

NZCC TSLRIC Conference

15 July 2003

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Outline

- Data availability and the implications for the modelling approach and input data
- Defining the relevant increment: TSLRIC vs TELRIC
- Common costs and economies of scope
 - PIE II Australian Experience
- Consistency between the TSO and PSTN access charges
- Network design and optimisation
- Asset valuation and depreciation methodology
- Conclusions

Data availability

- Incumbent accounting information can be of assistance in the implementation of a TSLRIC model
 - Input values
 - As a top-down reconciliation with the bottom-up model
- However, in the absence of information that can be validated, scrutinised and tested by all interested parties, relying on the incumbent's accounting information is problematic
- The circumstances in New Zealand are very different to those in Australia

Data availability: Australian experience

- Telstra and other major carriers are required to comply with a comprehensive regulatory accounting framework
- Requires vertical and horizontal separation of historic accounting information – ie wholesale costs identifiable
- Strict cost allocation procedures must be adhered to
- Allows the identification of the historic fully allocated costs of PSTN access and comparison of these costs to Telstra's internal wholesale costs for services on which access seekers compete
- Telstra must submit these accounts every 6 months to the ACCC

Data availability: ACCC's modelling approach

- Initially the ACCC used a TSLRIC model developed by NERA in 1997/98
- NERA model was updated to evaluate Telstra's Second PSTN Undertaking in 1999/00
- ACCC recently concluded in its Draft Determination on Model Price T&Cs that the NERA model is outdated
- In the Draft T&C's the ACCC utilised Telstra's PIE II model
- Debate is centred around a limited number of inputs not the modelling approach

Data availability

- While Telstra does rely on its cost information in its PIE II model, it makes all of this information available to interested parties, subject to appropriate confidentiality agreements
- Telstra makes available the whole model, input data, plus confidential submissions to the ACCC on all PSTN issues.
- Data available to regulatory and interconnection departments, lawyers and external advisors

Primus

Optus

AAPT

MCT

Powertel

Data availability: conclusions

If Telecom wants the industry to rely on a TSLRIC model which utilises Telecom's cost information and if it believes a top-down reconciliation is appropriate then it should make all relevant information available for industry scrutiny.

Needs to be available to personnel with skills to assess it.

Alternatively, the Commission should rely on publicly available information and a bottom-up cost model only.

Defining the relevant increment

- The relevant increment to be modelled appears controversial when a pure “service” approach is taken to the concept of TSLRIC
- However, in practice, the relevant increment is never measured on a service basis
- Rather, an element approach is used and the cost of a service is built up from the cost of the network elements required to provide a service
- In other words, cost-proxy models estimate TELRIC not TSLRIC

Defining the relevant increment

- TSLRIC and TELRIC are often used interchangeably, but there is a fundamental difference between the two approaches
 - TSLRIC is the incremental cost of supplying the *service*
 - TELRIC is the incremental cost of supplying the *element*
- The TSLRIC of PSTN access is strictly the additional cost of supplying the service given all other activities of the firm remain unchanged
 - Given the large fixed costs associated with telecommunications the TSLRIC of PSTN access is close to zero
- The TELRIC of PSTN access is the additional cost associated with a network element, such as switching and transmission links

Defining the relevant increment

- The difference is that TSLRIC treats the majority of network costs as common costs and hence a strict interpretation of TSLRIC will exclude the majority of network costs
- TELRIC involves estimating the costs of network elements and hence includes all network costs that are common to the supply of the declared service
- TSLRIC and TELRIC may equate if TSLRIC includes a contribution to the common costs that are captured in TELRIC
- In practice, TELRIC is used for setting access prices

Common costs and economies of scope

- To ensure that investment occurs when access seekers are more efficient than Telecom, all Telecom's economies of scope should be included in the PSTN access price
- Otherwise, there will be an incentive to invest even when access seekers are unable to achieve the same economies of scope as Telecom
 - That is, access seekers will have an incentive to invest even if they are less efficient than Telecom in the provision of the PSTN services
- This will result in inefficient duplication of infrastructure

Common costs and economies of scope

- The level of economies of scope is critical to determining the access price

For example, if ISDN services are omitted from Telstra's PIE II model, the cost of PSTN access increases by 20.3%

Common costs and economies of scope

- Telecom's submission (para 11-13 August 2002) states that that the stand-alone service cost is a relevant upper bound and TSLRIC with service increment the lower bound
- Given the nature of common costs and significant economies of scope this range is very large and the lower bound is close to zero
- Upper bound equivalent to all common costs being allocated to interconnection
- Act says “reasonable” not “all”
- Not helpful from a practical perspective

Appropriate increment & common costs: Conclusions

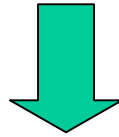
To achieve efficient outcomes all Telecom's economies of scope should be included in the PSTN access price.

