
Beyond the Safety Net:
A Strategic Review of the
Universal Service Obligation



LateraEconomics

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Executive summary and digest of recommendations

Broadly speaking, one can discern two strategies for delivering better 'equity for the bush':

1. Forcing the provision of equal services to non-economic customers using cross subsidies; and
2. The more strategic use of funds to address equity issues which have been specifically identified by regional, rural and remote communities and/or individuals as of priority importance.

This report considers both strategies and argues that both can be improved – as well as brought into better co-ordination with each other – by pursuing a strategy to inject greater choice and tradability of entitlements into rural equity programs.

1. Universal Service Obligations (USOs): One size fits all

The current telephony USO arrangements formalise earlier systems in which a state owned monopoly supplier undertook to cross subsidise non profitable services from higher prices imposed on profitable services.

The existence of 'network externalities' justifies some level of cross subsidies towards consumers of services at the margin of commercial viability. Generally however, beyond some – probably relatively small – level, USOs generate substantial inefficiencies:

- Because they are not means tested, they will operate in some cases to advantage those who do not need subsidies.
- They have suppressed market signals and so market development in the provision of regional, rural and remote services.
- Their 'one size fits all' approach is wasteful, because people have differing preferences.
- The various USOs are also uncoordinated between themselves.
- The problems with the 'one size fits all' approach of USOs are growing as the number of 'sizes' – the technological options for supply and needs of consumers – proliferate.

Nevertheless their history and their simplistic appeal to equality ensure that USOs are well entrenched in the popular psyche. Virtually all developed countries have USOs in telecommunications and post, even though some – such

as Finland – show much greater restraint by desisting from regulating telecommunications USO prices and by means testing subsidies.

As the quality and diversity of telephony rises in cities, electorates and politicians are already pursuing an extension of USOs to higher value telephony services.

The USO has already been extended to digital data services. So far the financial damage this threatens has been contained by the avoidance of price controls on extensions to the USO. However, as numerous submissions to the just completed Besley inquiry illustrate, calls to further extend the USO will continue to be heard for many years to come.

2. An enabling, opportunities focus

The other means of promoting rural equity and welfare seeks to direct subsidies to where communities identify there is greatest need. Here, programs such as Networking the Nation (NTN) provide a model which can be developed further.

This approach does much less to suppress market development than USO policies have in the past. Where a need is identified, it can be met directly by the market on commercial terms with subsidies coming from general revenue. These programs are also politically popular.

Where USOs can often foment hostility, enabling programs often improve relations between communities and their suppliers, as they become partners who mutually benefit.

Nevertheless, just as USOs generate funding priorities arbitrarily – by mandating a particular standard of service and price – so directly funded programs like NTN also lack many of the market disciplines necessary to prioritise funding efficiently. To discover the true level of demand for a service, one must generally see what those demanding it are prepared to give up. This suggests strategies designed to elicit greater demand discovery by allowing beneficiaries of programs to trade their entitlements within and between different kinds of programs and even to ‘cash out’ their entitlements.

3. Strategies for liberalisation

We are a little over a decade into telecommunications deregulation. It will be a long time before the transition is complete – if it ever is. Nevertheless we see this study as a search for strategic alternatives in moving further down the path of liberalisation.

Major improvements in the current structure are very unlikely to occur in the immediate future. Nevertheless an understanding of the various possible strategies can assist decision-makers in negotiating the territory which lies ahead.

3.1 Objectives for USOs

3.1.2 Transparency

It would be a useful transitional strategy to seek to maximise the transparency of the current arrangements, by itemising the USO as a cost or subsidy on all phone bills. It would be most effective if as many carriers as possible did this in concert, many or all of whom agree that the USO should be funded through general revenue.¹

3.1.3 Equity

The itemisation of the USO on individual accounts could also help to generate the information necessary to work towards another important goal – that of targeting the USO more tightly by making it subject to means testing.

It may be helpful to identify the local impact of the multiplicity of rural equity schemes and to identify the income characteristics of beneficiaries of those schemes including the telephony USO. There may be a substantial opportunity here to recover USO costs from beneficiaries in remote locations where they are wealthy, or where they are the employees of employers with substantial assets.

3.1.4 Broadening the USO funding base

Already the funding base of the USO is substantially broader than the services covered by the USO itself (ie basic telephony). Thus mobile telephony, carriage service providers including internet service providers and broadband telephony all bear the cost of funding the USO. It is clearly in the interests of economic efficiency for the funding base to be broader still. USO payments should be imposed upon pay TV services.

In principle it is consistent with this approach to argue for some kind of integration of the USOs for post and for telephony. However, on our rough

¹ Legal advice should be sought on the consistency of such a course with the letter and the spirit of the Trade Practices Act to discuss this matter with competitors.

calculations, the implicit levy on the postal USO base is much higher than the implicit levy on the telecommunications base. Accordingly in the short term the integration of the funding base of the two USOs would see a large shift in funding from the telephony funding base to the delivery of the postal USO. Given Australia Post's monopoly of standard letters, this seems both inequitable and unfair. A more promising approach based on 'cashing out' the delivery of the postal and telephony USOs is presented below.

Ultimately, carriers share the goal of shifting the responsibility of funding the USO from the industry to general revenue. One strategy for phasing towards such an outcome would be for price caps on USO services to gradually rise. Such a strategy would be difficult to achieve because of political resistance from 'losers'. Nevertheless it may be possible to have the price cap on USO standard telephony indexed to the CPI.

3.1.5 Can tax concessions help?

Tax concessions such as those available for research and development have important limitations. In addition to being strongly opposed by powerful departments within government, they assist different companies very differently, depending on their tax circumstances and their ownership structures.

Refundable tax credits – as franking credits are today – would assist firms equally, irrespective of their tax status. However for Australian shareholders the dividend imputation system has converted the company tax system into a withholding tax for shareholders. Accordingly it heavily dilutes the value of the concessions in the hands of shareholders. It is possible to overcome these difficulties also; however the degree of 'fine tuning' required for tax credits to achieve their objectives detracts from the attractiveness of pursuing this issue.

Running the delivery of the USO through the tax system for individuals does however have substantial merit. Rural equity rebates are already administered through the tax system – in the form of zone allowances. And delivering the USO through the individual tax system would also pave the way for means testing and/or funding from general revenue.

3.1.6 Could one phase out USO price capping?

More ambitiously, it should be noted that increasing political attention to equity for the bush could make governments receptive to the idea of rationalising existing equity programs for the bush. This idea is pursued at greater length in the following section. Nevertheless it has some relevance here. If some kind of

tax credit for those in rural and remote areas were to be phased in, it might be possible to phase out the USO price cap in sympathy in such a way that 'losers' from rising prices were fully compensated by the tax credit.

3.2 Objectives for 'opportunity based' funding

Funding of programs such as Networking the Nation (NTN) is always likely to remain the responsibility of government.

More generally one of the themes of contemporary economic reform is the attempt to integrate government services so as to better meet the needs of people. A range of strategies should be explored to improve the functioning of schemes like NTN in meeting the needs of regional, rural and remote Australians.

There is a wide range of independent rural equity schemes in a range of areas, from health and education to telecommunications to cash rebates, administered through the tax system. There is also a scheme for building rural capabilities.

These schemes put communities under little pressure to choose between alternative uses of the subsidies they receive. This suggests integrating more centrally funded rural equity schemes and also subjecting them to the discipline of 'tradability' between entitlements under schemes and even 'cashing out'. Thus, some general entitlement to assistance could be defined and funded from general revenue and communities could elect to take such entitlements as cash rather than receive the assistance for a project.

'Cashing out' can be a double edged sword however as it increases the ease with which people can avail themselves of subsidies. Certainly if the USO is funded by the industry it is important to ensure that cashing out does not increase the funding requirement of the USO.

4. USOs: Cashing out and up

USOs are being subjected to competition for delivery in the two pilot schemes announced recently. This will improve supply discovery. However it is also possible to subject USOs to competition on the demand side by allowing beneficiaries to cash them out.

There could be 'competition' on the demand side between the telephony and postal USO by enabling households to trade an entitlement for expenditure under one, for expenditure under the other. Given the proliferation of new higher value telecommunications services, their capacity to substitute for postal services and

the greater ease of self provision for post, it seems likely that such trading would transfer resources from the postal to the telephony USO. But it would not do so without the imprimatur of the choices made by beneficiaries and so without improving equity in the bush.

This would require the cost to be identified and a mechanism to allow election to cash out by beneficiaries. Where cost interdependencies between consumers were minimal, as will often be the case with satellite telephony, individual households could do the cashing out. Already the delivery of the satellite telephony residual USO involves a cash grant for supply.

Where there are cost interdependencies in servicing different households – which is generally the case with terrestrial telephony – decisions about the extent of cashing should first be made by the group of individuals affected. The group could be defined by the geography of the network or potential network. It would also generate greater alignment between consumer needs and supply as the group (or individuals) could ‘cash up’ by choosing a higher standard of service and paying the difference between the subsidy and the cost of the higher standard of service.

Prologue

The telecommunications revolution is bringing about remarkable changes with huge benefits, not only in business productivity, but also in the options available to citizens as they live their lives. Here is an example of the power of the telecommunications revolution to transform the life of the poor.

Bangladesh, for example, is a telephone desert: there is only one fixed-line phone for every 275 people . . . and about 90% of the country's 68,000 villages have no access to a phone. But the country is now seeing the birth of a new breed of entrepreneur: 'phone ladies' who make their living out of connecting the poor to the rest of the world. They buy expensive state-of-the art cellphones, using loans made available by the Grameen Bank, a private company that became famous for making microloans to villagers to buy cows or build fishponds. It is now trying to provide peasants with a portal on to the digital world. With its new subsidiary, Grameen Telecom, it has launched a programme which in the past two years has supplied 300 villages with phones. The company hopes that in five years time everybody in the country will be within two kilometres of a cellular phone. (The Economist, 9 October 1999)

Similar stories are reported from many other countries. Though striking, this example is not directly relevant to the telecommunications experience in Australia. What it does illustrate, however, is that the application of well-targeted telecommunications resources – targeted in this case by the private sector² – can profoundly improve equity outcomes.

Further reflection suggests that such powerful effects are unlikely to be realised by the application of universal service models of equity. Given its dearth of telecommunications infrastructure, the imposition of a universal service obligation (USO) would be immensely more expensive than the targeted private investment that has taken place.

In a less dramatic way, similar possibilities might be in the offing for Australian telecommunications and the wide range of industries which might supply content to rural and remote telecommunications networks. Thus the Office of Communications, Science and Advanced Technology in the Northern Territory

² Grameen Bank is an altruistic, highly profitable private sector organisation.

recently commented to the Productivity Commission inquiry into telecommunications specific regulation:

Nothing has been done to develop demand in remote areas although these areas are the obvious potential beneficiaries of new technology. Yet, there is evidence of a strong latent demand for services in remote areas. Real needs such as access to education, access to the job market, social and economic development, access to government information and services, health, security, EFTPOS and financial services that could be satisfied by telecommunications have not yet been translated into a coherent and articulated demand. If this latent demand could be realised and developed it would generate a volume of demand sufficient to drastically shrink, if not eliminate, the areas of Australia that are now unattractively marginal or net loss areas (2000).

The practical, and perhaps more importantly, political obstacles in moving the backbone of our current approach to telecommunications equity are formidable. But so too could be the benefits. This report explores the means by which we might be able to work our way from the current USO-dominated telecommunications equity framework to something which is more responsive to the nature of telecommunications demand in regional, rural and remote Australia, and something better suited to the opportunities for supply.

