Different models of government supported national fibre initiatives
Case study of Qatar Q.NBN and Singapore NBN

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1. Why are governments investing in national fibre network projects?
2. What are the different models available and how they compare?
3. What have others done? Singapore vs Qatar
4. How to chose the right model?

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Declaration of broadband and access to the internet as a basic human right

United Nations – 2011 Human Right Council Report

National fibre network is critical piece of infrastructure

Access to high speed broadband is linked with the economic prosperity of the country

Stimulating demand and supporting the national rollout are key initiatives and part of every national ICT plan

Main Goals

Broadband adoption	90%	90%
ICT contribution to GDP	x2 ($26 bil)	x2 ($3 bil)
ICT jobs increase	66% (80K adds)	100% (20K adds)

Source: IDA Singapore and ictQatar

Singapore IN2015 and Qatar ICT Plan 2015

iDA SINGAPORE ⟷ Next Gen Nationwide Broadband Network

ictQATAR ⟷ Q.NBN Qatar National Broadband Network

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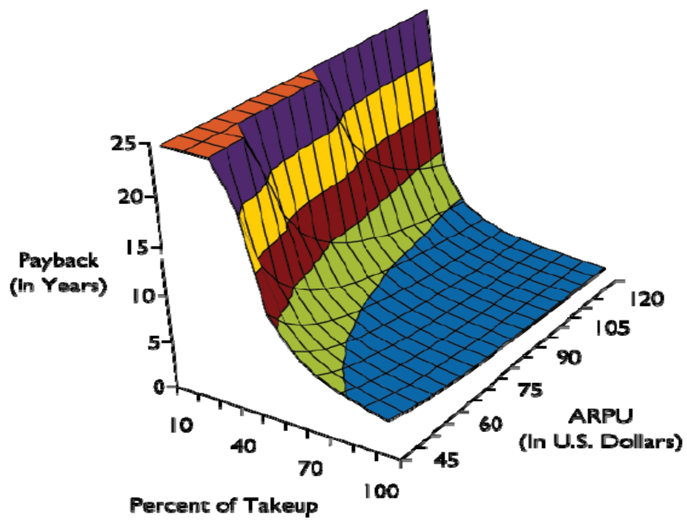
Operators usually don't have the commercial justification for doing it nationally

Nationwide roll-out is very expensive.
Business case payback period is usually more than 10 years

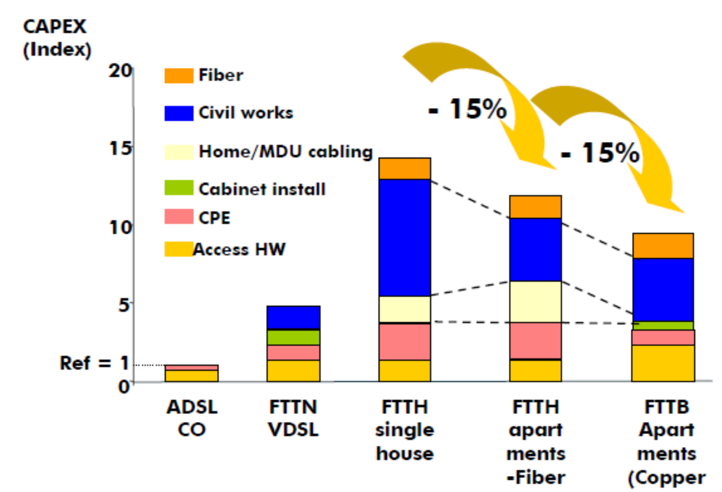
More than 50% of the costs are in the civil works.
Duct reuse could vary things a lot

Discounted FTTH payback analysis



Source: Yankee Group.
Based on 1000 USD cost per home / 45% margin and 12.5% WACC

Cost breakdown FTTx



Source: Alcatel-Lucent

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Governments have usually two levers they could use

1. Financial involvement

- National level subsidy
- Local government support usually as gap filler where operators can't afford