Therefore common costs should be allocated across **all** services that use Telecom's PSTN.

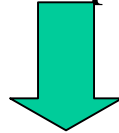
The increment used should be the network element not services, which allows a reasonable and transparent method of common cost allocation.

Australian Experience: PIE II Key Steps

Optimise network



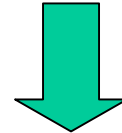
Calculate current cost of optimised network elements



Annualise network element costs

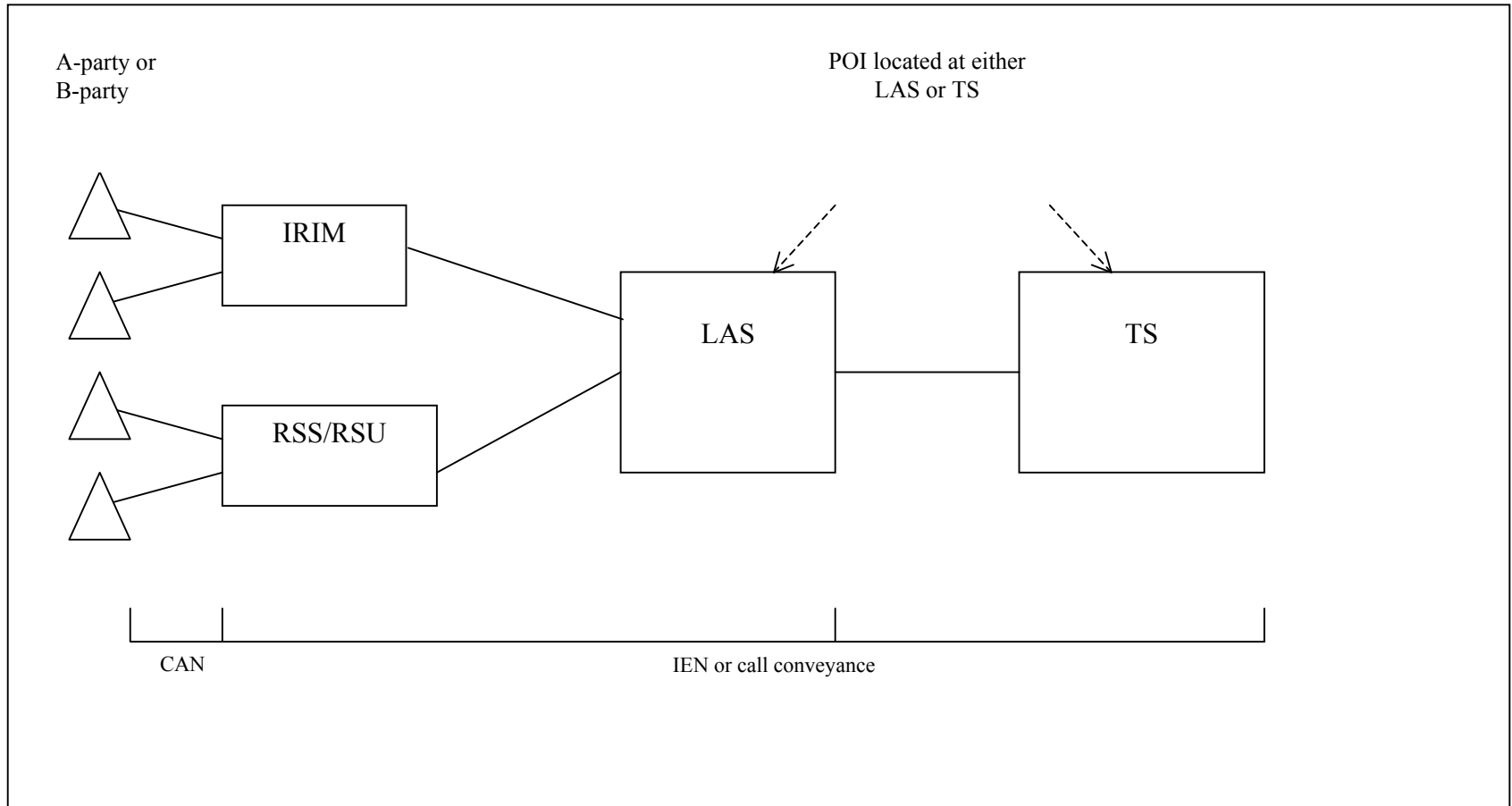


Calculate annual per minute cost for each element

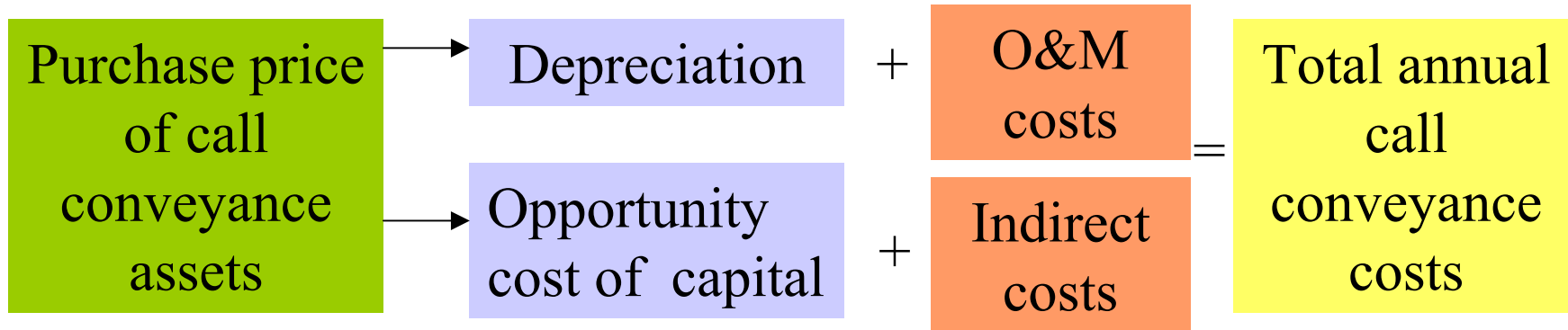


Calculate cost per service based on element usage

Australian Experience: network



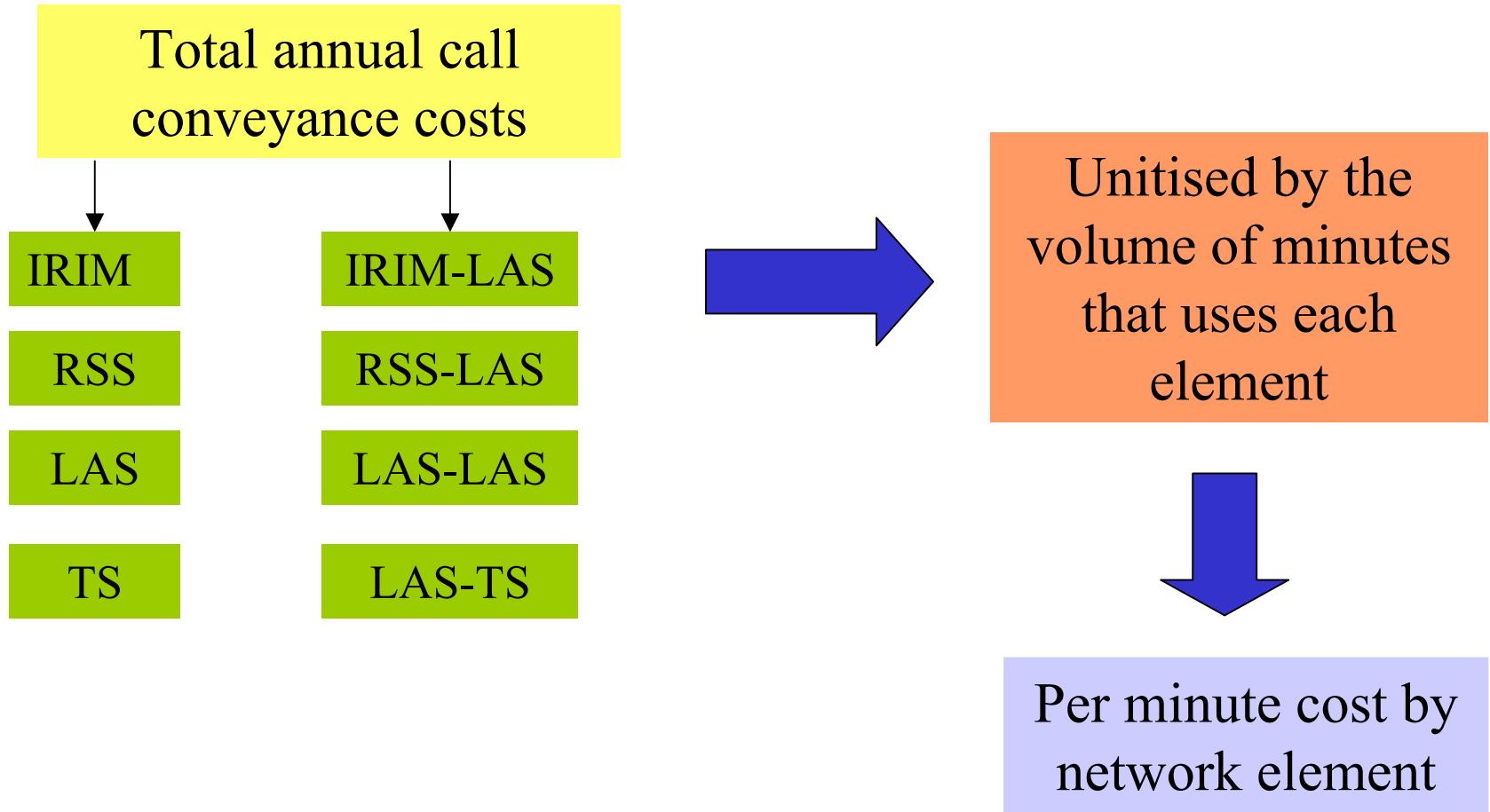
Australian Experience: annual costs



O&M and indirect costs

- As discussed earlier, Telecom's actual costs could be useful in determining the appropriate O&M and indirect cost percentages
- However, if these are not available for industry scrutiny then international benchmarks may need to be relied on
- NERA (commissioned by the ACCC) used estimates from BT and the US LECs
- In PIE II Telstra uses percentages based on actual costs

Australian Experience



Australian Experience

- Next, the network elements used in providing the PSTN access are identified
- The per unit network elements are then multiplied by routing factors to estimate the total cost of call conveyance for PSTN access

Example: metro areas

	Routing factor	Per minute cost	RF*cost
IRIM-LAS	0.31	0.98	0.30
RSS-LAS	0.69	0.08	0.06
LAS-LAS	0.00	0.20	0.00
LAS-TS	0.85	0.07	0.06
IRIM	0.31	0.11	0.03
RSS	0.69	0.19	0.13
LAS	1.00	0.16	0.16
TS	0.85	0.09	0.08
Total charge			0.82

Australian experience: services included

- In its PIE II model, Telstra allocates IEN (ie core network) costs across all services that use the PSTN
- Switching Elements
 - PSTN calls
 - Mobile to fixed calls
 - ISDN voice and data
- Transmission