1. Introduction

Many developed countries require public or privatised enterprises in the transport, postal, energy and telecommunications industries to undertake non-commercial activities such as USOs. However, there is no agreement on the most appropriate way of providing or funding universal service, or the minimum level of USO.

Firms in the telecommunications industry in a range of countries are typically required to provide a basic telephone service to all who request the service, at a uniform price, although there may be significant differences in the costs of supply. Traditionally, non-commercial universal service activities have been funded through cross-subsidisation by the monopoly telecommunications provider. However, as deregulation and increasing competition has occurred in telecommunications industries, the incumbent firm has often shared the cost of the USO based on some measure of market share (OECD, 1995). This is the current situation in Australia.

A key element in the current regulatory structure for telecommunications in Australia is the capacity of government agencies to determine, or fix prices for telecommunications services. Setting prices in this way occurs without reference to the likely market cost of the telecommunications services in question, and the implications for consequential investment in infrastructure to supply such services. Fixing retail prices below the commercial cost of providing the services can have powerfully negative effects on market development even though, if a universal service provider (USP) is coerced into supplying services, it can increase supply. This is because there is no competition in supply and so, little incentive for suppliers to meet customers' needs. While in principle the USP has the incentive to supply the lowest cost technology, in practice the search for better technological solutions will often be less intense in the absence of competition.³

³ Landrigan (2000) noted that price fixing by the Australian Communications Authority has reduced the supply of telecommunications investment and services: "The effects of the declaration process are further exacerbated by elements of the determination process which have resulted in unsustainably low and inconsistent access charges. The wide reach of the declaration provisions when coupled with the implementation of the determination process has resulted in an extraordinary number of access arbitrations lodged with the regulator and...limited investment in local network infrastructure outside of CBD areas."

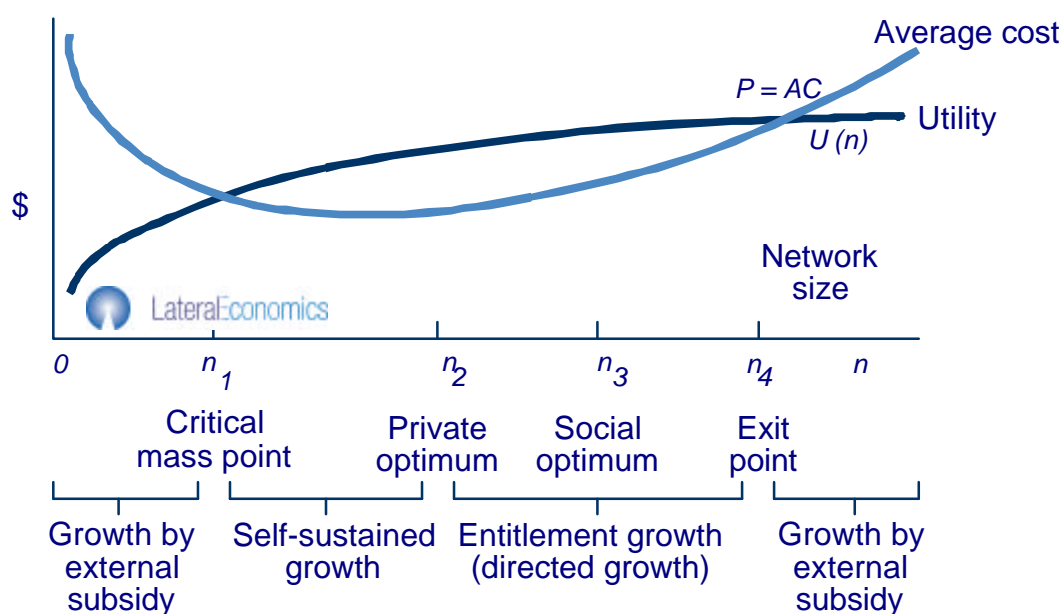
Telstra, the only active USO carrier in regional and remote Australia, is constrained by a variety of retail price controls established under the Trade Practices Act 1974 and monitored by the Australian Competition and Consumer Commission. Apart from the market inflexibility created by these controls, there are considerable administrative costs in adhering to the regulatory framework that determines these controls.

In practice, investment in remote and some rural Australian telecommunications infrastructure is constrained by the inability of the telecommunications provider to charge commercial prices for its services. The nature of demand is also distorted, as demand swings towards the service which attracts the USO subsidy, rather than the most cost-effective solution.

Across a variety of countries it has been common to subsidise the cost of local calls through higher long distance charges. Like any cross subsidy arrangement, this brings its own inefficiencies. Indeed, one important consequence has been that the price falls for long distance calls in Australia have been less than could otherwise have been achieved, an unfortunate consequence for a country as large as Australia.

The appropriate analysis of the economics of a USO depends upon the extent to which one regards telecommunications access to be a private or a public good. Clearly telecommunications exhibit network externalities to a substantial degree. My telephone is of no use to me if no one else has one. However, as the network becomes more complete, diminishing marginal returns set in. The last few households connected to the network enjoy substantially greater positive network externalities upon connection to the network – connection to almost all households in the developed world – than those already connected gain from their joining the network. Even so, where they would not otherwise join the network, there may be some case for subsidy. This schema is well represented in a diagram by Naom (1997).

Figure One: Average cost and utility of a telecommunications network as it grows



Source: Naom, (1997).

With coverage at the level it is, however, it stretches credulity to argue that the network externalities attaching to the connection of the few uncommercial phone services would be sufficient to justify the very substantial amounts which are currently lavished upon them as a result of the USO.

It is also possible that there are benefits outside the telecommunications system in extending the reach of the network. However, if these benefits exist, it would generally be preferable for the beneficiaries to fund network improvements. Centrelink – the Commonwealth’s primary welfare payments and service delivery agency – has made significant investments in establishing new service delivery outlets in regional and rural locations. Centrelink has sought to improve telecommunications links by opening up rural transaction centres and participating in a multimedia payphone trial covering ten rural locations from March to June 2000 (Anderson, 2000). If these initiatives help Centrelink better achieve its objectives, they should be funded through Centrelink.

Of course, determining what is most economically efficient is a small part of the solution. What this study goes in search of is the means by which the current burdens placed on incumbent telecommunications firms, with respect to their USO commitments, might in practice be lightened. Thus what is explored must be within the realm of the politically possible. Accordingly, this exercise is seen

by the consultant as a search for options to liberalise the USO in ways that are, or might over a period of time become, politically possible. This does not stop us from proposing some ambitious and visionary possibilities. Some of the proposals towards the end of the paper are clearly incapable of rapid implementation. Nevertheless, their articulation can help crystallise long-term possibilities towards which it then becomes possible to work in small steps. They may also serve to stimulate new thinking about old problems.

2. The themes of the study

Our lives are being improved by new technologies which enhance our productivity, our wealth and our lifestyles in ways which were the stuff of science fiction less than a generation ago. It is one of the paradoxes of our time, that just when this is happening, just as whole new pathways from rags to riches are being beaten, concern for equity in our society is intensifying.

Australia has one of the highest technology absorption rates in the world. It is also one of the top five countries in the world in terms of global spending on information technology and communications to GDP, with high penetration rates for personal computers, mobiles, the internet and e-commerce.

In large part, anxieties about inequality are fuelled by the broad economic and demographic changes which are now taking place. Broadly speaking, new technologies and (probably to a much lesser extent) liberalisation of trade and investment and privatisation may be leading to a situation in which the rich are getting richer, and the poor are standing still. Relative income disparities appear to be worsening. In addition, structural change is exacerbating long held resentments in the bush. Many rural areas are very prosperous and growing rapidly – particularly those along the Eastern and South Western coastline. But some areas, particularly those inland, are declining (Productivity Commission, *Rural Reforms*, 1999).

Against this backdrop, concerns about a divide between the information rich and the information poor⁴ are generating a political climate with strong strategic consequences for the industry. These consequences are already being borne out by unfolding events. We are already a long way from some of the basic principles underpinning ‘first best’ deregulation of telecommunications – for instance, the funding of community service obligations (CSOs) from general revenue – which were in prospect during the early days of telecommunications reform. Others – such as the requirement for transparency and independence in assessing the cost of USO – have been compromised in the recent past and the risk is that, far from being reined in, such an approach will be extended to other areas.

⁴ The internet search engine “HotBot” generates 3,800 internet items containing both the expressions “information rich” and “information poor”.

A particular concern is that the method for compensating the 'Primary Universal Service Provider' – effectively carrier of last resort – will suffer from the same kind of inadequacies as the method by which the net universal service cost (NUSC) was determined recently. Another area of concern is the way in which contestability of USOs could interact with ACCC determined access prices to create easy arbitrage opportunities for third parties accessing Telstra's network to supply customers in rural areas.

Other circumstances serve to exacerbate these consequences:

- The Government is keen to sell Telstra and may be prepared to make unfortunate compromises to achieve this.
- The emergence of powerful populist political forces on the right ⁵ and left ⁶ which are hostile to market liberalisation.
- The development and increasing market penetration of 'value added' telecommunications services which are generally costlier to supply to rural and remote users.

In 1997, a major consultancy for the EU agency, the Information Society Promotion Office, argued that the following criteria should govern the inclusion of new services within the ambit of universal service:

- Universal service is concerned with the provision of services to citizens. Provision of services to business customers is outside universal service.
- Any service included in the definition of universal service should be essential, that is: it should have a high penetration among the population (penetration of at least 75% was suggested by a number of interviewees); and being without that service would constitute a social or economic disadvantage (IPSO, 1997).⁷

⁵ Pauline Hanson's One Nation party and organisations with similar aims.

⁶ Organisations such as S11.

⁷ A third criterion was:

Currently only basic telephone services qualify as universal services, as they are regarded as essential for full participation in modern European society. However, there are a number of services associated with basic telephony which are necessary for customers to be able to make full use of the service: directory enquiries, information about services and their prices, and provision of public payphones. Moreover, itemised billing, call barring and malicious call control services are necessary in addition to the

At the time the report was published, Australian policy on USOs conformed reasonably with these criteria. This is no longer true. Powerful voices have lobbied hard to extend the USO. From 1 July 1999, the Government introduced a digital data service obligation which provides for:

- a general digital data service as part of the basic rate ISDN service, available on demand to 96 per cent of the population and
- a special digital data service for the 4 per cent of the Australian population not able to access the general digital data service on demand.⁸

It would be possible to argue that USOs – and certainly USOs which are not means tested – are an inefficient means of delivering on equity objectives in any event. But there is greater agreement still that USOs are an inappropriate way to assist business. In addition, mandating ISDN access is an arbitrary definition of a service standard which may become inappropriate. As OfTel observed last year:

Narrowband ISDN . . . is clearly not a service which is currently used by the majority or which is essential. Although it is available to the majority, on demand, it is actually used by very few. This may well be a function of the price of the service, but, as indicated above, that is not something that universal service policy can address. The possibility of adding ISDN to the universal service obligation also raises the fear that picking the wrong technology is more dangerous than picking nothing at all; few people

basic services so that customers have information on their expenditure, can control exposure to large telephone bills and can filter out undesirable calls.

⁸ This second provision requires the use of an 'on demand' internet-based asymmetrical satellite service providing a broadly comparable service – but at a significantly larger underlying cost.

