FTTH Asia-Pacific Market Panorama
December 2016

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FTTH Panorama APAC

1. Study background

- ❖ Objectives
- ❖ Available Results

2. FTTH/B in APAC

- ❖ Overview
- ❖ Overall Figures

3. APAC FTTH/B main trends

- ❖ FTTH/B subscribers and Homes Passed distribution
- ❖ Top 10 countries in terms of % of FTTH/B Homes Passed over total Households
- ❖ FTTH/B Take up rate in the region
- ❖ FTTH/B Penetration rate

4. Market trends for FTTH/B in APAC

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FTTH/B in Asia-Pacific

A year where alternative ISP and incumbents are leading the FTTH/B evolution

- A positive evolution: 94 FTTx projects in the region
- Incumbents have deployed fiber in a dynamic way from 2015 to 2016 covering with fiber more homes:
  - Alternative ops Growth: 6.5%
  - Incumbents: Growth rate about 22.6%

Incumbents:

387.5 million FTTH/B Homes Passed

National Programs (1) :

5 million FTTH/B Homes Passed

Alternative Operators:

270.8 million FTTH/B Homes Passed

(1) Australia, New Zealand, Singapore

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FTTH/B in Asia-Pacific

FTTH/B is taking a bigger place in the APAC market due to a positive evolution in the deployment and specially in the user's adoption

297.8 million FTTH/B subscribers by December 2016 in APAC

436.5 million FTTH/B Homes Passed by Dec. 2016 in APAC

68% FTTH/B Take up rate by Dec. 2016 in APAC

68% growth from 2015

12.5% growth from 2015

+23 points from December 2015

Take up rate = FTTH-B subs / Total FTTH-B Homes Passed

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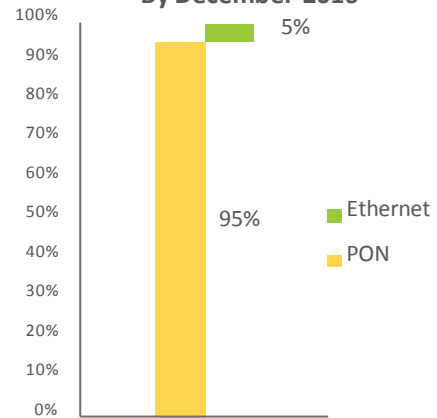ASIA PACIFIC | FIBER TO THE HOME APAC

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FTTH/B in Asia-Pacific

Regarding FTTH/B technologies...FTTH rollouts and PON solutions have evolved positively in 2016

**Main Fiber architecture deployed (*) in %
By December-2016**

- FTTB: 23%
- FTTH: 77%
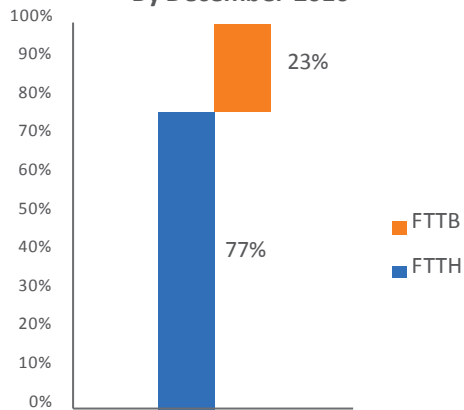
**Main Fiber technology deployed (*) in %
By December-2016**

