The Impacts of Policy and Regulation on FTTH deployments

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Policy and regulatory impacts compiled from input contributed by Ovum Consulting

Broader issues compiled by the members of the Regulation and Policy Committee of the FTTH Council Asia Pac

Government has a critical role to play

- Governments and regulators can substantially influence the nature and timing of FTTH / B transition
  - How open will FTTH / B be to competitive access?
  - What population coverage?
  - How can policy initiatives influence market behaviour?

- The absence of policy can be a cause of uncertainty that can delay investment

- Important progress can be made when governments take the lead

There's no one apparent formula for success

- Some governments and regulators have focussed on infrastructure competition
  - allowing the market to evolve naturally
  - eg Hong Kong
- Others have encouraged industry collaboration
  - facilitate FTTH/B by breaking down the barriers created around old services / technologies
  - eg Japan and South Korea
- Others are rewriting the competition and market structure book
  - Eg Singapore, New Zealand, Australia

Government participation can be a critical catalyst for change

- Government involvement in FTTH construction provides strong opportunity to promote change
  - A new kind of industry structure?
  - A new approach to competition?
  - Encouragement of new BB applications of national significance?

Asia-Pac BB Markets can be divided into distinct FTTH categories as at End 2008 (things have now changed)

- Tier 1 (well advanced FTTH/B deployment)
  - Hong Kong, Japan and South Korea
- Tier 2 (threshold FTTH/B transition)
  - Singapore and Taiwan
- Tier 3 (potential FTTH/B transition)
  - Australia, New Zealand, China and Malaysia
- Tier 4 (lower priority for broadband development)
  - India, Indonesia, Thailand and Vietnam

But there are still significant differences between countries in the same tiers

The Council strongly welcomes the Australian government's FTTH initiative…

and our members are keenly interested in the details of how its going to be implemented…

The reasons for doing NBN outlined by the Australian government

- "The nation has cause for concern" argument
  - Australia is falling behind its OECD partners
  - There is insufficient competition and investment
  - We need a nationwide network, available to all
- The critical benefits that will flow from an FTTH investment:
  - Economic benefits – jobs and international competitiveness
  - Regional benefits
  - Environment
  - Health
  - Education
  - Consumer benefits of the digital lifestyle

Encouraging consumers to connect

- Many Australians already have fast access available, but don't subscribe to the fastest services

- It must be because its the *value* of the applications that consumers care most about, not the *speed*

“Build it – and they will come”

But they don’t come of their own accord

- Australia’s existing FTTH greenfields
  - Are estimated to be ~10,000 homes connected (<~ 0.1%)
  - Largely emulate ‘fast DSL’
  - Attract very few subscribers to the highest service tiers
- We are yet to see the emergence of the government’s target NBN applications
  - Smartgrid
  - eHeath
  - eEducation…

