Teligen

Local Access Circuit Price Benchmarking for Key Asia – Pacific Countries vs. Each Other, the European Union & OECD Countries

Executive Summary Report

A report produced by Teligen for a group of Global Operators providing competitive service in the Asia - Pacific region.
November 2003

Teligen, HI Europe
Watermans Park
Brentford TW8 0BB
UK

halvors@teligen.com

HI Europe Limited
Registered Office:
Watermans Park
High Street
Brentford TW8 0BB
United Kingdom
Tel +44 (0) 20 8263 5200
Fax +44 (0) 20 8263 5222
www.teligen.com
Registered in England and
Wales No: 2802862

List of content

Disclaimer

The participating global operators have provided the information used in this report to Teligen in confidence. Teligen has made every effort to ensure that individual prices are not part of the final results. However, where final results show values similar or identical to individual prices, this is merely a result of individual prices being very close or identical to the average.
Teligen has produced this report exclusively for the group of global operators, and any publication or use of this report in part or its entirety will remain their responsibility.

Teligen, HI Europe, 2003

Study background and scope

This study has been commissioned by a group of six large global operators each with an operating presence providing communications services to businesses in the Asia - Pacific region. The purpose of commissioning the study is to compare the price levels for local access circuits as provided by incumbent operators in key countries in the region vs. each other, the European Union and OECD countries.

This is the executive summary version of the final report. It differs from the full final report in that the explanatory text has been shortened and a detailed depiction of the incumbent carriers' charging structures, including diagrams, has been removed. The benchmarking figurers and analysis are the same as in the final report, which is available upon request.

1.1 Background

Competitive operators typically have to rely on the incumbent operator in each country to provide the "last mile", i.e. the local access circuit from the competitive operator's point of presence to the customer. The availability, structure and price of such circuits have become crucial factors in the ability of the competitive operators to provide services to end user business customers.

It is important for the business end users that the competitive operators can resell reasonably priced local access circuit connections provided by the incumbent national operator. For the business end users to deal directly with national operators in each country does not provide the efficiency and quality they require, as it would mean a very fragmented network with no consistent quality and management. Competitive operators, though they may have some capability to self-provision local access circuits, are themselves not able to economically provide access to every individual building in a country.

The relationship between an incumbent operator and an competitive operator is a dynamic one, since the competitive operator is a customer of the incumbent operator when it purchases such "last mile" network services and on the other hand, becomes a competitor when it uses these network inputs to provide a retail offering to business customers similarly provided by the incumbent operator. History has shown that many inventive actions from incumbent operators are put in place to effectively prohibit competitive operators in providing competitive services in a country.

This study will investigate the prices and price structures used by incumbent operators in a range of countries, in order to see if there are significant differences between them, and how these differences affect the price offered to the competitive operators. The prices experienced in the Asia - Pacific region will also be compared with prices in other countries outside the region and with international benchmarks.

In order to ensure the highest possible integrity of the benchmarking process the methodology will be compatible with international well-established benchmarks, namely those used by the OECD (Organisation for Economic cooperation and Development) and the European Commission.

1.2 Scope

This study covers incumbent operators in 6 countries[1]:

- Australia
- Hong Kong
- Korea (South)
- Malaysia
- Singapore
- Taiwan

These countries are collectively referred to in this report as the "Asian countries".

For each of these countries a range of bitrates are covered, relevant to the provision of connectivity:

- 64 kb/s
- 256 kb/s
- 512 kb/s
- 1984 kb/s (structured E1)
- 2048 kb/s (un-structured E1)
- 45 Mb/s (DS-3)
- 155 Mb/s (STM-1)

1.3 Teligen

Teligen is a division of HI Europe Ltd. in the UK, and was formerly known as Eurodata Foundation. Teligen has been collecting and analyzing telecoms tariff information since 1979, and is offering such information and analysis in the form of databases and tools.

Teligen has been implementing and providing the OECD telecoms price baskets since 1995, through a unique agreement with the OECD. The benchmarking results are provided in the form of the quarterly T-Basket product, which include local access circuits, and through numerous bespoke analyses based on the same methodology.

Teligen has also been providing telecoms tariff information and analysis to the European Commission since 1997, with annual reports covering a range of basic services in Europe including local access circuits.

2 Methodology

The methodology used to benchmark the Asian countries is consistent with that used by the OECD and EU for benchmarking local access circuits. This means that the results for the Asian countries will be compatible and directly comparable with the EU benchmarks and a subset of the OECD basket results for local leased lines. For a more detailed explanation of the methodology used in this study and by the OECD and EU, the reader may refer to the unabridged version of this report.

> Teligen has made every effort to ensure that individual prices reported in confidence to Teligen by the 6 global Operators in the study are not part of the final results. However, where final results show values similar or identical to individual prices, this is merely a result of individual prices being very close or identical to the average.

[1] Pricing data for Japan was collected but has been excluded in the final report of the study. Japan, even considering NTT's less expensive local circuit service, was among the more expensive countries, particularly at the lower speed services i.e., sub T1. When NTT's more expensive local circuit service was considered, it was typically by far the most expensive country in any region or the world examined.

All prices are converted to US$ to allow direct comparison between the countries, and with OECD and other benchmarks. Taxes are excluded. Prices used are generally taken from end of July 2003.

2.1 Benchmarking results

The benchmarking results comparing the 6 Asian countries against each other follows below.

