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EU Guidelines for Public Investment in Broadband

October, 2012

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There is tension between public investment correcting *market failure* and public investment *crowding out* private investment. And managing this is essential to achieving national broadband goals and regional economic development. Recently we've found a framework capable of resolving these tensions. Developed for controlling the support of broadband networks across Europeⁱ, this framework deserves a closer look by examining the principles to be adopted in the European Union to decide when and where public investment makes sense.

Polar cases

The most significant example of public investment being used to correct market failure is the Australian Government's decision in April 2009 to create a start-up company (NBN Co) to roll-out a national broadband network (NBN).

The Australian NBN

The NBN will provide fibre to the home over a wholesale-only access network to 93% of homes and businesses nationally with the rest supplied with either fixed wireless or satellite service. The total cost will be over A\$40B and generate a "commercial return" of 7%.

According to NBN Co's first corporate plan in December 2010, 137,000 premises were to be activated by June 2012. It is running behind with just 3,500 active services at that date.

The Australian Government has been criticized for not undertaking a cost benefit analysis to justify its massive investment and the scale of this intervention is over-the-top because it crowds out private investment and existing private cable networks must be closed at the expense of infrastructure competitionⁱⁱ. The incumbent is also being forced to move customers to the NBN and de-commission its copper networks as the new network is rolled-out; eliminating competition to the NBN from copper based broadband.

At the other extreme, Tennessee is one of 19 states in the USA that have adopted legislation restricting municipal development of broadband networks. In spite of the tremendous service provided, legislation allowing the publicly-owned Electric Power Board (EPB) to offer broadband services outside of its electricity distribution footprint was aborted.

Chattanooga

Tennessee became the first community in the US with residential access to 1Gbps when the publicly-owned Electric Power Board (EPB) launched its fiber-optic network in 2010. The slowest tier of access is 50Mbps symmetrical for \$58 per month, a capacity that is nearly impossible to find at an affordable price anywhere in the United States. The renown "gig" service is available to anyone in its territory for \$300 per month (with just 34 customers at August 2012). Though that may seem a high price, only a few U.S. communities have gigabit service available even at ten times the price.

The urge to curb unfair competition from public enterprises and/or to avoid *crowding-out* private investment is understandable. But, blanket prohibitions on public sector investment ignore the benefits of addressing market failure leading to missed opportunities for economic development.

When is public investment good?

There are two arguments for public funding:

- **Market Failure** – When markets without public intervention fail to deliver an outcome that would yield the highest possible welfare for society. For example, socially profitable investments are not undertaken because some benefits cannot be taken into account in a private business case (*externalities*), and/or

Public Corporations can recognise public benefits

As an executive at EPB states, “A lot of the benefits we see from our system don’t accrue to PB.” Lower prices for telecommunications services mean more money in household and business budgets; reduced outage minutes mean improved productivity and new jobs and business expansions mean increased tax revenue for local governments. Each of these benefits to the community results in no direct benefit to the network owner, which is why private companies like Comcast and AT&T have less incentive to invest at the level EPB chose to. But EPB’s mission allows it to incorporate indirect benefits to the community when evaluating its return on investmentⁱⁱⁱ.

- **Equity** – When Governments choose to intervene to correct social or regional inequalities generated by a market outcome. For example, lack of investment in a region with limited market demand and/or high costs is not an indication of a market failure if there are insufficient public benefits, but Governments may want to see investment take place anyway for social reasons (e.g. *bridging the digital divide*).

Closing the Digital Divide

The Government's central NBN objectives are to deliver significant improvement in broadband service quality to all Australians, address the lack of high speed broadband in Australia, particularly outside of metropolitan areas, and reshape the telecommunications sector^{iv}.

But to be “good” public investment, government must not only make a case in market failure and/or equity but also it must implement the policy with least distortion to market mechanisms. In this context, the new EU state aid rules say that Member States may deem the provision of a broadband network to be a *service of a general economic interest* (SGEI) but governments can provide state investment only if the following conditions are met.

These are checked against our two examples below:

	Chattanooga EPB	Australian NBN
(a) the beneficiary must be formally entrusted with the provision and discharge of an SGEI, the obligations of which must be clearly defined;	No. EPB's broadband network was undertaken on its own initiative. It has not been allowed to extend service beyond its electricity franchise area.	Yes. NBN Co's obligations are enshrined in legislation.
(b) compensation must avoid conferring an economic advantage which may favour the recipient undertaking over competing undertakings. For example:		
(b1) in the case of a vertically integrated broadband operator, adequate safeguards should be put in place to avoid any conflict of interest, undue discrimination and any other hidden indirect advantages (e.g. <i>accounting separation</i>)	EPB cannot cross-subsidize its broadband business from its power business. EPB offers broadband, television and phone services as a bundle over its fibre but does not include power services in the bundle.	Not applicable – NBN Co. is mandated as a wholesale-only provider.
(b2) the operator cannot refuse wholesale access (including access to passive infrastructure such as ducts) on a discretionary and/or discriminatory basis (i.e. <i>open access</i> ^v)	No. Federal policy (FCC) does not mandate open access ^{vi} and EPB does not provide it.	Yes – but NBN Co. is only obliged to provide bitstream access (not dark fibre) and its ducts are acquired from Telstra.
(b3) selection does not confer an exclusive or special right to the provider of the SGEI	Not applicable. EPB was not selected and has not received any new rights or privileges.	No. NBN Co. has first rights to serve greenfield estates and competing networks have to meet its standards.
(c) the compensation can take into account only the relevant receipts and a reasonable profit for discharging those obligations	Not applicable. EPB is self-funding.	Maybe. NBN Co. is underwritten by government with a possibility of <i>gold plating</i> (over-investment).
(d) if the beneficiary is not chosen by tender, compensation granted must be determined on an analysis of the costs, relevant receipts and a reasonable profit.	Not applicable. EPB is self-funding.	No. There is no independent analysis of the reasonable costs incurred by NBN Co.