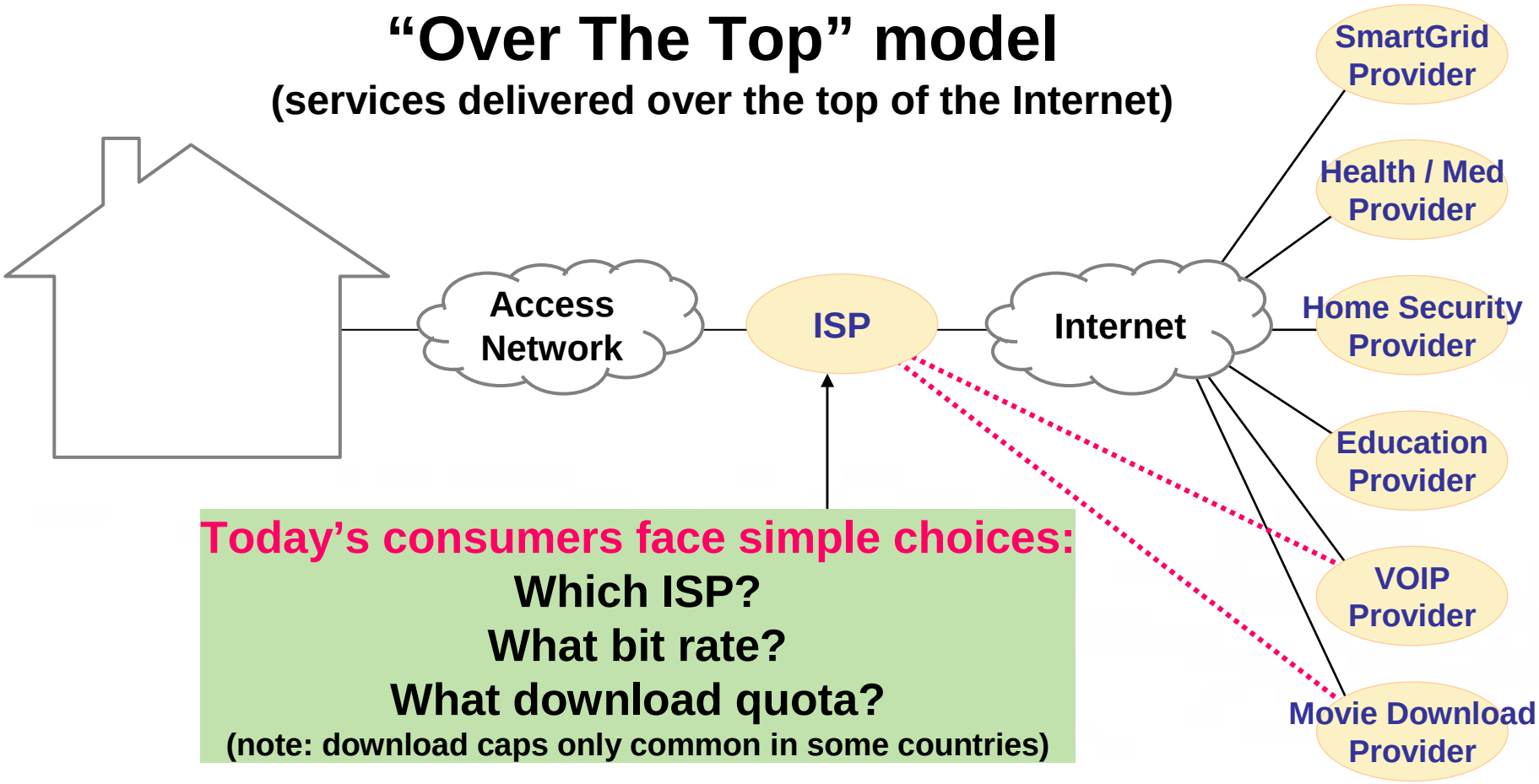
We need to approach FTTH differently than just ‘the Internet’ in order to realise its true potential

Are we still trying to emulate first generation DSL???

What kind of network will applications developers be working with?

"Over The Top" model

(services delivered over the top of the Internet)



Today's consumers face simple choices:

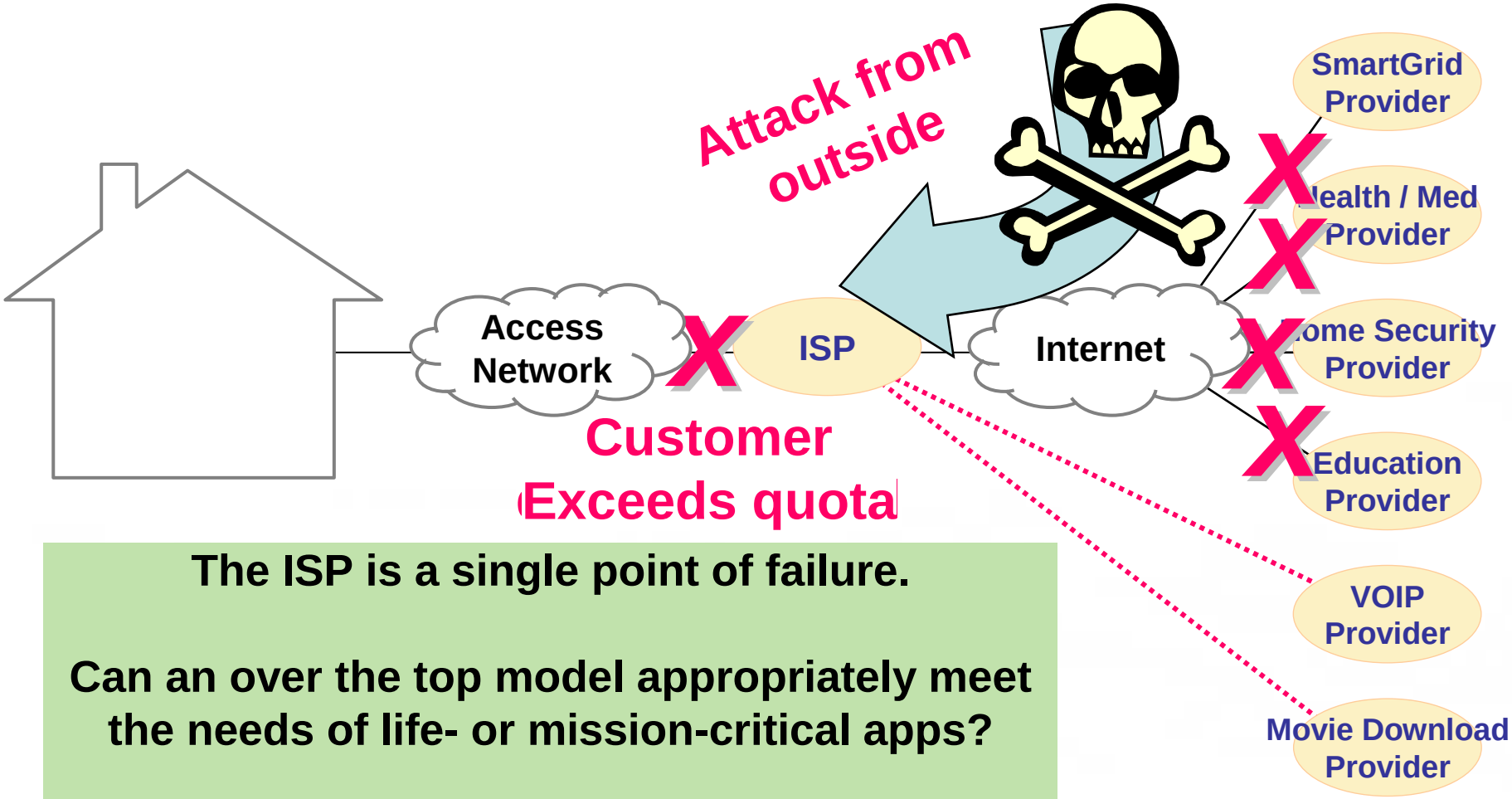
Which ISP?

What bit rate?

What download quota?

(note: download caps only common in some countries)

Does an ‘over the top’ model meet ***all*** applications developers’ needs?