- Ethernet: 5%
- PON: 95%

*Home Passed segmentation

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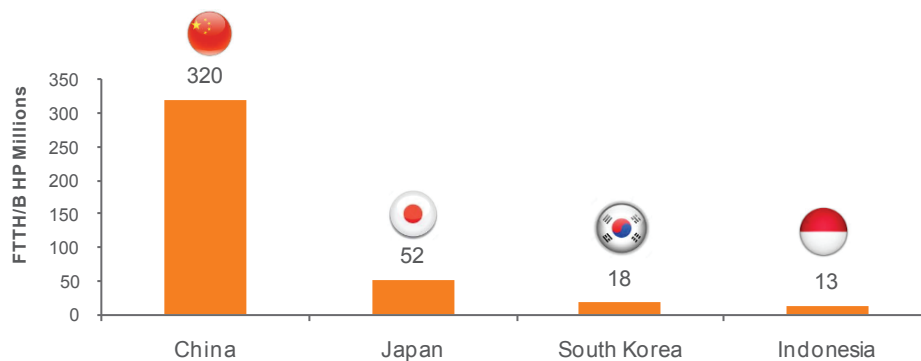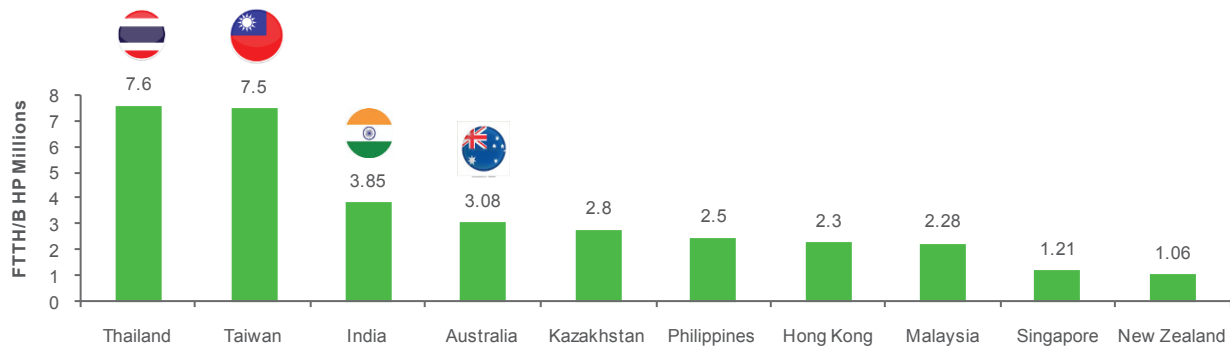
APAC FTTH/B Leading Countries

Total FTTH/B homes passed by country

The Top-4: China is no 1 by far due to the size of its market. Even though, countries like Japan, South Korea and Indonesia have reached 50 or more than 10 million homes with FTTH/B networks

The largest market worldwide. Important network overlapping. Coverage higher than government's objectives

Also it can be observed several countries that have deployed FTTH/B networks passing more than 1 million homes.
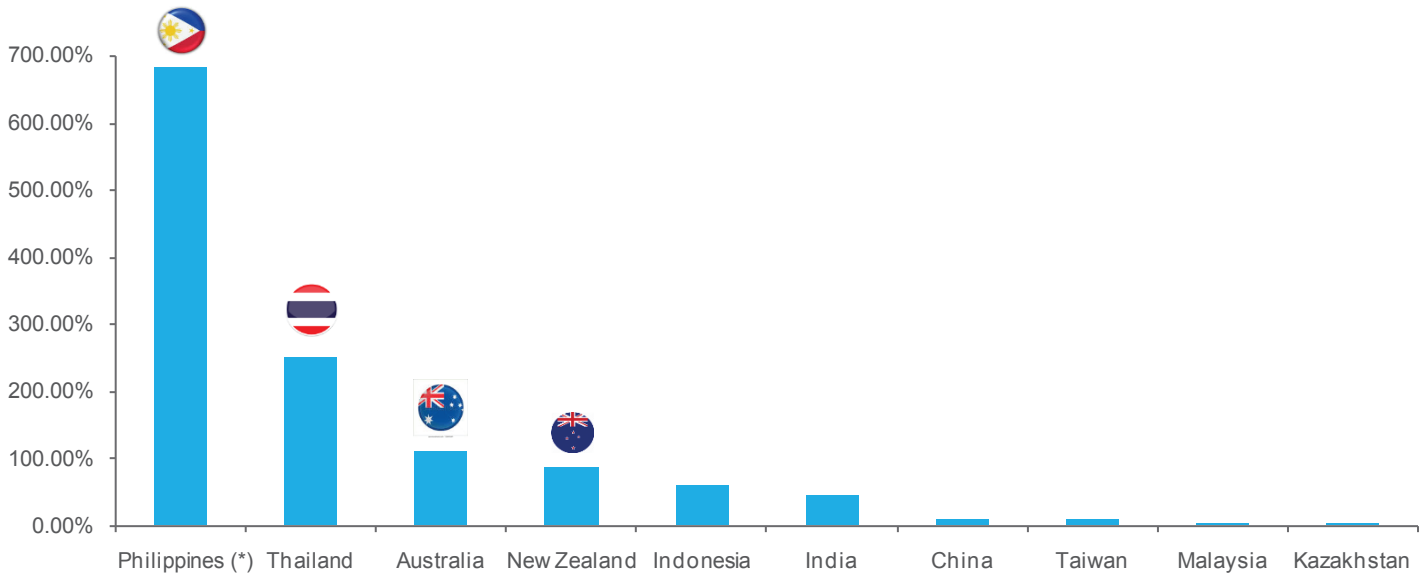

