

# 3G Entry in New Zealand: National Roaming and Colocation



For Vodafone New Zealand

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## Introduction



- We have been working with Vodafone NZ to gain an understanding of the economics of 3G entry in New Zealand.
- We have developed a quantitative model that estimates the costs a 3G entrant would face under different entry scenarios.
- Here, we present results to show how national roaming and colocation affect an entrant's costs and business case according to our model.

## Summary of Key Points



- A credible 3G entrant needs to spend a large amount of money to enter the NZ mobile market.
- The expenditure required is not very significantly affected by the price the entrant pays for roaming or whether or not it has access to colocation.
- The roaming rate affects an entrant's incentives to build coverage, i.e., the extent of facilities-based competition.

## 3G Entrant's Cost Model



- 3G entrant is assumed to build in some or all of the five main cities and have access to roaming elsewhere within VFNZ's current 2G coverage.
  - Entrant's modelled network design is based on advice from VFNZ network engineers.
  - Costs are estimated over a 5 year period.
  - Capital costs are annualised over 10 years.
- Baseline scenarios:
  - Entrant builds:
    - (1): Auckland & Wellington only
    - (2): All five cities
  - Entrant's volumes:

	Year 1	Year 2	Year 3	Year 4	Year 5	
Minutes per customer per annum	1050	1050	1050	1050	1050	
Market size (mil customers)	3.80	3.88	3.95	4.03	4.11	(2% p.a. growth)
Entrant's market share (customers)	3%	6%	9%	12%	15%	

## Entry Cost Estimates



- Annual total costs (\$m) at different roaming rates (with colocation) for the baseline scenarios:

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<b>Auckland + Wellington</b>						
15 cpm	128	182	233	276	320	1,139
20 cpm	131	188	242	287	335	1,183
25 cpm	134	194	251	299	350	1,228
30 cpm	138	200	259	311	365	1,273
<b>All Five Cities</b>						
15 cpm	133	186	236	276	318	1,149
20 cpm	135	191	243	285	330	1,184
25 cpm	138	196	249	294	342	1,219
30 cpm	140	200	256	304	354	1,254

## Effects of the Roaming Rate



- The roaming rate affects an entrant's total costs and most importantly their incentive to build coverage.

- Illustration: Year 5 total costs (\$m):

	AKL + WLN	All Five	Difference
15 cpm	320	318	-2
30 cpm	365	354	-11
<b>Difference</b>	<b>45</b>	<b>36</b>	

Cost difference between 15 cpm and 30 cpm is not very large relative to total costs

Higher roaming rate means a bigger cost reduction with coverage expansion, and a stronger incentive to build coverage.

## Effects of Colocation



- **Question:** How does access to colocation affect an entrant's costs?
- We address this by comparing three scenarios:
  - (1) **Realistic:** Entrant collocates 40% of its sites, half of which require upgrades to colocate, and pays colocation rentals.
  - (2) **Free:** Entrant collocates 40% of its sites, none require upgrades to colocate, and pays no colocation rentals.
  - (3) **None:** Entrant builds all its own sites.
- We compare the entrant's annualised total costs using the above baseline scenario, assuming the entrant covers all five cities.

## Effects of Colocation



- Results from the model:

	Scenario		
	Realistic	Free	None
Cellsites capital cost (\$m, total)	109.7	101.1	156.4
Cellsites operating cost (year 5, \$m)	10.7	10.7	12.8
Colocation rentals (year 5, \$m)	3.6	0.0	0.0
Annualised total cost (year 5, \$m)	353.5	347.0	367.8
Break-even customers @ \$500 ARPU (year 5, \$m)	707,000	694,000	736,000
Break-even market share @ \$500 ARPU (year 5, \$m)	17.2%	16.9%	17.9%

- Colocation has a relatively small impact on an entrant's total annualised costs, and does not seem to be a make-or-break issue for the business case.