

edotco Group
Regulatory Thought Piece
Issue 1/2018

**Facilitating Investment in Future Digital
Infrastructure:**
A Towerco's view on the Optimal Approach to achieving
Universal Service and its Funding

30 March 2018

0. Executive Summary

edotco is a key long-term investor in telecommunications infrastructure in the Asian region. We are committed to supporting policies that promote Universal Service which aims to provide access to communication services to all households or individuals regardless of income, geographic location or ability, and effectively and efficiently bridge the 'digital divide' in all of the markets in which it invests.

Universal Service objectives can potentially be achieved through market-driven policies and the operation of competitive market but in the event these policies, despite being enabled by appropriate regulation, have not resulted in the provision of services and gives rise to the incidence of digital divide, specific Universal Service intervention, either in the form of Universal Service Fund or equivalent schemes, is a regulatory option that has been considered and implemented in at least 69 countries worldwide¹.

Notwithstanding the important objectives of Universal Service policies, recent global studies by inter alia the ITU² and the GSMA³ show that across the world, more than half of the contributions collected by Universal Service Fund or equivalent schemes were never utilised and over a third of the funds were not able to distribute any of the levies collected. When administered ineffectively, Universal Service Funds can be counterproductive to sector policy goals in that, by effectively taxing communications customers, they actually serve to raise costs of providing services and increase the service affordability barrier.

Closer to our region, the recent introduction of Universal Service regulation in select edotco country markets⁴ and the reviews/proposed reforms in countries within the region⁵ which have long implemented Universal Service schemes have provided a timely opportunity for edotco to contribute to this important area by sharing its observations on Universal Service frameworks in general as well as making a number of recommendations with regards to the role and treatment of infrastructure/tower service provider, more specifically.

This paper from edotco sets out our view on this important policy issue. We would highlight the following:

A. Observations and Recommendations on Universal Service Policy

1. that ***technology change which permits Universal Service to be delivered using wireless technologies rather than fixed networks results in lower costs of access provisioning and more rapid deployment***. This needs to be acknowledged in any Universal Service policy (i.e. focused on mobile services, tower provisioning, backhaul access etc). Such access is shared and offered at affordable incremental rates by the mobile network operators. Consumer demand is also predominantly focused on mobile services. At a minimum, technology- and service-neutrality must be endorsed as a standard feature of Universal Service framework. In this context, it is vital to acknowledge that given its increasingly important role in the infrastructure building blocks of mobile networks and service, tower service providers should be the focal point of any Universal Service policy design (see Section 3.2)

¹See Universal Service Fund and Digital Inclusion for All, ITU, September 2013

² See above

³ See Universal Service Fund Study, conducted on behalf of the GSM Association, April 2013

⁴ Cambodia introduced Prakas (Regulation) on Universal Service and Prakas on Capacity Building and Research & Development in July 2017 while Myanmar is currently conducting a Public Consultation on Universal Service Strategy in January 2018

⁵ See section 3.1 for more discussion on recent developments in India and Australia

2. ***that the design and implementation of Universal Service policy framework needs to consider existing or planned regulatory approaches/policies*** such as market-based reforms and competitive frameworks, mandatory service or coverage obligation (e.g. coverage roll-out obligation from spectrum allocation), infrastructure sharing; cross subsidies, access deficit charges and private public partnerships to minimize overlaps between the said policies and specific Universal Service interventions such as Universal Service Fund (see section 3.3).

B. Observations and Recommendations for Universal Service Fund

3. ***that success of the above regulatory approaches/sector policies in (1) and (2) in increasing Universal Service and the extent of Universal Service Fund to fund the Access Gap (including True Access Gap) should be properly estimated in the Universal Service Fund and the amount to be collected.*** In this instance, there must be a regular review periods on the Access Gap analysis and the estimated Universal Service Fund, say in a 3- or 5-year cycle to ensure Funds are only collected to match the required Access Gap. If need be, collection can be ceased or suspended for a period of time if there is excessive build-up or alternatively, the contribution rate can be adjusted accordingly (see section 3.4); and
4. ***that the contribution rate for Universal Service Fund should be reflected in lower contribution (or ceased or suspended) by licensees.*** This is especially pertinent:
 - i) if the contribution rate is high, or unreasonable as compared with the global average of approximately 1 to 2% (see section 4.1);
 - ii) where there is low disbursement rate (as a result of cumbersome administrative rules or over-estimation of the requirement for Universal Service Fund) leading to excessive build-up of Universal Service Fund (see section 4.2);
 - iii) the Universal Service Fund should also require (wider) contribution from all participants of the digital ecosystem including digital service providers/OTTs either via general taxation system or specific Universal Service Fund contributions so that the responsibility is widely and equally shared amongst industry players in the Digital Economy. A broader contribution pool would also lead to a lower contribution rate from industry players (see section 4.3).
5. that there is continuous effort to ***improve governance and effectiveness of the Universal Service Funds*** via inter alia (see section 4.2 and Appendix A);
 - i) Increase transparency of operations and disbursement of Universal Service Fund;
 - ii) Capacity building through training and exchange of expertise; and
 - iii) Increase autonomy and independence of the Universal Service Fund administration (from policymakers/regulators).

C. Observations and Recommendations for TowerCos

6. specifically from the perspective of towercos and/or infrastructure service providers, that the Universal Service policy framework as well as Universal Service Fund is ***focused and designed with clear roles/treatment for infrastructure/tower service providers;***
- i) specifically on reducing mobile black spots focusing on new tower construction to improve mobile coverage in rural/remote areas (see section 5.1);
 - ii) in markets where specific Universal Service intervention is designed around Universal Service Fund;
 - no Universal Service Fund contribution required from infrastructure/tower service providers given the “wholesale” nature of business (see section 5.2);
 - the scheme should also allow in kind or “pay or play” contributions for towercos/infrastructure service providers as an extension of market provision (as opposed to imposing Universal Service Fund contribution and claiming back the expenditure) (see section 5.3); and
 - towercos should be able to access Universal Service Fund (see section 5.3).

1. Introduction

1.1 Overview

As edotco is a key long-term investor in telecommunications infrastructure in the Asian region, we are committed to supporting policies that efficiently and effectively bridge the ‘digital divide’ in all of the markets in which it invests. As such, edotco supports policies to achieve affordable Universal Service for citizens in each of its markets.

This is because telecommunications is a vital industry in all countries, providing important economic and social benefits. Aside from its direct contribution to the economy, telecommunications permits citizens to stay connected and is an essential facilitator of economic growth in other sectors. The academic literature suggests that economic growth is promoted by improved telecommunications performance, and it is likely that for the global value chains that are driving regional economic growth, it is a key input. The causal chain from telecommunications maturity to improved growth is illustrated in [Exhibit 1](#).

