Submission to the Telecommunications Service Inquiry: by CIRCIT (Centre for International Research on Communication and Information Technologies) at RMIT University

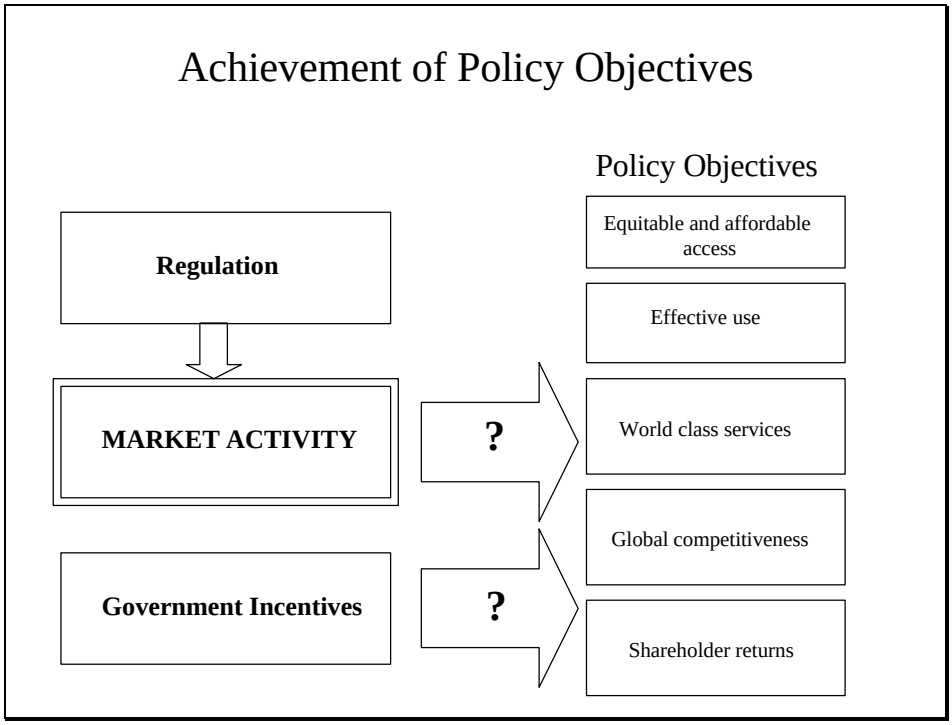
In this submission we wish to make three key points as a basis for further discussions if the Inquiry wishes to pursue them:

1. An appropriate strategy for meeting the future telecommunications requirements of Australians requires a comprehensive framework linking objectives and means

