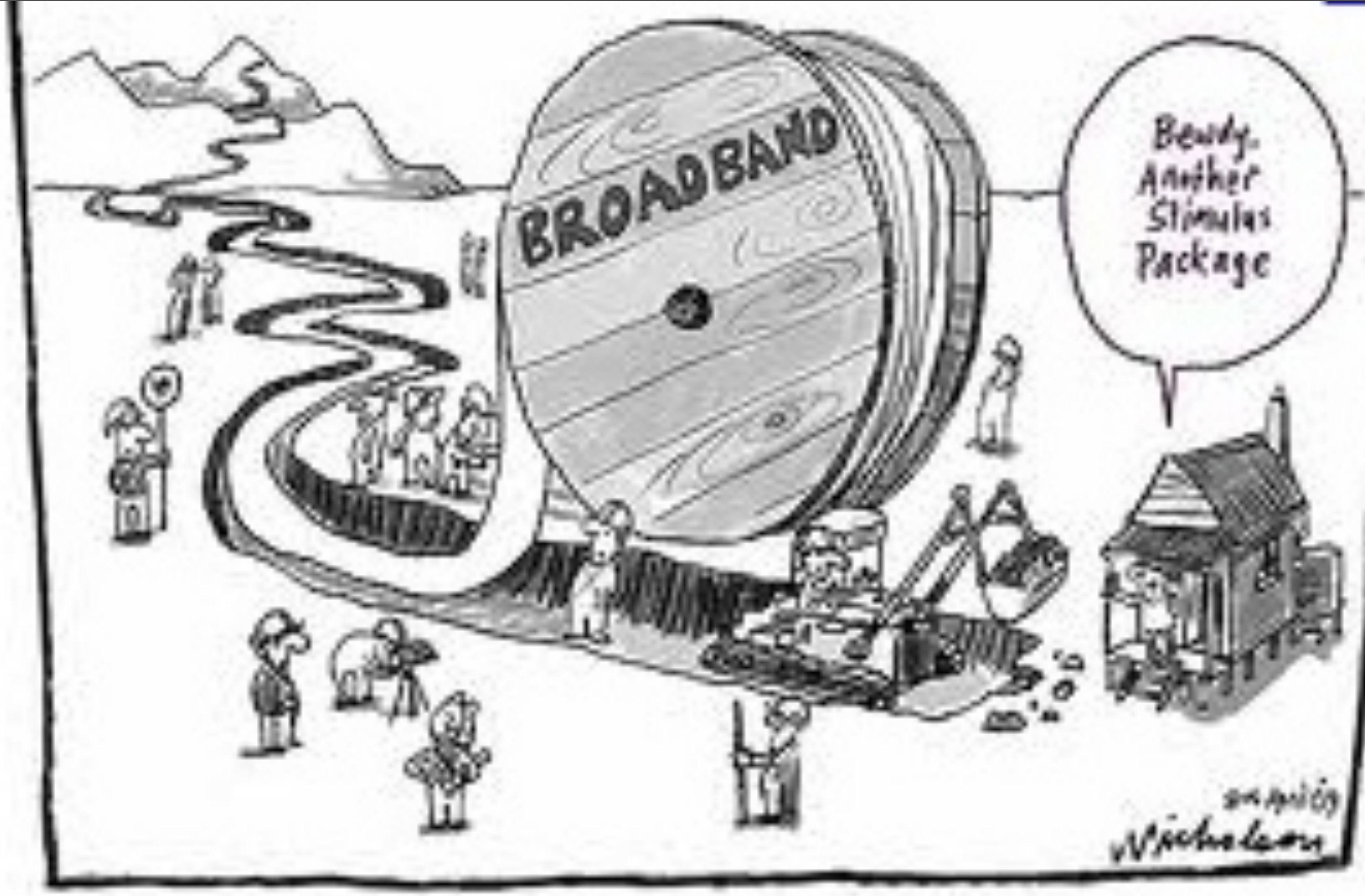
Industry was used to government *doing it over* rather than *doing it right*

And then...