Exhibit 1: Communications is driving economic development



Around the world developed countries are achieving rapid growth in telecommunications maturity and performance via wireless rather than fixed line networks as they move to the Digital Economy. This ‘leapfrogging effect’ of wireless networks is widely acknowledged.

Given edotco’s unique perspective as a towerco which provides an essential element of wireless infrastructure needed for both voice and wireless broadband service delivery and is an investor across a number of markets, it is uniquely placed to provide its perspective for policymakers and regulators on the optimal approach to achieving Universal Service including on Universal Service Fund. This concise paper is therefore focused on Universal Service from a conceptual as well as practical issues from a towerco perspective.

1.2 Background on edotco

edotco is an integrated telecommunications infrastructure services company providing end-to-end solutions from towers, energy, transmission and operations & maintenance (O&M) in Asia. As at December 2017, edotco has a regional portfolio that includes close to 28,000 towers⁶ across our core markets of Malaysia, Sri Lanka, Bangladesh, Cambodia, Pakistan and Myanmar. See [Exhibit 2](#) below.

Exhibit 2: Towers managed by edotco

	Owned	Managed	Total
Malaysia	4,001	5,074	9,075
Bangladesh	8,256	1,482	9,738
Sri Lanka	-	3,366	3,366
Cambodia	2,170	1,000	3,170
Myanmar	1,436	-	1,436
Pakistan	696	-	696
TOTAL	16,559	10,922	27,481

Source: edotco, December 2017

As the first regional tower services provider in Asia, edotco is committed to expand possibilities with cost-efficient telecommunications infrastructure, built around growing competitiveness and connectivity for businesses to enable both competitiveness for the industry and connectivity for communities. It has successfully capitalized on scale to recover R&D costs through regional savings. The company is currently the world's 12th-largest independent tower firm, and aspires to be amongst the world's top 5 tower companies by 2020. edotco has invested over USD 1,123.6 million across all its businesses since 2014.

In April 2017, edotco announced, final allocation of a record tower sector equity private placement. As part of that private placement transaction, some USD400 million has been invested by the Innovation Network Corporation of Japan and USD100 million by KWAP, Malaysia's second largest pension fund, in primary shares, and USD200 million by Khazanah Nasional Berhad in secondary shares. At completion, edotco's shareholding results in the 3 investors collectively owning 37.6% of edotco, with Axiata remaining as the majority shareholder at 62.4%. The enlarged placement of shares was concluded on the same equity valuation of close to USD1.5 billion and an enterprise value to FY2016 EBITDA multiple of 12.5x, which is comparable to regional peers.

On the innovation front, edotco has pioneered the first carbon fibre tower in Asia, which is a lightweight, high tensile strength tower solution which is not only 40-50% faster to install but also results in a 20% total cost of ownership (TCO) reduction. edotco considers that it has made technological advancements ahead of its peers and deploys the latest in tower technologies including:

- i) Advanced Materials & Structures and Aesthetic Structures;
- ii) Green Energy Models; and
- iii) Remote Monitoring & Advanced Management Systems.

⁶ This will increase to close to 40,500 towers once the proposed acquisition of a towerco in Pakistan is completed

In another first, on 28 March 2017, edotco became the first towerco to utilise bamboo in the construction of a telecoms tower, which was installed on a rooftop in the Uttara region of Dhaka, Bangladesh.

Developed in collaboration with Bangladesh University of Engineering ('BUET') and deployed by edotco Bangladesh Co. Ltd., this is a noteworthy use of this renewable resource. This milestone also reinforced edotco's foothold at the forefront of sustainable and green engineering.

edotco intends to roll out more bamboo structures as proof of concepts (POC) in several other areas in Dhaka in 2018. Further, edotco will take this solution to other markets where edotco operates and where bamboo resources are available like Malaysia.



Further, our value-added services are supported by state-of-the-art real-time monitoring service, echo, which has improved field operations while maximizing operational efficiencies in terms of battery, energy and fuel consumption for telecoms infrastructure.

1.3 Structure of this paper

The structure of this edotco Regulatory Thought Piece is as follows:

- Exploring optimal Universal Service provision in the Digital Economy (see section 2);
- Mechanisms to implement Universal Service (see section 3);
- Improving Implementation of Universal Service Fund (see section 4);
- Support for towercos and infrastructure service providers in relation to Universal Service obligations and funding (see section 4); and
- Conclusions and way forward to secure an exemplar framework for Universal Service (see section 5).

2. Exploring optimal Universal Service provision in the Digital Economy

2.1 The Universal Service Concept

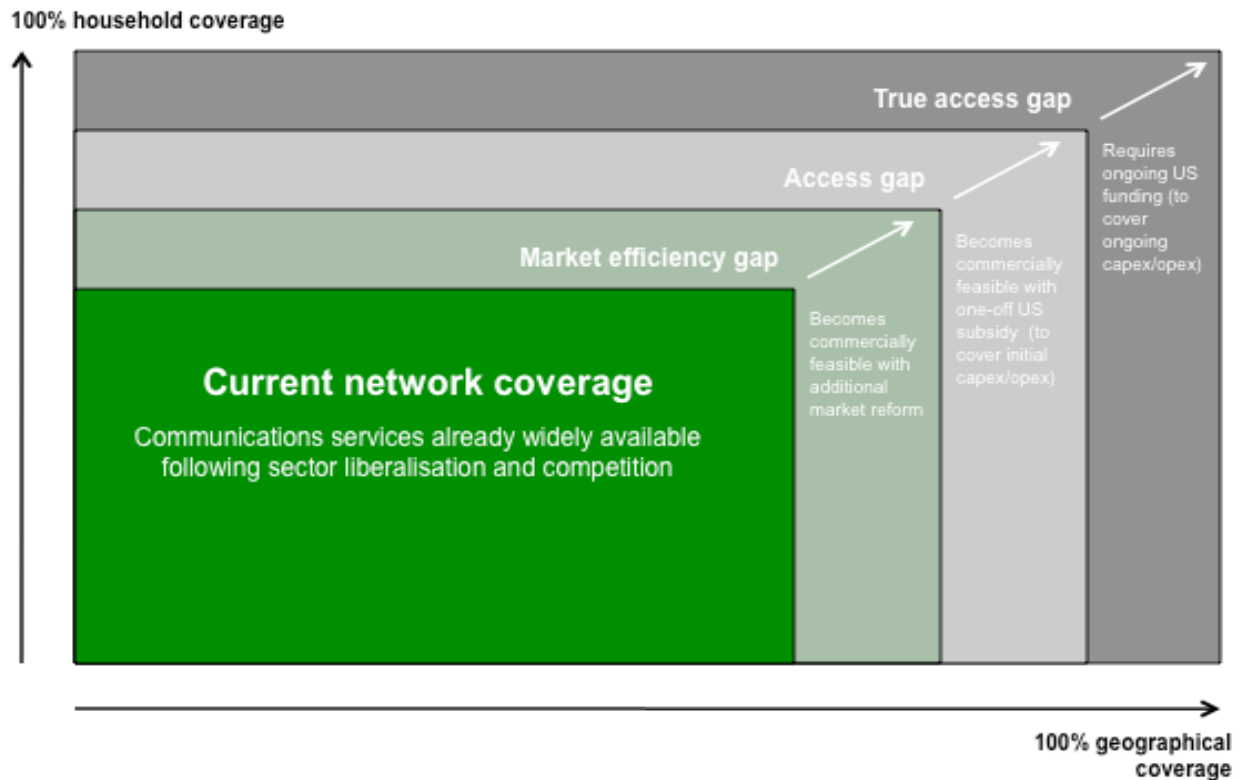
Firstly, edotco would highlight that the creation of a competitive telecommunications market through liberalisation and setting of good sector policies promoting such competition, are the critical policy decisions which have promoted mass-market, if not Universal Service in practice globally and especially in Asia. In essence, policy decisions to (i) have competition, (ii) the number of competitors to licence and (iii) the appropriate terms to regulate competition have been key to increasing teledensity and service availability internationally.