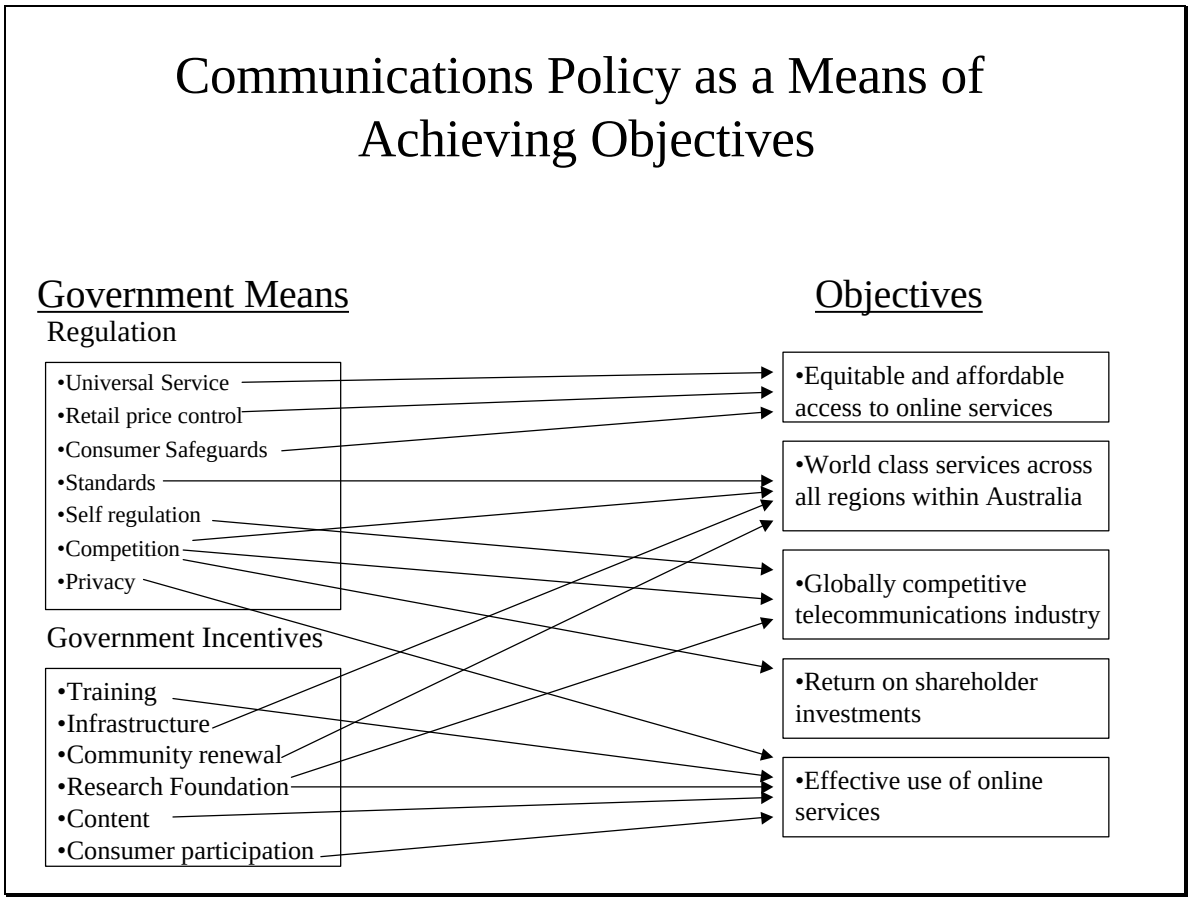
Recent work by CIRCIT, culminating in the 1999 CIRCIT Policy Forum - *Telecommunications Policy in Australia: Resolving Tensions in the Implementation of Social, Competition and Commercial Objectives* - has resulted in a framework for integrated policy development, starting from overall national policy objectives, both economic and social. The framework examines the way in which the telecommunications industry produces outcomes that contribute to these national objectives.

In broad terms the market in its normal operation contributes a great deal to the outputs of the industry. But there are, inevitably, gaps between the industry outputs generated by the competitive regime and the desired outputs to achieve national policy objectives. Governments act to fill these gaps in two ways: by regulating the market to achieve desired outcomes or by funding incentives to directly produce the outcomes required. The RTIF initiatives fall into this latter category.

The Forum report outlines a process for identifying gaps in the way the existing regime meets national objectives, and the regulatory and incentive means for overcoming them. The figure below illustrates the way regulatory models and government incentives address the achievement of policy objectives.



In more detail, initial analysis links particular regulatory levers and incentives to particular objectives, as shown in the following diagram:



CIRCIT studies, however, have found that regulation of the market can produce undesired as well as desired outcomes. That is, there are policy tensions between the intended objectives and what is actually achieved. Implementation of the Universal Service Obligation and the associated capital investment, for example, tend to reduce the global competitiveness of the telecommunications industry.

As a result of these tensions, which reduce the efficiency of the regulatory regime and retard industry development, CIRCIT believes there is a need for the examination of new models which either avoid the tensions inherent in the current structure or incorporate straightforward ways of managing them.

We therefore propose an approach to integrated policy development, which might be applied to the concerns of this Inquiry:

A. Specify objectives, with a focus on those for regional Australia: distinguish long- and short-term objectives:

1. For each objective:
    - Outline the expectations of the outcomes of market activity over the long- and short- term;
    - Identify the gaps in achievement of objectives which may arise from market activity.
2. Identify the potential models –regulatory and incentive –for closing gaps, as in the diagram above.