Source: IDATE for FTTH Council APAC

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APAC FTTH/B Leading Countries

Also, significant deployment efforts has been executed during 2016 for example in Philippines, Thailand, Australia and New Zealand

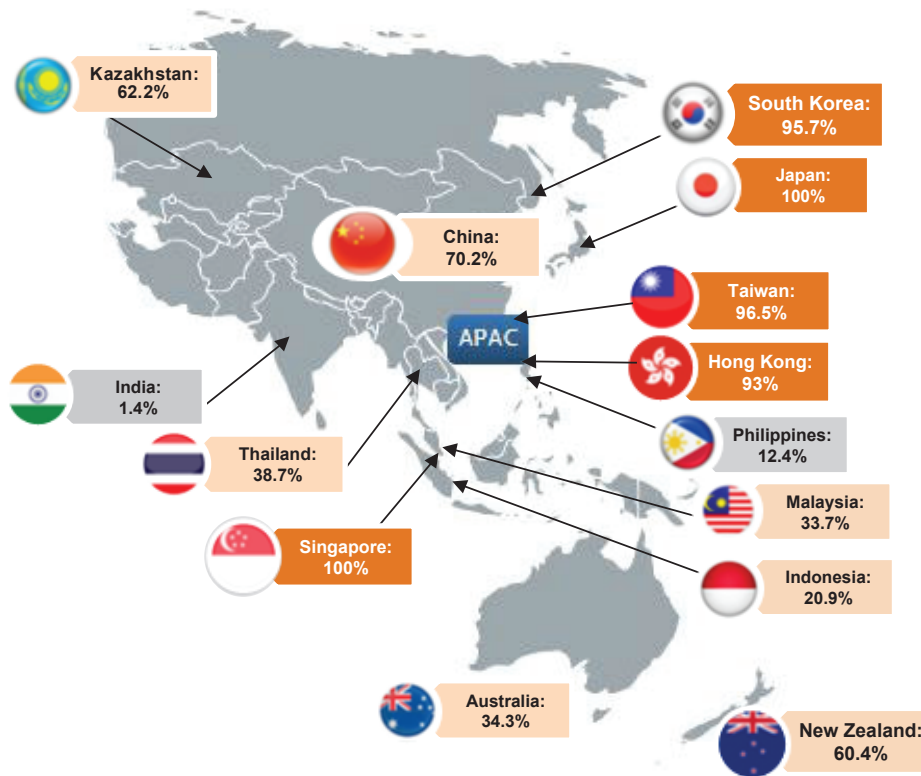% variation from Dec-2015 to Dec-16 in the number of FTTH/B Homes Passed by country

(*) An aggressive deployment plan performed by PLDT

APAC FTTH/B Leading Countries

Coverage: Top countries in terms of % of FTTH/B homes passed in total households

Kazakhstan: 62.2%

South Korea: 95.7%

Japan: 100%

China: 70.2%

Taiwan: 96.5%

Hong Kong: 93%

India: 1.4%

APAC

Philippines: 12.4%

Thailand: 38.7%

Malaysia: 33.7%

Singapore: 100%

Indonesia: 20.9%

Australia: 34.3%

New Zealand: 60.4%

- Number of Homes Passed not representative of effective coverage

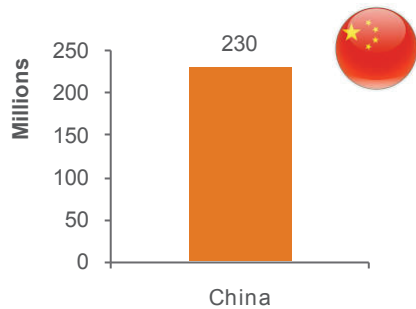- Here, the ratio represented is % of FTTH/B Homes Passed in total households