The purpose of introducing any specific Universal Service regulation is therefore to address the lack of services where the operation of the competitive market, even though enabled by appropriate regulation, has not resulted in the provision of services. In general, the reason for a lack of access to communications services is that it is not commercially viable for operators to provide them. This includes both consumers with low incomes and those residing in high cost rural and remote areas.

Universal Service regulation addresses this “gap” in provision and is designed to ensure that telecommunication services would continue to be accessible to the widest number of people (and communities) at affordable prices. The concept of Universal Service is underpinned by three essential principles:

- **Availability.** The level of service is the same for all users in their place of work or residence, at all times and without geographical discrimination;
- **Affordability.** For all users, the price of the service should not be a barrier to its use;
- **Accessibility.** All users should be treated in a non-discriminatory manner with respect to the price, service and quality of the service, in all places, without distinction of race, sex, religion, etc.

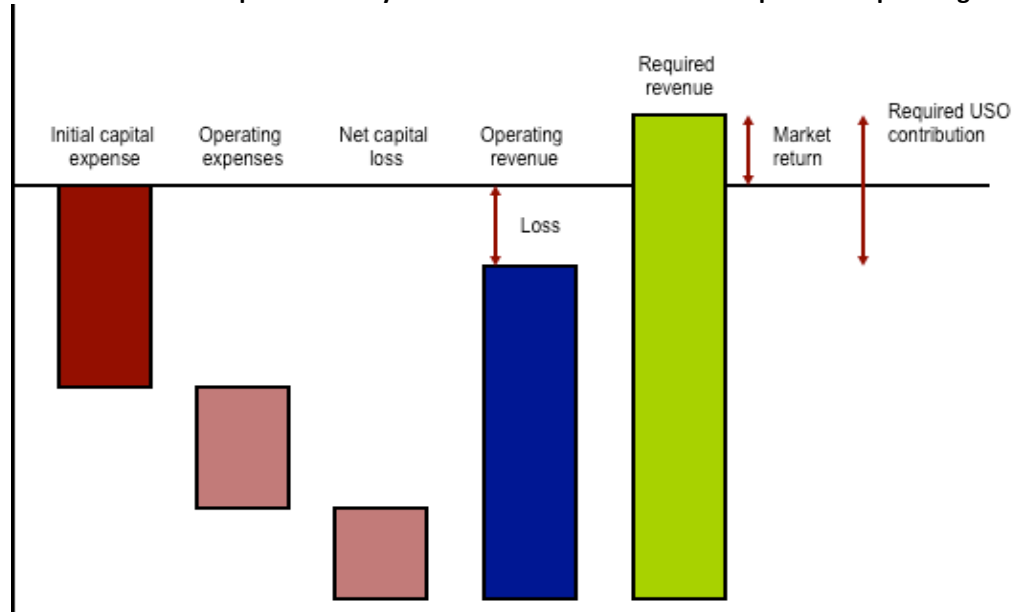
Exhibit 3: Universal Service conceptual framework – market gaps and access gaps



Source: www.ictregulationtoolkit.org/toolkit/4.1

Conceptually, the purpose of Universal Service funding mechanisms is to provide a subsidy to an operator so that it may recoup capital (and operating) expenses involved in providing a Universal Service and earn a sufficient return on investment. The required amount of subsidy should therefore be based on some measure of the cost of providing the service given the minimum required return (see [Exhibit 4](#) below).

Exhibit 4: Required subsidy for universal service based on capital and operating cost



Source: www.ictregulationtoolkit.org/toolkit/4.1

3. Mechanism to Implement Universal Service

3.1 Digital Economy has expanded the role of mobile broadband and broadened the scope of Universal Service

Historically, Universal Service provision was based on the provision of basic telephony services delivered over fixed networks. As technologies have rapidly advanced and the basic needs of consumers have evolved, Universal Service policies have increasingly moved to data and Internet communication and broadband services⁷, typically delivered using mobile technology.

Moreover, amid growing evidence that increased access to broadband services is a key driver of national economic and social benefits, Universal Service policy and its on-going development is very important to national policy makers. This has resulted in a range of international agencies such as the Broadband Commission⁸ and some policymakers mandating broadband services within the scope of Universal Services.⁹

More so in Asia than in more developed economies such as Europe and North America with their developed fixed network infrastructures, mobile broadband services – which needs passive infrastructure assets such as towers as fundamental building blocks for mobile networks and for service provisioning - is the lifeblood of the Digital Economy. Towers and other passive infrastructure as well as active network infrastructure is a necessary pre-condition to mobile coverage as well as high service quality.

As such, edotco is supportive of the inclusion of mobile broadband services within the scope of Universal Service – particularly in a modern mobile network utilising 3G, or 4G (and future 5G) technologies, wireless data services are integral to that service delivery, especially to support the Digital Economy.

3.2 Technology Neutrality and Cost Effectiveness must be Central to Universal Service framework

Technology change which permits Universal Service to be delivered using wireless technologies rather than fixed networks results in lower costs of access provisioning and more rapid deployment. Given the widespread role of mobile services and the impact of communications services on economic growth, it is important that any Universal Service framework must be technology neutral and Universal Service program should be framed in a technology neutral way and supply of services in such program should reflect the most cost-effective approach.