Figure 1: Monthly rental for 64 kb/s, 2 km circuit

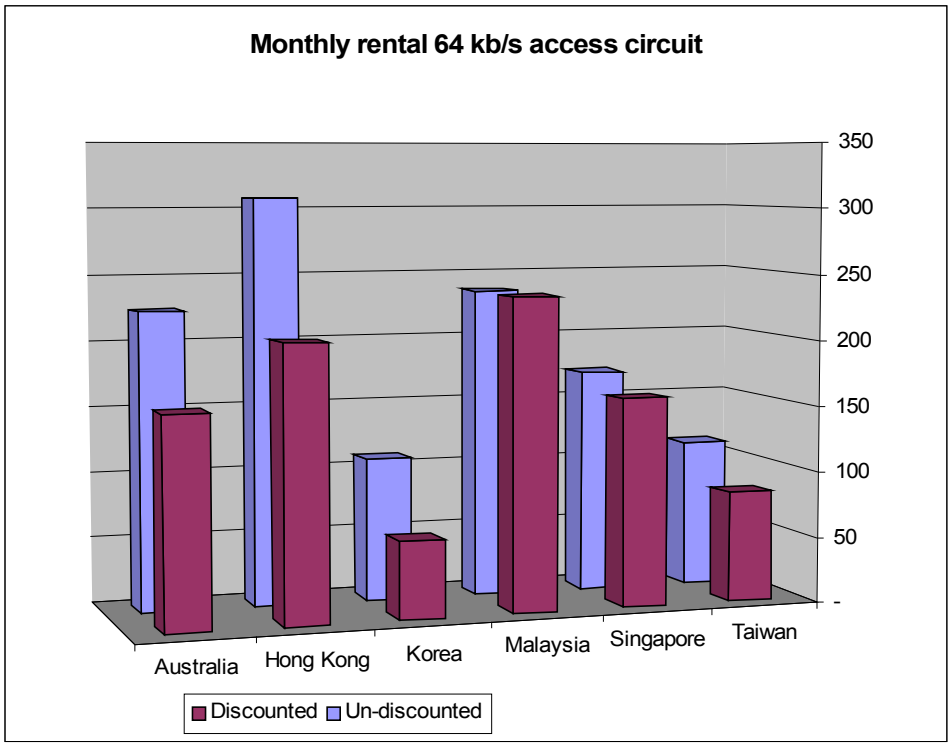


Figure 2: Monthly rental for 256 kb/s, 2 km circuit

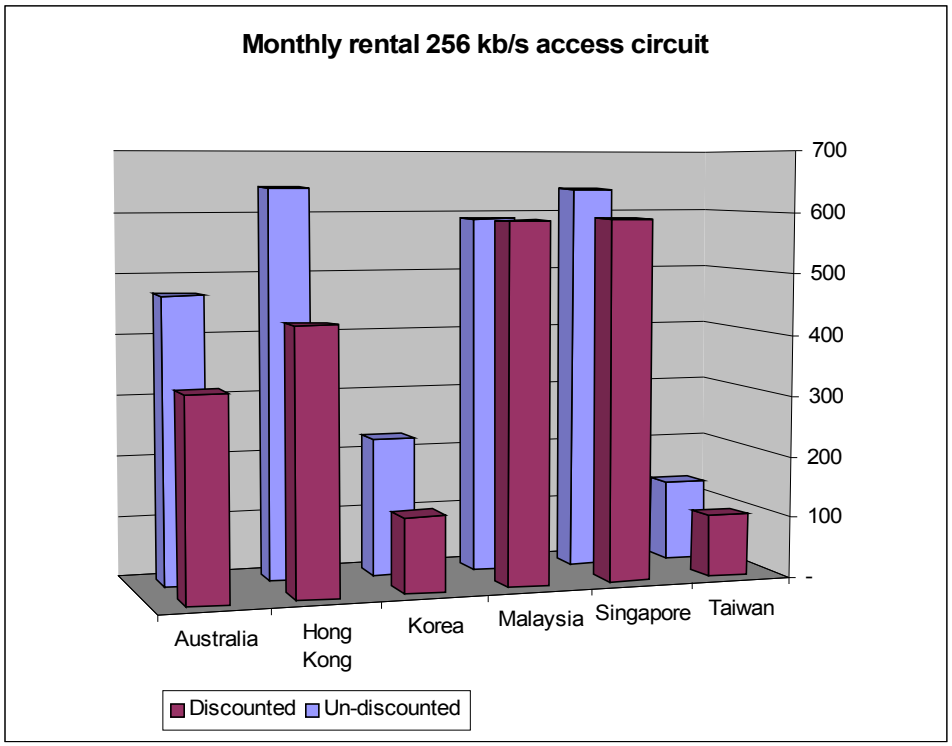


Figure 3: Monthly rental 512 kb/s, 2 km circuit

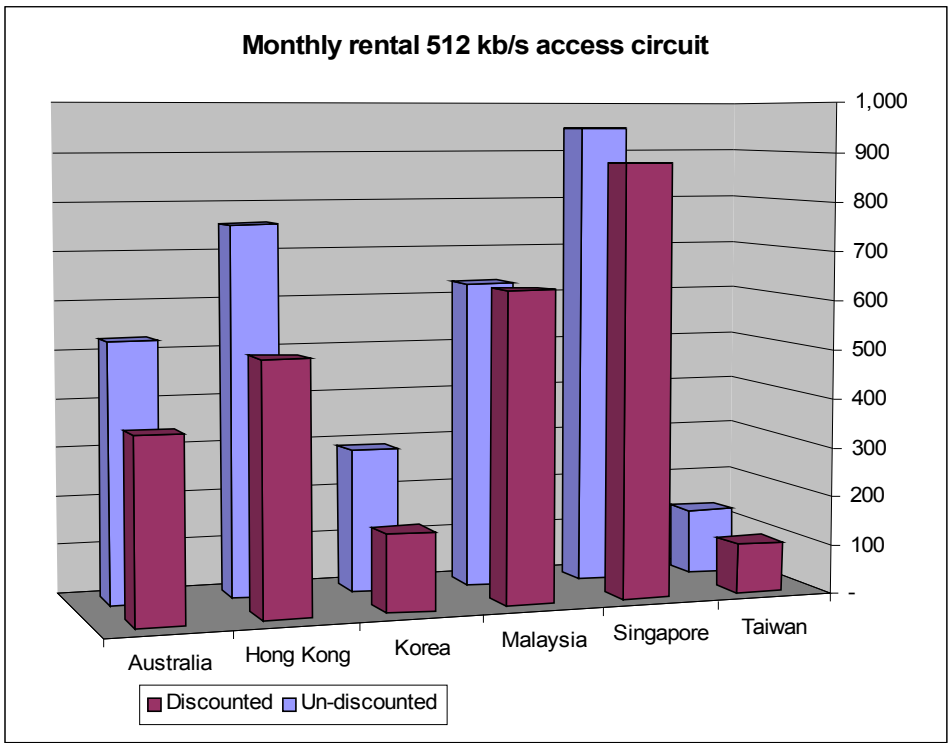


Figure 4: Monthly rental 1984 kb/s, 2 km circuit

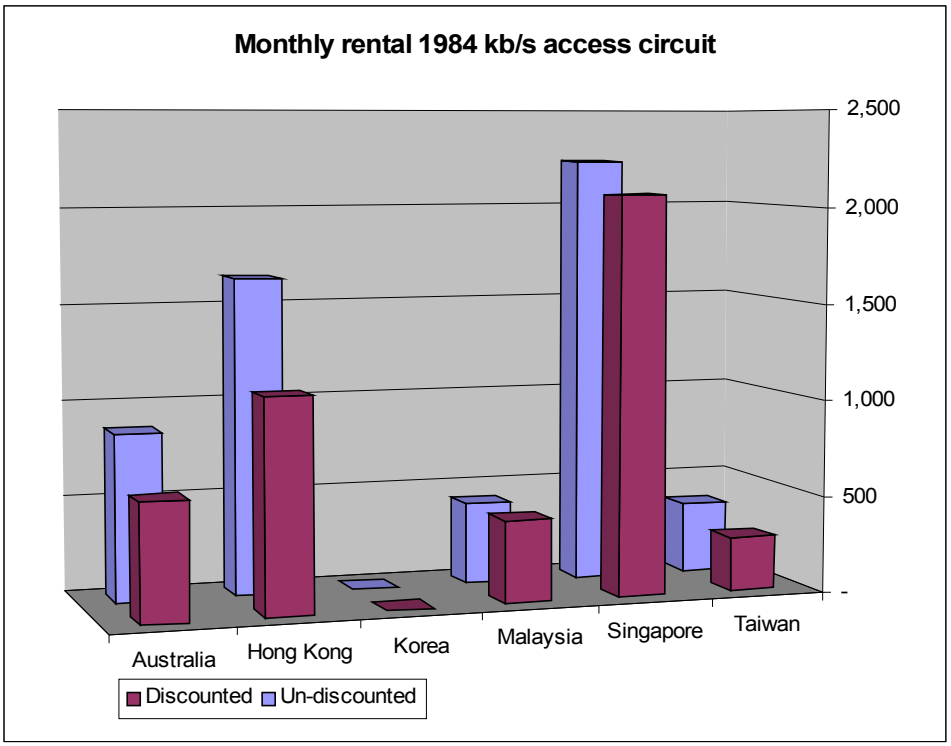


Figure 5: T1 circuits compared with US average

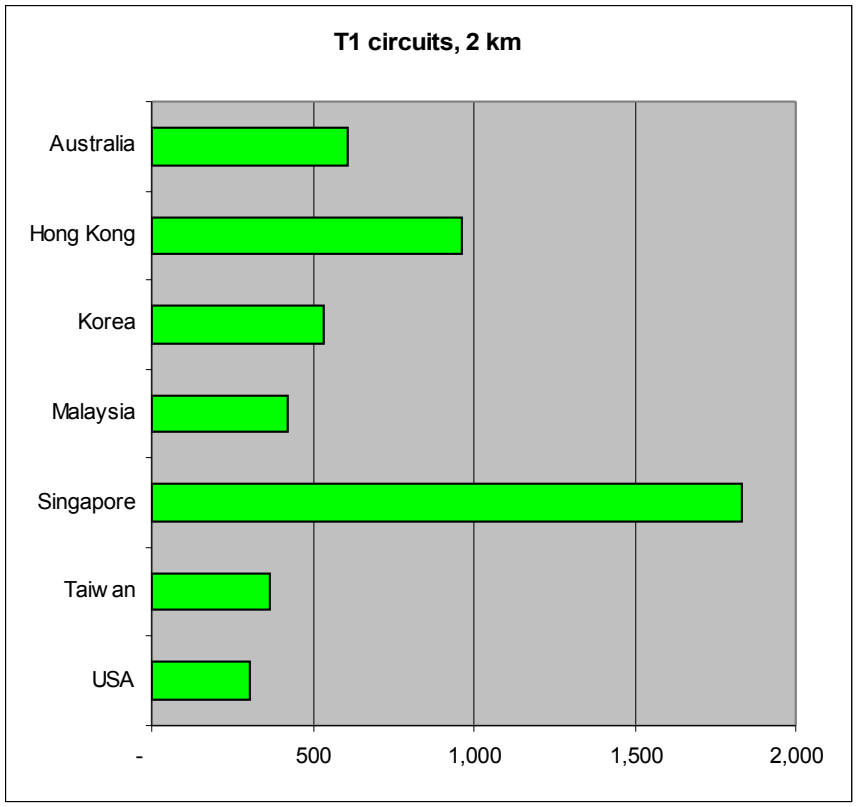


Figure 6: 1984 kb/s vs. 2048 kb/s prices

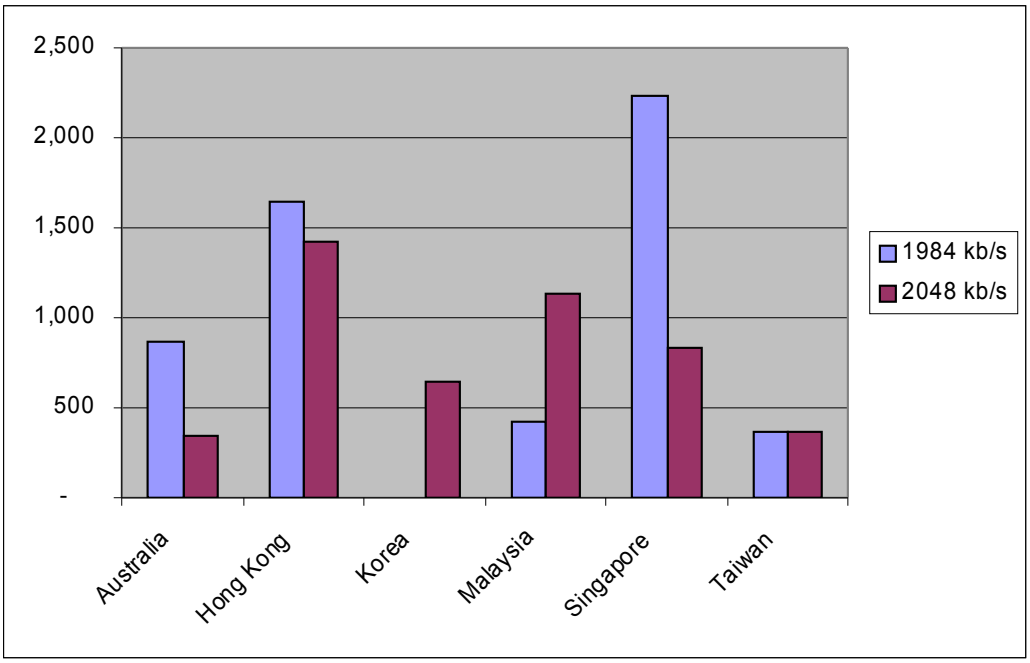
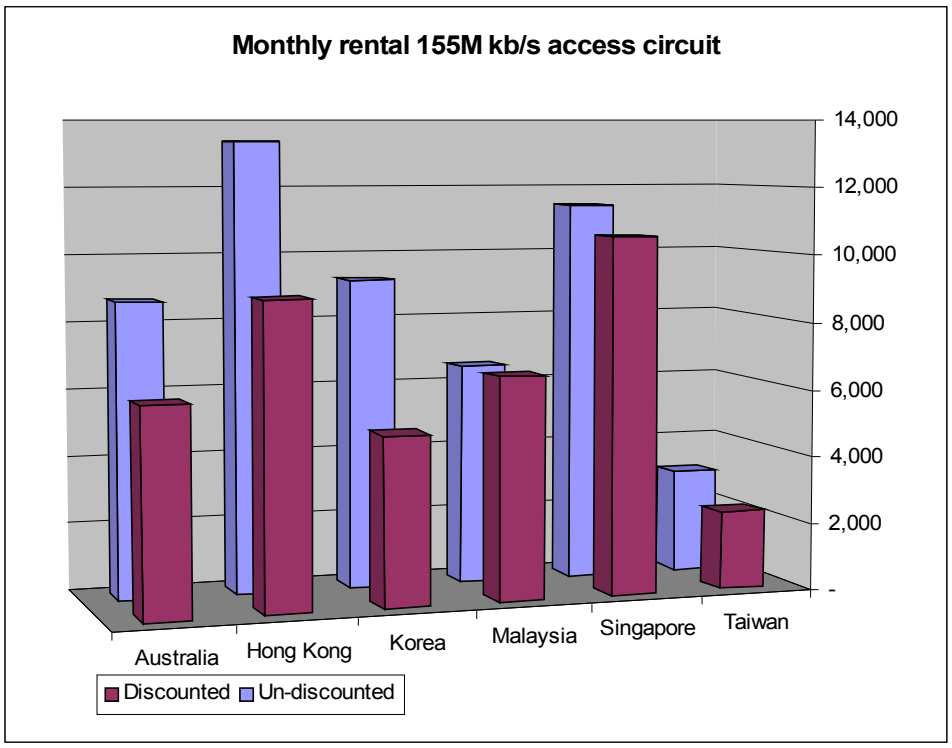


Figure 7: Monthly rental 155 Mb/s, 2 km circuit



Some important points drawn from the data shown above:

- There is a significant difference between the countries covered by this study. Singapore, for instance, is almost eight times more expensive than Taiwan for the same or poorer service.
- The relative differences between countries are consistent across the bitrate range 64 – 1984kb/s.
- When comparing the prices for structured 1984 kb/s and unstructured 2048 kb/s services there is a small difference for Hong Kong and Taiwan, a larger difference for Australia, and a very significant difference for Singapore. Experiences from other countries suggest that there should normally be a small difference, similar to Hong Kong and Taiwan, but not like the difference seen in Singapore. (the "inverse" difference seen for Malaysia is due to significant differences in the data reported for this country, see comments below).
- The prices for high speed services (as seen for 155 Mb/s in figure 7) are much more uniform than for lower speeds. Taiwan is again cheaper, but the rest of the prices are in an "expected" range.
- For lower speeds Singapore is the most expensive.
- For higher speeds Hong Kong is most expensive, followed by Singapore. With the discounts considered, Singapore is the most expensive for higher speeds. There is a significant difference down to the 3rd on the list.
- The price for a T1 circuit in USA (Figure 5) is a simple average of the prices from the RBOCs in CA, IL and NY, for an equivalent to a 2 km access circuit.