In the examples used in this paper, public investment is a direct investment through a public enterprise. But, the notion of public investment should be taken to include the possibility of providing subsidies to private companies selected by tender.

Where is public investment bad?

Assuming that the case for a good public investment has been made, it may not apply to all parts of the network or every region. The EU stops public investment *crowding out* private investment by defining “go” areas and “no-go” areas:

Go areas have **no broadband** infrastructure now or in the near future (3 years).

No-Go areas have **at least two basic broadband network providers** (facilities-based; not sharing one copper network), so it can be assumed that there is no market failure.

What is basic?

The EU considers that “basic” includes ADSL, cable, mobile, wireless and satellite solutions while, at the current stage of market and technological development, next generation access (NGA) networks are wired access networks which consist wholly or partly of optical elements and

- (I) provide enhanced connectivity
- (II) provide the possibility of symmetric speeds and
- (III) represent a sustainable and non-temporary technological advancement
- (IV) support infrastructure-based competition.

But what if neither of the existing “basic” broadband providers is prepared to upgrade to an NGA broadband network, or from a fibre-to-the-cabinet (FTTC) network to an ultra-fast broadband network? In the absence of a clearly demonstrated *market failure*, the EU Commission will take a negative view of measures to fund the roll-out of an additional broadband infrastructure in a no-go area.

Of course, there are also contentious *grey areas*, which apply to our EPB and NBN examples.

Grey areas are those in which **one network operator** is present and another network is unlikely to be developed in the near future^{vii}. A single operator may provide a suboptimal combination of service quality and prices. Certain categories of users may not be adequately served or, in the absence of regulated wholesale access tariffs, retail prices may be higher than those charged for the same services offered in more competitive but otherwise comparable areas of the country.

State funding in *grey areas* is allowed provided that:

- I. no affordable or adequate services are being offered to users, that
- II. there are no less distorting measures available (including ex ante regulation) to reach the same goals and
- III. that there are no other operators planning to invest in the target area within a three-year period.

Some Approved Grey Areas

In the United Kingdom, the EU Commission allowed financial support by Welsh authorities for the construction of an open, carrier-neutral, fibre-optic network linking 14 business parks even though the target locations were already served by the incumbent network operator who provided price regulated leased lines. The Commission found that the leased lines offer by the incumbent operator was very expensive and almost unaffordable for SMEs^{viii}.

Another possible example of public investment in this category is the Greenlight Community Network in Wilson, North Carolina, which provides up to 100Mbps (typically 20Mbps) while the local cable company, Time Warner, offers Wilson residents “blazing speeds” of just 15Mbps on its Road Runner plan.

A fine balance

In George Orwell's book "Animal Farm," the pigs led a rebellion to the chant of "4 legs good, 2 legs bad" - which might be echoed in "private investment good, public investment bad." When the pigs ruled the farm and learned to stand on two feet, the rule became "2 legs good, four legs bad" - but when you read the book, you see that this wrong too. The market mechanism (private investment) is preferred. But there will always be a need for public investment (either direct or by subsidy) where socially desirable investment cannot be justified by a private business case (including the *grey areas*). The issue then is how to identify when and where public investment is appropriate. To get the balance right, both the US and Australia would benefit from studying EU guidelines on state aid for broadband networks.

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ⁱ Proposed EU Guidelines for the application of state aid rules in relation to the rapid deployment of broadband networks at

http://ec.europa.eu/competition/consultations/2012_broadband_guidelines/index_en.html

ⁱⁱ The Optus HFC network announced in 1994 was rolled out to more than 1.4 million households and completed by the late 1990s at a cost of about \$4 billion. Telstra rolled out a larger HFC network (to 2.5 million households) in roughly the same time frame. Both are being paid to cease providing broadband over these networks and migrate customers from the existing copper network to NBN Co's fibre access network.

ⁱⁱⁱ Broadband at the speed of light: How three communities built next generation networks by Christopher Mitchell, April 2012 at <http://www.ilsr.org/wp-content/uploads/2012/04/muni-bb-speed-light.pdf>

^{iv} Australian Government's Statement of Expectations, December 2010

http://www.dbcde.gov.au/_data/assets/pdf_file/0003/132069/Statement_of_Expectations.pdf

^v The EU regulatory framework does not mandate the extreme option of *structural separation* which NBN Co. represents and only allows intermediate forms of *functional/operational separation* under stringent conditions.

^{vi} For the difference in US and EU approaches to access policy, see Competition and Broadband in the EU in Bandwidth, 30 Nov 2011, Joanna Taylor at <http://www.sngroup.com/competition-and-broadband-in-the-eu/>

^{vii} The existence of several retail providers on one network does not turn the area into a *black area* as only one infrastructure is present. But, the existence of competing operators (at the retail level) will be considered an indication that, albeit grey, the area in question may not be problematic in terms of presence of a market failure.

^{viii} Decision N131/2005 *FibreSpeed Broadband Project Wales*.