This is due to the fact that access to infrastructure is shared and offered at affordable incremental rates to mobile network operators (MNOs). Consumer demand is also predominantly focused on mobile services. The proliferation of wireless technologies (including especially cellular mobile) is such an innovation which has fundamentally rewritten the economics of service provisioning and lowered the cost of providing Universal Service. It has also increased their utility to consumers especially with the introduction of smartphone by offering wireless broadband connectivity.

⁷ www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR11/documents/06-Universal-broadband-access-E.pdf

⁸ Broadband Commission, *Connecting the Unconnected*, 2017. Available at http://broadbandcommission.org/Documents/ITU_discussion-paper_Davos2017.pdf

⁹ For example, in Europe. See [www.europarl.europa.eu/RegData/etudes/BRIE/2016/581977/EPRS_BRI\(2016\)581977_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/581977/EPRS_BRI(2016)581977_EN.pdf)

As such, at a minimum, technology- and service-neutrality must be endorsed as a standard feature of Universal Service framework. In this context, it is vital to acknowledge that given its increasingly important role in the infrastructure building blocks of mobile networks and service. As this Paper will elaborate in section 5, the focus of Universal Service Fund or other similar schemes ought to be on infrastructure such as towers provisioning, backhaul access etc, towercos should be the focal point of any Universal Service programs and should be able to access Universal Service Fund.

3.3 In designing Universal Service framework, Market Approaches should be considered first prior to specific Universal Service intervention such as Universal Service Fund

Where Universal Service is established as a policy objective, the means by which it will be achieved should include first market and then non-market approaches (or specific regulatory intervention such as Universal Service Fund). In this regard, Asian experience with voice services is unambiguous: effective competition is the primary driver of mass-market access to communications services and the same can be said for wireless broadband services. This should be complemented by a supportive regulatory approach, for example, to share infrastructure in order to allow competition to extend as far as economically viable. Only once this point is reached will specific Universal Service interventions such as Universal Service Fund be relevant and required.

Various market approaches, with varying degrees of success have been adopted by governments globally to implement their respective Universal Service policies. Chief among these are:

- Sector reforms and introduction of competitive frameworks,
- Imposing mandatory service obligations (such as coverage roll-out obligation from spectrum allocation);
- Infrastructure sharing frameworks;
- Putting in place cross subsidies;
- Levying access deficit charges;
- Negotiating Private Public Partnerships (PPPs).

These market approaches should be considered first prior to specific introduction of Universal Service intervention such as Universal Service Fund.

At this juncture, it is important to note that designing the Universal Service framework is not a static process. For example, the access gap will narrow as a result of;

- i) introduction of any or all of the regulatory approaches/policies mentioned above;
- ii) technological developments within the sector that allow greater network coverage for less cost, or
- iii) as a result of broader economic developments or policies that boost incomes for consumers in remote areas or lower the cost of service provision.

As such, it is important to conduct regular assessments of the effectiveness of market approaches as well as Universal Service framework including Universal Service Fund, in light of changes in market developments (population coverage, geographical coverage, national penetration, etc), technological developments (introduction of new spectrum or technology standards) as well as economic development, nationally and locally that impacts income levels and affordability. This review period could be effectively implemented in a 3- or 5-year cycle.

3.4 Establishing and Operating Universal Service Fund

The purpose of Universal Service intervention is to close what has been described by some commentators as the “Access Gap” – that is, to fund (or subsidise) those activities that can only be made viable through some form of additional funding. As Exhibit 3 shows, the Access Gap may be closed through;

- i) a one-off subsidy (after which the Universal Service provider is able to fund the services in a way that is commercially viable or generates a market return); or
- ii) it may require ongoing opex funding (in addition to the capex) to maintain the service.

The gap requiring ongoing or indefinite funding to maintain commercial viability is described as the True Access Gap.

In coming up with the estimated Access Gap, it is critical to ask the following questions;

- i) if the population and/or geographical coverage analysis has been properly carried out to ascertain the Access Gap;
- ii) if the analysis has justified the need for a Universal Service intervention such as Universal Service Fund;
- iii) if the above analysis has accurately estimated the cost that is required to fund the Universal Service intervention.

Question iii) above is fundamental given the link between the estimated cost and fund size of Universal Service Fund with the contribution rate to the Universal Service Fund by operators and licensees. At the minimum, the contribution rate must reflect as closely as possible, the estimated cost of the access gap in order to avoid an excessive build-up of undisbursed Universal Service Fund. As per ITU¹⁰, even for the most effective funds, the levies and taxes established for most Universal Service Fund contributions appear to have been established without conducting substantive analysis regarding the actual service funding/subsidy levels needed and, as a result, many funds receive contributions that appear to be far in excess of the actual Universal Service funding needs or capabilities¹¹.

In this instance, it is equally critical to have review periods on the analysis on the Access Gap and the estimated requirement of the Universal Service Fund in order to ensure that funds collected is matched as closely as possible with the Access Gap funding. Similar to the above review process on market approaches, the review period could be effectively implemented in a 3- or 5-year cycle. If need be, collection can be ceased or suspended for a period of time if there is excessive build-up or alternatively, the contribution rate can be adjusted accordingly.

In terms of funding sources, the subsidy may be paid by the Government from consolidated revenue or from customer or industry contributions. The most common approach in Asia is for operators to contribute to a Universal Service Fund based on their revenue, which is then allocated to operators engaged in a specific Universal Service activity. While the need for operator subsidies may be apparent for a given Universal Service project, the proper amount of the subsidy requires careful calculation based on the project’s cost or the use of an appropriate and transparent Universal Service auction.

¹⁰ See Universal Service Fund and Digital Inclusion for All, ITU, September 2013, para 3.4 on page 12

¹¹ See also section 4.2 for more discussion

4. Improving Implementation of Universal Service Fund

Once the proper assessment of the need for Universal Service intervention is completed, regulators will come to a decision on whether to implement a Universal Service Fund or not. From edotco's perspective, two issues that continue to concern the industry are;

- i) the reasonableness of the Universal Service Fund contribution rate;
- ii) the effectiveness of the Universal Service Fund or equivalent scheme.

4.1 The Universal Service Fund contribution rate

Exhibit 5 summarises the Universal Service Fund (or equivalent schemes) contribution rate in ASEAN and selected regional markets.