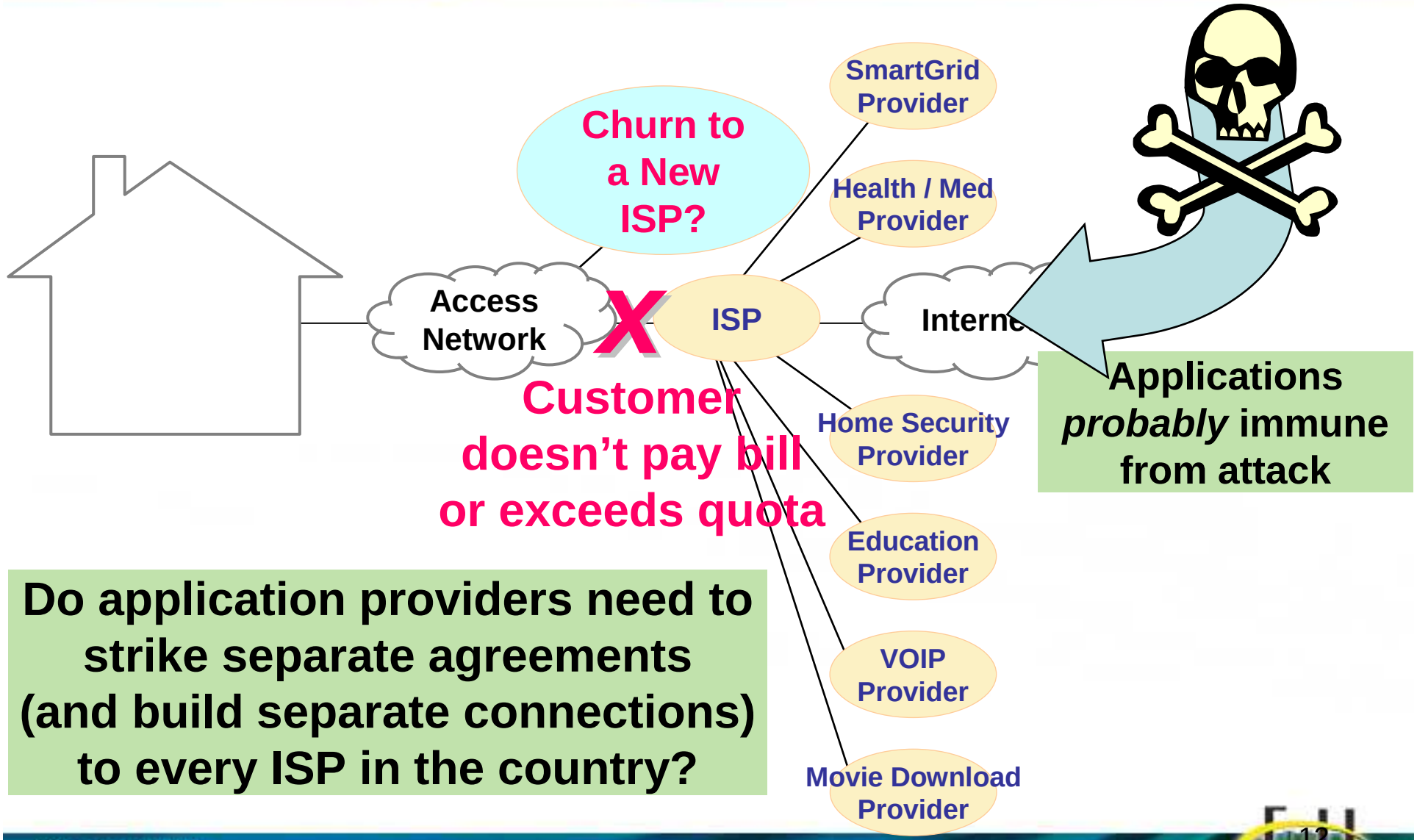


The ISP is a single point of failure.

Can an over the top model appropriately meet the needs of life- or mission-critical apps?

Some kinds of application may be discouraged under this model.

