



ATUG Third Regional Conference – 11 May 2005, Canberra

The Role of Spatial Analysis

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Agenda

- **Where Have We Come From**
- **Geospatial Analysis**
- **Application of Geospatial Data Mining**
- **Third Party Data**
- **Limitations and Challenges**
- **Looking to the Future**

Where Have We Come From - ADSL

Last updated August 17, 2000

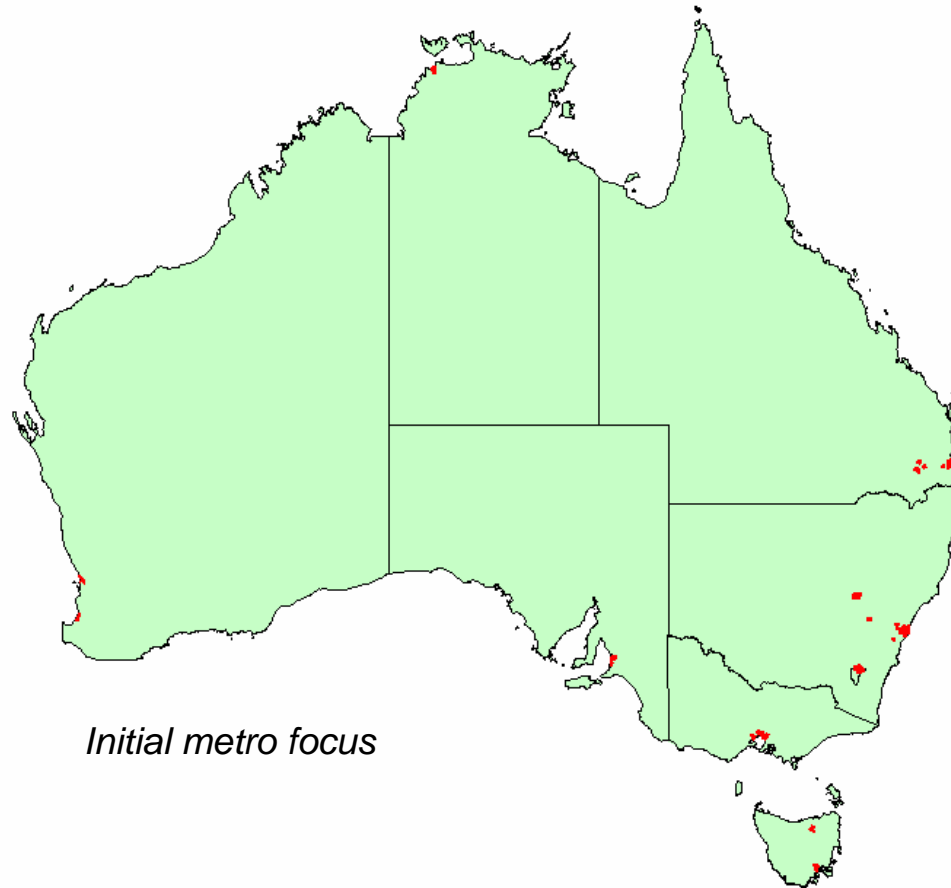
The National List of Exchanges to be ADSL Covered

The following is a list of the exchanges that are to be ADSL enabled. They are tabbed by state.

- Coverage information is indicative only and is subject to change.
- Where a telephone exchange area is shown as being ADSL enabled, there is no guarantee that individual telephone services provided from that exchange will qualify for ADSL service provision. Each service request will be subject to an ADSL Service Qualification process.