This policy change followed the Review of the Standard Telephone Service established by the Minister for Communications, Information Technology and the Arts to examine and make recommendations on the basic level of telecommunications service provided to all Australians. The Review recommended that an enhanced level of service, a 'digital data capability', providing a platform for access to services such as fax, email, the Internet, electronic commerce and educational applications, should be reasonably accessible to all Australians by the year 2000. The government accepted this goal, and incorporated a provision for digital data capability to be provided on demand under the Universal Service Obligation, formally incorporated into the statutory universal service arrangements. Those amongst the 4 per cent using a satellite option qualify for a rebate on the cost of the capital equipment and installation necessary to access the service. The rebate is funded by the industry and is \$765 or 50 per cent of the costs of equipment and installation of the equipment (whichever is the lower).

would now back narrowband ISDN as the future of telecommunications (1999).

The Government has stuck more closely to principle in externally funding some other equity based improvements to rural telecommunications services – for instance, untimed local calls, Networking the Nation (NTN) and other spending initiatives associated with the first two sales of equity in Telstra. From the industry's perspective budget funding of telecommunications equity objectives would clearly be preferable.

3. From 'first' to 'nth' best: The 'directness' of policy

The bounty to the white herring fishery is a tonnage bounty; and is proportioned to the burden of the ship, not to her diligence or success in the fishery; and it has, I am afraid, been too common for vessels to fit out for the sole purpose of catching, not the fish, but the bounty.

Adam Smith 1776⁹

In the world, if not in economists' models, all policies have side effects. The essence of good policy is to maximise the intended beneficial effects of policies and to minimise the side effects. These issues were explored in the 'Optimal Intervention' literature of the '50s and '60s. The Australian Max Corden synthesised many of the principles from this literature in his 1974 book *Trade and Welfare*. In it, he develops a taxonomy or hierarchy of policy interventions.


He gives the example of a market inefficiency in a developing country in which returns to labour in manufacturing are suboptimal. There are better and worse ways of achieving this policy objective. As illustrated in the following illustration, the 'first best' way is to subsidise manufacturing labour, the second best way is with a production subsidy, third best is a tariff with an export subsidy, with fourth best being a tariff only. The logic here is that each movement down the hierarchy involves an additional distortion.

⁹ The Wealth of Nations, 1776 (1937) Cannan Edition, The Modern Library, New York, p. 486.

Figure Two: Corden's hierarchy of interventions

Original Inefficiency: Manufacturing wages too low	
Policy	Additional by-product distortion
<p>First Best - subsidy to labour</p>	None *
<p>Second Best - subsidy to production</p>	Manufacturing production too capital intensive
<p>Third Best - tariff plus export subsidy</p>	Too little domestic consumption to manufactures
<p>Fourth best - tariff</p>	Too little exporting of manufactures

*Assuming no efficiency costs of taxation



In fact, as Corden subsequently makes clear, the first policy is not perfectly efficient because of the efficiency cost of collecting the tax to pay the subsidy. The second best policy draws additional capital to production when the distortion which was being addressed was the reward to labour. The third best policy adds a consumption distortion, whilst the fourth best policy also distorts production – away from export.¹⁰

¹⁰ It is worth noting at the outset that this approach is best regarded as an heuristic rather than a rigorous framework. Strictly speaking the theory of the second best (Lipsey and Lancaster, 1956) holds that, for so long as any distortions remain in an economy – and there are always numerous distortions – one cannot be sure that removing one distortion will make things better. Nevertheless the degree of rigor appealed to by the theory of the second best is a recipe for policy paralysis (Mishan, 1962: 205). The idea that fewer deviations from optimal conditions is better than more deviations (unless there are good reasons to the contrary) underpins virtually all micro-economic reform. We make the same assumption here.

Further, the heuristic assumes that, other things being equal more distortions are worse than less. Thus, for instance in Corden's example, a tariff raises revenue and so in contrast to a subsidy that imposes a burden on the exchequer, it lightens that burden. Accordingly the multiple 'by-product' distortions involved in a tariff could still be preferable to the single distortion involved in a subsidy if the sum of the tariff's distortions has a lower efficiency cost than the single distortion associated with the subsidy. Be that as it may, the heuristic provides useful guidance in thinking about tariff problems. It is used here to provide a way into thinking about USO reform.

We may consider three separate aspects of the efficiency of a USO:

- The efficiency with which the USO is funded. The broader the base on which the USO is funded, the lower any given taxes or price rises have to be and so the lower the efficiency cost.
- The efficiency with which the USO is defined. The more precisely the policy objective can be specified, the less funding is required and so the less distortion it leads to.
- The efficiency with which USO funding is used to deliver on the objectives of the USO. The more flexibility is possible in the way the funding is spent, the greater utility is achieved for any given expenditure.

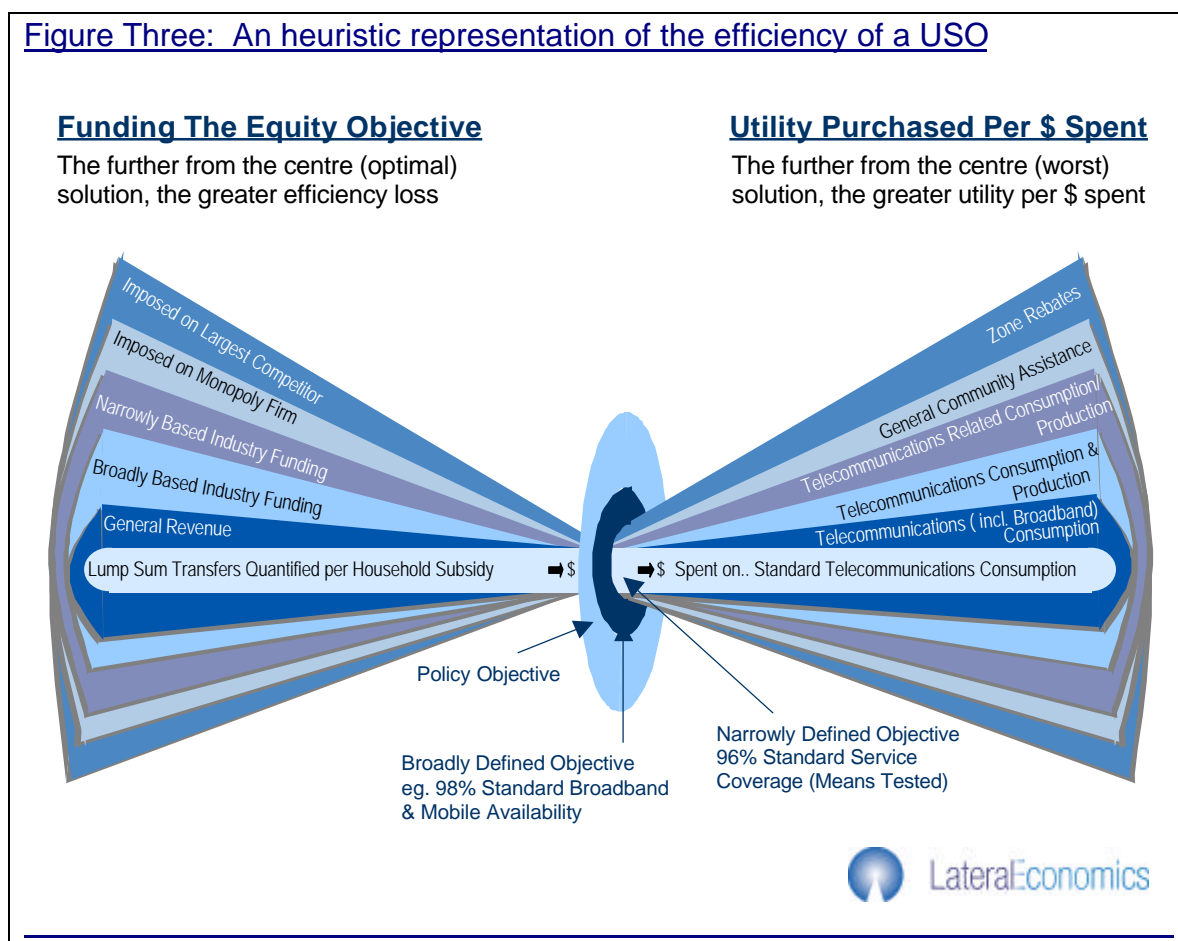
Figure Three provides an heuristic illustration of each of these kinds of efficiency. On the left hand side of the diagram, the most efficient solution to funding the USO is the economic 'textbook' assumption of non-distorting lump sum taxes. This may be optimal in some theoretical sense, but it is not achievable. The next most efficient funding method is with general taxation. This creates a distortion, but it has the lowest cost of any of the options that are practicable. The next least distorting option is to raise the funds from a levy on the industry that is as broadly based as possible. Here of course, the more broadly one defines the industry, the lower the efficiency cost of raising the revenue. A narrowly based industry tax is worse again. The two options beyond this each involve additional 'by-product' distortions. In the first, the USO is raised from a levy on a dominant firm. If the firm is a monopoly, this minimises the consumption distortions from substitution within the industry. (On the other hand, it may lead to additional distortions). The final option is a levy imposed on a dominant carrier without monopoly protection.¹¹

The disc in the centre of the diagram represents the breadth or narrowness with which the USO is defined. Clearly a more broadly defined USO will require more funding – and so greater efficiency costs in funding – than a narrowly defined USO. The right hand side of the diagram illustrates the way in which funding raised on the left hand side of the diagram is 'spent' on the USO objectives. It illustrates the arbitrary nature of the USO in delivering equity. Put simply, telecommunications isn't everything. There will be individuals and there will be

¹¹ It is not obvious in principle whether the last or the second last alternative involves greater efficiency costs, as each involves different distortions. Which in practice matters more is an empirical question.

communities which, if given the choice, would choose to spend any subsidy they might receive in the name of equity at least partly on things other than telecommunications consumption. For instance, it was a common complaint in rural and remote submissions to the Besley Inquiry that communities had lost their call centres. According to the submissions, this robbed the local community of employment opportunities, at the same time providing service which was less knowledgeable about local circumstances.¹²

Figure Three: An heuristic representation of the efficiency of a USO



Of course, one can take this logic much further. In principle, the fewer restrictions on the way USO beneficiaries spend the resources which USOs confer on them, the greater good could be done for them. This approach points ultimately to the logic of ‘cashing out’ USO entitlements. This report deals with ‘cashing out’ subsequently. It is worth noting here, that much of this logic is fine

¹² See for instance the submissions of the Queensland Chamber of Commerce & Industry (South West Qld) and the Outback Regional Development Organisation Inc amongst sundry other submissions.

in principle. However it is not clear that the assumption made in generating the diagram will always hold, namely that the amount of money spent on equity objectives is held fixed. Indeed, the factor *driving* the determination of the USO funding is the definition of the USO. One obvious risk in liberalising the basket of services that the USO can fund is that the USO becomes more widely defined itself. For instance, it might come to include the right to a local call centre – and so come to impose greater costs on carriers.

The discussion now moves to the issue of broadening the base of USO funding. The discussion is in two parts. The next chapter discusses partial base broadening measures, whilst the subsequent chapter discusses the ultimate goal of broadening the base to that of the tax system. None of the base broadening measures explored would be easy to achieve politically, particularly since they involve increasing imposts on others to relieve the disproportionate impost on Telstra – a company which is perceived to be very profitable in the community. However the more modest base broadening proposals are, in the opinion of the consultant, worthy of pursuing.

the order of 20% of revenue raised. It is not credible that the current deadweight losses amount to 10 times the amount of the revenue raised!