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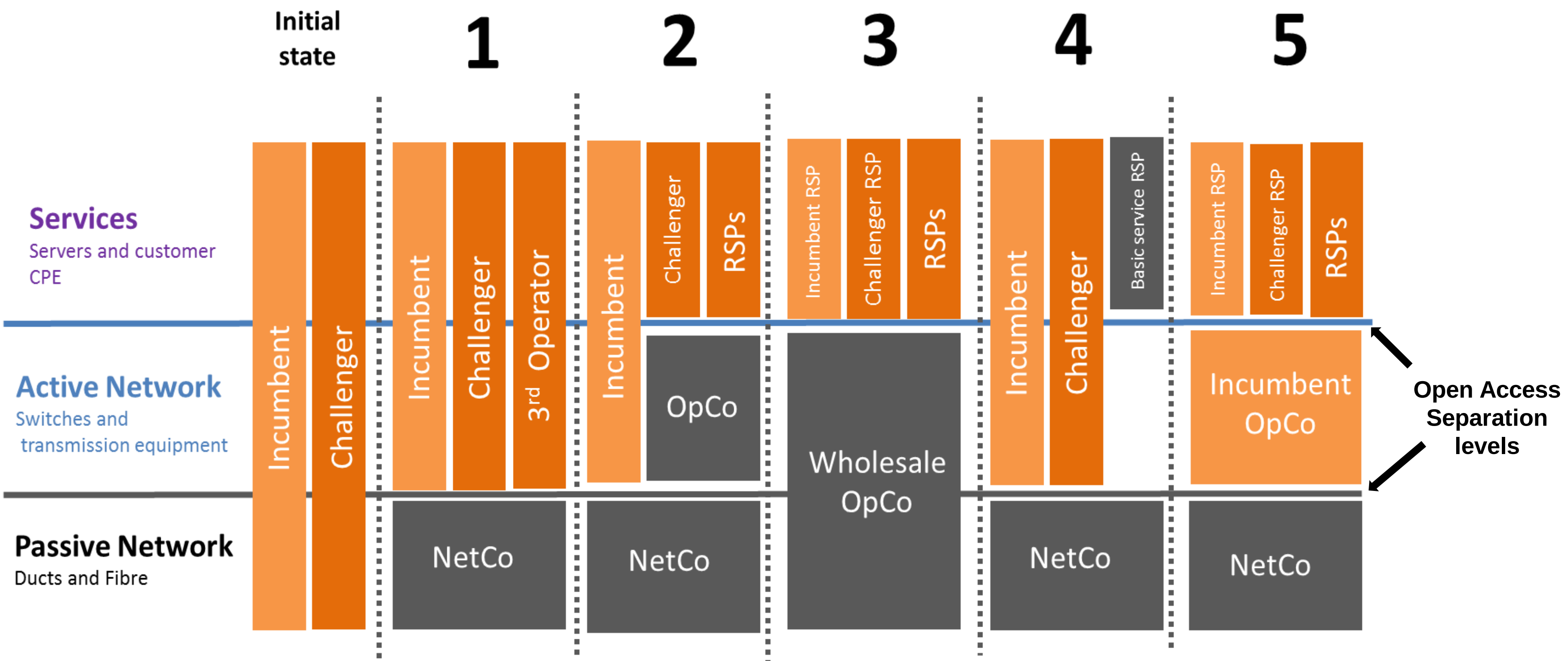
2. Regulatory measures

- Regulatory holidays
- Regulatory access
- Separation (structural/functional)
- Nationalising the assets and creating government utility