ADSL Enabled By	Australian Capital Territory Telephone Number Prefixes	Exchange Name
Aug-00	0121 6207 6208 6209 6212 6215 6216 6253 6272 6273 6277	BARTON
Aug-00	0228 6251 6252 6253 6256 6264 6272	BELCONNEN
Aug-00	0111 6233 6235 6236 6239 6242 6243 6244 6247 6248 6249 6250 6257 6261 6262 6263 6267 6268 6274 6275 6276 6284	SYDNEY
Aug-00	0241 6243 6253 6255 6262	BRIDGE
Aug-00	0104 6104 6107 6108 6109 6106 6111 6114 6121 6124 6241 6242 6243 6244 6245 6246 6247 6248 6249 6250 6251 6252 6253 6254 6255 6256 6257 6258 6259 6260 6261 6262 6263 6264 6265 6266 6267 6268 6269 6270 6271 6272 6273 6274 6275 6276 6277 6278 6279 6280 6281 6282 6283 6284 6285 6286 6287 6288 6289 6290 6291 6292 6293 6294 6295 6296 6297 6298 6299	GEORGE
Aug-00	0238 6238 6201	SYDNEY
Aug-00	0281 6286	WARRAH
Aug-00	0284 6284	BARTON
Aug-00	0232 6238 6200 6285	WARRAH
Aug-00	0286 6286	WARRAH
Aug-00	0288 6288	WARRAH
Aug-00	0291 6291	WARRAH
Aug-00	0284 6287 6289	WARRAH
Aug-00	0121 6254 6255 6278	WARRAH
Aug-00	0124 6208 6244 6283	WARRAH
Aug-00	0287 6288	WARRAH

200 Exchanges
– Aug 2000

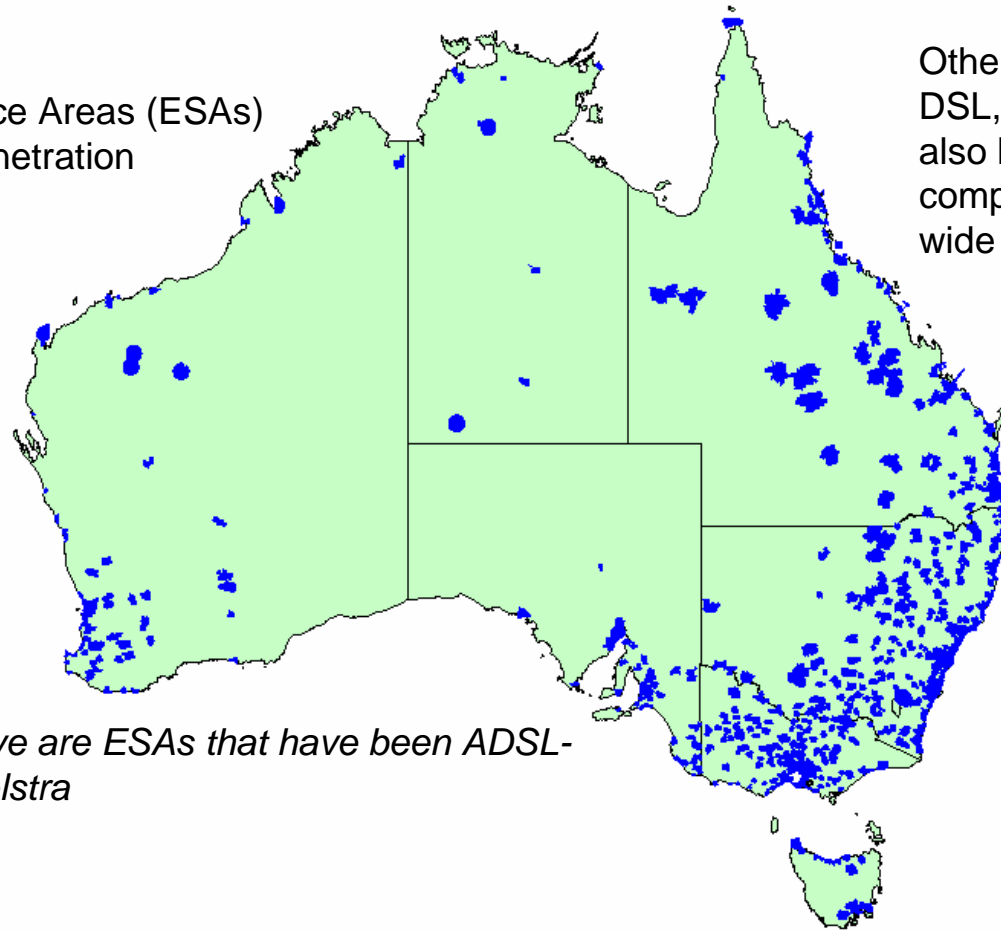


Initial metro focus

Where Are We Today - ADSL

As of 3 May 2005
1,500 Exchange Service Areas (ESAs)
Significant regional penetration
funded under HiBIS