Exhibit 5: Universal Service Fund contribution rate in ASEAN and selected regional markets

Country	Universal Services contribution rate	Trend
Australia	Approx 0.5% of eligible revenue (telecommunications carriers with more than AUD25 million per annum in revenues) in recent Universal Service assessment but Productivity Commission has recently recommended in January 2018 removal of Universal Service Obligation levy	↓
India	5% of annual gross revenue (AGR) for all operators but in 2017, TRAI has recommended to reduce to 3% of AGR	↓
New Zealand	Total annual liability of NZD50 million is allocated across 20 telecommunications providers by the New Zealand Commerce Commission, based on a proportion of their qualifying revenue.	↓
Philippines	Universal Access Fund has been closed following the dissolution of the Commission on Information and Communications Technology (CITC), the agency who administers the Fund.	↓
Singapore	No Universal Service Fund contribution. OpenNet and Nucleus must meet all requests to install fibre/activate service under NGNBN.	↓
Thailand	Non-designated operators must contribute 3.75% of annual gross revenue. Reduced from 4% in 2012. Further reductions are planned. Also, in June 2016, Universal Service Obligation levy on television operators was reduced to 0.5% on revenue of less than THB5 million, 0.75% on revenue of THB5 to 50 million, 1% on THB50 to 500 million, 1.75% on THB500 million to 1 billion, and 2% for more than THB1 billion.	↓
Viet Nam	1.5% of telecommunications service revenue from all network/facilities-based operators including fixed and mobile operators	↓
Bangladesh	1% to Social Obligation Fund (SOF) from licensees since 2010	→
Indonesia	1.25% of gross revenue of each operator	→
Malaysia	6% of weighted net revenue derived from designated services	→
Nepal	2% of annual revenue to Rural Telecommunications Development Fund	→
Cambodia	2% for Universal Service Fund in accordance with Article 42 plus 1% capacity building and R&D in accordance with Article 46 of the Law.	↑
Myanmar	Provided for under Chapter 15 of the Telecommunications Law but Universal Services Fund has not been established yet. The regulator has recently initiated a public consultation process on Universal Service Strategy in January 2018	↑
Sri Lanka	All external gateway operators who terminate international calls are required to pay USD0.12 per minute to the Ministry of Finance, increased in 2016 from USD0.09 per minute. The regulator, TRCSL does not maintain the Telecoms Development Fund (TDC) since 2013.	↑

Source: Windsor Place Consulting, GSMA and ITU¹²

Across many markets, the Universal Services levy has been reduced including in the Philippines, Thailand and Vietnam¹³. For example, in Vietnam the current Universal Service levy is 1.5% of revenues. However, a decade ago it was applied as 5% of mobile revenues, 3% of long distance and leased line domestic revenues and 4% of international leased lines and international calls. This was reduced in 2008 to 3% of mobile revenues, 1% of domestic revenues and 2% of international revenues. It has subsequently been reduced to the current rate.

In markets like India and Australia, further reductions in the Universal Service levies are planned. The TRAI has recommended a 40 % reduction in the Universal Service Obligation levy to 3% in India (see [Exhibit 6](#) over) and recently the Australian Government has recommended, after an extensive public consultation process by the Productivity Commission (PC), to eliminate the Universal Service Obligation (currently called the Telecommunications Industry Levy) and replace it with a Universal Service Guarantee (USG) (see [Exhibit 7](#)).

Exhibit 6: Proposed reductions to the Universal Service Obligation levy in India

In early 2015, the Indian telecom regulator, Telecom Regulatory Authority of India (TRAI) recommended that **Universal Service Obligation levy should be lowered to 3% of the adjusted gross revenue** from the present 5% from 1 April 2015. Telecom operators pay 8% of their annual gross revenues as licence fee to the government, out of which 5% goes to the Universal Service Obligation Fund (USOF). TRAI rationale is that the USOF have not been utilised fully in the past few years. Of the Rs.58,579 crore collected for the USOF between 2002-03 to 2013-14, Rs.33,683 crore remained unutilised as on 31 March 2014, representing 57% of the Universal Service Obligation levy collected. TRAI has stated that even after the lapse of more than 10 years, utilisation is below 50%.

In June 2017, TRAI reiterated its stance on lowering the Universal Service Obligation levy fee to 3%¹⁴ As of the beginning of 2018, the Government is yet to respond to this proposal.

Source: TRAI and press reports

Exhibit 7: Australian Government Proposal for Universal Service Guarantee to replace Universal Service Obligation

In 2012, Australia's largest operator Telstra entered into an agreement with the Australian Government to provide all Australians with payphones and reasonable access to standard telephone services on an equitable basis. The contract was meant to last 20 years, however its validity and justification came into question due to a review by the Australian PC released in June 2017.

The PC's report recommended that the agreement be wound up by 2020, citing the transformation that rapid developments in telecommunications and technology has brought across Australia. Australians are well served by mobile networks, with over 99% of people having access to mobile telephony (and to a slightly lesser extent, broadband) where they live. For the vast majority (more than 99% of premises), the combination of the national broadband network and mobile networks is likely to meet or exceed minimum standards for universal service delivery. As such, the PC called for policy reform.

In response, the Australian Government in December 2017 announced a new Universal Service Guarantee (USG) to replace the existing Universal Service Obligation contract. The new Universal Service Fund will propose to provide all Australian homes and businesses, regardless of their location, with access to both voice and broadband services. It also ensures areas with specific needs have access to payphones or equivalent community

¹² Refer to ITU ICT-Eye available at www.itu.int/icteye

¹³ At least 7 of the 14 markets surveyed are on a downward trend in terms of Universal Service contribution rate, with 4 remaining at the same level and 3 on the upward trend

¹⁴ See <http://businessworld.in/article/TRAI-Bats-For-Lower-Levies-For-Telcos-Favours-Cut-In-GST-Rate/30-06-2017-121232/>

services, like communities with no mobile phone coverage or in remote Australia.

The following are some of the requirements the USG is expected to fulfil are (i) the availability of broadband services to all Australian premises on request by 2020, when NBN completes its rollout; (ii) availability on request of voice services to 100% of Australian premises; and (iii) any other proposed service delivery considered to be relatively cost effective compared to the existing Universal Service Obligation contract.

Until these requirements are met, the government will leave the existing Universal Service Obligation unchanged. Even after the USG comes into operation, Telstra will still be retained as a provider for the existing Universal Service Obligation services where and when it is appropriate. Further updates to these arrangements will be provided in 2018.

Source: www.communications.gov.au/departamental-news/improving-access-communications-all-australians; <https://whatphone.com.au/the/changing-role-of-payphones-in-australia> & Australian Productivity Commission, *Telecommunications Universal Services Obligation, Commission Report, No.83*, 28 April 2017

4.2 Improving the Effectiveness of Universal Service Funds

Notwithstanding the important objectives of Universal Service policies, recent global studies by *inter alia* [the ITU](#)¹⁵ and [the GSMA](#)¹⁶ show that across the world, more than half of the contributions collected by Universal Service Fund were never utilised and over a third of the funds were not able to distribute any of the levies collected. When administered ineffectively, Universal Service Fund can be counterproductive to sector policy goals in that, by effectively taxing communications customers, they actually serve to raise costs of providing services and increase the service affordability barrier.