 - RAU to LAS- as switching plus voice grade leased lines
 - All Telstra voice, data and video/audio products

Approach to new services

- If new services are introduced and they utilise the PSTN then costs should be allocated to them in the same way as existing services
- Although a few years away services, eg VoIP, may not lend themselves to a per minute costs allocation
- Alternative rules will need to be sought eg percentage of customers, percentage of lines etc

Australian experience: conclusions

The appropriate increment is the network element

O&M and indirect costs can be based on SCRUTINISED incumbent data

PSTN costs should be defrayed across all services that use PSTN infrastructure

Minutes of use is an appropriate way to allocate of common costs

TSO and PSTN access consistency

- There is no reason why the approach used for estimating the TSO should not be consistent with the approach used for estimating PSTN access prices, with the exception of input values, methodologies that are TSO specific
- For capital values, asset lives, tilt factors for the annuity, spare capacity factors etc a consistent approach should be adopted
- This was not the case in Australia with the ACCC estimating the TSLRIC of PSTN access completely independently of the ACA estimating the net cost of the USO

TSO and PSTN access consistency

The results of the ACCC and ACA approaches were completely inconsistent and this caused substantial problems for USO tendering where access prices were based on the ACCC's estimates yet subsidies were based on ACA estimates

•ACA estimates (based on efficient costs):

•-1997-98 the line costs to serve 416,586 USO customers was \$797 million

•-2000-01 the line costs to service 493,862 USO customers was \$624 million

•ACCC estimates:

•-1997-98 the line cost to serve 1.1 million rural customers, including USO customers was \$646 million

•-2000-01 the line cost to serve 1.2 million rural customers, including USO customers was \$550 million