B. Then examine the relative effectiveness of these models.

2. The core requirement of enhanced infrastructure cannot be dealt with by competition policy alone

In CIRCIT's view, one of the most pressing issues for Australia is the establishment of clear objectives for the availability of higher capacity infrastructure and an associated national plan. This is a matter that has not been adequately dealt with from the time of the Broadband Services Expert Group in 1993/94 to the National Bandwidth Inquiry of this year.

In establishing the plan we will need to shift our emphasis from that of competition, and consequently be prepared to recognise possible natural monopolies in the provision of terrestrial networks. The above framework indicates that competition policy should be a means and not an end in itself. It is one of a number of regulatory means which, together with a set of possible government incentives, can be utilised to achieve objectives.

Competition is clearly a means of achieving some key objectives, particularly in the availability, price and quality of services. However, even in countries where competition policy has been entrenched for decades, eg. the US and UK, outcomes continue to primarily benefit metropolitan areas and business users. This too is the case for infrastructure development where incumbents and new entrants continue to target high traffic routes and densely populated areas. In relation to the underlying objective of infrastructure availability, an emphasis on competition may be limiting our

capacity to achieve essential outcomes across metropolitan, regional and rural Australia. With our emphasis on market approaches, we have not moved forward in infrastructure development in the way that other countries such as Canada and Japan have done in the last decade (though regional disparities in rollout are also noted in these cases).

Clearly CIRCIT is not alone in recognising these limitations, since they are a stated starting point of the Telecommunications Service Inquiry. Our national challenge appears to be, however, to place competition in an appropriate perspective as one means. The confusion we still experience is indicated by the background material for the November 1999 Regional Telecommunications Forum proposing that *"the central objective of the Commonwealth Government is to facilitate competitive and sustainable communications services for regional, rural and remote Australia"*.

The requirement for the TSI to report on the effectiveness of existing and future technologies "combined with the market model" opens up the prospect that the TSI can draw conclusions about the deficiencies of the current model, particularly as it relates to the provision of infrastructure.

3. Alternative models for developing infrastructure need to be considered

The present approach to developing communications infrastructure relies on a partially-privatised Telstra as the dominant carrier and subject to obligations to provide a universal service, coupled with the competitive efforts of other carriers and service providers all of whom are driven to primarily serve their shareholders. Legacy infrastructure is augmented and competitive service offerings deployed –all in a 'leapfrog' yet gradual manner so as to manage investment risk. The outcomes are as follows:

- USO-dictated infrastructure delivers lowest common denominator services but at generally affordable prices;
- Higher bandwidth services are marketed and dimensioned at premium prices that are not widely affordable;
- Duplicate infrastructure is targetted to address the more profitable markets, with the side effect of higher overall embedded costs and foregone investment in less profitable markets;
- Oligopolistic pricing in many markets where competition is underdeveloped; and
- Innovative service and application demand is severely limited by bandwidth supply.

The end result is the absence of business drivers that will provide Australians, particularly in regional and remote areas, with leading-edge communications infrastructure that will serve the nation well into this millennium and provide an international advantage within globalised markets.

Leading-edge infrastructure implies the availability of services and applications that can only be delivered via broadband networks, such as those constructed with optical fibre. In announcing the findings of the National Bandwidth Inquiry in April 2000, the Minister for Communications, Information Technology and the Arts, Senator Richard

Alston said "*This report provides vital information which will help the Government ensure that affordable, high-speed bandwidth is made available to all Australians. It has found there is likely to be adequate bandwidth in the backbone network on most routes to meet the majority of demand scenarios*". Although such backbone routes are nowadays solely realised by optical fibre, this is almost universally not the case for the infrastructure directly servicing consumers and small businesses (ie. spanning the 'last

When coupled with Internet Protocol, communication services delivered via dedicated optical fibre offer the promise of:

- Pricing regimes that are substantially independent both of distance and bandwidth;
- Potentially inexhaustible bandwidth and, in particular, bandwidth supply that does not constrain the demand for new applications;
- Complete decoupling between infrastructure and service provision, in both a logical and physical sense.