The most common factors in the failure of Universal Service Fund policies include:

- most Universal Service Fund levies are set without any analysis of the subsidy levels needed or an “ambitious” Universal Service target that leads to unachievable outcome;
- the underlying legal frameworks tend to be poorly-conceived and thus affected by the lack of technological neutrality, lack of service-flexibility, excessively bureaucratic structure or processes leading to minimal disbursement, insufficient oversight and absence of built-in review mechanism;
- political intervention from other government agencies often affects performance;
- many Universal Service Fund suffer from poor or inefficient administration and governance;
- programs for the deployment of tele-centres and community information centres often fail to take into account issues related to training and education, maintenance, power sources and other sustainability concerns; and
- transparency and accountability for most funds is inadequate.

To address these deficiencies, edotco is strongly supportive of the ITU’s eight-step plan for establishment of effective national Universal Service framework which is summarized in [Appendix A](#). This ITU plan focuses on having good definitions of Universal Service, quality information on which to make funding decisions, and ensuring the market structure and funding mechanisms are optimal. The ITU also supports technology neutrality and on-going monitoring mechanisms.

¹⁵ Notably, an ITU Study entitled “*Universal Service and Digital Inclusion for All*” in September 2013 recommended a number of reforms. See http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/USF_final-en.pdf.

¹⁶ For example, a GSMA Study also found numerous “challenges, pitfalls and deficiencies” in Universal Service Obligation arrangements globally, including the fact that many Universal Service Obligation schemes do not support or permit use of the funds for arguably important services such as wireless and broadband. See www.gsma.com/publicpolicy/wp-content/uploads/2016/09/GSMA2013_Report_SurveyOfUniversalServiceFunds_KeyFindings.pdf

4.3 Application to online service providers/OTT

In addition to issues concerning the use of Universal Service Fund and the large balances of many such funds, another outdated requirement of Universal Service Fund globally is arguably the discrimination seen in levying only domestically licensed operators for Universal Service and not their online service provider competitors, who are typically offshore-based.

Many industry stakeholders including edotco argue that consideration should be given to extending levy obligation to online service providers as they offer substitutable services, benefit from the availability of network infrastructure that was built primarily to deliver the Universal Service Obligation, and do not currently purchase wholesale inputs from the operators to provision their services. Expanding the contribution obligation to a broader pool of industry players such as online service providers and OTT players would also lead to a lower contribution rate from industry players.

This argument is based on the principle that a user-pays levy base should ideally capture all those who benefit from the services that it funds. To minimise distortions, the base should include all providers in the levy that supply services that are close substitutes, particularly where there is evidence of convergence in telecommunications services.¹⁷ We hold this view even though we acknowledge that there are some practical difficulties with such an approach.¹⁸

4.4 Summation on Improvement of Implementation of Universal Service Fund

Given the above, there are important questions in many markets about the continued need for Universal Service Fund. This in turn also raises fundamental questions about the need or timing to establish a Universal Service Fund in countries which are only beginning to introduce such framework. This is especially so given the interaction between other Universal Service policies as highlighted above with Universal Service Fund that would equally contribute, if not more, to Universal Access.

Certainly, either in continuing to implement or at the stage of introduction of Universal Service Fund, there should be specific goals for such funds and depending on the achievement of those goals the Universal Service levy can be reduced or be eliminated. Increasing sector competition including OTT online service providers means that reducing the costs and improving domestic operator profitability is critically important.

If there continues to be a need for Universal Service Fund, ***a rate of between 1 and 2% of service revenues that applies to operators is reasonable and in line with international best practice. Notwithstanding the above, as this Paper will elaborate in section 5, the contribution rate should only apply to retail operators such as MNOs and other integrated service providers to make Universal Services contributions and exempt towercos and infrastructure companies who provide wholesale only services.***

¹⁷ www.pc.gov.au/data/assets/pdf_file/0017/202373/sub030-telecommunications.pdf

¹⁸ These difficulties include how such levies would be computed and to which entities would they be levied against.

5. Treatment of towercos and infrastructure service providers in relation to the Universal Service obligations and funding

It is also important to highlight that there is support for towercos and infrastructure companies in many Universal Services regimes. edotco would like to emphasise two aspects of that support, namely:

- (i) there are many precedents for tower construction and investment being a key focus of Universal Service funding, and
- (ii) there are a number of precedents for towercos or infrastructure companies not being required to contribute to Universal Service Fund.

5.1 Precedents for tower construction and investment being a key focus of Universal Service Fund

Globally and in edotco markets like Malaysia, many of the Universal Service Obligation and related schemes actively promote tower construction and investment. Such investments – often undertaken by towercos like edotco – are the critical infrastructure often needed to extend Universal Services to both underserved and unserved communities in rural and remote areas of a country. They are also typically premised on and subject to infrastructure sharing.

For example, in Malaysia, a key focus of the MCMC's Time One and Time Two projects in 2004, was on sites and towers. The MCMC identified about 262 new additional sites to address Time One improvement requirements and for Time Two the MCMC identified 1,650 new towers and 4,448 base station transmitters would be required.¹⁹

In Australia, rounds 1 and 2 of the Australian Government's Mobile Black spots program delivered almost AUD600 million in new investment towards improving mobile coverage in regional and remote Australia. This investment by focusing on key mobile infrastructure such as towers has enabled the delivery of:

- 765 new and upgrade mobile base stations;
- 86,300 square kilometres of new and upgraded handheld coverage;
- 202,300 square kilometres of new external antenna coverage; and
- over 7,600 kilometres new coverage to major transport routes.²⁰

Other country examples where this occurs are detailed in Exhibit 8 below.

¹⁹ MCMC, *Fact sheet for cellular coverage for Time One and Time Two*, 24 December 2004. The MCMC estimated cost for Time One was about RM200 million and for Time Two RM2.6 billion.

