Measuring disbursement efficacy of Universal Service Funds: Case studies from India, Malaysia, Pakistan & Sri Lanka

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1. Introduction

As in all industries that fall within the scope of public utilities, the telecom industry is affected by the challenge of connecting all persons desirous of service. In these infrastructure industries, the normal incentives cause the suppliers, who tend to have varying degrees of market power, to prioritize the high-revenue, low-cost market segments. Governments, because of the nature of utility services, tend to want suppliers to provide services sooner to a larger area or to a larger population than the suppliers may consider commercially viable. When the industry is monopolistic, service extension will occur because of government or extra-market pressure. With greater competition, there will be incentives for market forces to be more effective, but even then, some areas and populations perceived as likely to yield revenues that are lower than costs may remain unserved.

In pre-reform times telecom services in most countries were provided by government-owned monopolies. These monopoly operators were regularly ordered to serve rural areas and regularly failed to comply, with the possible exceptions of Australia and Finland. In the case of private monopolies, as in the United States, parts of Canada and the Philippines, the most common mechanism was a requirement in the operator license or concession contract that defined network deployment requirements, also known as universal service obligations (USOs). Other approaches included special franchises for rural areas and subsidies for rural areas.

The ICT regulation toolkit refers to universal access (UA) as a condition wherein everyone can access the service somewhere, at a public place, thus also called public, community or shared access. Universal service (US), on the other hand,

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describes the situation wherein every individual or household can have service, using it privately, either at home or increasingly through wireless devices carried on the person. (infoDev & International Telecommunications Union)

By around 2000, expert consensus was converging on the stance that universal service/access funds were more effective than USOs for achieving the public-policy objective of extending service to rural areas, especially under conditions of workable competition (Clark, 1940). Indeed, the Regulatory Reference Paper that was included in the GATS Protocol Four included specific obligations related to universal service that amounted to a legal obligation to committing governments:

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. (World Trade Organization, 1996)

Debates around telecom-sector reforms also contributed to changes in the approach to extending coverage. Opponents of reform, primarily the managers and employees of state monopolies, made a two-fold argument. They argued that the new, private entrants would engage in “cream skimming,” or just serving the lucrative urban areas and/or commercial enterprises (Madden, 2010). They also attributed all the shortcomings of the now-threatened government-owned incumbent operator to its universal-service obligations, conveniently keeping silent about the poor performance in that regard.

In countries such as Malaysia and South Africa, universal-service obligations were imposed on the privatized incumbents (Gillwald, 2005). But in the subsequent reforms, the policy shifted to the inclusion of provisions for universal service levies to be charged usually as a percentage of adjusted gross revenues (AGR). However, these funds were often left undisbursed. Before an assessment is made of the efficacy of the activities undertaken using the funds, it is necessary to see if the funds are expended. Unless this necessary condition is satisfied, discussion of the sufficient conditions of effective use becomes moot.

This paper proposes a set of metrics that can be used to assess the efficacy of universal service instruments, with emphasis on the necessary condition. It applies the metrics to discuss the efficacy of the Universal Service Funds (USFs) of India, Malaysia, Pakistan, and Sri Lanka.

Robust and parsimonious indicators that allow comparison over time and across countries will assist stakeholders and policymakers design and implement better
policy mechanisms. The overall performance of the universal service programs is discussed, with emphasis on the necessary condition of timely disbursement which is amenable to the development of objective indicators.
2. Literature review

Navas-Sabater, Dymond, & Juntunen (2002) presented a heuristic for thinking about the relationship between sector reforms and subsidies, showing two separate gaps that the USFs address; the market efficiency gap and the access gap.

![Conceptual access gap framework](source: Navas-Sabater, Dymond and Juntunen (2002))

The access gap refers to people and places that remain beyond the limits of the market due to inadequate income levels or its skewed distribution. Bridging these gaps requires subsidies to encourage service providers to enter these areas (De Silva, 2008). USFs are thus seen as a means of achieving equity in terms of access to infrastructure. Others like Crandall, Hahn, Litan, & Wallsten (2004) are less optimistic, stating that subsidies should not generally be used to promote universal service, and are likely to hurt the average consumer.

Shifting attitudes have also been observed. The World Bank was a major proponent and funder of USFs. Thus it was highly significant when the Independent Evaluation Group of the World Bank, after reviewing ten years of Bank activities in the Information and Communication Technology (ICT) sector stated, “targeted efforts to increase access beyond what was commercially viable have been largely unsuccessful. Support to universal access programs was largely superseded by the rollout of phone services by the private sector...” (IEG (Independent Evaluation Group), 2011). In other words, market liberalization connected people. Subsidy programs failed.

