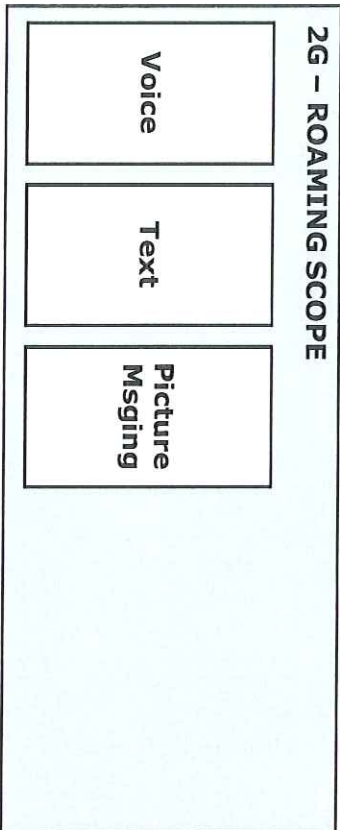


Roaming on 3G Networks

3 October 2007

2G / 3G Roaming Scope (Examples)

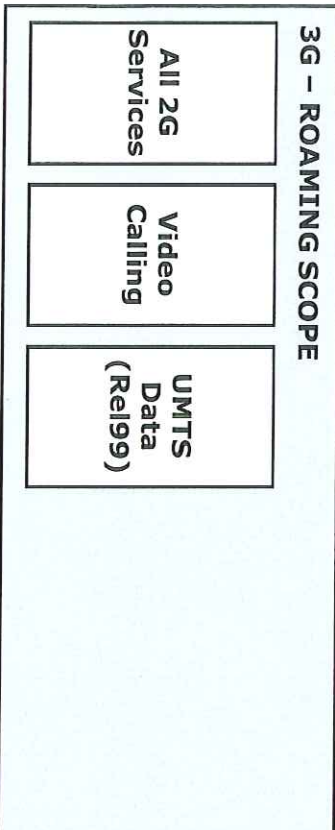
2G – ROAMING SCOPE



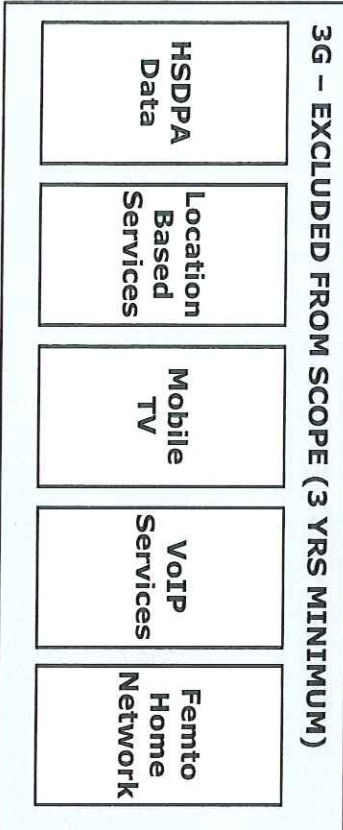
Notes:

- All the initial 2G / 3G network features shown are supported when an Access-Seeker end-user customer is roaming onto an access-provider 2G/3G network.
- Call hand-over when an end-user customer device moves from Access-Seeker coverage into Access-Provider coverage is NOT mandated.

3G – ROAMING SCOPE



3G – EXCLUDED FROM SCOPE (3 YRS MINIMUM)



- These services would NOT be supported when an Access-Seeker end-user customer moves into coverage of an Access-Provider network.
- If no commercial arrangements are implemented earlier, then the Commission could mandate that support for roaming for these services be provided after 3 years of commercial availability on the Access-Providers network (where technically feasible).