Models differ in the level and scope of government involvement



Source: Salience analysis

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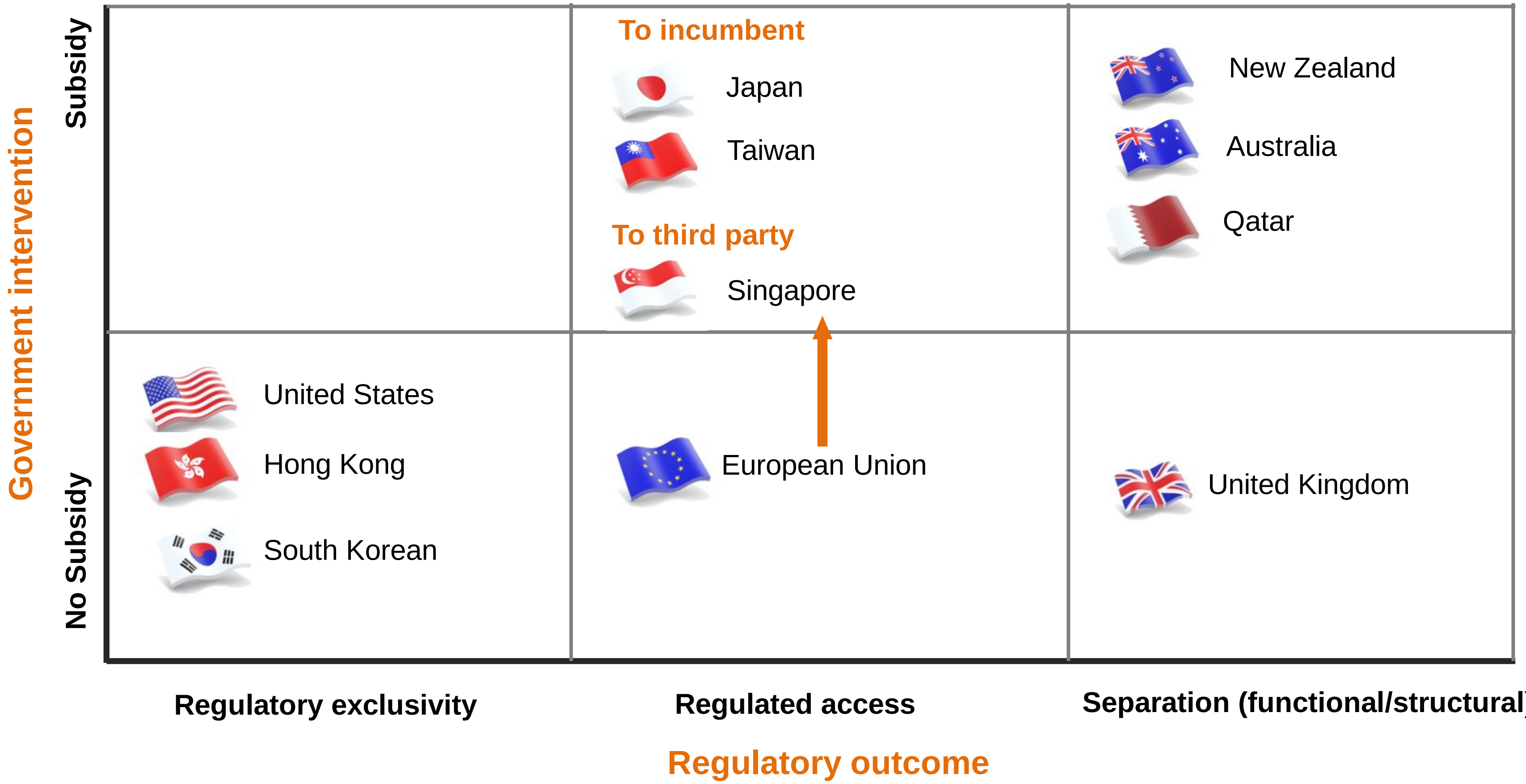
Regulatory exclusivity is the only model that works without government subsidy



