Identification and Analysis of Appropriate Regulatory Framework for Universal Service Interventions in Telecommunications

Abstract

The importance of telecom connectivity has only been increasing over time. In the digital age, we live in, Information and Communications Technologies (ICTs) have become not just the backbone but also the predominant medium of national and international social, political and economic activity. In such an environment the digital divide wherein some regions or parts of the population are deprived of the benefits of ICTs is not just politically and ethically unacceptable but also undesirable from the viewpoint of a nation’s economic growth. This would apply even more to a country like India with a large working-age population and hence tremendous potential to reap the benefits of ICTs for socio-economic growth. The rural-urban digital divide is an especially worrisome problem in India. The Universal Service Obligation Fund (USOF) of India was created with the aim of meeting the obligation to provide Universal Service, or in other words to ensure universal affordability, availability, and accessibility to telecommunications services as per its legal mandate in India, which emphasizes bridging the rural-urban digital divide. While it has contributed to increasing telecom penetration, literature review has revealed that the results of USOF interventions or subsidy schemes have not been commensurate with subsidy outflows. A comprehensive literature review has suggested that these shortcomings could be attributed to the legal framework in which USOF operates. This includes both the overall and telecom-specific institutional framework, and the overall and telecom-specific regulatory environment, apart from USOF’s regulatory framework.
The conceptual model of the study arrived at based on literature review delineated a set of variables that would constitute part of these institutional and regulatory dimensions. These were segregated into country, telecommunications (telecom) and USOF institutional strength variables and variables constituting the desirable elements of Universal Service Fund (USF) regulation. These variables were studied further with the help of Total Interpretive Structural Modelling (TISM), which helped delineate drivers that could be the subject matter of policymakers’ attention to achieve desirable Universal Service outcomes.

Data Envelopment Analysis (DEA) was used to validate the European Union’s (EU) regulatory framework for Universal Service interventions and to compare the Indian regulatory framework’s effectiveness in terms Universal Service outcomes relative to its institutional strength, with those of similarly placed EU nations. The analysis carried out with the help of TISM and DEA led to the refinement of the conceptual framework and finalisation of the list of variables to be subject to an empirical study by way of an Expert Survey.

The data obtained from an Expert Survey was subject to Univariate Analysis and Factor Analysis to further validate and organise the regulatory framework. This exercise revealed a good degree of agreement among experts as regards the model arrived at, with some difference in opinion between PSU experts and those from Government and regulatory background, and industry background. In particular, it was found that PSU experts laid less emphasis on competitive neutrality and avoidance of market distortions, as compared to other experts. Overall, the recommended model consists of fifteen variables organised into three sets of rules depending on the stage of a Universal Service intervention. Thus, some rules related to the regulatory
decision-making process at the pre-intervention phase wherein it was to be decided whether or not to intervene in a market by way of a USOF scheme, keeping in view other possible policy instruments and the harm caused by market distortions. The second stage was the scheme design phase wherein having decided to intervene; the recommended rules would guide policymakers and the USOF Administration in ensuring best outcomes in terms of sustaining competition and long-term growth of the targeted market segment. Finally, the third set of rules would apply to the implementation phase of a USOF scheme and would ensure transparent and effective implementation of schemes with feedback for future improvements in scheme design.

Two case studies were used to validate this recommended regulatory framework. These comprised of the Wireline Broadband Scheme of USOF and USOF’s Shared Mobile Infrastructure Scheme. The case studies revealed that schemes that had closely followed the recommended regulatory framework had better outcomes both in the short run and long term in terms of competition and growth of the affected market segment.

Having validated the recommended regulatory framework, the next step was to synthesise the finding and thereby, a consolidated model of a legal framework was arrived at which could serve as a guide for policymakers, not only in regard to Universal Service Interventions in telecommunications but also in other sectors such as airlines, railways, and posts.

Finally, the limitations of the study were recorded, and the way forward identified in terms of scope for further research.