    - 5 countries → 90% !!!
    - 7 countries → 20%
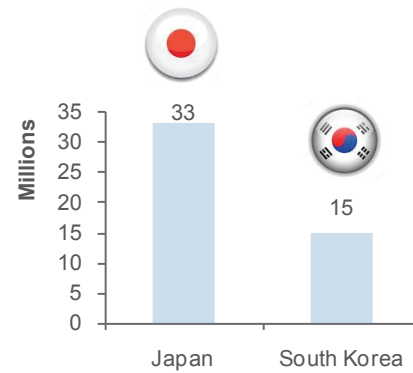   - 1 country over 10%

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APAC FTTH/B Leading Countries

Total FTTH/B subscribers by country
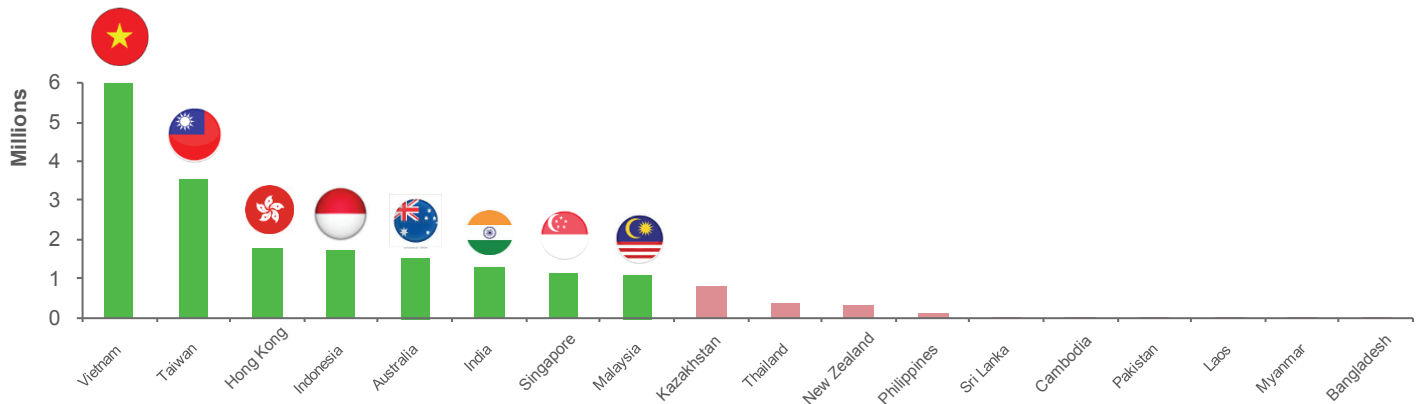
While China has increased its fiber subscribers and is still the leading country....

... countries like Japan and South Korea also have more than 30 or 10 million FTTH/B subscribers....

... and it can be observed more countries that already passed 1 million of FTTH/B subscribers

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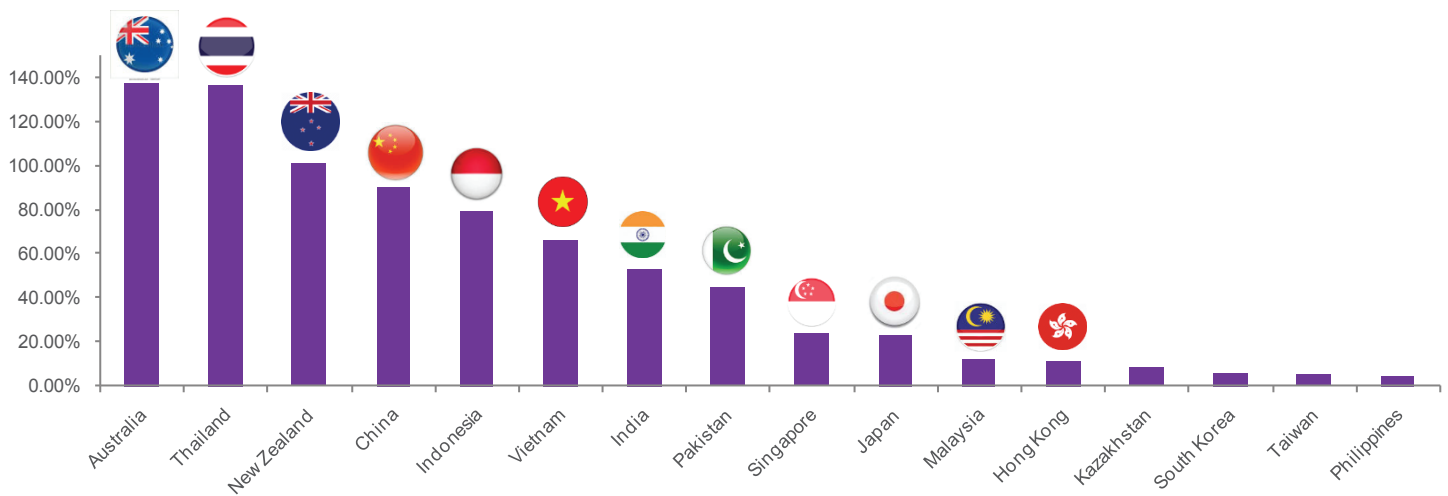
APAC FTTH/B Leading Countries