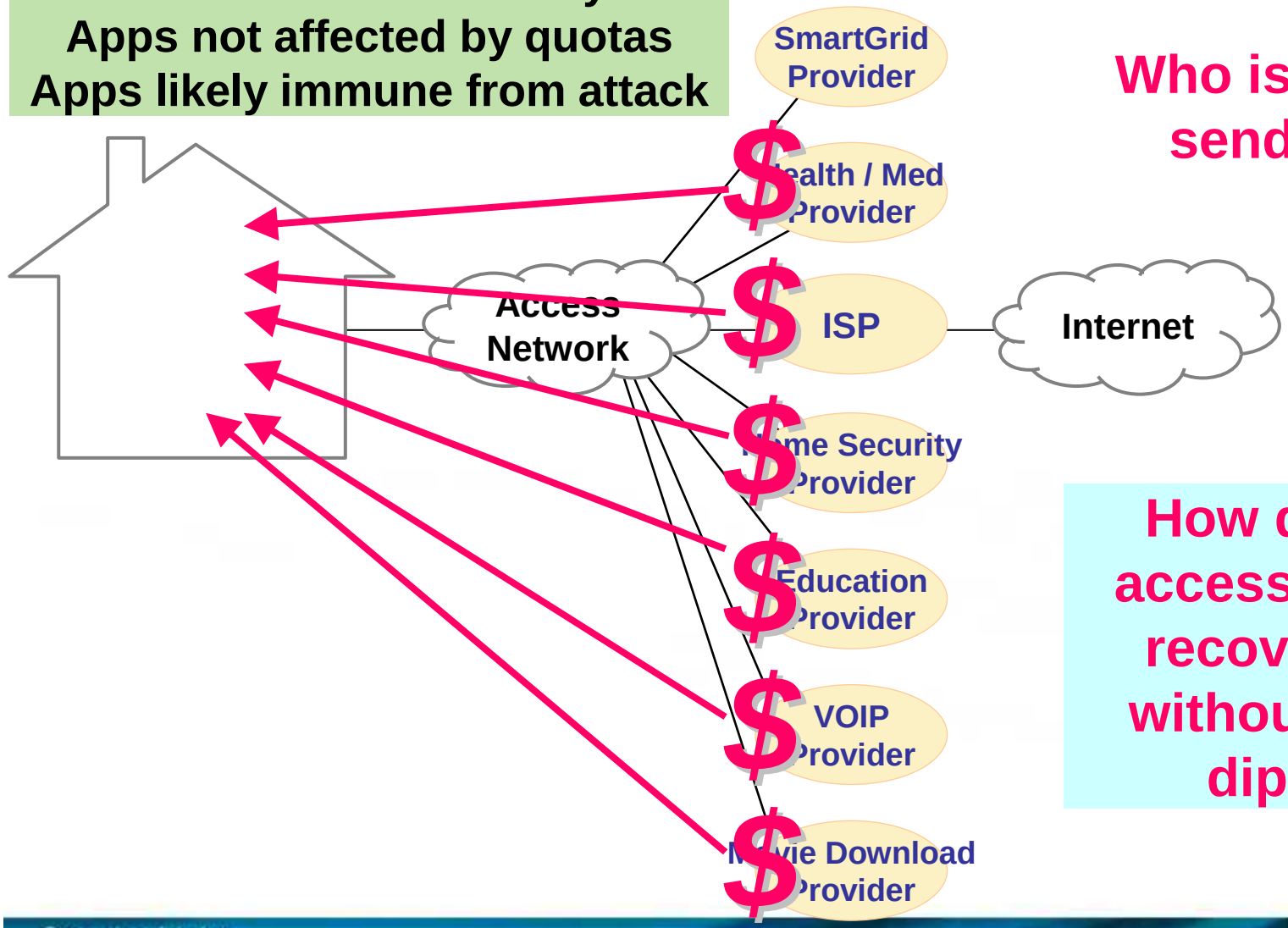
Option 2: Create incentives for application providers to partner with ISPs



Do application providers need to strike separate agreements (and build separate connections) to every ISP in the country?

Option 3: All application providers connect to NBN directly…
They totally control their own destinies

ISP churn is now 'easy'
Apps not affected by quotas
Apps likely immune from attack