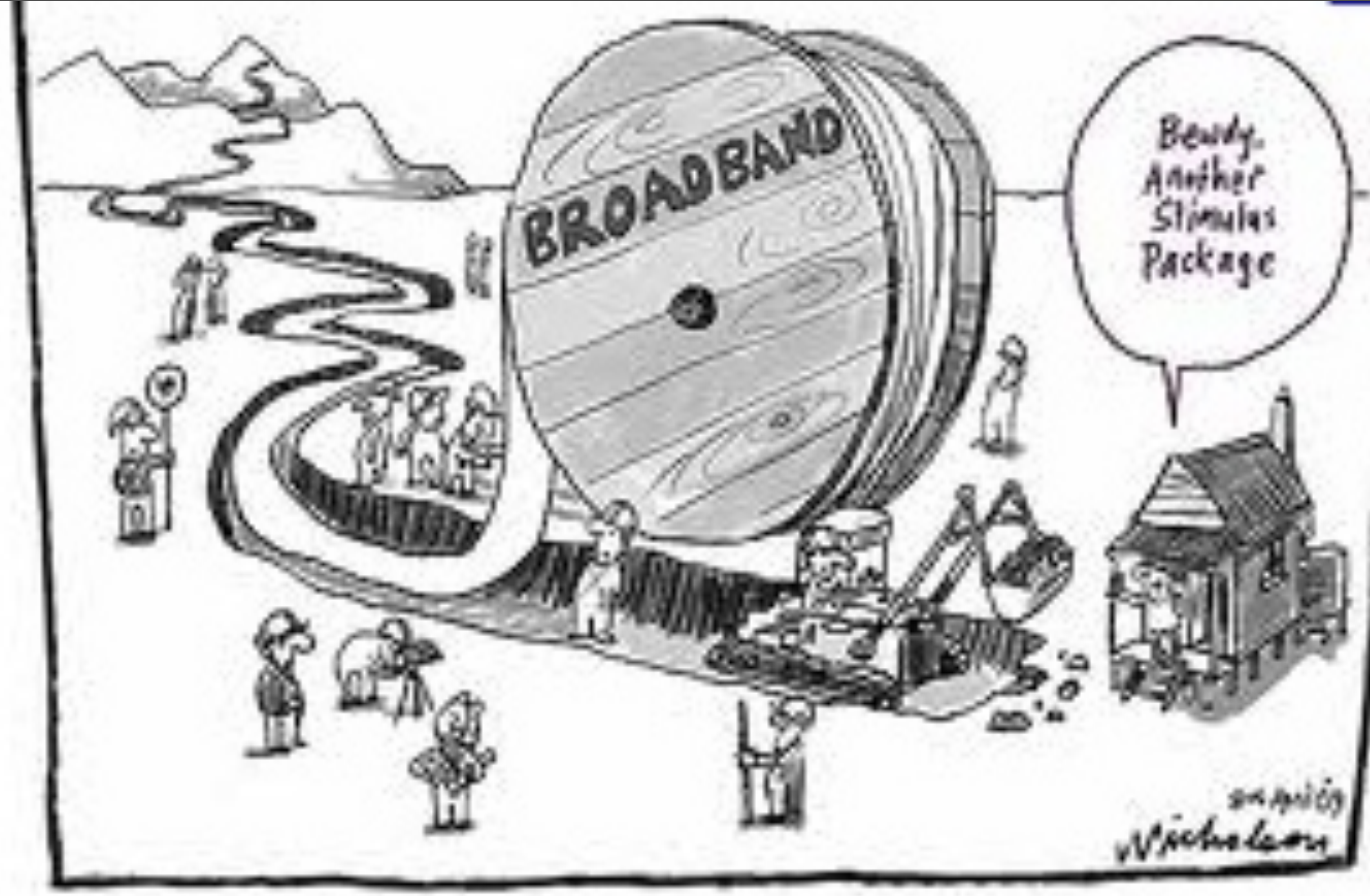
... out of the blue...

The Great NBN
FTTH Announcement


Hell



This was a GFC Recovery Policy



This was a GFC Recovery Policy

...but...