Other eg competitor
DSL, fibre, FWA can
also be included for
comprehensive Australia
wide analysis

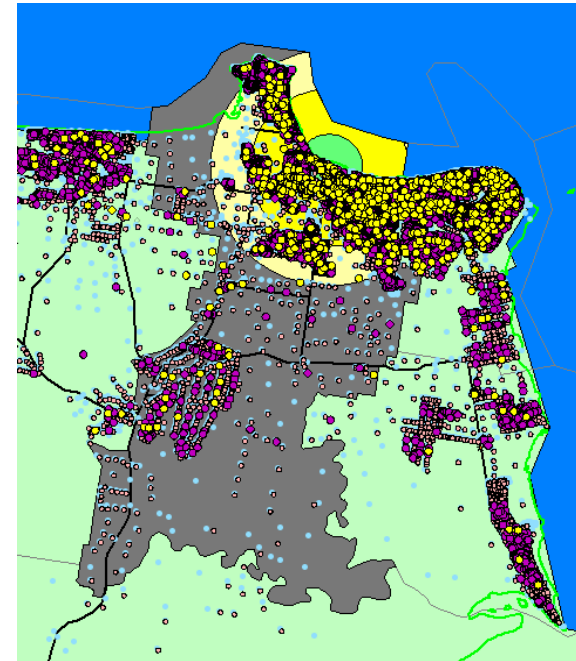


Note: the above are ESAs that have been ADSL-enabled by Telstra

Particularly for regional ESAs, the DSL coverage area is a geographical subset of each ESA

Geospatial methods + Third Party Data = Spatial Modelling

- Spatial spread of Business and Residential demand in relation to notional ADSL coverage areas
- Visualisation (coverage maps) and analysis (distribution of demand by coverage region)
- Need to appreciate third party data and modelling limits



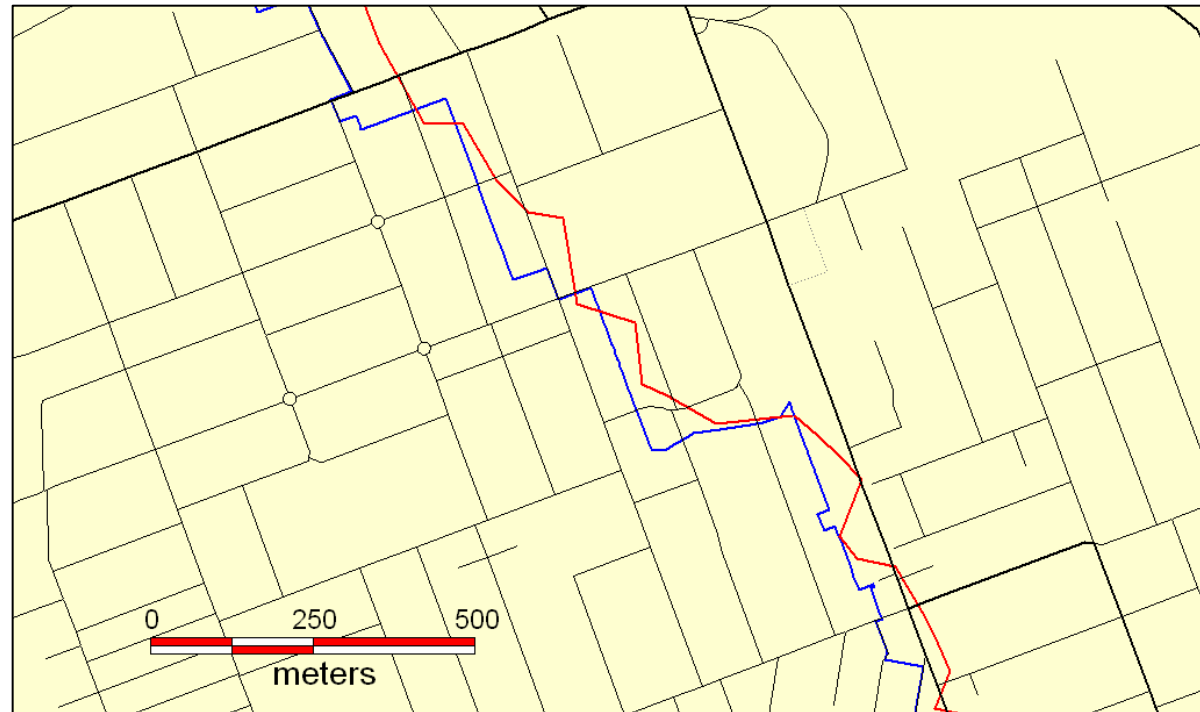
NB: To protect client analysis, the table data relates to a different ESA to the map above