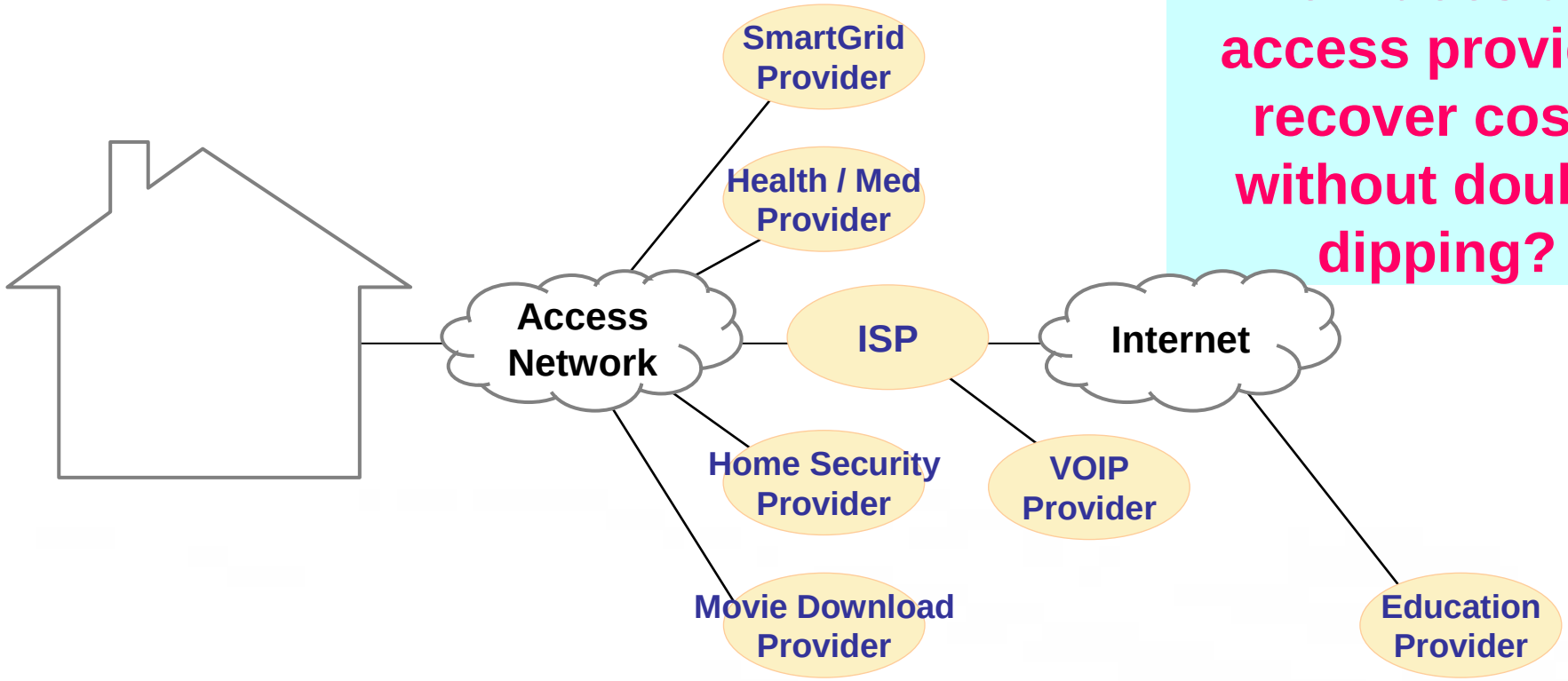


Who is going to send a bill?

How does the access provider recover costs without double dipping?

Option 4: Give consumers the choice…

Apps providers free to partner or provide direct services



How does the access provider recover costs without double dipping?

Apps providers requiring immunity from ISP single-point-of-failure are free to provide direct services

ISPs are still free to offer 'value' bundles

But consumers need to understand what they're signing up for

Removing barriers to entry and avoiding the applications divide

- The Council argues strongly for national FTTH uniformity
- Inconsistent implementation creates barriers
  - Additional cost to overcoming differences
  - Some deployments might not be able to assure required quality
  - Implementation of service tiers might be different
- Without a consistent technical approach
  - Differences discourage providers offering services to **all** communities
  - There is a tangible threat that ‘applications divides’ will emerge
  - Some Australians could miss out on some of the benefits of FTTH

What are the critical parameters for uniformity?

- Optical engineering requirements
  - To what standards should fibre deployments be designed and tested?
- Locations of the FTTH Points Of Interconnection
  - Where will backhaul be built? How will existing routes influence the choice?
- The duct and fibre architecture
  - How can we identify and accommodate today's **and future** needs?
- Fibre count
  - Will there be rules for provisioning lit and unlit fibres?
  - How will we allow for longer term community re-development?
- Aggregating build data into a uniform national database
  - How should developers record cable / infrastructure data? In what form?
- How will existing FTTH greenfields be inducted into the NBN?