Fast evolution in 2016 in terms of FTTH/B subscribers in some countries like Australia, Thailand, New Zealand, China, India

% variation from Dec-2015 to Dec-16 in the number of FTTH/B Subscribers by country

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APAC FTTH/B Leading Countries

Penetration rates of FTTH/B in the region

Kazakhstan: 17.8%

South Korea: 82.9%

Japan: 64.4%

China: 50.4%

Taiwan: 96.5%

India: 0.5%

APAC

Hong Kong: 71.4%

Vietnam: 26.6%

Malaysia: 16.4%

Singapore: 95%

Australia: 16.9%

New Zealand: 18.6%
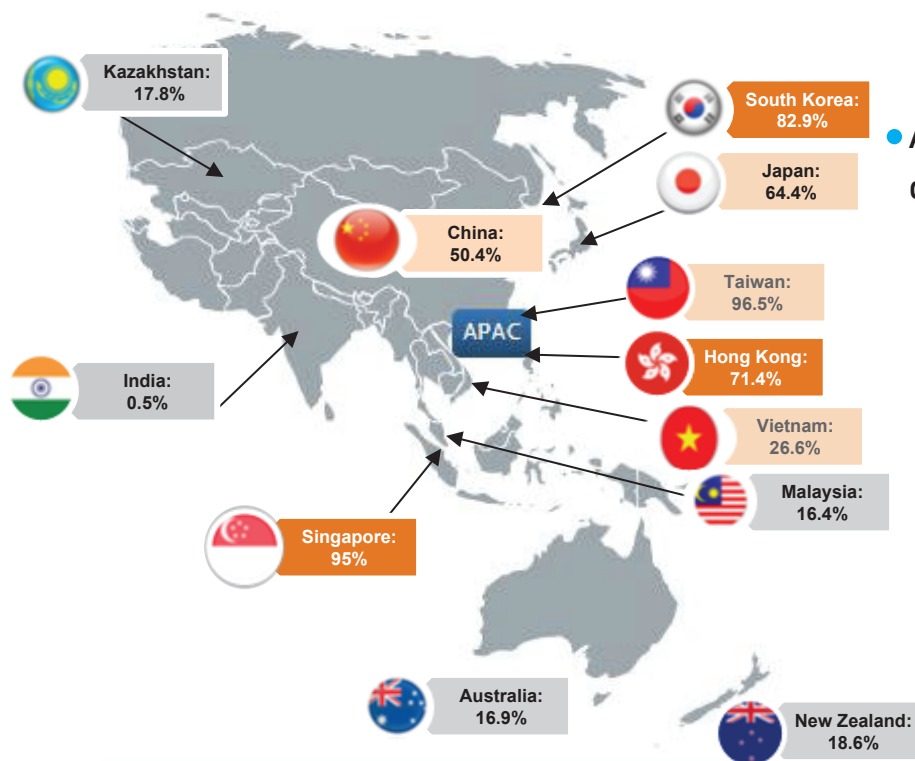
- APAC has continued the trend to deploy FTTH/B

  – 13 countries among in the Global Ranking:

  - 3 countries with a penetration rate → 70%
  - 4 countries with a penetration rate between 20% and 70%
  - 4 countries with a penetration rate → 10%

Source: IDATE for FTTH Council APAC

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Market Trends for FTTH/B in APAC

Market trends

Based on the size of the market, China is the main worldwide market in terms of number of subscribers