Broadening the definition of telecommunications

Be that as it may, the funding of the telecommunications USO is substantially broader than its delivery. Thus, although the USO applies principally (though no longer exclusively) ¹⁴ to standard telephony, the funding of the USO is imposed upon the bulk of telecommunications services. The obvious area in which the funding base could be extended in the area of telecommunications is pay TV. This is particularly the case since the facilities used to deliver pay TV compete with telephony. A case could also be made that broadcasting should also bear a funding burden for the telephony USO. In the case of pay TV and particularly in free to air broadcasting, the political obstacles would be substantial.

In each case it would have to be clear that the extension of the funding base of the USO was *asymmetrical* – that is, the base of funding the USO was being broadened, but not the USO obligations. It is possible that the attempt to broaden the base carries the risk that the base of the USO would be broadened as well. This risk would have to be assessed before proceeding to seek an extension of the USO.

A Communications USO?

The postal system has a USO imposed upon it, as does telephony. In the three quarters of a century before post and telecommunications were separated, these two USOs were unified under the administration of the one entity – the Commonwealth Postmaster General. Whatever might be said of the gradual process of communications reform, that began under the Whitlam Government with the corporatisation of Telecom and Australia Post, in these days of ‘technology convergence’, the separation of the USOs seems unfortunate.

If it ever did make sense to separate these USOs, that time seems to have passed. Firstly, we have moved away from the monopoly USO model in telecommunications and established a competitive USO payments system. Australia Post still enjoys a monopoly over the standard letter service, although the National Competition Council has discussed the idea of moving towards the

¹⁴ Since the extension of the USO to ISDN services.

kind of competitive USO model currently established in telecommunications (NCC, 1998).

Secondly, the rapid progress of telecommunications technologies and their 'convergence' with other forms of communication now would seem to provide an opportune time to reintegrate them. This is particularly the case given the extent to which telecommunications such as facsimile, e-mail and internet access now substitute for postal services. Indeed, there may well be circumstances where specific households and/or groups of households would opt to swap or partially swap any postal USO entitlements they have in order to fund better telecommunications services.

Two aspects of the USO can be considered for integration separately – the funding of the USO and its delivery. Funding integration would aggregate the funding of both USOs over the base both use today – or some augmented base. Other things being equal the level of the levy required (as a proportion of revenue) would then be equalised so as to yield the same revenue at a uniform rate over the base. If this were done however, it would produce a substantial windfall for post as the levy is being imposed at a much higher level on Australia Post (because its monopoly status allows its market to bear this burden). It seems reasonable to argue that USO funding should not be integrated whilst Australia Post retains its monopoly status.

On the other hand the delivery side of the USOs could be integrated by allowing households which are beneficiaries of either USO to 'trade' any costs they can save one in additional entitlements under the other. The obvious example would be a remote household or areas deciding to accept less frequent mail deliveries – or even self provision – to allow the funding of improved telecommunications in the relevant area. Given the proliferation of new higher value telecommunications services, their capacity to substitute for postal services and the greater ease of self provision for post, it seems likely that such trading would transfer resources from the postal to the telephony USO. But it would not do so without the imprimatur of the choices made by beneficiaries and so without improving equity in the bush. (See also Appendix One for further details of the postal USO).

5. Funding the USO from general revenue.

For those seeking to broaden the base of the USO, the 'Holy Grail' would surely be achieving its funding through general revenue. In this chapter we discuss the case for funding the USO from general revenue. The next chapter discusses the mode of delivery – whether the USO is delivered by way of a subsidy or a tax concession. We then discuss whether the assistance should be delivered to the telecommunications industry or the household. The subsequent chapter then discusses possible transitional strategies to arrive at an improved system.

Subject to some qualifications discussed below, 'first best' principles suggest that the social objective of ensuring equal access to telecommunications and the financial objective of funding that outcome should be treated quite separately.¹⁵ Thus the funding necessary to achieve the social objective should be made available to telecommunications carriers and it would be raised in the most efficient manner possible. This would be as part of the Government's general revenue raising task within the tax system.

There is a wide range of reasons why this has not been done, and indeed why it is rare in developed countries:

- The history of telecommunications and other services has ensured that a cross subsidisation model grew out of state (or privately owned) local or national monopolies.
- One of the major political obstacles to liberalisation was the political need to maintain funding to uneconomic services, to support community perceptions of equity. Accordingly, governments were quick to preserve existing cross subsidy arrangements.
- A range of economic and political considerations has meant that moving towards 'first best' has presented difficulties for governments.
- If the USO were funded entirely from revenue, the financial commitment would be open ended and so present an unattractive risk for a revenue system which could not automatically respond to higher outlays with higher taxation.
- Cross subsidies in carriers' prices were well-hidden taxes and as such, more politically attractive than explicit taxation.

¹⁵ This point is also made in Cable and Wireless Optus, (1999).

- The period of liberalisation has coincided with strong political pressure on governments to balance budgets which, until recently, have been in chronic deficit.

It is worth keeping in mind that there are some arguments in favour of keeping the cross subsidy broadly within the industry and/or having it paid in the prices of firms rather than through taxation. These may somewhat qualify the presumption of central funding, but may nevertheless feature in the debate.

- To some extent the subsidisation of new members of the network generates positive 'network externalities' to others in the network, which it then becomes both fair and efficient for them to fund.
- Where they are not perfect competitors, firms can 'Ramsay price'¹⁶ their funding obligations for the USO, thus minimising the welfare loss. The uniformity of most government revenue raising precludes this.
- The OECD (1995) observes that: "Cross-subsidy regimes require minimal administrative control since welfare transfers take place as part of the operation of the pricing system. By contrast, direct subsidies entail higher administrative costs".

These arguments suggest that the optimal policy from an economy wide perspective would probably involve some sharing of the Net Universal Service Cost (NUSC) between the industry and the Federal Government. The above arguments seem to be relatively minor riders on the presumption of central funding. The 'network externalities' argument would have some significance for those who receive relatively small subsidies. But it would have little significance for those receiving large subsidies. The benefit to an individual in Sydney of being networked to more than the market clearing number of households in rural and remote Australia would be very small. Likewise, the more competitive the telecommunications market is, and the more regulated access pricing is, the less scope exists for Ramsay pricing.

The third argument applies with much greater force to a situation in which the incumbent firm is a monopoly and has the USO imposed upon them, as is currently the case with Australia Post. In telecommunications the costs and

¹⁶ Charging price sensitive customers the least, and price insensitive customers the most. This can include price discrimination between different customers for the same service. However regulation and/or competition would eliminate substantial scope for this.

complexities involved in calculating and disbursing a subsidy for non-commercial services are incurred already under the current system.

Might extending the Medicare levy offer a useful model for funding the USO?

One way of facilitating the transfer of the funding of the USO would be to introduce a supplement to the Medicare levy. This overcomes the problem that otherwise the assumption of funding from general revenue would put an additional strain on the budget. The hypothecated levy would mean that the transfer did not reduce any surplus (or increase a deficit). It would be funded directly from increased taxation. Explicitly raising taxes could be politically unpopular. Nevertheless the amount involved is surprisingly small. At a rate of 1.5% the current levy raises \$4.6 billion. Accordingly, raising \$280 million or six per cent of this figure would require an increase in the levy of just 0.09 percentage points.¹⁷ The mechanism would also enable the government to reduce the risk which it has taken on, by allowing changes to the levy where changes in the underlying USO cost changed.

Such an impost is well within the bounds of political possibility. The Medicare levy has been increased permanently three times – on 1 December 1986 (from 1 to 1.25%), 1 July 1993 (to 1.4%) and on 1 July 1995 (to 1.5%) – on each occasion without major political upset. It has also been used, and proposed for temporary financial exigencies more recently, on each occasion without decisive opposition. A transfer of some expenditure items from the prices of goods and services to the tax system would also have a small effect on inflation, which current forecasts indicate will be moving to the top or over the Reserve Bank's 'comfort range' of 2-3% (See for instance, Melbourne Institute, 2000).

Nevertheless successfully achieving a refunding under a Medicare model would not be easy. An increase in the Medicare levy is proposed by all manner of interest groups as the best way to fund their proposals. And the transfer of under

¹⁷ This assumes simple linearity between the rate of the levy and the revenue it raises. This seems a reasonable approximation. However there are some minor non-linearities in the scheme. Thus, no levy is payable by single people with income less than \$13,389 per year or by couples and sole parents with income less than \$22,594 per year, with a further \$2,100 per year allowed per child. In addition there is now a Medicare surcharge on higher income earners without health insurance.

\$300 million of revenue raising from prices would reduce the CPI by less than 0.1%.

6. Taxes or subsidies: delivering the USO funding

Having discussed the best means of raising revenue to fund the USO, this Chapter discusses the preferable mode for delivering the USO. The discussion may be summarised at the outset as follows:

- In principle, subsidies are to be preferred to tax concessions for delivering assistance.
- Because of the complexities of the tax system, and particularly the dividend imputation system, this is particularly the case for assistance to firms.
- There are, in principle, benefits from directing USO assistance at consumers rather than producers.
- Given this, the most efficient means of delivering that assistance to consumers would be to use the tax system to deliver the equivalent of a subsidy – ie a benefit which has the same value irrespective of the beneficiary's tax position.

Assistance to the Industry

In principle the best form in which the USO funding should be delivered to firms who rely on it to deliver the USO, is a subsidy. This is effectively the case today. The USO currently functions as an internal system for the levying of economic services and the subsidy of uneconomic ones.¹⁸

The ATO and the current system

Current government policy is to transfer the administration of the telecommunications industry levy to raise the NUSC to fund the USO from the ACA to the Australian Tax Office (ATO). This may provide some benefits, though clearly they would be minor. Whatever the 'in principle' merits of the plan, the advisability of the change from the perspective of the telecommunications industry would depend partly on assessments of the relative competence of the ACA as opposed to the ATO and the relative costs of dealing with each agency. Optus observes that the ACA is not well resourced nor skilled to perform its revenue raising and that "in any event, the task is essentially duplicated by the

¹⁸ Note: The use of the word 'subsidy' here is descriptive of the kind of benefit, not the entity which pays it. A subsidy is generally associated with a government-funded subsidy. The telecommunications USO is however effectively a privately funded subsidy scheme.

more appropriate government authority, the Australian Taxation Office.” (Cable and Wireless Optus, 2000, §3.10).

Funding the USO through tax concessions for the USPs

From the perspective of telecommunications carriers, an alternative means of funding would be through a tax concession. This is an approach which has gained some favour in the United States with Senators Rockefeller and Snowe introducing a Bill to give tax benefits to companies that provide broadband Internet services to rural areas in the US.¹⁹ If enacted, the legislation will offer any company that invests in broadband facilities in rural areas a 10 percent tax credit per year for three years. The proposed Bill would give a larger tax credit to companies that invest in the most powerful forms of broadband facilities. The tax credit would only be available for certain types of investments, with the stated aim of focusing on actual need in rural areas. Further details of the proposed tax credit are given in Appendix Two.

Tax concessions in Australia

Since micro-economic reform gathered pace in Australia in the mid 1980s, funding industry development objectives with tax concessions has been out of favour with the most influential policy makers in Canberra – the Departments of Prime Minister and Cabinet, the Treasury and the Department of Finance. This is because it is generally considered more efficient for the taxation system to target the efficient raising of revenue, leaving other instruments such as subsidies and regulation to target other objectives (and see discussion below). This kind of thinking has underpinned business tax reform recently as business tax concessions – for instance on accelerated depreciation – have been surrendered to achieve a lower tax rate for business within the constraints of broad revenue neutrality.