Application of Geospatial Data Mining

- “We have a problem – we’re only permitted to use the exchange boundaries internally, but not with our channel partners. Can you help us?”
- “How can you model *actual* ADSL coverage within an Exchange Service Area, rather than ‘circular proxies’, as obviously copper does not extend in a radial manner from exchanges?”
- “Can you create in-depth coverage and gap analysis for groups of adjacent Local Government Areas?”

“Can you help – we’re not permitted to display exchange boundaries to our channels”

- Callpoint developed and licensed algorithms to Request that derived the approximate extent of Telstra’s ESA’s (2001); refined (2003)
- The algorithms served an important role during Request’s startup phase
- The geodata has recently become commercially available



Example shown – Chatswood, Sydney
Legend:
* Blue Line – Original Telstra exchange boundary
* Red Line – Callpoint computed exchange boundary

“How can you model actual ADSL coverage within an Exchange Service Area”

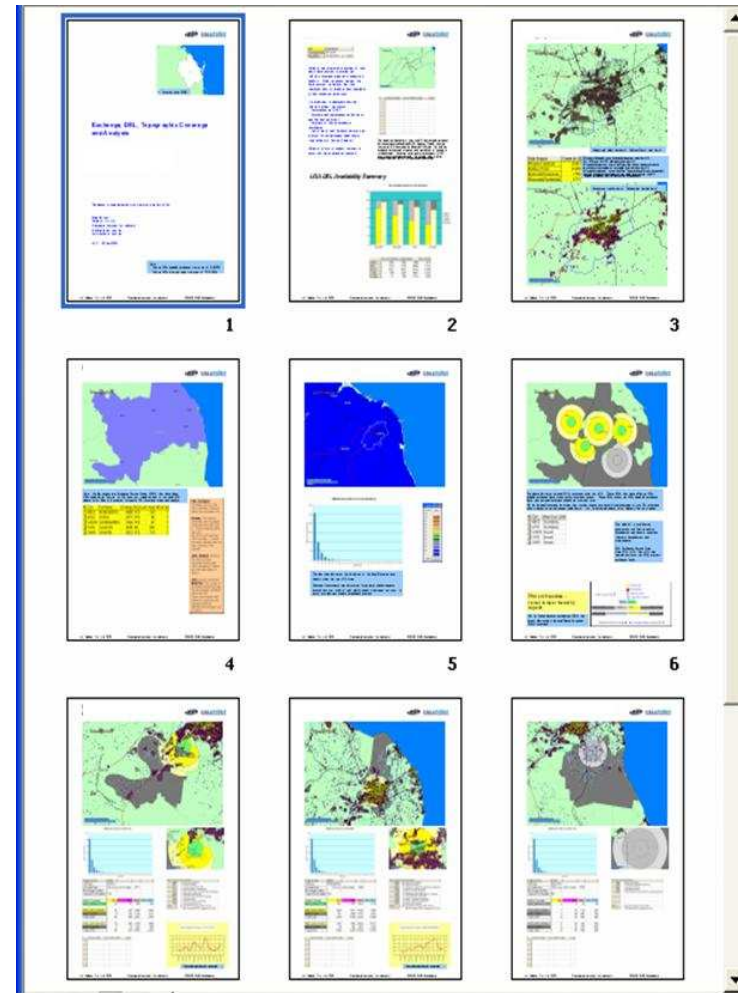
- Higher speed DSL services typically serve smaller areas eg 1.7km, 2.5km than ADSL 4km
- Increased precision is needed for a carrier’s DSL marketing and sales efforts
- Approached by Request, Callpoint used actual per-customer copper length data to create ‘equidistant copper length polygons’