Pricing of Roaming

4 October 2007

Final Pricing Principle

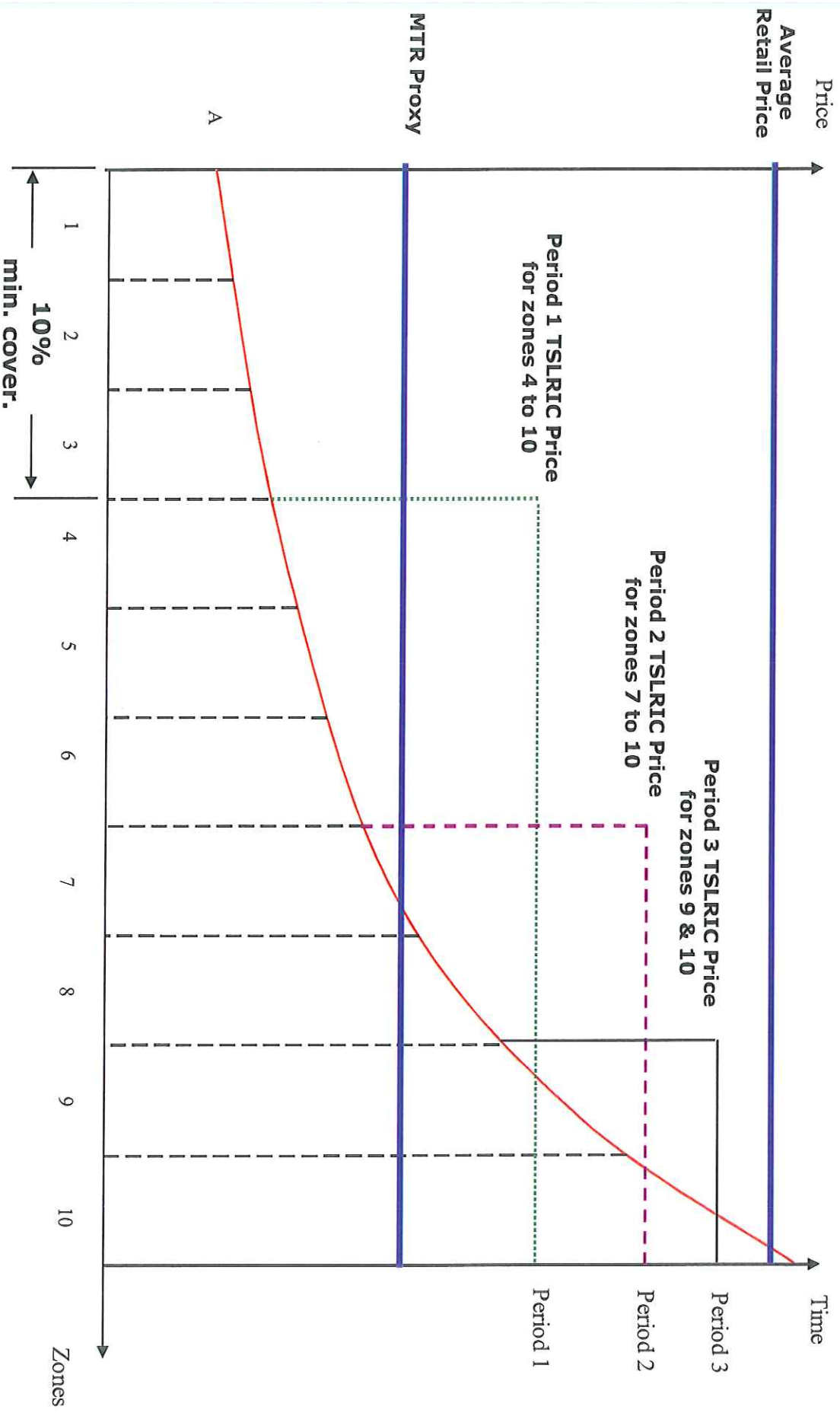
- Telecom supports geographic de-averaging of roaming prices -
 - This allows access providers to recover costs
 - Provides a positive incentive for access seekers to roll-out a network
- Strategic question -
 - Should roaming prices be based on access seeker's expected coverage?
 - Should roaming prices be based on access seeker's actual coverage?

Telecom's position is that national roaming should be based on the access seeker's expected coverage. Vodafone's approach, which relies on the access seeker's actual coverage raises the risk of an inefficient equilibrium.
- Alternative approaches to de-averaging (which are analytically equal) -
 - Geographic patchwork of cost based prices
 - Seems very complex to implement when customers are roaming from zone to zone
 - Does not reflect the national roaming service (which is about allowing an operator to complete its national coverage)
 - Single roaming price adjusted to match access seeker expected coverage
 - This approach is simple to implement
 - Reflects the national roaming service
 - Telecom's preferred approach

Indicative FPP Scenario

- An access seeker builds out to the 10% threshold
- The access seeker asks the Commission to determine the price of roaming and the Commission makes an IPP determination
- The access seeker and/or the provider asks the Commission for an FPP determination
- During the consultation the Commission considers the access seeker's network build over the next 5 years
- Recognising the objective of encouraging network investment, the Commission determines a set of cost based roaming prices that increase according to the expected network roll-out of the access seeker.