In addition to the theoretical reasons for focusing tax policy on revenue raising rather than industry assistance, the central departments have other reasons for being hostile to using tax concessions as a means of broadening the base of the USO:

- Even though the Departments of Treasury and Finance would naturally support the basic economic logic of moving the funding of the USO away from

¹⁹ ‘Bridging the Digital Divide’, (2000), *Communications International*, April.

telecommunications carriers, their role as defenders of the exchequer gives them a conflicting interest to defend. Frequently these departments give precedence to the short-term needs of the budget ahead of their longer-term commitment to efficient resource allocation.

- Tax concessions are not just less economically efficient than subsidies because they undermine the integrity of the tax system. They are also less transparent. Subsidies appear in the budget, whereas tax concessions occur off budget.²⁰ The ATO is a particularly vigorous defender of the integrity of the tax system.
- Tax deductions are not usually capped and as such represent an open-ended risk to government. As the competitive USO pilots proceed and if and when they are extended more widely, there will be greater certainty about the costs of provision in rural and remote areas. Even then, it would probably be difficult to predict the revenue impact of a given tax concession. Today, it would be extremely difficult for governments to be confident they would set the right rate.

Accordingly the use of tax concessions for industry assistance purposes has been rare. A conspicuous exception with a chequered history is the tax concessions provided to the funding of R&D. Under the current arrangements in Australia, eligible R&D expenditures qualify for a tax deduction to the tune of 125% of their value – down from 150% when the scheme was introduced in the 1980s. The way in which enhanced tax concessions such as those offered to R&D in Australia affect incentives is complex. This is particularly so since the advent of dividend imputation in Australia.

Firstly, changes in company tax rates have the unintended consequence of affecting the level of assistance that a given subsidy provides. In all the company tax changes that occurred over the past decade, there was no attempt to quarantine the level of assistance provided by tax concessions for R&D from those changes. (This would have required compensating changes in the rate of concession on each occasion the company tax rate changed). As a result, the value of the 150% tax concession was substantially eroded, even before it was

²⁰ In fact owing to the efforts of the Treasury, tax concessions have become somewhat more transparent through public reporting on the cost of tax concessions. Nevertheless, the cost of subsidies will always be easier to measure, and so more transparent than the cost of tax concessions.

cut to 125% - from whence it was further eroded with the reduction in company tax rates from 36% to 30%.

Secondly, the tax concessions are of little or no benefit to companies that are in sustained tax loss. This is a matter of significance in an industry like telecommunications with such vigorous entry and loss leading expenditure to build market positions.²¹ Given the presence of tax loss firms within the telecommunications industry, and the political benefits of gaining their support, it seems worth exploring ways of addressing these problems.

Both of these problems can be alleviated with better instrument design, particularly the use of tax credits in place of enhanced deductibility – as proposed in the Rockefeller/Snowe legislation – and most tax based industry assistance in the United States. A tax deduction – or enhanced deduction – is subtracted from assessable income to calculate taxable income. Tax is then payable on taxable income, having regard to the relevant tax rate. The level of assistance thus changes whenever the tax rate changes. By contrast, the tax credit – or rebate in the terminology of the Australian system - applies after the amount of tax due is calculated.

Common types of tax rebates available to individual Australian taxpayers include:

- Dependent Rebates
- Pensioner Rebates
- Beneficiary Rebates
- Medical Expense Rebate
- Zone Rebates.²²

If for instance, tax credits or rebates were issued for eligible expenditure at a rate of 25 cents in the dollar, then they would be good whatever the tax rate was. Nevertheless all the credits or rebates outlined above are only good for the payment of tax which is owing. These rebates can only lower tax payable to zero. They cannot generate a refund.²³ Since the recent ANTS tax reforms, dividend imputation tax credits have become refundable beyond the level of tax liability in just this way. Apart from the action of the dividend imputation system – dealt

²¹ This issue is also critical for R&D where many firms are in tax loss.

²² Kennedy and Co Chartered Accountants at http://www.kennedy.com.au/Index_html/Tax_html/Individual_Tax_Information.htm#zone

²³ CCH, (1996), §17.380. They are also not claimable against the Medicare levy.

with below – such refundable tax credits or rebates would in effect be subsidies administered through the tax system.

Dividend imputation and tax credits

There is a further complication. Underpinning tax concessions in the United States is a ‘classical’ tax system. Here, companies are taxed on their profits, and dividends are (generally) paid out of post tax profits from companies, whereupon their recipient pays income tax on the dividends received. The Australian system of dividend imputation is designed to avoid this ‘double taxation’. For Australian shareholders, the Australian system of full dividend imputation converts company tax from an independent tax system into a withholding tax for income which is payable on receipt of dividends by company shareholders. For each dollar of company tax paid, a franking credit is generated which can be passed back to shareholders with dividends.

This dramatically dilutes the benefit of any tax concessions to companies in the hands of shareholders. With company tax operating as a withholding tax against tax payable on dividends, for every dollar the firm saves in tax, it receives that many fewer franking credits to distribute to its shareholders. Thus the tax concession – which managers may be thinking of as equivalent to a grant of the tax saved – is, in the hands of Australian taxpaying shareholders, no more than a loan of the same amount. Their company pays less tax, but in return they receive lower dividends and/or pay more tax.²⁴

A recent BCA report argued that the existence of dividend imputation ‘claw back’ of the R&D tax concession could have made it ‘super efficient’ (1998). That is, the evidence of strong R&D growth stimulated by the concession suggested that management had overvalued the worth of the concession. Be that as it may, this argument seems like a weak one on which to base further industry policy initiatives.

It would be possible to design a tax credit instrument that dealt with these issues as well. Thus one could issue refundable, franked tax credits which would pass through to companies’ bottom lines and then be free to pass through to

²⁴ This is one of the reasons that the Treasury regarded the dividend imputation system as the ‘Rolls Royce’ of the tax system. It enabled the government to give tax concessions to interest groups with much smaller effects on the budget than the apparent and reported size of the concession (personal communication).

shareholders with some level of tax benefit attached. However, the more special features are built into the instrument, the more serious will be the hostility it encounters from the central agencies in Canberra. As already discussed, they are already hostile to the idea of using tax concessions for industry assistance.

These considerations mean that the tax concession route to greater community funding of the USO is a double-edged sword. On the one hand the way in which a tax concession can 'hide' the cost to the budget may be of some political benefit. Perhaps for this reason the idea of tax concessions is often more attractive to the public than a subsidy. On the other hand, within government, those agencies which could be expected to be the most powerful institutional allies of broadening the base of USO funding – the central agencies – would all have instinctive reservations about the use of tax concessions to do so. Further, the extent to which one would have to change existing schemes to generate an efficient subsidy scheme through the tax system militates further against this course.

Given the base on which it is calculated, is the method of revenue raising appropriate?

Optus has argued that the funding base on which the USO is calculated is flawed in a range of ways. Whilst some of the argument is tendentiously distorted to represent their own interests, they have made some comments of interest concerning broadening the funding base of the USO. Optus considers that:

The eligible revenue formula is not a value-added tax. It does not allow new carriers to deduct their own infrastructure inputs costs, or inputs purchased from non-carrier firms, to determine their net eligible revenue.²⁵ Hence such carriers are liable for USO levy even though their sunk investment may not yet be net profitable. This especially hinders facilities-based carriers in the start-up phase of their operations. (Cable and Wireless Optus, 2000).

This assessment appears to confuse value added taxation and profits taxation. Unprofitable firms still remit GST to the government corresponding to their value added (the surplus of their revenue over their outgoings to external suppliers –

²⁵ A carrier who rents infrastructure from another carrier receives an eligible revenue deduction for the inter-carrier rent payment. However, a carrier who instead builds their own infrastructure receives no deduction for the costs of building the infrastructure. In this way the current eligible revenue formula distorts the build/buy decision towards renting infrastructure.

not including their employees). The purpose of funding the USO is to have the consumers of profitable services fund the consumers of unprofitable services. As such, the relevant considerations are efficiency ones, to do with the least distorting means of raising the funds from the profitable consumers.

In principle, it seems unlikely that aligning the collection of funds with profitability would enhance efficiency. This is because it would place the greatest burden on the most profitable carriers and the most profitable products, thus reducing investment in those areas with highest returns to carriers and the community. However, to arrive at a robust conclusion, one would need to model the actual circumstances which are encountered in the market – something which it seems reasonable to impose at least in the first instance upon those proposing change.

In any event, there would most likely be political and administrative problems with a value-added tax model. Firstly, there would be a need to track value-added through the production chain. However a number of suppliers to the telecommunications industry would be outside the industry and so not brought within the net. This would complicate record keeping. The value-added tax cascading through the telecommunications system would have to be marginally above the 10% level of the GST. This could create political problems. Further, if there were – say – a 10.5% GST on telecommunications this would:

- create further administrative complexities in the administration of GST across the economy.
- Reduce the USO funding burden on business – thus *narrowing* the funding base and increasing the rate necessary for consumers to fund it on their own.

Moreover the notion of vertical equity to which Optus appeals may be an appropriate concept to apply to individuals, but it is doubtful that it is an appropriate standard to commercial entities where efficiency objectives should dominate.

Delivering USO benefits to users

By contrast to subsidising telecommunications suppliers, there are some strong in principle attractions to funding consumer beneficiaries of the USO directly. The Macquarie Corporate Telecommunications submission to the Productivity Commission current review of telecommunications specific regulation summarises some of the ‘in principle’ benefits:

One of the most effective means of driving competition within a subsidised market whilst leaving discretion with the end user is a voucher system.

Essentially payments are made or rebates given to targeted end users to offset the cost of telecommunication services. The payments are output related, that is payments represented by the voucher or rebate compensate the purchase of end products and are not contingent upon the means or the party by which the end product is provided. . . . The benefit of the system is that it leaves the choice of service and provider in the hands of end users allowing market forces to ensure service delivery. There are also important equity advantages from this type of approach that allow it to be targeted at areas most in need of services such as remote schooling, health services and commerce with limited risk of cross subsidisation (2000).

Of course Macquarie has its own competitive reasons for putting these arguments. However there are likely to be economy wide efficiencies from pursuing such an approach. With the exception of the arrangements made for the carrier of last resort, the proposals for competitive bidding for USOs essentially convert the producer funded and delivered USO into a quasi voucher system. The bidder for the USO is effectively bidding for the consumers' cross subsidy entitlements. There are additional benefits of a voucher system.

The first is that vouchers can be more readily means tested than entitlements of suppliers. This is a powerful reason for administering any voucher/rebate system through the tax system. Providing rebates are refundable where they exceed tax liability, they represent a simple subsidy administered through the tax system.²⁶ We already have the beginnings of such a system in the 'zone rebates' administered through the tax system. Zone rebates may be claimed by residents of remote regions of Australia in recognition of the disadvantages that taxpayers are subject to because of the uncongenial climatic conditions, isolation and high costs of living in comparison to other areas of Australia.²⁷

The administration of USO benefits through the tax system is likely to encourage the USO also to be funded through the tax system. On the other hand this is not necessary. It would be quite straightforward for the USO to continue to be

²⁶ As has been made clear above, this would not be the case if the tax rebates or credits were made available to companies – as the dividend imputation system complicates the benefit of the credit in the hands of the shareholder receiving dividends.