Investment in leading-edge infrastructure of this type is most unlikely to eventuate in an openly competitive environment. The achievement of the desired objectives for rural customers therefore requires the creation of a national strategy and the deployment of infrastructure according to that strategy.

The reality of telecommunications infrastructure is that the access network (between the customer and the local exchange) almost certainly constitutes a natural monopoly – particularly in rural areas. As a result:

- Other carriers are unlikely to compete to provide services in those residential areas where Optus has not installed its broadband network, and in rural areas.
- If they did compete wasteful duplication of the infrastructure would result.
- Telstra has an incentive to price access to its network high, in order to prevent competition at the services level (eg, local calls). This is a logical business response that it must pursue in the interests of its shareholders. Its objective is to protect higher-level product revenues.

The natural monopoly of the network between the rural customer and the nearest exchange has the following consequences for the application of competition in rural areas:

- Higher overall costs - and, other things being equal, prices to customers - result from provision by two or more efficient networks than by a relatively inefficient monopoly network;
- Attempts by government intervention to protect an incoming carrier who has installed a competing network will result in the consumer receiving prices based on the higher unit costs of the incoming carrier;
- Potential instability in the market may occur for the following reasons:
    - If Telstra retains market share it will earn super profits, thus further strengthening its monopoly position.

- Conversely, should demand aggregation cause Telstra to lose significant customer revenue, sound business practice would require it to reduce service levels to the minimum and lobby to exit the market entirely.

In the more remote areas, natural monopoly characteristics apply even when the level of infrastructure invested is relatively low. The amalgamation of Internet Service Providers in rural towns is an example of the unviability of the competitive regime in rural areas.

The inherent inconsistencies in the application of the competitive market to rural areas therefore give rise to significant gaps in the achievement of national objectives. Intervention by the government by using regulatory levers (for example, costing and tendering of the USO) leads to a range of implementation difficulties in practice. Intervention by incentives (for example, the RTIF) is potentially a more appropriate response, but its application has lacked accountability and focus.

As a result of these considerations it is appropriate to consider a more strategic model.

This could comprise a vertical separation and part privatisation of Telstra whereby:

- The transmission network (cables, pipes, ducts and associated transmission equipment) would be wholly owned by the public or by local communities.

  Ownership by local government would facilitate the generation of significant cost savings by sharing ducts and other construction and operational components with other utilities.

- The remaining parts of Telstra would be fully privatized.

This model is structurally similar to that adopted by the British Government for the privatisation of rail facilities and by the Victorian Government for the part privatisation of the Melbourne tram infrastructure.

The resulting structure has the following advantages for key stakeholders:

Government:

- Proceeds from sale of the Telstra retail and Internet businesses;
- Simplified regulation;
- Increased services competition;
- A clear, logical and efficient mechanism for providing rural subsidy to meet social objectives.

Industry:

- Reduction in regulatory overheads and increase in industry efficiency;
- Reduction of barriers to entry for service providers.

Telstra:

- Flexibility and speed in addressing new market opportunities.

Service Providers:

- Open access to telecommunications infrastructure on commercial terms, since infrastructure provider can not compete with its own customers.

Rural and Other Users:

- Reduced prices through the avoidance of infrastructure replication and the achievement of economies of scope and scale;
- Politically accountability of the infrastructure provider and operator at the local level.

Other Utility Customers:

- Reduced prices through sharing of civil works capital expenditure.

Advances in telecommunications technology now mean that it may be cheaper to upgrade or replace rural networks with optical fibre rather than the existing copper pairs. This would provide rural customers with improved quality of service and the opportunity to access a vast range of broadband services as discussed above. The vertical separation of service provision and network operation, and public accountability for access to the network are both necessary for these benefits to be obtained.

This is a critical time to make decisions influencing the future direction of the nation's most important infrastructure component for the information age. It is crucial that the model adopted maximises the opportunities that the technology will make available. The model proposed, which utilises - where appropriate - the benefits of both private and public investment is capable of reaping these benefits.