²⁰ See www.communications.gov.au/what-we-do/phone/mobile-services-and-coverage/mobile-black-spot-program

Exhibit 8: Examples of Universal Service Obligation and related schemes that promote tower construction and investment

Country	Situation
Australia	The Mobile Black Spot Program invests in telecommunications infrastructure, including new mobile towers, to improve mobile coverage in the country.
India	The USOF planned to invest US 1 billion back into the mobile industry through the financing of up to 10,000 towers in rural areas.
Ghana	Under its Universal Access to Electronic Communications Programme, Ghana has seen the construction of 41 towers for co-location by telecom operators to extend telecom services to undeserved areas.
Malaysia	Under Malaysia's Universal Service Provision fund, an approximately USD256 million telecommunication contract has been granted to develop and deploy communication facilities in underserved areas, including telecom towers.
Pakistan	In February 2015, Pakistan's Universal Service Fund awarded a contract worth USD18m to Telenor to deliver basic telephony and data services in unconnected areas, including telecommunications towers.
Zambia	In 2011, the Zambia Information and Telecommunications Technology Authority set aside over USD 10 million from the Universal Access Funds for tower installation.
Zimbabwe	<ul style="list-style-type: none"> The Zimbabwean Government announced in May 2017 that the Universal Service Fund will invest USD250 million in 600 towers in rural areas. Deployment will be managed by the country's regulator, POTRAZ, and will be coordinated with the country's 3 MNOs; Econet Wireless, NetOne and Telecel.

Source: WPC analysis, 2017

On the implementation and operations of such scheme, we submit the view that imposing Universal Service Obligation contribution levies on towercos and then seeing them receive it back in funding could be administratively cumbersome and counter-productive to faster deployment and improved coverage. A more efficient way is to allow towercos to build the infrastructure first then offset it from the contribution (if towercos are required to contribute). On the other hand, if towercos are not required to contribute, then the more conventional approach of build-then-claim could be applied.

5.2 Precedents for towercos or infrastructure service providers not being required to contribute to Universal Service Fund

There are many global and regional precedents for towercos and infrastructure companies not being required to make contributions to a country's Universal Service Fund. Universal Service contributions are typically levied on retail services of the telecommunications operators and not on infrastructure or wholesale services which towercos provide (as is shown in [Exhibit 9](#)).

Exhibit 9: Country examples where towercos or infrastructure companies are not required to contribute to Universal Service Fund

Country	Contribution Type to Fund
Australia	Levy only on licensed operators (i.e. not towercos or infrastructure companies).
Bangladesh	Percentage of gross revenue from operators.
Bulgaria	Percentage all voice revenues from operators.
Colombia	Percentage of gross revenues of national, IDD and mobile services, and a percentage of net revenues from fixed telephone, VAS and trunking.
France	Only operators offering voice telephony are required to contribute to the fund.
Ghana	Levy only on licensed operators (i.e. not towercos or infrastructure companies).
Jamaica	Carriers pay USD 0.02 per minute for calls terminating on mobile phones and USD 0.03 per minute to fixed-line phones.
Sri Lanka	Levy only on incoming international calls.
Vietnam	Levy only on mobile, domestic and international call revenues.

Source: WPC and ITU²¹

There is a good rationale for this including *inter alia*:

- (i) Given the nature of the business, the margin on MNO's retail services is typically higher than the wholesale returns from towercos; and
- (ii) A levy on the returns from towercos is an additional direct tax/cost burden on the type of telecommunications infrastructure which is promoted by Government policy and secures the policy objective of Universal Service.

As a consequence, a Universal Service contribution rate which is set as a percentage of revenues, is a proportionally higher level of taxation on wholesale businesses like towercos compared with MNOs and other industry players.

5.3 Recommendations on Universal Service support for towercos and infrastructure service providers

Given the two points above, edotco considers that ***there are compelling reasons for a different treatment of towercos and infrastructure companies in any country's Universal Service regime.***

Firstly, many of the Universal Service regimes and related schemes actively promote tower construction and investment - critical infrastructure required to extend Universal Service to both underserved and unserved communities in rural and remote areas of a country and typically subject to infrastructure sharing. These are typically exemplified in schemes such as Mobile Black Spot programs and specific roll-out of mobile network in remote/rural areas.

Secondly, in markets where specific Universal Service intervention is designed around Universal Service Fund, only require retail operators to make Universal Services Fund contributions and exempt towercos and infrastructure companies who provide wholesale only services. At the minimum, towercos should be required to contribute to the Universal Services fund at a lower rate. Such an approach would acknowledge Universal Service funding typically is made to towercos and other infrastructure companies in order to address any Access Gap.

Thirdly, towercos should be able to access Universal Service Fund, even if they are not required to contribute to the Universal Service Fund in the first place. These are based on the following considerations:

- i) As towercos are very often the beneficiaries of Universal Service Fund, they should be able, especially if they are required to make in-kind or "pay or play" contributions, rather than making a payment directly to any Universal Service Fund. Such contributions, to be valued on a fair and equitable basis, should be endorsed as extending market-led provisioning and are more sustainable than Government-led intervention. Given towercos' strong support for infrastructure sharing to all licensed operators, such an approach has even more merit because once deployed the availability of such infrastructure results in lower operating costs for all service providers;
- ii) In relation to this, specific tower sector requirements with regards to sustainable practises for example green energy solutions such as solar panels and wind-generated power should be allowed access to Universal Service Fund;

²¹ www.itu.int/en/ITU-D/Conferences/GSR/Documents/ITU_USF_Final_Report.pdf

- iii) Specific to edotco, as a towerco with presence in the region, we have considerable access to funding the infrastructure investment from financiers especially in relation to rapid roll-out of towers. Given the long-term nature of the business, towercos can in turn fund the deployment of tower/infrastructure in return for payments from Universal Service Fund on a regular basis, which we consider to be an effective arrangement and efficient management of capital and resources.

6. Conclusions and way forward to secure an exemplar framework for Universal Service provision

In this paper, edotco has outlined its views on the optimal Universal Service provision in the digital economy. While edotco always complies with domestic legislation and it is committed to supporting policies that efficiently and effectively bridge the ‘digital divide’ in all of the markets in which it invests, it is clear that some improvements to existing Universal Service regimes are sensible and prudent. Further, any new Universal Service regime ought to take account of global and regional exemplar practice during its creation.

In [Exhibit 10](#) below, edotco sets out its recommended best practice in relation to Universal Service and Universal Service Fund. edotco hopes that its unique perspective as a key sector investor will be helpful to both Government and regulators to achieve the most efficient and effective regime to secure affordable and ubiquitous voice and wireless broadband service delivery.