²⁷ Remote areas are called Zone A (Single: \$338; Married: \$1008) and Zone B (Single: \$57; Married: \$325) and Special Areas (Single \$1173; Married: \$1843). See http://www.kennedy.com.au/Index_html/Tax_html/Individual_Tax_Information.htm#zone

collected in essentially as it is today, with remittances made to general revenue to fund the tax benefits. Given the difficulty that the telecommunications industry will encounter in achieving central USO funding, administering USO benefits through the tax system might nevertheless be seen as facilitating some future transition in this direction.

There is another important strategic benefit in moving towards some kind of voucher system. Just as it creates the possibility of beneficiaries of the USO using their funding to purchase services from competing telecommunications providers, it can also facilitate greater integration of benefits to individuals and/or households from different government sponsored equity programs. Thus for instance, one might not need to formally integrate USOs from post and telecommunications. If each were delivered by a voucher system an integrated solution could be delivered to each household according to its preferences. And the logical extension of injecting this degree of 'tradability' into the system is to enable vouchers to be 'cashed out'. It is to these matters that the next chapter turns.

Transparency

Why are the beneficiaries and proponents of cross-subsidisation often resistant to funding them from general revenue? The reason is that once this funding arrangement is achieved it becomes harder to justify the cross subsidy against all the other demands on general revenue. One is more forcefully faced with the opportunity cost of the cross subsidy – which is that the same money cannot be used for other worthy social objectives such as better schools, hospitals poverty relief and so on. Not only is there greater transparency, but the funding stream is opened up to scrutiny virtually every year in the budget round.

For political reasons, we are a long way from centrally funding USOs. Nevertheless it may be possible for telecommunications carriers to make an important step in that direction by increasing their commitment to greater transparency themselves. Contributions to and from the USO system could be itemised on bills. However, customers who saw that they were paying the levy with one carrier, but not with another might believe that they could avoid the levy by shifting to carriers who did not itemise the payment. For this reason it might be beneficial to seek to increase transparency in this way through cooperation amongst the various carriers.

Be that as it may, the identification and itemisation of USO costs for each USO subsidised telephone is a precondition for taking many of the most useful steps

towards greater efficiency in telecommunications equity policy in Australia. It is to these possibilities that the report now turns.

7. Out of the silos: Beyond the Safety net

A major theme of discussion across the political spectrum is the way in which government interventions have hitherto been based on the idea of 'one size fits all'. Critical discussion has focused on the ways in which this approach has distorted incentives for self-provision and impeded market development. Thus the idea of 'passive welfare' has come under attack from both sides of the political spectrum. When attention turns from supporting a 'passive' set of entitlements to welfare to maximising opportunity, it becomes readily apparent that rigid delivery structures organised into specific 'silos' are not effective at delivering integrated 'whole of government' solutions.

Thus for instance, the economist and senior bureaucrat John Patterson has been critical of the plethora of different health programs operating at different levels of government (1996). The multiplicity of discrete schemes undermines the ability to generate and integrate data on patients and other beneficiaries of the system. At the same time, it generates a range of incentives to shift cost from one program to another and from one level of government to another.

There is also the concern about the transaction costs for citizens and businesses in dealing with government through a large number of different agencies that do not behave in an integrated fashion. Thus, for instance, there has been substantial demand for 'one stop shops' to deliver government services to businesses and citizens and frequent calls for a 'whole of government' approach to policy problems.

These issues have been central to welfare reform. New institutions have been developed to ensure that programs and the mix of programs available in particular instances are tailored to individual and/or local circumstances. The 'one stop shop' for the delivery of government services and 'case managers' for welfare recipients provide examples of these kinds of changes. In the mid-1990's, the former Keating Government Minister Peter Baldwin sketched out the way in which it might be possible to move away from the 'one size fits all' social security system.

It is envisaged that people will be able to select from a menu of products to produce a customised income support package, parallel with the revolution that has transformed financial markets, such that clients sit down in front of a computer terminal with a bank employee to work out what particular home loan package meets her/his needs most effectively.

I would like to see DSS [the Department of Social Security] doing business in a similar way. . . . Importantly, these flexible income support structures should greatly enhance people's capacity to exercise choice, to take control of their own lives. This takes us beyond the goal of simply providing a safety net to one of enhancing people's freedom to achieve. (Baldwin, 1995).

'Third way' Australian Labor MP Mark Latham echoes similar sentiments, highlighting the need to devolve resource allocation decisions down to the place where they have their impact. His focus is on government services in the area of welfare and education.

The public sector needs to move into place management. It needs to cast its organisational methods at managing the problems of disadvantaged people and places, rather than a disparate set of functional responsibilities and inputs. The first step is to bundle together the public resources – in health, housing, education, training, employment initiatives and community services – of a selected suburb or local government area. These would then be managed by a placed authority empowered to buy in the services best suited to meeting local needs. (Latham, 1998).

The importance of case management holds centre stage in the current Government's Job Network changes. And the idea of breaking out of the 'silos' established for the provision of government services was the centrepiece of a major study into long term unemployment for the Business Council by the Boston Consulting Group.²⁸

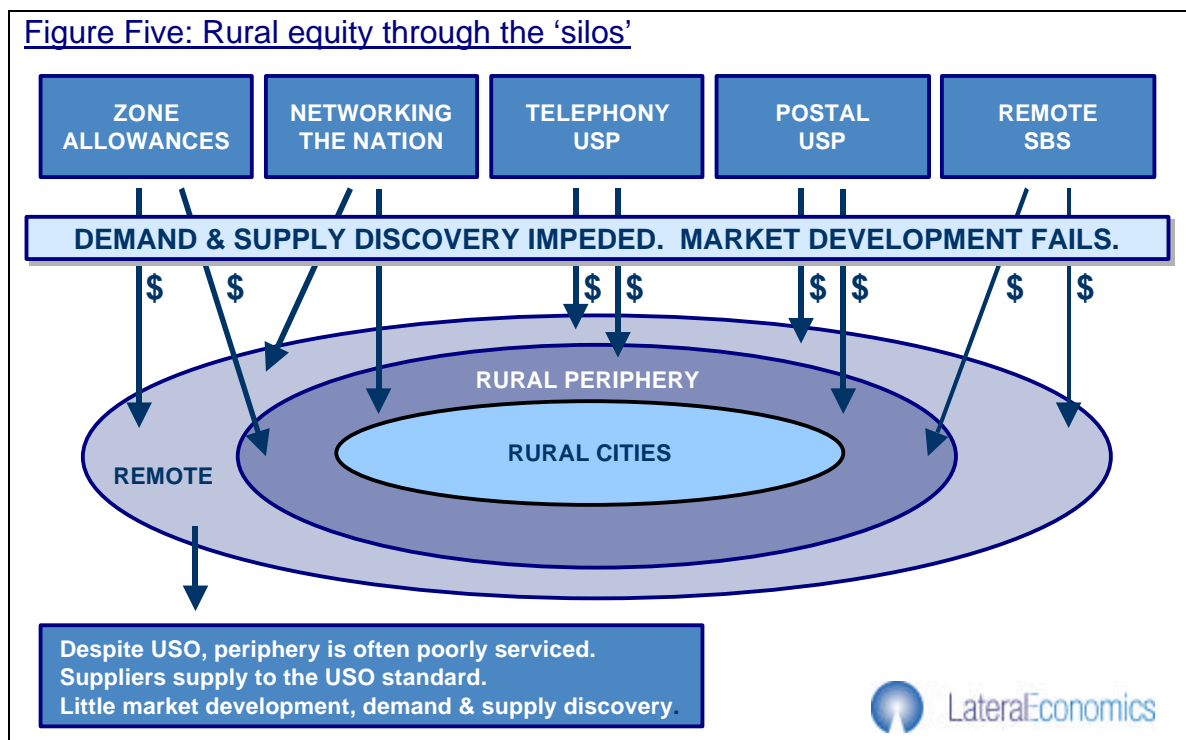
A brief look at the multiplicity of programs for enhancing equity in rural and remote Australia confirms the suspicion that equity in the bush is not being pursued or delivered in an integrated manner. Figure Five is a simplified illustration of:

²⁸ It argued that:

Young people are the recipients of a largely uncoordinated set of initiatives and funding from federal and state governments, as well as from the non-government welfare sector. Many of these programs are undoubtedly making a contribution but, without clear accountability and measurement of outcomes, there is no knowledgeable buyer of services for these young people – someone who is motivated and able to measure the effectiveness of expenditure, and determine whether a particular group of young people requires more of a certain type of initiative or less of another. (BCA, 2000, 20)

- the way in which programs to deliver equity in the bush have been divided into 'silos';
- how they have been dominated by a model of supplier delivery, and
- how, as a consequence demand discovery and market development have been impeded.

Thus for instance, with the USO imposing obligations on suppliers to supply services at below cost, competition for supply has been suppressed. This robs both the community served and the supplying firm of the essential discipline of competition. Competition generates information about the true cost of supply, as well as the best technology for the circumstances. Further, the existence of the USO impedes the flow of information not just from suppliers to consumers, but also from consumers to suppliers. Because a certain price is set, producers (and policy makers) have no way of knowing how highly valued the price controlled service is. As illustrated in Figure Five, these programs exist alongside other rural equity programs that provide simple entitlements to cash.



Regional Policy and the USO

The underlying aim of assisting the relative position of regional and remote individuals and communities that is implicit in the telephony USO, is also a policy aim in many other regional programs. A great variety of regional programs are

available from Federal, State and Local levels of government in Australia. The Federal Government's recent Regional Australia statement aims to improve access to, and delivery of, programs and services in regional areas, to foster employment and business initiatives, to enhance regional infrastructure and to improve community welfare. Just some of the initiatives with direct telecommunications inputs are as follows.

- Centrelink's improved regional telecommunications links mentioned in Chapter One.
- A national telephone hotline and Internet site is being established as a rural initiative to provide legal services
- The Education Department provides a 'Distance Education Allowance' to primary and secondary students of up to \$1,579 per student (Anderson, 2000).

Another regional scheme that aims to improve regional infrastructure in communications is the Regional Equalisation Plan for Digital Television Services commencing this financial year. This will assist the rollout of digital television and datacasting services to Australians living in regional and remote Australia – a policy clearly analogous to the telecommunications USO policy. Over 13 years, up to \$260 million in financial assistance will be provided to assist commercial television broadcasters. Under the scheme, Commonwealth assistance will be available for up to 50 per cent of the estimated capital and operating costs of regional commercial broadcasters in converting to digital technology. This assistance will be made available predominantly in the form of rebates on annual licence fees paid by broadcasters. There will also be a small grants program for broadcasters in some single-service licence areas.

The Government is also spending \$66 million over four years for the ABC and SBS to enter digital television broadcasting, but the ability of many Australians in rural and remote areas to receive these services will be limited by the available infrastructure (Anderson, 2000).

Specific Regional Grants

The Regional Solutions Programme is a Federal Government initiative that will assist regional and rural communities build their capacity to identify and implement development opportunities. Some \$90 million will be provided over four years to allow communities to undertake projects that will lead to economic diversification and strengthen their social structures by improving access to and filling gaps in services.

The Regional Solutions Programme offers a menu of funding options from small-scale projects (\$5000 or less) to large-scale projects (up to \$500,000), depending on the needs of the communities and the activities to be undertaken. Up to \$100,000 over two years can be accessed towards the cost of resourcing regionally based people to help implement local projects or provide information on Commonwealth programs and services. This could cover the cost of employing a community information officer or possibly new telecommunications access, such as a satellite link that would greatly increase communications with a regional area. Similarly, up to \$200,000 for projects aimed at diversifying the economic base of a region, which could be broadly defined to include the promotion of e-commerce from regional areas.