3 Comparing with other countries

As the same basic selection criteria and calculation methodologies are used in this study as in the preparation of the OECD and EU price benchmarking studies, it is possible to directly compare the results from this study with similar results from for example the OECD leased line baskets.

3.1 Comparing with OECD basket results

The OECD leased line basket results for 2 km local circuits are taken from the latest (August 2003) issue of T-Basket, produced by Teligen in agreement with the OECD.

Figure 8: Asia - Pacific results compared with selected OECD countries

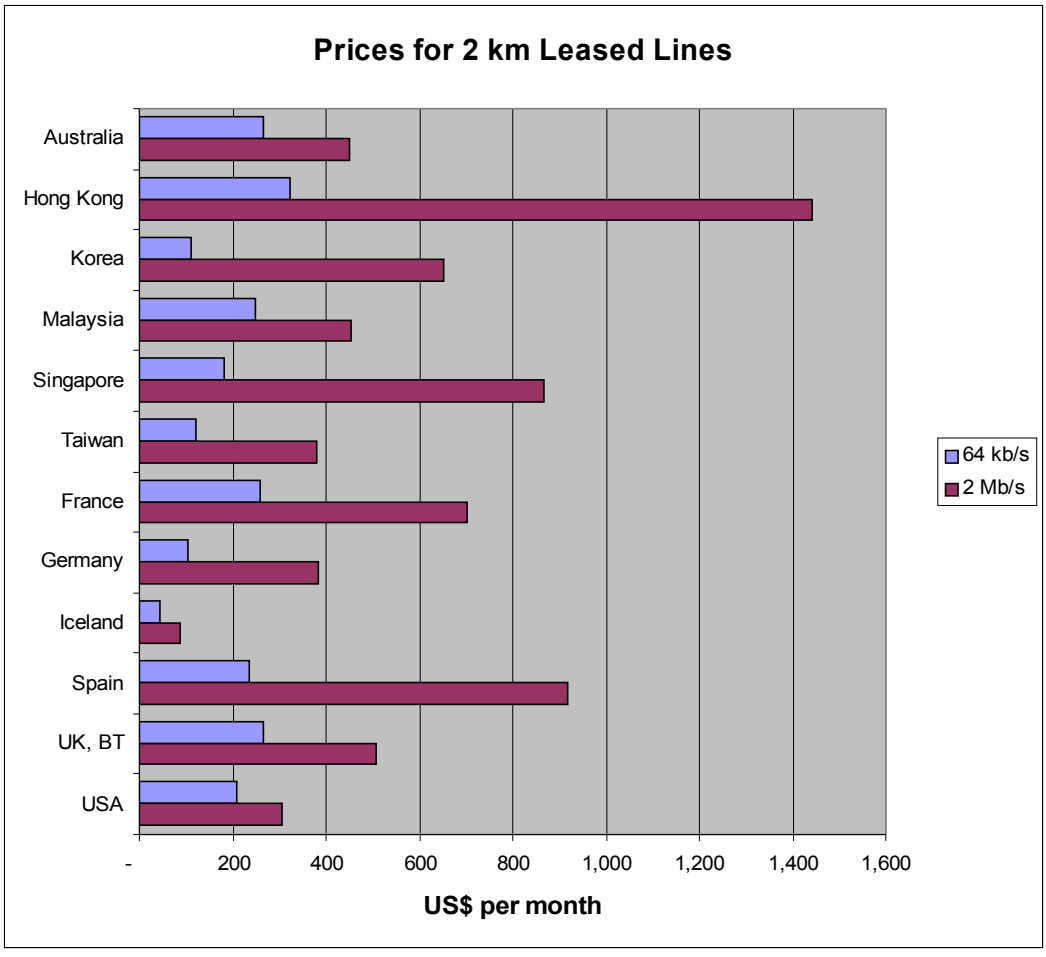


Figure 8 shows the relationship between the Asia - Pacific countries covered by this study, and a selection of the OECD countries.

Please also note that for 2 Mb/s in the Asia - Pacific countries the cheapest service is selected, regardless of bitrate (1984 or 2048 kb/s). For the USA the prices have been recalculated from the original bitrate of 56 kb/s and 1.5 Mb/s, using the speed relationship[2].

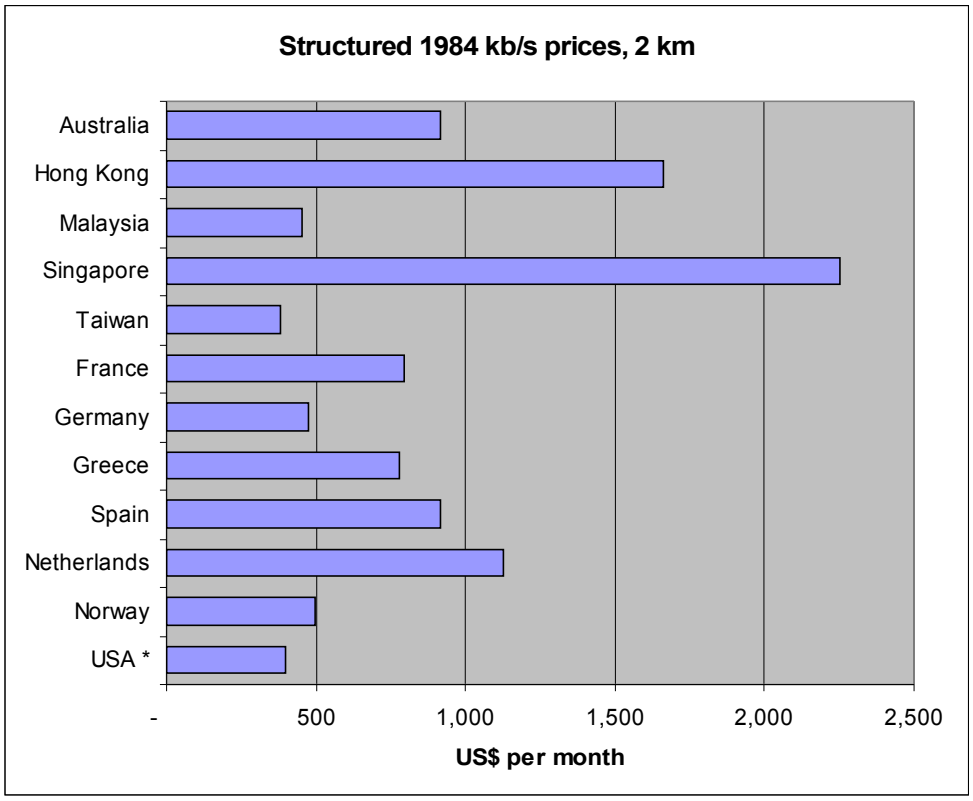
The cheapest OECD country, Iceland, is also included in the graph for reference. This is a country with a much smaller business community in the capital than any of the other countries. There are also considerably more expensive countries in the OECD comparison, with New Zealand ranking among the highest.