Exhibit 10: edotco’s recommended best practice on Universal Service

- 1) **Technology neutral and cost effective:** *Given the widespread role of mobile services and the impact of communications services on economic growth, it is important that any Universal Service policy framework must be technology neutral; Universal Service policy should be framed in a technology neutral way and supply of services under a Universal Service program should reflect the most cost-effective approach. The focus of Universal Service funding or projects ought to be on infrastructure such as towers;*
- 2) **Market and non-market approach:** Where Universal Service is established as a policy objective, the means by which it will be achieved should include first market and then non-market approaches. Asian experience with voice services is unambiguous: effective competition is the primary driver of mass-market access to communications services and the same can be said for wireless broadband services. This should be complemented by a supportive regulatory approach to the sharing of infrastructure, to allow competition to extend as far as economically viable. Only once this point is reached will specific Universal Service interventions be relevant and required;
- 3) **Coverage obligations tied to spectrum:** Where new spectrum is made available, policy makers should consider whether there is a role for coverage or build-out obligations in increasing rural service coverage. This approach may be particularly relevant where new greenfields spectrum is below 1 GHz and offers excellent propagation characteristics;
- 4) **Reasonable cost:** Universal Service contribution is common in many Asian markets. If applied (and it is questionable whether such levies should be applicable where there is already a high population coverage and teledensity) the contribution rate must not impose a continuing burden on operators and should not result in the build-up of excess funds in Universal Service Fund where resources can be used by operators to improve services or to reduce prices. This represents a loss to the consumer, industry and the nation. A Universal Service rate applying to service providers of between 1 and 2% of services revenues is reasonable and in line with global best practice. Towercos and infrastructure companies ought to be exempt from contributing on their wholesale rather than retail provision of services. Where possible, online service providers either through the taxation system or via a specific Universal Service contribution should pay a fair and reasonable contribution to a country’s provision of universal services;
- 5) **Good governance of funds:** While transparency should always be a requirement of the operation of Universal Service Fund, administrative complexity can have a material impact on the rollout of Universal Services, especially where the determination of funding for various projects involves a significant amount of time and resources to secure Government approval. Complexity should be avoided as much as possible to reduce the risk of wasted resources and to provide certainty for operators; and
- 6) **In relation to Infrastructure/TowerCo specifically, many of the Universal Service schemes actively promote tower construction and investment, typically exemplified in programs such as Mobile Black Spot and specific roll-out of mobile network in remote/rural areas.**

- i. ***In markets where specific Universal Service intervention is designed around Universal Service Fund, In relation to this, only retail operators are required to make Universal Service contributions and exempt towercos and infrastructure companies who provide wholesale only services. At the minimum, towercos should be required to contribute at a lower rate.***
- ii. ***towercos should be able to access Universal Service Fund. They should therefore be able, if they are required to make Universal Service contributions, to make in-kind or “pay or play” contributions rather than making a payment to any Universal Service fund. These In-kind or “pay or play” contributions, valued on a fair and equitable basis, should be endorsed as extending market provision especially by towercos and infrastructure providers as well as being more sustainable than Government-led intervention;***

- END -

ITU'S EIGHT STEP PLAN FOR ADOPTING UNIVERSAL SERVICES OBLIGATION FRAMEWORKS

The ITU proposes a number of generic steps that a country can take in adopting Universal Service Obligation frameworks (see [Exhibit A.1](#)).²²

Exhibit A.1: ITU's eight-step plan for establishment of effective national universal access

- **Definition:** Develop a definition of universal access that corresponds with the country's level of economic and sector development. Effective definitions in developing economies generally concentrate on the expansion of new access services rather than the provision of fixed household services.
- **Information:** The regulator will require detailed telecommunication, economic, social, geographic and demographic data to generate meaningful universal access outcomes. In addition, information is required about the distribution of network services, population and income in the country to identify underserved areas and groups.
- **Targets:** The practice of establishing network expansion targets have generally been successful, especially as part of licence conditions. To ensure the ongoing relevance of universal access targets, the regulator should need to pay rigorous attention to the appropriate level of provision of telephone lines to the public per community or per region by periodically reassessing and re-establishing operator targets.
- **Affordability:** While there are trade-offs between the affordability of telecommunications services and the need to generate sufficient revenue for expanding access to networks, at the same time, gains made in extending access could be threatened if tariff rebalancing is too abrupt or drastic in raising prices for local telephone services.
- **Market structure:** Industry arrangements for universal access will need to reflect the broader objective of using competition as the key driver of sector growth in the country. In this context, it is not always appropriate to consider the incumbent operator as the default carrier of last resort.
- **Funding mechanism:** Financing for universal access can come from a number of sources and generally includes market-based reforms, mandatory service obligations, cross subsidies, access deficit charges and universal service funds. These approaches are not mutually exclusive and most countries use more than one of these mechanisms.
- **Technology choices:** Wireless technologies are commonly used as a substitute for traditional fixed services especially for urban poor and rural users. This is because wireless networks are characterised by accelerated deployment and are significantly cheaper than conventional fixed line facilities.
- **Monitoring:** Effective implementation requires ongoing reviews in order to measure actual progress against objectives and to fine tune policies in respect of technological and economic development. Traditional measures of fixed penetration and household usage do not necessarily reflect market realities.

From ITU's perspective, the overall Universal Service framework should be determined by the government as part of its communications development policy. Generally, the sector regulator should be given powers and responsibilities relating to the administration of the policy, including, where applicable, the operation of any fund which is created.

²² See ITU, *Trends in Telecommunication Reform 2003: Promoting Universal Access to ICTs - Practical tools for regulators*, 2003.

Where a government or a regulator decides to establish a Universal Service Fund in order to support universal network and service availability, the regulator will need to develop a comprehensive set of capabilities to identify, support and monitor Universal Service projects to ensure they adhere to the proposed business plan.

Some degree of complexity is unavoidable in the design of Universal Service Fund schemes. However, any Universal Service Fund scheme must not be so complex that it impacts on the speed and efficiency of programs or the provision of Universal Services generally. Operators must have confidence in the administration of Universal Service Fund, and funding must be provided on a consistent and equitable basis, taking into consideration the costs of network expansion and the impact on the broader market.

The disbursement of funds from a Universal Service Fund can involve a long and involved process with considerable work for the industry regulator. It is therefore important that Universal Service regulation be as simple as possible while providing the best incentive for operators to expand their networks and services. This needs to be avoided in the design of the Universal Service scheme.

Consistency with WTO Obligations

edotco would also note that such an approach is consistent with a country's WTO obligations especially the General Agreement on Trade in Services ('GATS') Reference Paper. The Reference Paper states that member governments may define their own kind of Universal Service Obligation so long as the administration of Universal Funds is transparent and non-discriminatory, and disbursed on a competitively-neutral basis. The Reference Paper with respect to Universal Service states:

“Any Member has the right to define the kind of Universal Service Obligation it wishes to maintain. Such obligations will not be regarded as anti-competitive per se, provided they are administered in a transparent, non-discriminatory and competitively neutral manner and are not more burdensome than necessary for the kind of Universal Service defined by the Member.”

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