Source, http://www.dotrs.gov.au/regional/solutions/facts_1.htm.

The recent measures to promote regional Australia are summarised in the following table.

Table One: New Budget Measures for Regional Australia (\$ million)

Type of Assistance to Rural and Regional Australia	Assistance 2000-2004
Agriculture Advancing the Nation	309.4
Education funding for isolated children	16.4
Regional health package: 'More Doctors, Better Services' (Education portfolio)	19.1
Department of Employment assistance	45.0
Family and community services	94.3
Regional Health Package: 'More Doctors, Better Services' (Health and aged care portfolio)	543.0
Aboriginal and Torres Strait Islander community development employment projects scheme	71.5
Fuel grants scheme	499.5
Infrastructure development (Indian Ocean territories)	69.0
Total assistance to regional and rural Australia	1828.1

Source: Anderson, (2000).

Networking the Nation (NTN)

An alternative to mandating minimum standards of service involves government 'partnering' with local regions in funding projects that the local community identify as worthwhile. Many environmental programs are of this kind. NTN is one such

program that seeks to address regional disadvantage in telecommunications. Funded from the sale of equity in Telstra at \$250 million over five years from 1 July 1997, the stated objective of NTN is to assist the economic and social development of regional, rural and remote Australia by funding projects that:

- enhance telecommunications infrastructure and services in regional, rural and remote areas;
- increase access to, and promote use of, services available through telecommunications networks in regional, rural and remote areas; or
- reduce disparities in access to such services and facilities between Australians in regional, rural or remote areas and those in urban areas.²⁹

In 1999-2000a total of 174 new projects, totalling \$90 million, were approved. Networking the Nation Online was also implemented – providing easy access for applicants to register and apply for funding, and for the secretariat to assess applications and manage grants online.³⁰

The program is focused on assessing and meeting some of the demand for new telecommunications services in rural Australia. This sensitivity to local needs, and its capacity to elicit a local assessment of funding priorities, exhibits some strengths that balance the weaknesses of the USO. Communities will clearly seek funding for those initiatives they value most highly. Accordingly such programs can assist in demand discovery in a way that USOs as they are currently administered do not. Moving to more negotiated equity outcomes should improve the utility that rural and remote Australia gets out of the political commitment that other Australians appear willing to make in the interests of rural and remote equity.

Nevertheless for all their differences, NTN and USOs share one weakness. For just as USOs generate funding priorities by default – by simply defining some standard of service to which everyone will be deemed entitled – so directly funded programs like NTN also lack many of the market disciplines necessary to prioritise funding efficiently.³¹ The same complaint has been levelled against other community-based project subsidy schemes such as Landcare.³² There is a

²⁹ Networking Australia Information Paper, 1997.

³⁰ Department of Communications, Information Technology and the Arts, (2000).

³¹ See Optus's comments at § 3.65 in Cable and Wireless Optus, (2000).

³² Personal communication during Nicholas Gruen's participation in the Productivity Commission's inquiry into Ecologically Sustainable Land Management 1997.

range of strategies that can help with this problem. Each rely on imposing the logic of scarcity and choice – which is the essence of market decision making – to elicit real and effective prioritising by the beneficiaries of equity programs acting either individually or collectively.

Trading rural equity benefits and ‘cashing out’ the silos.

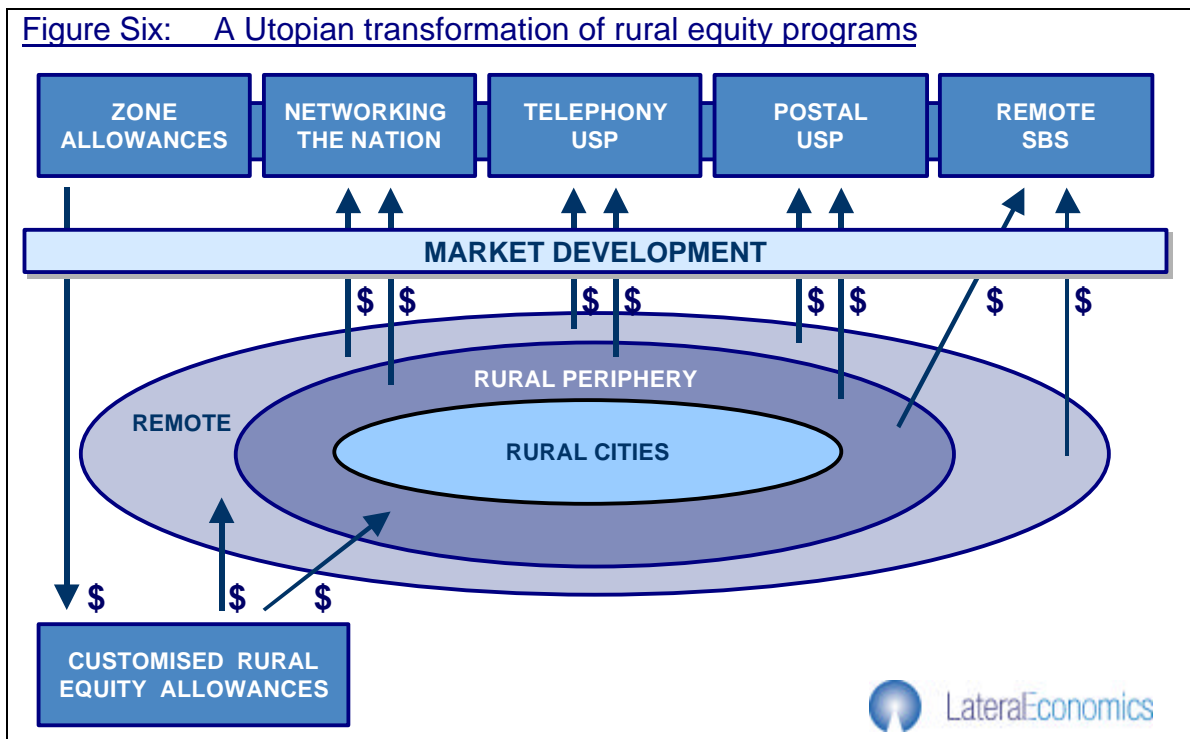
The rigidities involved in individual rural equity programs run by different agencies and operating in different markets has – one may presume – always had efficiency costs. But the possibilities which the communications revolution is unleashing probably increase the opportunity costs of such rigidities considerably. The technology will soon exist for virtually any household to have satellite telephony at a cost that is not prohibitive. Optus argue the figure is in the order of \$2,000 per annum (Cable and Wireless Optus, 1999, §2.23). We have already discussed the possibility that some of the postal USO might be better spent purchasing telephony solutions for rural and remote Australians.

The kind of change envisaged is illustrated in the attached diagram. Ideally all rural equity programs should deliver the same degree of benefit per dollar expended. Otherwise the nature or administration of the least effective programs should be changed, or expenditure on them should be switched to the more effective programs. Clearly the aspiration to equalise the marginal benefit of each dollar on each program is utopian. Nevertheless, some ground can be made in that direction by moving towards greater user contestability of programs. In the ideal model, resources would be made available to rural individuals and communities as ‘customised rural equity’ allowances. Any individual’s or household’s entitlement would be related to their circumstances. More remote locations would bring forth greater entitlements, and above certain income levels, means testing would reduce entitlements.

The individuals or communities that receive them then spend those resources maximising their own welfare. In the exercise, they will generate demand for precisely the kinds of services that they are now receiving via the ‘silos’ of government programs. But supply of these services will be contestable. Thus demand discovery and market development can take place. Suppliers must maximise the efficiency with which they deliver services, because if they do not, consumers will find other suppliers to take their place. This process works both within industries and between them. If there are better telecommunications suppliers they will win business. And if some services are being over-provided compared with others service, consumers will switch between them.

The benefits of cashing out are not just the ‘theoretical’ ones arising from optimising consumer utility. The approach would also immensely improve the development of appropriate industry structure and technologies to meet rural and remote needs.

Figure Six: A Utopian transformation of rural equity programs



The mechanics of ‘cashing out’ USOs

Just as the costs of the USO are calculated with detailed geographic/demographic data, so too it should be possible to generate the cost of meeting the USO for each individual household. (It may be more sensible administratively to arrange all households into several ‘bands’ of cost based on their geographic circumstances.) Where their choices do not affect each other – in mathematical jargon, where the joint costs of individual services do not exhibit subadditivity or economies of scale – individuals or households can be permitted to ‘cash out’ USO subsidies, leaving them to purchase the telecommunications service with the money, or to spend the money on a basket of other goods and services which (as their behavior indicates) they value more highly.³³

³³ It is unlikely that this process would enable the USP to escape fully from price regulation. Political anxiety would remain that the incumbent carrier could charge monopoly prices. Nevertheless the availability of cashing out would enable an increase in prices charged to the level of the cashing out – which would be a substantial improvement upon the current situation.

Already the diversion of the USO scheme for those 4% of people who Telstra connect to an ISDN line via the satellite, partially illustrates such an approach. Here those who cannot be connected to a terrestrial ISDN line in a cost effective manner, are entitled to a refund of 50 per cent of the cost of installing a satellite up-link refunded to them from the USO up to a capped total which is currently set at \$765.³⁴

Of course one type of government regional equity assistance comes in a form which is already 'cashed out' – the zone rebate.

Interdependencies of supply

More usually there are interdependencies in the provision of telecommunications services to different households in the same locality. There are local economies of scale. The line out to one remote user can be extended on to the next. In such circumstances, there are complications in calculating each household's USO entitlement. And there are complications in allowing individual opting in and out of the system, since one household's opting out, or choice of a different technology is not just a choice for themselves. Their decision affects the economic choices facing their neighbors.

We already have institutions that can be of assistance here, such as local councils. These may be appropriate in some areas, but an alternative model would be catchment management committees in the management of environmental issues. Where a particular group of households exist within the 'catchment' of a particular exchange or along a terrestrial trunk line or potential trunk line, it could well be appropriate for this group to be the decision maker.

Once such structures exist, USOs could be folded into them. Thus entitlements from the postal USO, and other entitlements under health, education and so on could be aggregated into rural and remote entitlements. They could be administered through the tax system – and thus made subject to means testing – as refundable zone rebates. To do so, the decision making units – they may be called 'rural and remote service zone committees' for the purposes of this discussion – would have to be appropriate not just to telecommunications but also to the other services aggregated in the exercise. They would be interposed between individual households and their entitlements.

³⁴ Note also the Western Australian Government's intention to subsidise the use of the new Globalstar satellite mobile phone system. (Western Australia, 2000, pp. 30-31)

They would have authority to commit any amount (up to the total available) to any cause collectively – providing such decision was made democratically – with the remainder to be remitted as vouchers or cash to the households on a pro-rata basis. In this way the community would be able to negotiate with suppliers for upgrades to their infrastructure and services and be capable of sharing the risk of that project with competitive suppliers. Further, this machinery provides the means by which communities can express any desire they have to trade off consumption possibilities for increasing production. Thus the committee might decide in favour of one bid from one potential carrier over another because of its preparedness to locate a call centre in or near the zone.

Because this is a local monopoly model, innovations in charging from natural monopoly industries could also be considered by zone committees. (See Appendix Three).