Now it is a Venture Capital Investment

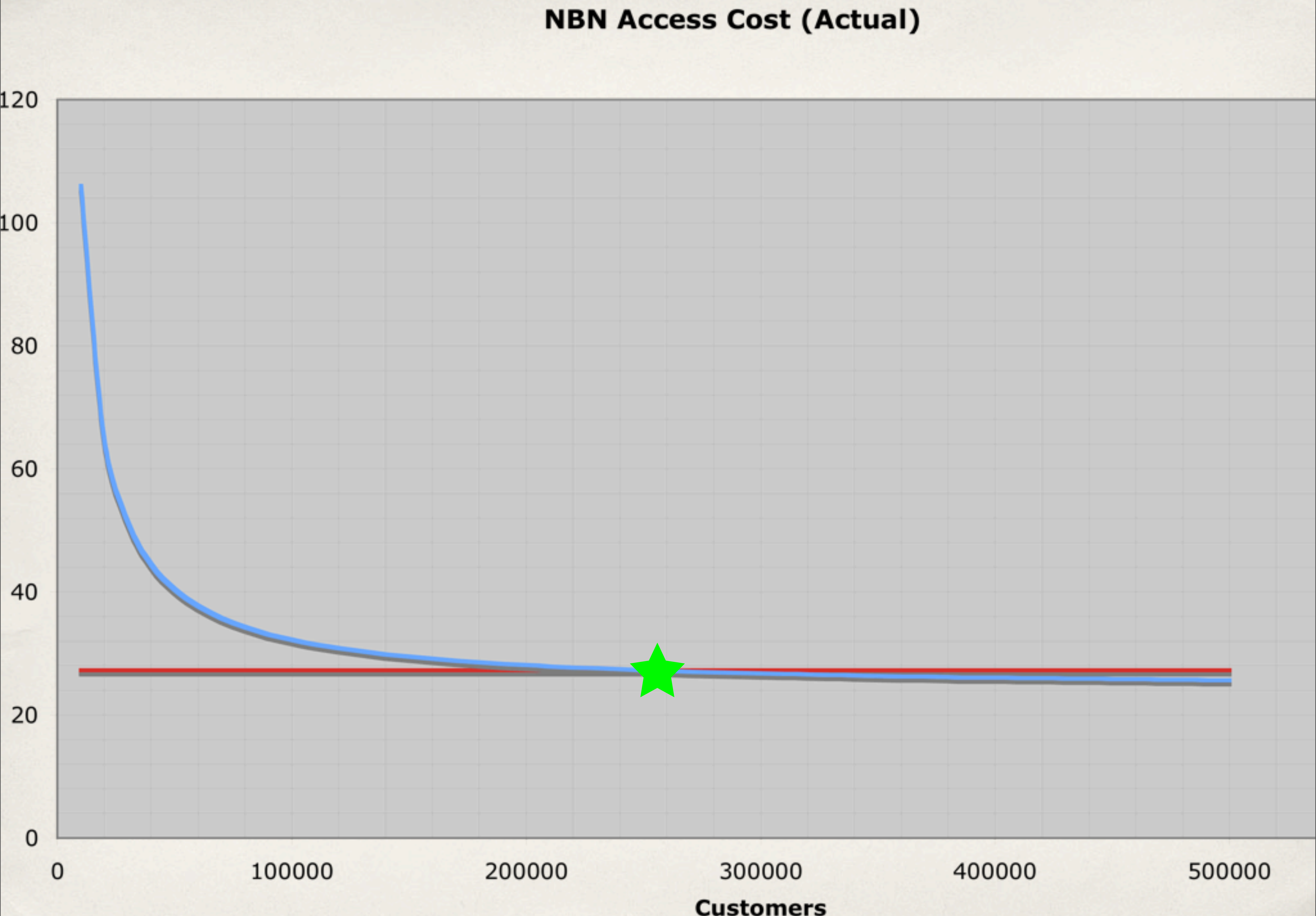
NBNCo Limited

NBN Co Wholesale Access Service

Product and Pricing Overview for Access Seekers

December 2010

	User Network Interface	Access Virtual Circuit		Connectivity Virtual Circuit		Network-Network Interface
Product	Data	TC_4 12Mbps/ 1Mbps	TC_1 150kbps	TC_4 150 Mbps	TC_1 20Mbps	1 Gbps short
Pricing	Incl in Access Virtual Circuit	$24		$2150[4]		$200
Quantity	250,000 1 per customer	250,000 1 per customer		200 1 per Connectivity Serving Area		120 1 per Point of Interconnect
Sub total	N/a	$6,000,000		$430,000		$24,000
Total; MRC	$6,454,000 Monthly Recurring Charge (MRC) or $25.82 averages across all customers					
Total NRC	$1,000 Non-Recurring Charge (NRC) for each Network –Network Interface $120,000 once off.					