TSO & PSTN consistency: conclusions

Should be as consistent as possible

However should be **correct** and consistent

Inappropriate to adopt an incorrect approach in TSLRIC just because it was adopted in the TSO

Network design and optimisation

- TSLRIC methodology aims to mimic the price that would prevail in a competitive market
- The price you can charge in a competitive market is limited by the price of your most efficient competitor
- The most efficient competitor will be utilising the optimal network architecture and the most modern technology available
- This logic leads you to the appropriate approach being the network design and level of optimisation that an efficient network operator would deploy today
- Independent of operator's network and their upgrade plans
- This pricing will allow only efficient bypass to be viable –unnecessary duplication is avoided

Network design and optimisation

- PIE II goes further than a traditional scorched node model
- For RAU sites the optimum site out of existing sites is chosen, which may not be the site of the current RAU
- The number of LASs is optimised but the current locations are maintained

If the Commission uses a scorched node due to practical considerations in the short run, then the Commission should consider the results from such an approach as an overestimation of the true TSLRIC

Conclusions

Only use Telecom data where it has been scrutinised

Increment should be network element

All services using PSTN should be included

TSO and PSTN access should be both consistent and correct

Scorched node is an underestimate of true TSLRIC

The logo for Network Economics Consulting Group (onecng) features a stylized 'o' on the left, which is a dark blue circle with a yellow-green crescent shape inside. To the right of the 'o' is the lowercase text 'necng' in a dark blue, serif font.

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