- 3 players involved on this market,
- By end 2016 China Telecom and China Unicom are the leaders with 106 and 85 million subscribers respectively.
- The market level is in line with the Government's objectives in terms of subscriptions, and higher in terms of coverage (300 Million HP at end 2020)

Japan and South Korea are the historical leaders

- The markets are still growing but at a lower pace (Japan +22% and SK +6% subs in 2016)
- Coverage is exhaustive in both countries and the growth is now supported by the switch of end users from one access technology to another

Australia, New Zealand and Thailand with the highest growths in terms of subscribers

- National program in Australia an New Zealand, with dedicated players involved in the rollout of the new infrastructure and in the commercialization of the new network
- Thailand with fast evolution with its operator in the FTTH deployment and adoption

Other significant markets:

- Indonesia, Taiwan then India and Philippines progressing

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Market Trends for FTTH/B in APAC

Challenges and drivers for FTTH

→ Demography: a huge market potential

- India and China are the most populated countries in the world
- MDUs are dominating in large cities especially in China
- A huge potential of 550 Million population: Bangladesh, Philippine, Vietnam and Pakistan

→ Low competition from other xDSL or Cable networks

- The "quality gap" between copper and fiber networks is important: end users need fiber for higher bandwidth
- Cablecos are less dominating the broadband market than in Europe or in the US ... and it's not going to change for now (SARFT in China)

→ A key driver for mass market migration in APAC: NBN programs... the NZ success, now followed by the Australian one, and in 2016 by Philippines

→ Incumbents leading rollouts in APAC but also some free room for new entrants

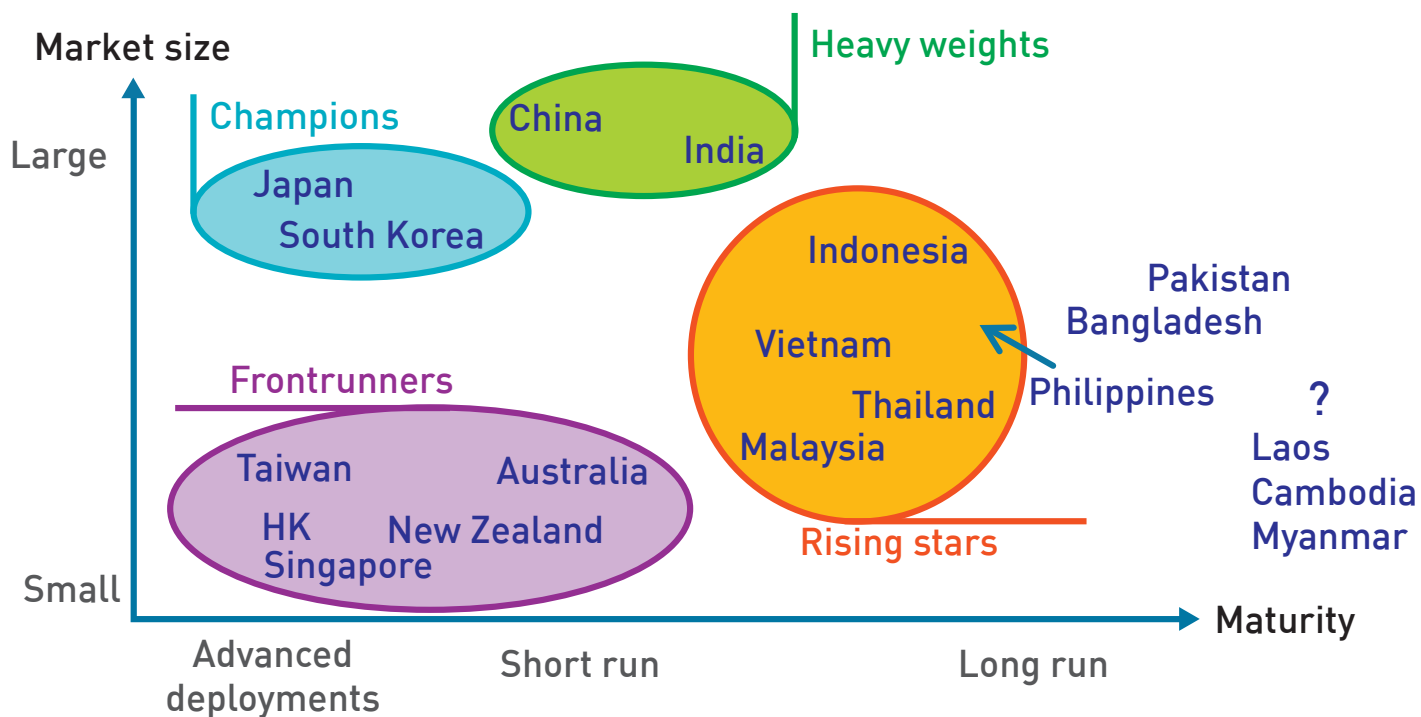- Some incumbents are deeply involved in national FTTH/B deployments (Philippines, Indonesia, Malaysia)
- New entrants in large countries (India), mature markets (HK) or emerging markets (Vietnam)