NBN Access Cost (Actual)
120
100
80
60
40
20
0
0
100000
200000
300000
400000
500000
Customers

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NBN Business Case Says $33/Mth!

14 Points of Interconnect Becomes 121

Australian
Competition &
Consumer
Commission

INFO

ACCC HOME

The ACCC

- For consumers
- For businesses
- For regulated industries

- About us
- Publications
- Public registers
- Media centre
  - Media background
  - News releases
  - Speeches
  - Conferences
  - Photographs and

ACCC home → The ACCC → Media centre → News releases → News releases by topic → For regulated industries → Communications → ACCC announces outcome of NBN points of interconnect confirmation process

ACCC announces outcome of NBN points of interconnect confirmation process

The Australian Competition and Consumer Commission today issued a revised list of initial points of interconnect* (POI) to the National Broadband Network (NBN).

"The revised list represents the agreed number and location of initial POI to the NBN. It follows a public confirmation process into the 120 initial POI that was developed by NBN Co in consultation with the ACCC and published in December last year," ACCC chairman Graeme Samuel said.

Submissions to the public confirmation process suggested the relocation, addition and consolidation of a number of POIs. The ACCC and NBN Co have considered the submissions in light of the competition criteria in the ACCC advice to government and the NBN Co planning criteria released in December.

=> Far higher overheads for all RSPs (*except Telstra*)

OUTCOMES DRIVEN BY 121 POI DECISION

Australian Competition & Consumer Commission

- No longer a national network with dual/redundant state capital PoPs: It is now 121 separate regional networks
- Less reliable: No failover if a POI is unavailable
- Uniform Retail Pricing won't be assured
- Dramatically higher fixed overheads + backhaul cost
- Telstra remains the economic monopolist
  - Owns fibre to all POIs (permanent cost advantage)
  - Owns the building for most POI's sites
  - Gets paid 'Eleventy Billion Dollars' as well (!)
- Smaller national providers forced to use aggregators
- National RSP participation and viability damaged

OUTCOMES DRIVEN BY FEDERAL POLICY ON RETURN RATE

- Government ROI -> NBNCo -> RSP's -> retail price

- Network cost funded by consumers via retail fees
  - Its not a grant or subsidy based network - its commercial
  - Once built the network will be sold to complete the VC cycle

- Last decade of retail price improvement will halt for some time
  - Upward pressure on high speed, high capacity retail prices

- A toll road - and all the old roads will be gone

OUTCOMES DRIVEN BY NBNCo COST MODEL

- National average $33 (+GST) NBNCo income required
- Entry Speed/Entry Quota prices set artificially low (ca. $25)
  - To support historical price for fixed line voice services
- CVC pricing set artificially high ($20/Mbit) as a consequence
  - Pricing hacks to hide true CVC cost on entry level plans
- Drives high speed and high download prices upward
- 121 POI decision magnifies this outcome (*except Telstra!*)
- ‘Small’ RSPs forced via aggregators
- Services sold only as a wholesale voice + data bundle
  - The end of “Split Bundles”

Sovereign Risk

(politics can be full of surprises)

Marketplace

Transition Challenges

Consumers generally understand how a competitive marketplace works

FAIR PLAY

If someone tries to kill you, kill 'em right back.

Unfortunately its *not* a free market in Australian telecommunications

‘Deals’ in a monopoly market aren’t like a normal commercially negotiated arrangement