The funding sources for USFs, for both telecoms and others such as the postal service, have been well documented (Cremer, Gasmi, Grimaud, & Laffont, 2001;
Borsenberger, Cremer, De Donder, Joram, & Roy, 2010; Mageira, 2009). Despite many talking about how the preferable source of funds is the central budget as seen in Chile (Wellenius, 2000) and other Latin American countries, most funds rely on levies collected through operators. The contradiction between trying to encourage the greatest use of telecom services (the stated objective of universal service) and imposing additional service-specific taxes on the same services did not attract much attention, with a few exceptions such as Crandall, Hahn, Litan, & Wallsten (2004). Additional taxes imposed on a particular good or service reduce demand (Musgrave & Musgrave, 1989).

When addressing efficiency, many studies focus on the efficiency of individual projects, particularly in the US. Ladcomm Corporation (2013), in a study for the GSM Association, documents the enormous gap between the contributions gathered versus the funds subsequently disbursed in actuality. USD 8.6 billion was left undisbursed in India and Brazil as at 2013. The International Telecommunications Union (2013) also refers to large amounts of undistributed funds. They attribute this, in many instances, to the absence of access-gap evaluations and meaningful demographic surveys.

McTigue & Ellig (2005) state that good performance measures would identify whether the program actually produces the public benefits intended by policymakers.

The literature on US universal service funds focus on inefficiencies, in the form of high administrative costs and misuse of funds, rather than on difficulties in disbursing money. The E-rate program, signed into law in the United States in the 1990s, sought to help schools and libraries gain access to telecommunications services. It has, however, has faced some allegations of fraud and waste. (Meer, 2006)

Efficiency is given prominence in writing on the US universal policy schemes. The Universal Service Reform Accountability and Efficiency Act of 2000, was intended to reform the collection and distribution of universal service support under the Communications Act of 1934 (Gilroy, 2011).

The FCC required the Universal Service Administrative Company (USAC) to publish quarterly reports of unused funds from prior funding years. Goldstein (2009) used this data to measure the percentage of committed funds disbursed by the USAC. Despite the requirement, the proportion that was disbursed fell from 79 percent to 72 percent. However, when concerted efforts were made to address the problem of unused funds, the amount of undisbursed funding in expired grant accounts declined (Goldstein, 2009).
There is no prior work on disbursement rates, the focus of this paper. Organizations such as the GSMA have published research on developing-country USFs, but have reported the magnitude of undisbursed funds, not metrics for how disbursement could be reported and compared.

This paper proposes two methods to measure disbursement: the first is an accumulated rate, as was done in Brazil and India by Ladcomm Corporation, but on a yearly basis. The second is a year-on-year (Y-o-Y) rate. While looking at how the objectives have been met, it primarily focuses on inflows to and outflows from the USFs, and proposes a mechanism to measure and compare the efficiency of the USFs.
3. Methodology

Universal service programs may be examined in terms of inputs, outputs and outcomes. The money going in, from whatever source, may be seen as inputs. The outputs are the funds disbursed. Whether the disbursed funds actually yield the desired results can be discussed under outcomes. Inputs and outputs can be easily measured. Outcomes are defined by the objectives of the specific programs as established by the different national governments and can only be assessed in qualitative terms.

The first step is to develop a metric that will permit efficiency of output to be compared across time and across countries. This constitutes a necessary condition for examination of outcomes. Unless money is disbursed, it is not possible to talk about outcomes.

The efficiency of each USF is measured by calculating a disbursement rate. Two disbursement rates are proposed; the accumulated disbursement rate (ADR) and the year-on-year (Y-o-Y) disbursement rate (YDR).

\[
\text{Accumulated disbursement rate } t = \frac{\text{disbursement of funds } t}{\text{funds accumulated in USF } t-1} \times 100
\]

This measures the rate at which funds have been spent from the USF, relative to the funds accumulated in the fund at the beginning of the relevant period, which is set at a year. It can also be thought of as the outflow of funds in a given year, relative to the previous year’s year-end balance. The flow of funds into the USF in the given year was not taken into consideration in the calculation of the disbursement rate. Their inclusion would have reduced the disbursement rates even further. The proposed ADR permits a reasonable time for the fund administrators to process the input.

The YDR is even more forgiving.

\[
\text{Y-o-Y disbursement rate } t = \frac{\text{disbursement of funds } t}{\text{inflow of funds } t-1} \times 100
\]

This method also calculates the outflow of funds in a given year relative to the inflow of funds into the USF in the previous year. Funds that have accumulated in the USF over time are excluded from consideration. The question that is asked is how successful the agency has been in disbursing the most recently provided funds. This accommodates the special difficulties that some fund administrators face. Accumulated balances may not have been caused by those currently administering the funds, or by actions outside their control, such as difficulties in obtaining funds kept with the Finance Ministry. This method is even more
forgiving to the fund administrators. The ADR or the YDR may be used, depending the specific circumstances. Poor performance in the ADR may be explained away. While the YDR is less demanding, poor performance by this metric is also more difficult to justify.