→ APAC Fiber dynamic is also being pushed by Mobile demands...

- Fiber for mobile Backhaul : LTE and metro / small cells ... and 5G coming soon in APAC !!

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FTTH/B APAC Markets evolution

Market size

Heavy weights

Champions

Large

China
India

Japan
South Korea

Indonesia

Pakistan
Bangladesh
Philippines

Vietnam

Thailand
Malaysia

?
Laos
Cambodia
Myanmar

Frontrunners

Taiwan
Australia
HK
New Zealand
Singapore

Rising stars

Small

Maturity

Advanced
deployments

Short run

Long run

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Membership Information

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Who can become Member?
Membership to the FTTH Council is open to companies interested in leading the FTTH revolution! Any company, business entity, non-profit organization, academia or individual that is involved in the development, production, deployment, service, maintenance or analysis of FTTH networks or FTTH network components is welcomed as our member.

Membership Guideline
Platinum and Gold class membership are available for commercial profit based organizations and companies.
Silver membership is created especially for non-profit institutions, certified educational institutions like universities, govt. institutions.

Category	Platinum	Gold	Silver
Annual Fee	5,000 USD	3,000 USD	1,000 USD
Representatives	7	5	1
Attend Council Workshop and Seminar	✓	✓	✓
Attend Annual Conference (At Member's Discounted Rate)	✓	✓	✓
Attend General Meetings	✓	✓	✓
Attend Committee Meetings	✓	✓	✓
Chair a Committee	✓	✓	✓
Hold a Board Seat	✓		
Have Voting Rights	Annual Meeting – Special Meeting – Working Committee	Working Committee	Working Committee
Access to Woking Documents	✓	✓	✓
Access to Technical Reports	✓	✓	✓

Membership Benefits
- Opportunities to promote your company to the industry
- Review the latest market analysis & projections
- Stay up-to-date on cutting-edge technologies
- Participating Annual Conference and General Meeting
- Networking opportunities: By joining one of our Working Committees you are able to work together with experts from all the leading FTTH related companies in Asia-Pacific. Benefit from new contacts, open discussions and new insights!

Join now!
1. Visit the Council website www.ftth councilap.org and submit the online membership application.
2. Your application is submitted to our membership committee for a formal voting procedure, then final approval is taken by Board of Directors.
3. You get a confirmation of your membership and are welcomed as a new member in our organization!

Governance
FTTH Council Asia-pacific consists of approximately 60 company members, around 200 delegates and a five - member Board of Directors.

The FTTH Council Asia-Pacific has 7 working committees which focuses on developing the case for Fiber connectivity through a range of materials and activities.

Committee	Purpose
Membership	Provide a process that encourages the growth of membership.
Technology & Standards	Promote the awareness and business implication of active system, passive components and deployment techniques of FTTH network.
Market Intelligence	Provide common understanding of the customer segments and their requirement; and to promote the markets development through communication.
Planning, Communications & Events	Plan and coordinate all general membership activities such as meetings and conferences. Also coordinate active and proactive public relation.
Education & Training	Promote the FTTH Council APAC as a trusted & impartial central source for knowledge, facts, education and perspectives on FTTH.
Smart Cities	Provides knowledge and best practices to assist with fiber infrastructure for Smart City projects.
Fiber as a Service (FaaS)	Provides knowledge and best practices to assist with common Application Programming Interfaces (APIs) to abstract the service model to rapidly deploy and provision services over fiber.

FTTH Council Global Alliance

Website: www.ftthcouncilap.org
Contact: info@ftthcouncilap.org

Updated in March 2017

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