This comparison shows that it is possible to get 64 kb/s and 2 Mb/s services in the Asia - Pacific countries which are in the same price range as in many of the the dominant OECD countries. However, the service bought at this price may not be suitable for the purpose intended, as depicted below in the Figure 9.

3.2 Comparing structured 2 Mb/s circuits

One specific issue is the price for a structured 2 Mb/s (at 1984 kb/s) circuit. Benchmarking such circuits gives a somewhat different picture than for un-structured 2Mbps (2048 kb/s) circuits. It is important to note that most international circuits will require the use of a structured access circuit at the prices referred to in Figure 9.

Figure 9: Comparing prices for structured 2 Mb/s service (1984 kb/s)



[2] The recalculation of prices, or normalization, is based on the actual and normalized bitrates, for example: if a 56 kb/s circuit costs 100 Dollar, the normalized price will be 100 * 64 / 56 = 114 Dollar for the bitrate of 64 kb/s.

* Price for USA is a simple average of the offerings from 3 RBOCs (in CA, IL, and NY), with the price adjusted for bitrate (i.e. multiplied by the bitrate factor 1.29). Tariffs used for the USA do not distinguish between structured and un-structured.

Not all operators in Europe distinguish between structured and unstructured services in their pricing. The ones presented in figure 9 are those who clearly do.

The difference between the highest and the lowest prices in the Asia - Pacific countries covered by this study is significant. Malaysia and Taiwan are in the same price-range as the cheapest of the European countries listed. Hong Kong and Singapore are a lot more expensive, and are at least 50% above the highest Western European country presented and 420% above the U.S. average in figure 9.

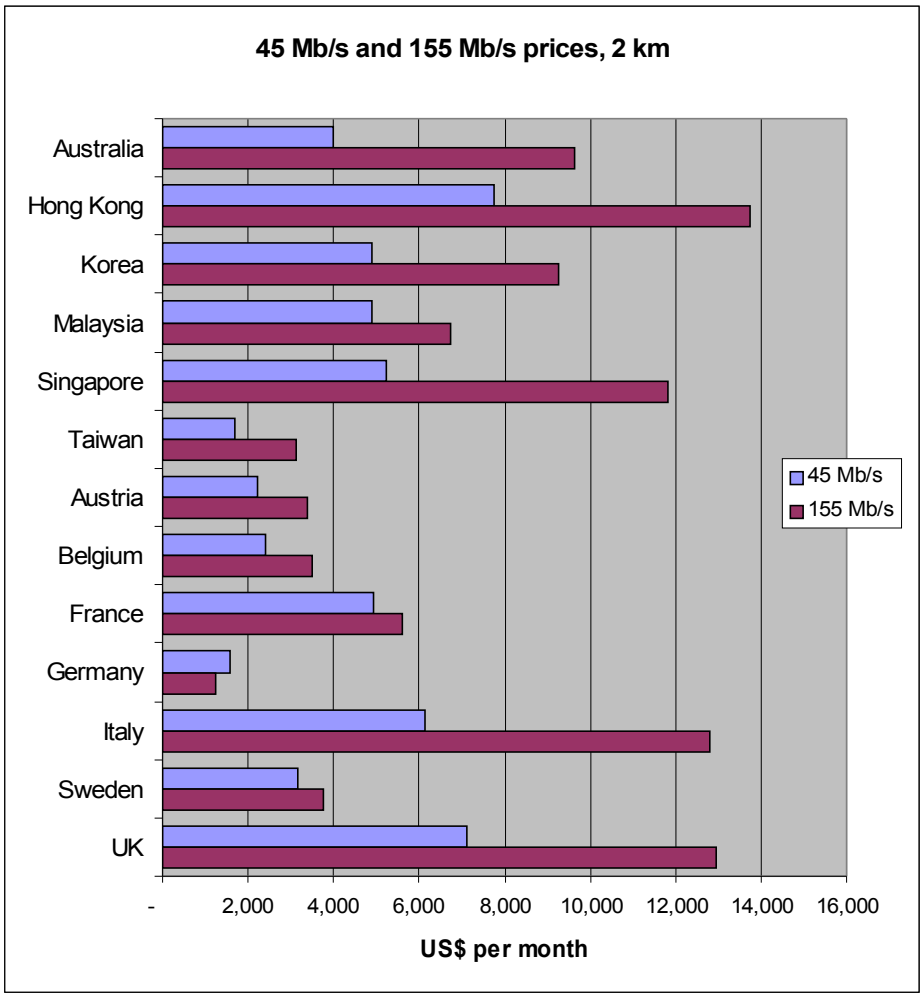
Two countries clearly stand out as being more expensive than the rest when it comes to prices for structured 2 Mb/s services. Singapore and Hong Kong both have a similar price structure with two-part pricing (as does Telstra in Australia), where an end to end service actually is priced as two different half circuits.

