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Motives and means for public investment in nationwide next generation networks

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ABSTRACT

There is now strong interest among governments in allocating public funds for the purpose of promoting investment in very high speed broadband. Motives include industrial policy, and the attainment of equity objectives and of economic recovery. The paper examines the various dimensions of choice over where and how to intervene. It also considers three nationwide broadband plans in Australia, New Zealand and Singapore, in each of which industrial policy appears to be the major objective, combined with equity goals. Particular attention is paid to the resolution of problems related to the incumbents' legacy assets.

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0. Introduction

The received wisdom of a decade ago in liberal economic circles was that the telecommunications sector had permanently escaped, to its great benefit, from reliance on public finances and its inevitable accompaniment—subjection to the dead hand of government control, which often had anti-competitive consequences. The sector was rich enough to fend for itself; privatisation gave access to private capital; and governments saw it largely as a source of, rather than a sink for, public funds. This view even survived the dot.com crash of 2000.

What a difference a few years make! Faced with the enormity of expenditure on next generation networks (NGNs), and particularly in next generation access networks (NGAs, the successor to the copper local loop), under pressure from the credit crunch, the earlier view has now virtually reversed itself. Some form of public funding is now seen as necessary and appropriate almost everywhere, not simply as an aberrant feature of Asian economies.

This reflects the fact that advanced countries with ubiquitous fixed copper networks have been enjoying essentially a free ride on the copper access network. Regulators have been confronting incumbent operators with a sunk and largely depreciated asset which they could price almost at will.¹ However, the costs of next generation access networks are not sunk. Operators have to see the prospect of a return and if there are uncertainties, they may exercise the option of delay even in undertaking apparently profitable investments. The sheer scale of investments, especially on fibre to the premises (FTTP) variants of access networks, is daunting. The fibre pathfinders in Asia relied on more or less transparent public subsidies to install the fibre. Their followers elsewhere now seek to copy this.²

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¹ A good illustration is the manner in which OFTEL/Ofcom in the UK changed the valuation method of the local loop from historic cost to current cost and back again within the space of ten years, in pursuit of its variable pricing objectives.

² See Huigen and Cave (2008).

So fast has been the stampede towards public funding that it has outstripped much analysis. In this paper some of these underlying questions are raised.³ Section 1 discusses the different motives for public investments. Section 2 discusses where they may be exercised and what form they may take. In Section 3 the focus is on three applications (contingently in the Southern hemisphere) of one particular class of intervention, the participation by the central government in the construction of a (nearly) nationwide NGN. These examples differ from the piecemeal and local interventions or expression of aspirations which characterise most 'plans', and expose the underlying policy dilemmas particularly sharply. They also show how different geographical circumstances influence the ability to achieve national plans—relatively easy in Singapore, a city state, difficult in a country such as New Zealand with a large rural hinterland, and daunting in Australia, with its vast geographical reach. Section 4 contains some conclusions.

1. Why intervene?

There are many possible motives for public investment in telecommunications at national, regional or municipal level. Broadly, they fall into one of three types:

1. An *equity* motive, where public spending is justified by the need to provide otherwise disadvantaged people or regions with a service deemed necessary to permit full participation in economic, political and social life. This goes back a long way in telecommunications history to the foundation of a universal telephone service at the start of the 20th century by AT&T under Theodore Vail, through policies of cross subsidies of line rentals by call prices (to encourage take-up), and to equalisation of prices through universal service obligations. This tradition is maintained in the European Union via a universal service obligation for broadband which guarantees access to a particular quality and speed of service at a maximum price throughout a territory. It is envisaged that this will be accomplished by 2013.

Precedent suggests that making a service which has been taken up spontaneously by 70–80% of the population is quite feasible. However, the passage of time and the development of competition will complicate its implementation. In a competitive world it should ideally be achieved by a means which does not distort competition between providers. This also implies a competitive and technologically neutral process, including wireless technologies. Second, it is generally recognised that providing access to broadband is not enough. People need assistance in take-up too, including the acquisition of a suitable device and instruction in the necessary skills.

Is a policy of (near) universal access to high speed broadband based on NGAs feasible? In some small island states and Japan and Korea, it is already accomplished or being accomplished. Finland and Sweden within the EU have adopted such an objective. In other states, attempts to devote economic resources to a universal NGA within a similar time frame are likely to prove disproportionately expensive.

2. *Industrial policy*. The motive here is to construct high speed networks as an instrument for the provision of what the OECD has described as a faster and more powerful general purpose technology – broadband – used both in production (by SMEs for example) and in consumption. Public intervention is designed to solve the underlying market failure flowing from the presence of network externalities: a critical mass of high speed broadband users can galvanise an economy, just as the World Bank data suggest current generation broadband has in the recent past.

This approach underlies many regional as well as national approaches. At the regional or municipal level, the concern is often to avoid being left behind by neighbours, or alternatively, to get ahead of them. Clearly not every locality can succeed in this endeavour, but the fear of being left behind is a powerful means of generating the local resources.

A study by the French regulator (*Autorité de Régulation de Services Electroniques et des Postes, 2008*) suggests that investment by local authorities in France has extended and quickened the availability of broadband, promoted competition and encouraged rather than discouraged private investment.

3. *Economic recovery*. In countries which have been hit hardest by the recession, especially the UK and the USA, unprecedented deficits are being run to avoid further declines in output. At the same time, a significant percentage of GDP has been lost, probably permanently, which reduces the return to NGA investment. The macro-economic situation opens up a window of opportunity for NGA investment which may close as policies to reduce the deficit take over. Public investment in high speed broadband has advantages over the caricature of Keynesian public spending policies, which involves the digging and filling-in of holes in the road, in every respect except one crucial one. Unfortunately, constructing an advanced local telecommunications network cannot be accomplished without considerable planning; as a project, it is anything but 'shovel-ready'. This is part of the reason for the relatively small showing of broadband projects in national recovery plans. Even in Australia, with a very high government commitment to public investment in communications, the first version of the national broadband plan pre-dated the current financial crisis, and the build-out of the subsequent version will occur as growth returns to normal.

Clarity as to which, or which combination, of the three above-noted motives is being pursued is fundamental to the development of good public policy. Outside countries which already have high levels of NGA installation or those which are prepared to make very large investments in it, two separate but overlapping stages of public policy are required: first, a policy to achieve universal access to current generation broadband (with speeds of, say, 2 Mbps), and, second, a

³ But see also Gomez-Barroso and Feijoo (this issue).

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