

Response: Funding of universal telecommunications services (RBS Review)

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Please find our joint response to the “[Funding of universal telecommunications services \(RBS Review\)](#)” that outlines the thoughts of academics from the RF and Communications Technologies Lab and Intelligent Networks and Applications Lab at the University of Technology Sydney (UTS). As academics and telecommunications technologists, within a leading national university of technology, we strongly support a sustainable funding model for Australia’s Universal Service Obligation (USO) in telecommunications. We recognise the critical role of the USO in bridging the digital divide for education, research, and services across Australia. We see a critical need for a two-pronged approach: first, to advance research and technologies crucial for overcoming Australia's unique telecommunications challenges; and second, to ensure the USO is supported by future telecommunication standards that incorporate these needs, particularly in coverage, capacity, and other functional capabilities such as security, resilience, and latency requirements. We believe that universities can play a vital role in achieving this by conducting efficiency reviews of technology deployments and assessments of the commercial viability of services. Our unique perspectives and innovative ideas can contribute significantly to a sustainable USO model. Additionally, we are committed to collaborating and ensuring Australia has a strong voice in shaping the international telecommunication standards that will impact USO.

Pros of existing USO funding:

- Funding predictability, diversity, and redundancy – 3 funding bodies currently contribute to USO funding: (1) The Government’s \$100M annual contribution. (2) The Regional Broadband Scheme (RBS) contribution to provisional broadband through fixed wireless and satellite. (3) The TIL (Telecoms Industry Levy) supporting voice services, payphones, 000, and national relay services.
- USO Industry contribution – opportunities for industry to contribute financially.
- Transparency – RBS maintains cost of supporting any non-commercial services transparent as these are separate from profitable fixed line services.
- Simplicity and Stability – The two established funding mechanisms (RBS and TIL) may prove simpler and more stable than anything newly proposed in an uncertain economic environment.
- Needs focused – the current funding tied to cost of providing services in non-commercial areas.

Cons of existing USO funding:

- Scope is limited – RBS funding is only applied to fixed line services. This has the potential to isolate/neglect the funding of emerging technologies in rural/outback Australia. There is no engagement with Mobile Black Spot Program (MBSP) given the overlap in the investment to improve coverage.

- Unfair – current funding places a larger burden on NBN – this ultimately limits their ability to fund future improvements in rural technology deployment.
- Duplication of Effort / Cost Effectiveness – Two separate levies (RBD / TIL) might still be inefficient. Could a single mechanism be more streamlined and cost effective while retaining the QoS and enabling future proofing using saved funding? This is in opposition to the predictability / simplicity / redundancy described under “Pros of existing USO funding”. A study comparing both approaches would be useful to support a decision.
- Lack of future proofing (of technologies) – does the current funding scheme/model adapt well to advances in technology and changing network infrastructure requirements? The confusion surrounding the shutdown of the 3G network would suggest it does not. Opportunity for more in-depth surveys to provide insight.
- Lack of transparency – would a single funding scheme/model provide more transparency and efficient use of resources and would transparency be cheaper (i.e. More funding for the underlying technology and surveys).

How do we improve the status quo?

- Create a broader base – wider inclusion of mobile network operators (through the MBSP) in the funding schemes (e.g. RBS or future scheme) to share the burden/load and financial responsibilities? Consider US FCC Universal Service Fund as a possible model.
- Review funding levels – are RBS / TIL funded to meet real world requirements of deploying/maintaining USO?
- Neutrality – is the tech used vendor neutral or tied to different vendors? Is it adaptable to future performance and service requirements/needs? Can it be mixed and matched or is there proprietary lock-in? Equipment should have an improved End of Life (EoL) to support a higher degree of neutrality.
- Review – are there reviews of the efficiency of technology / deployments? Could Universities contribute to this and provide out of the box guidance/thinking/innovation or is reliance purely upon industry? Can reviews of the commercial viability of a service be done to determine if this is a service that should be rolled out?
- Observability / Measured outcomes – do we routinely provide measured data/analysis to determine how effective and efficient services / deployments are? Are they meeting the USO? Is there a dashboard? Why not? The observability of the services and networks should be automated as a reminder/3rd part incentive to the USO meeting its design.
- Heat map – are there options to be more targeted in investment and deployment of services? Identifying needs (from observability / dashboard) that allow 3rd parties to invest alongside the USO funding and potentially offer value or growth.

What is the role of government and academia in ensuring the USO’s viability and success?

- USO base technology research – deliver research targeting R&D that delivers base technologies to support the least common denominator bridging the digital divide and intersecting with future 6G. Address coverage, capacity, and other functional capabilities such as security, resilience, and latency requirements of rural/low density target areas.
- Standardisation / Open implementations – more support for academic engagement on standardisation, modularisation and open implementations providing a path forward to democratise and lower the cost of technology expenditure (capital) through software defined and virtualised core/edge (for example: OpenRAN and Open5GCore).
- Open Innovation – support for more open collaboration between a wider spectrum of industry and academia and government to drive “out of the box” thinking and innovation to meet USO requirements.

- Pilot projects for USO innovation - Advocate for more academia-engaged pilot projects (testing, deployment, and rapid iteration) to refine USO technologies specific to Australian needs. These projects should focus on standardisation, 5G/6G, Long Range WiFi, LEO connectivity, and overcoming outback deployment challenges (temperature, latency, user experience, QoS).
- Limited LCD R&D - Current research and development lack focus on "least common denominator" (LCD) technologies – basic but effective solutions to bridge the digital divide for underserved communities. This focus on LCDs is crucial for both immediate progress and future 6G development.

In conclusion, as academics, our commitment to educational equity and leadership in telecommunications research, particularly given our expertise in testing, optimising, and developing innovative solutions for remote telecommunications connectivity, compels us to advocate for a sustainable USO funding model. This model should bridge the digital divide and foster universal access to reliable connectivity. Ensuring Australia's future competitiveness on the global stage hinges on a robust telecommunications infrastructure that addresses the unique challenges of our vast and diverse landscape. By prioritising universal access, incorporating Australian needs into future telecommunications standards, and fostering a thriving national research environment, we can cultivate a future where all Australians, regardless of location, benefit from the transformative power of technology. We and our respective labs stand ready to collaborate with the Department and stakeholders to achieve these vital goals.

We would be honoured to extend an invitation to the Department to visit the University of Technology Sydney for a discussion or roundtable session. This would provide an opportunity to explore our joint response to [Funding of universal telecommunications services \(RBS Review\)](#), and collaboratively examine ways in which UTS academics can best support the Department in delivering an effective USO for Australia.