3.3 Comparing 45 Mb/s and 155 Mb/s with EU results

The OECD basket definitions unfortunately do not cover higher bitrates at present. The European Commission however has focused on 34 Mb/s and 155 Mb/s prices for a few years, and those prices can be used as a basis for a comparison. The definitions of the circuits are identical to that of the OECD, so it also corresponds with the prices used for the Asia - Pacific countries in this study. Prices shown below are valid as of 1 December 2002, but a more recent, still not finished study suggests that there have not been any major changes, except in France where prices for 34 Mb/s circuits have gone down over the last year.

In order to have comparable criteria for the European and the Asia - Pacific prices the European prices for 34 Mb/s need to be adjusted to match the 45 Mb/s speed. This is done in a crude way by multiplying with the factor 45/34, which may not be entirely correct, but still gives a feel for what the prices of the higher speed might be in the European countries.

Figure 10: Comparing high speed 2 km circuits



Note: The adjustment of the prices mentioned above will increase the 34 Mb/s prices for European countries. For Germany this has led to the peculiar result that 34 Mb/s appear more expensive than 155 Mb/s. This is of course not correct, but resulting from the fact that the prices are almost the same for short local circuits.

Two European countries stand out as more expensive than the others. But these actually have prices that are comparable with many of the Asia - Pacific countries. Except for Taiwan all the other Asia - Pacific countries are more expensive than the majority of the European countries listed.

Prices for the UK are so called “Baseline” prices, and discounts will almost always apply. But actual prices are not published.

Prices within the Asia - Pacific country group are relatively uniform, again with the exception of Taiwan. And once more it is Hong Kong and Singapore who stand out as most expensive in Asia – Pacific.

3.4 Comparing with EU price ceilings

The European Commission has long been concerned about the high price levels of access circuits for long distance and international circuits, especially when the incumbent operator in a country is providing the access circuit and a competing operator is providing the long distance leg. In an attempt to force these prices down a set of Recommended Price Ceilings were set up by the European Commission to provide a target for the National Regulators to relate to.

One of the main concerns of the EU is that high prices on international connectivity will affect the prices of local Internet services, and make access to the ever more important Internet less affordable for residential users and local businesses.

The price ceilings were based on a set of assumptions, where the retail price levels from the 3rd cheapest EU country was used as a reference, and a wholesale discount level 20% was taken into account. This resulted in the recommendation adopted in 1999, with these price ceilings for circuits of 2 km length:

64 kb/s	90 US$ per month
2 Mb/s	394 US$ per month
34 Mb/s	2,026 US$ per month

Figure 11: EU price ceiling recommendation for 64 kb/s

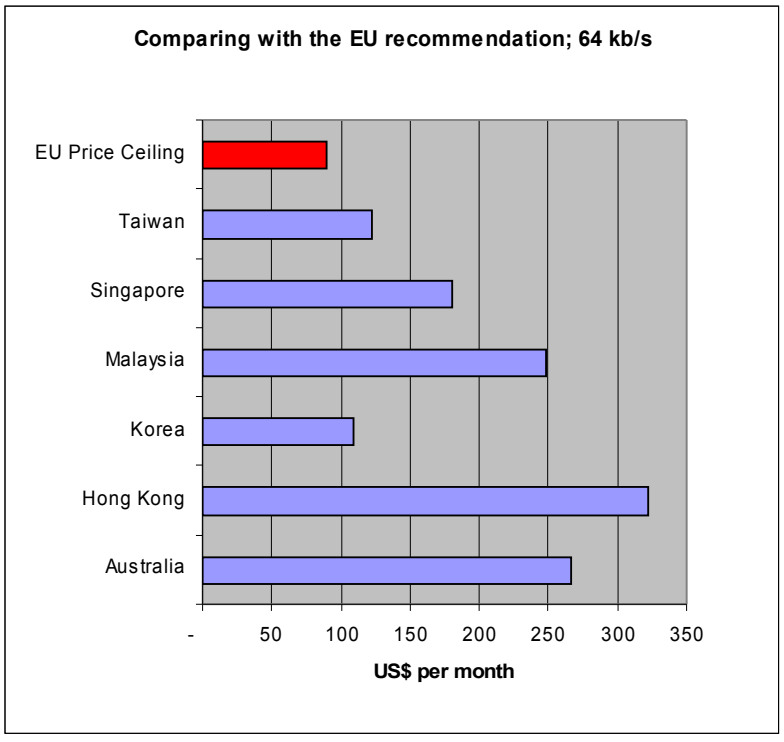


Figure 12: EU price ceiling recommendation for 2 Mb/s

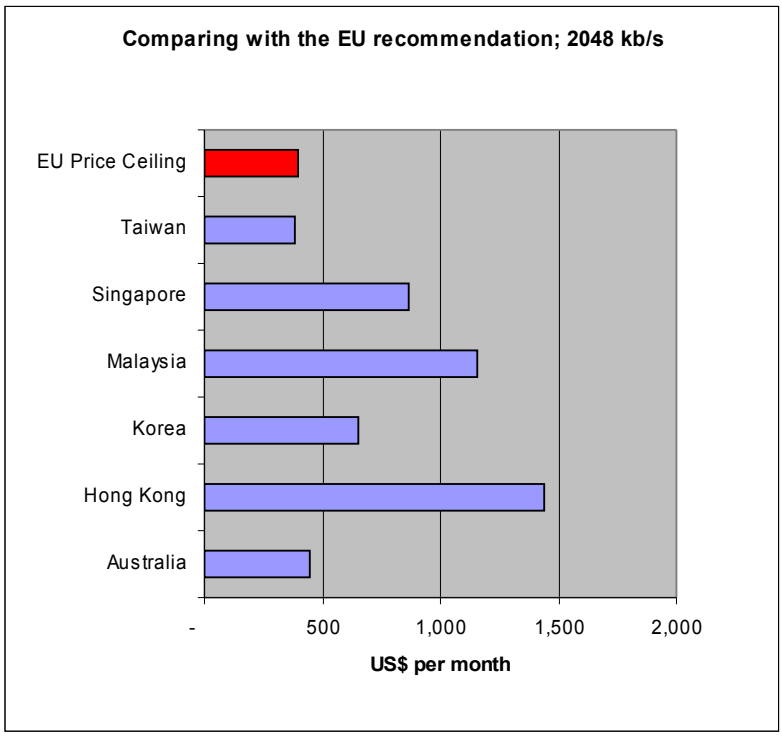
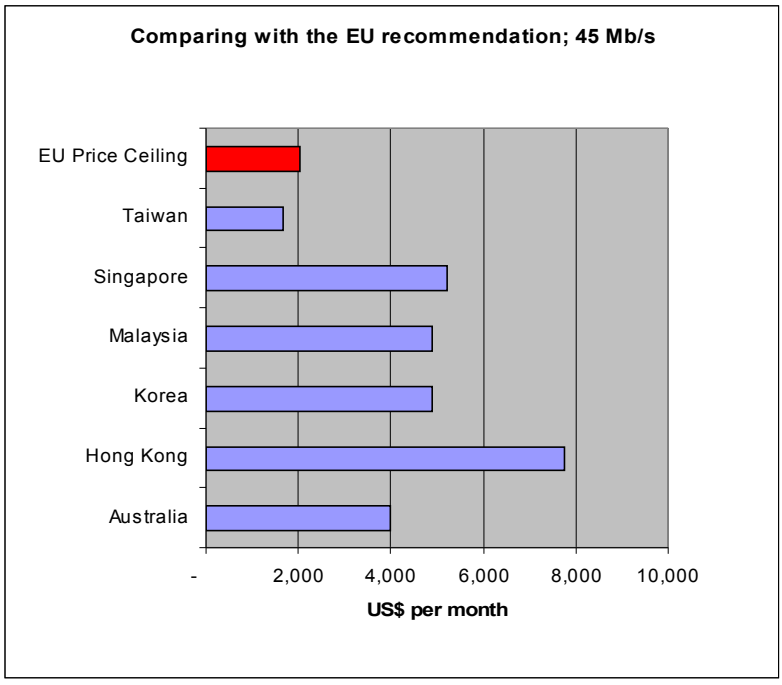


Figure 13: EU price ceiling recommendation for 45 Mb/s



Most of the Asia - Pacific countries covered by this study clearly miss the recommended price ceiling target that was developed for Europe. It is of course possible to argue that the situation is different in these countries. But how it is different will require a more in-depth analysis, and the conclusion may go either way. There is no obvious reason, demographic or geographical, why such price ceilings should not be applicable also in these countries.

4 Conclusions

The 6 Asian countries covered in this study are all to be classified as developed countries, and should be compared with other developed countries where regulation and competition is well developed. 2 of the 6 countries are OECD members.

- There is a great deal of variation between the 6 Asian countries covered in this study but the more expensive countries in the Asia - Pacific region are among the most expensive developed countries anywhere.
- The cheapest access services available are generally at a similar price level as access services in other countries and parts of the world. However, for the purpose of international connectivity they may not always provide the necessary level of quality and service. Getting such quality and service is possible, but then the price is significantly higher than with similar services in many European countries or the U.S.
- Most countries do not match the EU Recommended Price Ceilings, which are viewed as a reasonable target for access circuit prices. There is no obvious reason, demographic or geographical, why such price ceilings should not be applicable also in these countries.
- The concept of two-part charging and "Grooming" is offered in 3 of the 6 Asian countries – Singapore, Hong Kong, and Australia. These countries are coincidentally also the countries where prices for access circuits from the incumbent operator are often found to be highest. Grooming, depending on configuration and pricing, can offer a significant cost saving over simple circuits, also beyond the circuit cost element, in most of these countries. However, in Singapore the cost savings are smaller due to the very high prices of grooming pipes (1984kb/s structured circuits). Grooming is also not a cost-effective alternative when higher bitrates are required. Already at 512 kb/s the cost-effectiveness has declined considerably.
- Regarding the individual countries:

  - **Australia** - Structured service from Telstra is significantly higher priced than Unstructured. The structured service uses a two-part pricing scheme, which in some cases makes a 64 kb/s structured circuit as expensive as an unstructured 2 Mb/s circuit.

  - **Hong Kong** - Prices are generally on the high side. But the price relationship between structured and unstructured circuits appears more logical. The structured service uses a two-part pricing scheme. High speed circuits above E1 are more expensive than in other countries.

  - **Korea** - Prices found for Korea are among the lowest in this study. There is a fair amount of variation in the prices reported from the global Operators.

  - **Malaysia** - Prices for access circuits are mostly in the middle range. However there is a significant variation in prices reported as being offered to the global Operators by the incumbent, something that makes the analysis of prices in Malaysia a bit uncertain.

  - **Singapore** - Prices for 64 kb/s and 2 Mb/s unstructured are in the middle range of prices for this group of countries. Other bitrates, and the structured service, are however found to be among the most expensive. The structured service uses a two-part pricing scheme.

  - **Taiwan** - Prices here are generally among the lowest anywhere, and even match the EU Recommended Price Ceilings.

- The prices in these 6 Asian countries are too diverse to be commented on as a group. Singapore and Hong Kong stand out as expensive, Australia can be expensive depending on choice of service, while Korea, Malaysia and Taiwan have reasonable to low prices.