Cyber attack on an American city! http://perens.com/works/articles/MorganHill

- “Just after midnight on Thursday, April 9 [2009], unidentified attackers climbed down four manholes serving the Northern California city of Morgan Hill and cut eight fiber cables in what appears to have been an organized attack.”
- “The city of Morgan Hill and parts of three counties lost 911 service, cellular mobile telephone communications, land-line telephone, DSL internet and private networks, central station fire and burglar alarms, ATMs, credit card terminals, and monitoring of critical utilities.”
- “Commerce was disrupted in a 100-mile swath around the community”
- “In addition, resources that should *not* have failed, like the local hospital's *internal* computer network, proved to be dependent on external resources, leaving the hospital with a "paper system" for the day.”
- “The first lesson is what stayed up: [Ham] radio systems and not much else. Cell phones failed.”
- “Will there be another Morgan Hill? Definitely. And the next time it might happen to a denser community that won't be so astonishingly able to sustain the trouble.”

NBN – its got to be more than just a vehicle to promote competition!

- It is imperative for Australia that the right balance is struck between
  - cost effective deployment and
  - security, reliability, availability, dependability and resilience
- Both have their place
- Few would be satisfied with an outcome that delivers one without the other

It's a *National* Network – and needs to be taken seriously!

Snowy Mountains Scheme VS FTTH NBN

- The Snowy Mountains Scheme
  - Australia's largest engineering project up until now
- Project delivered
  - sixteen major dams
  - seven power stations
  - a pumping station
  - 225 kilometres of tunnels, pipelines and aqueducts
- Commenced in 1949 and was finished in 1974, taking 25 years
- **Peak** workforce of 7,300
- The cost was $A820M ($A6B-7B in today's dollars)

- The FTTH NBN
  - Will eclipse Snowy Mountains Proj
- Project will deliver
  - FTTH to 90% of Australian homes and businesses at 100 Mbit/s and beyond
  - Supplemented by wireless to remaining 10% at 12 Mbit/s and beyond
  - national wholesale-only, open access broadband network
  - rolled-out, simultaneously, in metropolitan, regional, and rural areas
- Commence 2009, and last 8 years
- **Average** workforce of 25,000 over the eight years
- The cost will be up to $43B

The Snowy Hydro project succeeded because of careful thorough engineering.

Ref http://www.cultureandrecreation.gov.au/articles/snowyscheme/

Learning from Australia's past FTTH deployments

- Which communities currently have FTTH?
- To which standards were the deployments designed and tested?
- Is it easy for applications providers to connect to existing greenfield FTTH?
  - What backhaul do access seekers need to build themselves?
  - What commercial backhaul will be available to these POIs?
- What are the technical capabilities at the greenfield POIs?
  - Can the equipment support QOS?
  - Can the equipment support the market models just presented?
- What problems were encountered during rollout?
  - How resolved?
- Will the NBN overbuild existing FTTH communities?
  - How will existing FTTH communities be inducted into the NBN?

What needs to happen?

- *All* stakeholders should engage - together
  - both from within and outside the telecommunications industry,
  - to identify minimum network requirements,
  - likely future network requirements,
  - develop clear technical specifications encompassing these requirements,
  - and leverage these requirements to assure a minimum level of national consistency across all urban and regional FTTH deployments.

- Set a clear timetable for reaching *stakeholder agreement* on minimum technical requirements
  - Which can then inform the national FTTH build

Do we need to address the Universal Service Obligation?

- The existing USO will continue to serve Australia for as long as its twisted pair PSTN continues to exist
  - What happens to the USO where the PSTN is replaced by NBN?
- A structurally separated sector implies USO change
  - No one organisation can be responsible for an end to end service
- Perhaps we will require
  - A universal fixed access obligation – fixed access to the NBN for all?
  - A universal telephony obligation – provide telephony to every NBN address?
  - What happens to payphones?

Concluding remarks

- The value of national projects extend far beyond the boundaries of the telecommunications industry
- The lesson from Asia-Pac is that strong collaboration between *all* stakeholders and the government is the key
- It is important for the government to develop policy further than the first step of encouraging the deployment of FTTH and to develop a
  - nationally coordinated deployment plan,
  - clear industry development policy,
  - well defined competition framework that delivers fair and predictable outcomes, and
  - appropriate incentives to support all industries that stand to benefit from the planned FTTH deployment.

END

Thank you