Illustration of FPP set of prices



Initial Pricing Principle

- The Commission has proposed the IPP is based on the MTR
 - this is the lower bound of the roaming rate because access seekers are not going to roam over the whole access provider's network
 - therefore, this is not consistent with any cost based price for roaming
- The upper bound of the cost of roaming will be determined by the average retail price of a call
 - this follows from economic decision to invest in marginal cell-sites
- This means
MTR < cost of roaming ≤ average retail price of a call
- Telecom's retail-minus proposal results in a roaming price that falls within this range
- An alternative is to take the simple average of the MTR and the average retail price

Recovery of Access Provider Set-Up Costs

- Telecom's position is that the set-up costs incurred by access providers should be recovered from access seekers
 - This is fair as access seekers are the beneficiaries of the service, and it gives them the correct economic incentives for the "rent coverage" or "buy coverage" decision
 - This is a well establish principle, eg –
 - ACCC determination regarding Telstra's recovery of ULL set up costs
 - Decision 477 TelstraClear interconnection determination regarding Telecom's recovery of billing functionality associated with 50XY; and
 - Telecom's and TelstraClear's interconnection terms regarding Telecom's recovery of the costs of making premises available at call handover points, implementing Non-code Access functionality available, etc
- Vodafone's calculation for recovering set-up costs is very complex
- An alternative simpler approach is to allow a mark-up in the price of roaming for the set-up costs, based on forecast volumes, which can be reviewed at regular intervals to ensure that the costs have been recovered.

**Telecom's suggested revisions to the draft service description
4 October 2007**

National Mobile Roaming Service	
Description of service	<p><u>Carriage (and its associated functions) of cellular mobile traffic by means of the access provider's cellular mobile network between (but not including) the access seeker's end-user's cellular mobile device and the access seeker's handover point or equivalent facility to enable an end user who subscribes to an access seeker's service to obtain service within the area where the access provider has a cellular mobile network, but which is outside the coverage of the access seeker's network. A service that enables an end user who subscribes to a network operator's (operator A's) service to use services that are provided by another network operator (operator B's) within the area where operator B has a mobile network, but which is outside the coverage of operator A's network.</u> <i>[Drafting note: The purpose the amendment is to describe the service being provided rather than the end result for the end-user. This also clarifies that call handover is included in the service, but interconnection of the access seeker's network to any other network is a separate matter.]</i></p>
Conditions:	All of the following
	(a) the access seeker must not already have an agreement that provides for national mobile roaming with any mobile network operator in New Zealand
	(b) there must be no separate determination (whether pending or existing) regarding roaming onto a network other than the network in respect of which the access seeker seeks access
	(c) the access seeker must have rolled-out a <u>cellular mobile</u> network that comprises 100 sites or covers no less than 10% of the population, whichever is lower
	(d) the networks of both the access seeker and the access provider must be technically compatible and be able to interconnect

<p>(e) access seekers with a total New Zealand mobile market share greater than 25% in the mobile services market cannot roam in New Zealand cities.</p>	
<p><u>(f) the network feature or features for which carriage is sought, must each be offered by the access provider to its end-users and be generally available to the access seeker's end-users from the access seeker's own mobile network (that is, the effect of roaming is to increase the coverage area for the access seeker's end-users) [Drafting note: Examples of network features include voice call capability, SMS text message capability and video calling.]</u></p>	
<p><u>(g) the network feature or features for which carriage is sought, must each have been generally available to end-users in the cellular mobile services market for the previous 3 years</u></p>	
Access provider	Any person who operates a mobile network
Access seeker	A service provider who <u>operates a cellular mobile network and seeks access to the service</u>
Access principles	The standard access principles set out in clause 5
Limits on access principles	The limits set out in clause 6 and additional limits, which must be set by taking the following matters into account:
<p>(a) whether the access provider has, for each relevant site within an area, sufficient available capacity to provide the service, taking into account its reasonable anticipated requirements for capacity at that site</p>	
<p>(b) all legal requirements and all existing contractual obligations that the access provider has with third parties</p>	
Initial pricing principle:	Benchmarking against mobile termination rates in comparable countries where a forward-looking cost-based pricing methodology is used <u>plus a margin to account for the relative cost differences in providing mobile termination versus mobile roaming</u>
Final pricing principle	<u>A TSLRIC model which creates appropriate incentives for build-buy decisions and takes into account regional cost variations</u>