Source: McKinsey Analysis

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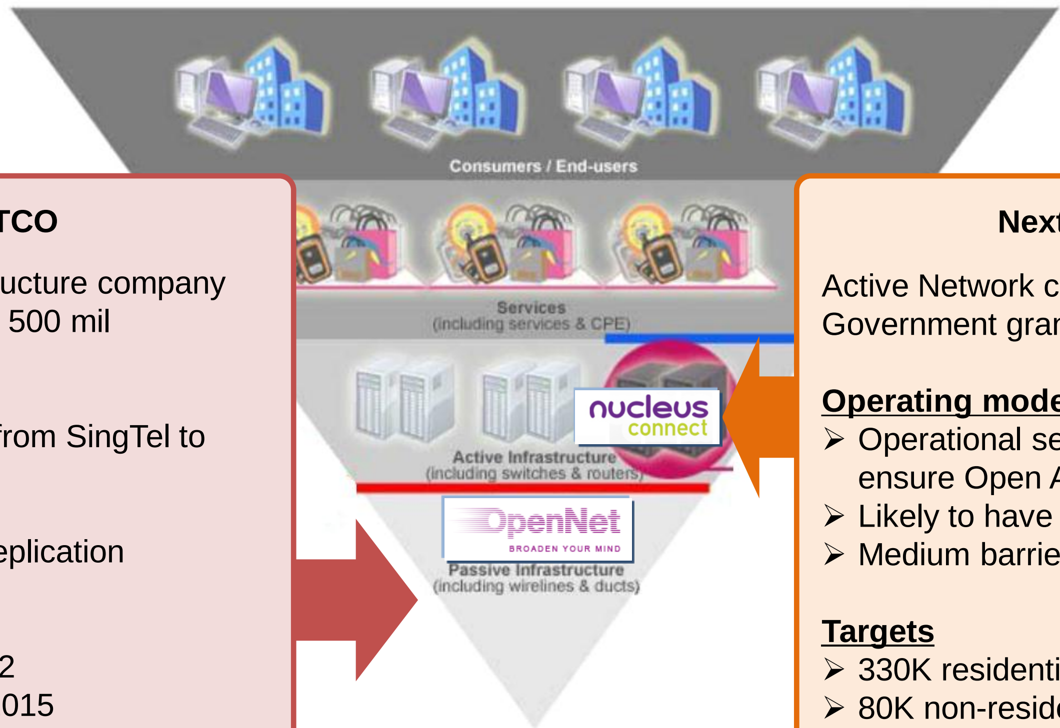
Singapore had great vision but long road to success



Next Gen NETCO

Passive Network Infrastructure company
Government grant of US 500 mil

Operating model

- Structural separation from SingTel to ensure Open Access
- Natural Monopoly
- High barrier of entry/replication

Targets

- 50% coverage by 2012
- Universal service by 2015

Next Gen OPCO

Active Network company
Government grant of US 170 mil

Operating model

- Operational separation from Starhub to ensure Open Access
- Likely to have multiple OPCOs
- Medium barrier of entry/replication

Targets

- 330K residential subs by 2015
- 80K non-residential subs by 2015

Main challenges/lessons

- Selected the right model for their country – open access, consortium approach
- The bid was open to external parties – knowledge transfer through consultations
- Took much longer than anticipated by the government – 3 years to award
- Shaping the incumbent involvement was difficult and highly political
- NetCo – issues with in-home cabling
- OpCo – issues with meeting surge of demand

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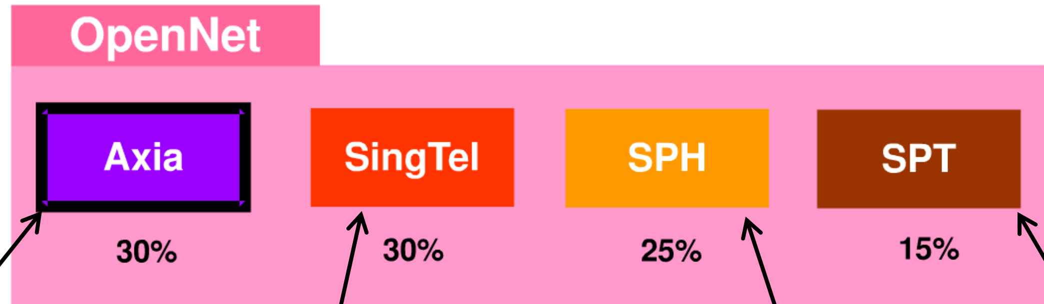
NetCo – carefully crafted consortium



INTERNATIONAL EXPERIENCE
Has built an open-access network in Canada, and is currently building one in France

LOCAL EXPERIENCE AND ASSETS
The most experienced telco in Singapore, with access to the most extensive network of subterranean ducts

INVESTMENT & CONTENT
Surprise partner
Biggest content and multimedia company

UTILITY DUCT ASSETS
Broadband network and access to underground ducts
Affiliated with Singapore Power (SP), incumbent utility