Australian
Competition &
Consumer
Commission

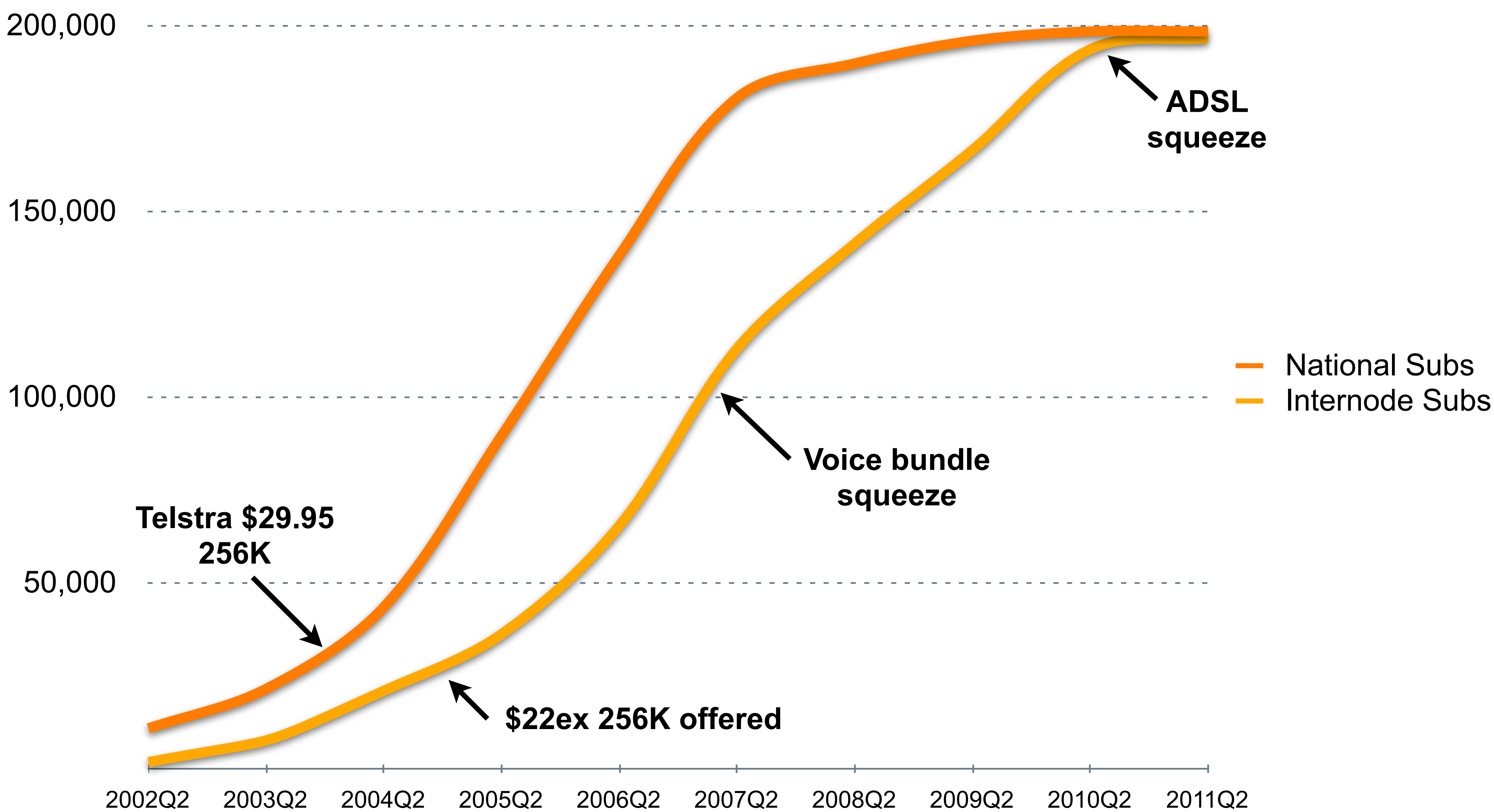
The ACCC's role is to use the TPA to simulate the outcome of a competitive market environment

THE MARKET SUFFERS REGULAR PRICE SQUEEZES

Price Squeeze History

National Subs
Internode Subs

Price Squeeze History



Australian
Competition &
Consumer
Commission

Each time this happens the ACCC intervenes (eventually)
This leads to wholesale pricing remedy

However, this time...

(cue the sound of crickets)

The existing monopoly dominated market
will be with us a long time

Australian
Competition &
Consumer
Commission

Consumers without infrastructure based competition are being re-monopolised while the NBN is being built

ACCC inaction is allowing this outcome

Regulatory action *is* occurring in monopoly voice but *not* in monopoly bitstream data services

WHAT I WOULD CHANGE (Given a magic wand)

- Subsidy/grant approach to regional NBN costs
  - Instead of funding via higher retail download costs
- Reverse 121 POI Decision and restore fairness
  - Or: ACCC Declaration of ‘Dark Fibre’
- ACCC Declaration of Wholesale ADSL2+ Services
  - So there is more than one viable and competitive retailer left in regional zones when NBN arrives

Summary:

The crystal ball is a tad cloudy

However:

FTTH NBN is still the best outcome for Australia