The definition of zones could also facilitate a kind of conditional bidding for the competitive supply of the USO in an area. Conditional bidding occurs today in takeovers on the stockmarket. Thus a bidder for a stock can propose to shareholders that it will pay a certain price for stock conditional upon a minimum threshold of acceptance – often an amount which will take the bidder to 90% of the company. Similarly, a carrier could put a proposal to all households in the zone which was conditional upon a minimum number of acceptances. This could, conceivably, substantially reduce the risk premium required by a new entrant. Facilitating such an entry strategy may be in the national economic interest.

In thinking through such an approach, there could also be a national dimension. Some goods and services of use to rural and remote Australia need not be supplied locally, but can be provided as part of a national (or indeed international) market. For instance, in their negotiations with carriers, local zone committees are likely to benefit from expert advice. The funding for such advice might be provided in a way that was additional to the USO or could be funded within it. It is also likely to be of benefit for committees from different regions to be in contact with one another. There may also be software services and other content that could be provided nationally.

Thus for instance, despite their eagerness to provide their services over the Internet, no Australian bank has made a fully functioning banking service available to Australian users, incorporating for instance the capacity to write cheques to unrelated third parties over the Internet and have them sent by the

bank. Such services exist in the United States ³⁵ and could be of substantial benefit to many people living in remote Australia, both on their own account and also because they could reduce critical commercial dependency on postal services. A wide range of other possible goods and services could be imagined in the areas of health, education and other services to citizens. But if it were not commercially viable, how could such an initiative be funded?

Here, Australian rural R&D corporations provide a useful model. The rural research and development corporations compulsorily levy their members – generally the producers of agricultural commodities. The levy is calculated as a percentage of commodity revenue. Those paying the levy are then entitled to vote (in proportion to the levies they pay) in the management of the corporation that then takes the stream of funding from the levy and invests it in research and development. Some industries such as the meat and wool industries apply a similar compulsory levy approach to marketing.

The industry development potential of such an approach is apparent – indeed, industry development is the whole rationale of the rural R&D corporations. Thus agencies at the household, local area and national level would facilitate demand discovery. And the institutional means exist for the satisfaction of those demands to be prioritised against the choices made by people seeking to maximise the satisfaction of their own needs against the constraint of limited resources.

Some of the precedents drawn upon here – for instance in the case of the rural R&D corporations – already involve subsidies direct from government. This would help the process of gradually migrating as much as possible of the USO funding to general revenue. The risk is that the USO is not cashed out with integrity. Here it is possible that the ‘national needs’ of Australians in the bush could be additional to the USO Telstra currently faces, rather than in substitution for it.

³⁵ Personal communication with Westpac Bank.

Appendix One: The postal USO

Introduction

Section 27 of the Australian Postal Corporation Act 1989 requires Australia Post to deliver standard sized letters to all but the most remote parts of Australia, even if it would not choose to do so under normal commercial circumstances.

The letter delivery USO consists of three elements:

1. Australia Post must provide a letter service to almost all parts of Australia at a single uniform price (price element);
2. It must make the letter service reasonably accessible to all Australians (access element); and
3. It must meet reasonable performance standards in the delivery of letters (performance element).

The letter USO has traditionally been supported on the basis that it is of assistance for the social and commercial needs of the community. The 1998 Review of the Australian Postal Corporation Act by the National Competition Council concluded that it is in the public interest for the USO to continue to be delivered since 'the USO enhances social cohesion, as a nationwide communications service is fundamental to people's business and social dealings' (1998).

The USO was also considered desirable because its existence enabled communication to take place that would otherwise not occur. Further, the USO promotes an Australia-wide postal network and guarantees the availability of postal services. It was considered that: 'telecommunications services are not an adequate alternative'. Notably, the NCC recommended:

The retention of the letter delivery USO because the CSO costs incurred are fully justifiable by the social benefits, and there is no effective alternative means of providing the social benefits.

The NCC argued that there were network externalities associated with universal service delivery.

The existence of the USO promotes the creation of an Australia-wide postal network. If there was no USO in relation to postal services, people might be reluctant to use the postal system because they might not be confident of being able to post a letter anywhere in Australia. Providing the

letter at a uniform price (which assists affordability and therefore usage in rural and remote areas), and providing it on an Australia-wide basis, increases the attractiveness of the service to all Australians, whether they are located in city or rural areas.

The Cost of the USO

In 1997 the revenue from reserved services for Australia Post was \$1,587 million, with expenses of \$1,467 million and operating profit of \$120 million. This represented a return on revenue of 7.6 per cent, half that available to non-reserved services. The boundaries around the reserved service contracted to letters up to 50 grams in July 1998 restricting reserved revenue to \$450 million. This represents about 25 per cent of total letter revenue and is considered sufficient to absorb the cost of Australia Post's Community Service Obligations without requiring a subsidy from the budget.

In 1996-97 the cost of providing letter delivery to, from, and within rural and remote areas contributed just over one third of total CSO costs (ie \$25 million). The remainder related to delivery within Australia of incoming international letters, and of mail delivered between metropolitan locations.

A significant part of the reason why rural and remote letter delivery only contributed to a third of the CSO cost is because delivery standards are lower – there are fewer deliveries and delivery times are longer. Australia Post's total USO was \$67 million in 1996-97 (and \$71 million and \$70 million in subsequent years).

Note on Relationship between Postal and Telecommunications USOs

In rural and remote areas a significant issue is that large numbers of Australians have inadequate access to telecommunications services and rely on the postal service since there are practical problems in the side-scale use of electronic services. The National Farmers' Federation submission to the National Competition Council argued that:

While some owners and managers of remote properties are increasingly able to use new forms of technology as essential tools for business management, many other, such as the elderly, unemployed and those

whose telecommunications network is not adequate do not have access to these facilities.³⁶

³⁶ National Farmers Federation (1997), Submission to the NCC Inquiry into the Australian Postal Corporation Act.

Appendix Two: The Rockefeller/Snowe Bill for tax credits for rural and remote telecommunications providers

The main aim of the Rockefeller/Snowe Bill is to improve telecommunications access and infrastructure in rural America.³⁷ Rockefeller noted that:

New technologies can remove the geographic barriers that have held back rural areas for generations, meaning that places like West Virginia no longer have to be separated from the rest of the world. The implications of this are tremendous — traditional industries, small businesses, new entrepreneurs, and everyday people have so much to gain. The New Economy is about every type of business and every type of person. High-technology companies and traditional industries, big corporations and small businesses, Silicon Valley and small towns — they can all thrive if they have the right tools.

Access to broadband communications in rural American states such as West Virginia is low by urban standards since rural areas are often more expensive to serve due to terrain and widely dispersed populations – as in rural and remote Australia. Typically, broadband technologies cannot serve people over eighteen thousand feet from a phone company's central office. Senators Rockefeller and Snowe introduced the Rural Telecommunications Modernization Bill which aims to use a focused tax credit to build broadband facilities in rural areas. If enacted the Bill would have offered any company that invests in broadband facilities in rural areas a 10 percent tax credit per year for three years. Companies that invest in the most powerful forms of broadband facilities will receive a larger tax credit. The tax credit will only be available for certain types of investments, so that the credit is focused on actual need in rural areas.³⁸

The Rural Telecommunications Modernization Act is claimed to be technology neutral and provides benefits to both incumbent companies as well as

³⁷ Rockefeller, (2000).

³⁸ Investments must be for broadband local access facilities. These facilities provide the equipment needed for broadband capability. This includes fiber optics, DSL equipment, wireless enhancements, and cable TV network upgrades. The credit is restricted to investments needed for high-speed broadband telecommunications service. The bill restricts the credit to investments in areas that are more than 15 miles from any town with more than 25,000 people, and that are not within a county with an overall population density of more than 500 people per square mile.

competitors, while directly addressing the higher cost of investing in rural areas. In June 2000 the Bill was subsumed by the Broadband Internet Access Bill which aims to foster the deployment of broadband Internet services to residential, rural and low-income areas. The bill offers any company that invests in broadband facilities in rural areas a ten percent tax credit per year for five years.³⁹

³⁹ *Press Release of Senator Rockefeller, 8 June 2000.*

Appendix Three: Some revenue raising alternatives

Some interesting new ideas for generating revenue for new infrastructure development have been explored by Mann (1999) in relation to the water industry in the United States. He explores two kinds of charge

- availability charges and
- service delivery charges.

The **availability charge** is proposed as useful for a new housing development. The initial system costs may exceed the level that can be realistically recovered from the low initial customer base. Thus, it can be argued that it is appropriate that lot owners be charged for having service available, even though at that time they are not actually receiving service. The availability charge is essentially an access charge reflecting the availability of the service, as opposed to its provision (which can occur upon payment of an additional charge). Access charges are payments for system access regardless of usage and should recover only the usage-insensitive costs incurred when consumers join the system. The justification for the availability charge is that the water utility incurs certain costs regardless of whether or not consumers receive service.

If the capital investment is oriented toward serving demand growth caused by the addition of new customers rather than toward benefiting existing customers, it is inefficient to recover these capital costs from existing customers. An appropriate financing option is the front-end capital payment or capital contribution, that is, a payment by new customers to recover the capital investment required to provide service to the new customers. The rationale for the front-end charge is to require new customers to finance system improvements that directly benefit them and are largely a result of demand growth caused by the new customers.

The system development charge should be limited to recovering capital expenditures for new telecommunications distribution facilities required by the projected demands of new customers; the system development charge is not appropriate for recovering operating costs. A system development charge ensures that rates for existing customers need not be increased to recover the costs of facilities that have been constructed for new customers. System development charges can even have the effect of lowering rates if they are a significant source of front-end capital.

According to Mann, the merits of the system development charge are several. First, the system development charge can preclude existing customers from

having to subsidize the new customers. Second, by requiring the customers who have caused the system growth to pay for that growth, the system development charge can allow the water utility to maintain a common rate schedule for both existing and new customers, which avoids the implementation of vintage rates that distinguish between old and new customers. Third, the system development charge reduces the need for rate increases to accommodate system growth.

The relevance of these innovations to Australian telecommunications policy is probably limited. Both tend to be conceived in a monopoly context and so are unhelpful for the telecommunications sector except that part which has monopoly characteristics. This includes the local loop and possibly other aspects of the system in more remote areas. A properly constituted 'rural and remote service zone committee' might nevertheless wish to consider them in considering how to fund the capital investment necessary to improve local services.

Appendix Four: Abbreviations

ABS	Australian Bureau of Statistics
ACA	Australian Communications Authority
ACCC	Australian Competition and Consumer Commission
ANTS	Australian National Tax System
ATO	Australian Taxation Office
BARN	Building Additional Rural Networks
Bps	Bits per second
BCA	Business Council of Australia
CAN	Customer access network
CSO	Community service obligation
DoCITA	Department of Communications, Information Technology and Arts
EC	European Commission
FCC	Federal Communications Commission (US)
GDP	Gross Domestic Product
GSM	Global System for Mobile
GST	Goods and services tax
IDD	International Direct Dialling
IP	Internet Protocol
IT	Information Technology
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
NCC	National Competition Council
NTN	Networking the Nation
NUSC	Net universal service cost
OECD	Organisation for Economic Cooperation and Development
OFTEL	Office of Telecommunications (UK)
PBTS	Public Basic Telecommunications Services
PC	Productivity Commission
PSTM	Public Switched Telephone Network
R&D	Research and Development
RATE	Remote Australia Telecommunications Enhancement Program
STD	Subscriber Trunk Dialling
TSLRIC	Total Service Long-Run Incremental Cost
USO	Universal Service Obligation
USP	Universal Service provider

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