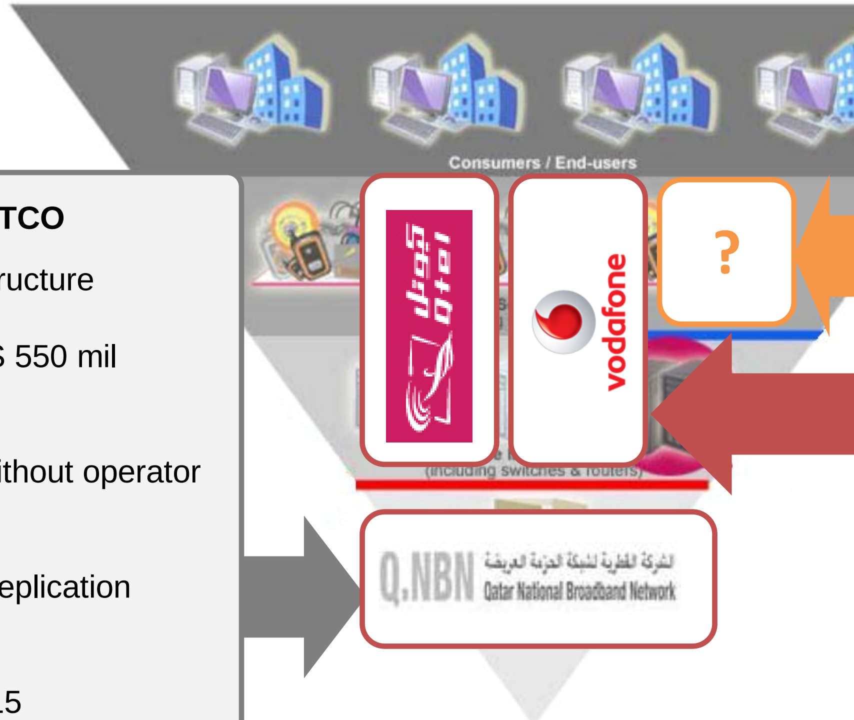
Qatar is great example of government support

Next Gen NETCO

Passive Network Infrastructure company
Government grant of US 550 mil

<u>Operating model</u>
- Separate company without operator experience
- Natural Monopoly
- High barrier of entry/replication

<u>Targets</u>
- 95% coverage by 2015



New ISP?

- ictQATAR indicated planning for a 3rd "services based" operator

Vodafone

- New fixed license gained after delays
- Keen to get going quicker

Q-Tel

- Q.NBN is to acquire duct assets and CO space from Qtel

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Qatar: Positive start but a lot of unknowns

Potential issues

- Duct asset identification and transfer from QTel and other government entities (Ashqal)
- Q.NBN is new entity with new team and no operator background
- Take-up is a target but its not clear how Q.NBN could achieve this
- Delays are likely – most government projects are over optimistic at the beginning

Likely outcome

Qtel: negative / neutral
Expected to lose market share quicker than in normal circumstances. Potential to build leaner service oriented company.

Vodafone: positive / neutral
Quicker access to new customers then building own network. Government delays could affect service plans negatively and impact brand.

3rd player: positive
Unclear yet but the availability of regulated infrastructure should help

End users: positive
Availability of high speed connections at lower price. Possible disruption from the roll-out.

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Comparative analysis – Qatar vs Singapore

			**Notes**
Population density (People/km2)	7,315	123	Singapore has 3 times more population, urban space is mainly multi-storey buildings
Subsidy per household	$437	$706	Higher costs are consequence of different geography
Rollout plans (years)	7	4	Qatar has very aggressive targets
Model	Independent NetCo & Opco	Government established NetCo	Singapore spend 3 years selecting the right model and doing competitive RFP
WEF Networked Readiness rank in 2011/2010	2/2	25/30	State of various factors related to ICT development

Source: Salience Analysis

Subsidy calculated on the basis of 1,145 K homes in Singapore and 779 K homes in Qatar

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Planning is key so do your homework

- **Analyse your country specific factors** – there is no one-size fits all solution
- **Create financial business cases** for the various alternatives
- **Choose wisely** – importing international experience vs local knowledge, interest of existing players
- **Make it big and bold** – plan it around national ICT strategy
- **Learn from other mistakes** – you could observe why others have succeeded or failed
- **You don't need all the answers from day one** - Singapore was shaping the framework through its competitive consultation process for years
- **Implementation needs to be rigorous** – running multiple networks is chaos, digging roads to deploy fibre could be very disruptive

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