The above compares Squiggly (blue) with a concentric ring (orange – 1,210 m radius) at the 1,700 m SHDSL distance around Castle Hill exchange, Sydney)

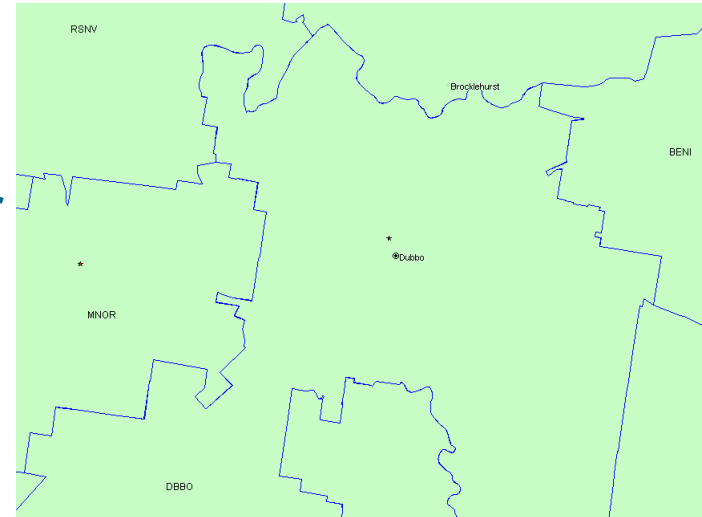
“Can you create comprehensive, in-depth coverage and gap analysis for groups of adjacent Local Government agencies?”

- Working with GDI, Callpoint developed a geospatial analysis suite to meet the specific needs of GDI’s Regional Organisation of Council clients such as DDROC in the previous presentation
- Callpoint integrates multiple third party datasets (inc. Exchange boundaries and other Telstra data, GNAF, Business and Residential data, ABS boundaries and other, Cadastral, Digital Elevation data)
- Callpoint’s GeoCarrier® automatically populates Powerpoint and Excel files for delivery to clients



Third Party Data

- **Critical to geospatial analysis**
- **Telstra exchange boundaries and coordinates are especially important for ADSL availability/ black spot analysis**
- **Callpoint began championing the more open sharing of this data in 2002**
- **In December 2004, this became a reality with Telstra's dataset launch**
- **Now, the benefits of geospatial analysis can extend to the user community such as demand aggregators**
- **Callpoint thanks ATUG, the Senate Broadband Inquiry and Telstra Wholesale for progress in this area**



Telstra ESA (exchange service area) boundaries, and exchange locations around Dubbo

Limitations and Challenges

- **Third Party Data issues**
 - **Availability, Authority, Comprehensiveness**
 - **Accuracy, Update cycle**
- **The third party data industry is currently fragmented**
- **HiBIS providers and demand aggregators have a need for RIM data for comprehensive DSL black spot analysis**
- **Telstra Wholesale does not currently share this view**
- **Callpoint uses data synthesis to address DSL-enabled RIMs**

Looking to the Future

- **For telcos, geospatial techniques have demonstrated their value in marketing, sales, operations and network planning roles**
- **Demand aggregators can now take advantage of these techniques**
- **Third party data industry is critical, and needs to be fostered to ensure the ongoing availability of high quality data**
- **Callpoint stands ready with five years of experience with specialised tools to assist industry**