The countries covered in the study were chosen to illustrate the workings and the resulting efficiency of differently sized and structured funds. All the USFs studied are funded through operators, which means that they actually come from current consumers.\textsuperscript{2} When taxes are itemized on customer’s bills and simply collected and transmitted to governments, it is quite clear who the payor is. The operator in this instance is simply the government’s tax collector. When levies and taxes are imposed on companies, they do not appear on the bills itemized. But they are no different from itemized levies and taxes. The company factors them in as costs of doing business, no different from what they pay electricity companies, or other suppliers. The business cases for offering services and making investments take them into account, as well as the returns on investment made possible by the cost structure and what prices can be charged. In addition to keeping prices above where they could be in the absence of taxes, these levies also depress certain kinds of investments (Samarajiva, 2010).

India, Pakistan and Sri Lanka are lower-middle-income countries, while Malaysia is an upper-middle-income country. India has the largest fund, and Sri Lanka the smallest of the four. The Indian Universal Service Obligation Fund (USOF) operates under the Department of Telecommunications (DoT). The Malaysian and Sri Lankan funds operate within the regulatory agency. Pakistan’s unit, which operates independently, offers a useful contrast.

The data for the paper were obtained through desk research. Data was sourced primarily from information available online on the websites of the USFs and regulatory bodies. Requests were made to obtain data on the inflows and disbursements in the Pakistani and Sri Lankan cases. In the latter instance, the request was made under the Right to Information Law.

Outcomes are qualitatively assessed, based on each program’s stated objectives.

4. Case-study funds

This section briefly describes administrative design of the organizations administering the USF and the laws and rules applicable to these USFs, along

\textsuperscript{2}Except in the case of Sri Lanka, where the bulk of the payments come from persons located outside the country who call into Sri Lanka. It could be said that the levy is on the customers of telecom companies who terminate calls within Sri Lanka.
with their funding mechanisms.

**India**

The Indian Fund is administered as a separate administrative organization set up within the DoT (Malik P., 2008). The Universal Service Support Policy came into effect from January 4th, 2002. The guidelines for universal service support policy were issued by DoT on March 27th, 2002. The Indian Telegraph (Amendment) Act, 2003 giving statutory status to the Universal Service Obligation Fund (USOF) was passed by both Houses of Parliament in December 2003.  

The Indian Telegraph (Amendment) Act of 2003 states that the Indian USOF is under the control of the Central Government; the Central Government is thereby responsible for the coordination and timely utilization of the funds. Any funds received towards the USO are first credited to the Consolidated Fund of India. They are then disbursed by Parliamentary appropriation.

Malik & De Silva (2005) state that giving statutory status to the USOF helped expedite disbursements and effectively implement universal service policy. An operator is deemed eligible to be a universal service provider if it has a valid license or registration/authorization from the Central Government to provide telecom services or infrastructure. By law, funds may come into the USOF in two ways; through levies from telecommunications service providers and through grants and loans made by the Central Government. To date, the latter has not occurred. Five percent of the AGR is levied from all telecommunications service providers, except those who provide pure value added services such as Internet, voice mail and email services. Telecommunications Regulatory Authority of India (2009) speaks of a recommendation made to reduce the levy to three percent.

**Malaysia**

The Malaysian Universal Service Provision Fund (USPF) is managed by the regulator, the Malaysian Communications and Multimedia Commission (MCMC). It was established under Section 204 of the Communications and Multimedia Act 1998 and is regulated by the Communications and Multimedia (Universal Service Provision) Regulations 2002. Regulation 27 of the Malaysian USP Regulations requires all licensees whose weighted net revenue derived from the designated services for the previous calendar year exceeded the minimum revenue threshold of RM 2 million (USD 0.61 million) to contribute six percent of the weighted net revenue to the USP fund. The only exempted parties are Content Applications Services Provider (CASP) license holders (Malaysia Communications and Multimedia Commission, 2014).

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3 [http://www.usof.gov.in/usof-cms/usof-history.jsp](http://www.usof.gov.in/usof-cms/usof-history.jsp)
The Communications and Multimedia Act (Universal Service Provision) (Amendment) Regulations 2003 show that international calls, international roaming services, Internet Protocol (IP) telephony and Integrated Services Digital Network (ISDN) among others, are considered when calculating the net weighted revenue. Services such as local and national calls, operator assisted calls, and Internet access charges are not given any weight when calculating net revenue (Ministry of Energy, Communications and Multimedia, 2003).

**Pakistan**

In Pakistan, the USF is controlled and monitored by the Ministry of Information Technology (MoIT), but is administered by an independent and fully state owned company, Universal Service Fund Guarantee Limited. According to the Universal Service Fund Policy, its operation must be technologically neutral unless circumstances require otherwise (Ministry of Information Technology: Government of Pakistan).

The USF Amendment Rules of 2013 state that the USF shall be kept in the Federal Consolidated Fund and the Ministry of Finance shall release funds of the USF in accordance with the procedures laid down by the Rules, through budgetary mechanisms. Despite admitting the limited successes of other USF programs, the IEG (2011) report states that Pakistan’s USF is a success story. Here, Least Cost Subsidy Auctions are mandatory. All licensed operators that contribute to the USF are eligible to apply for all USF contracts in this method of resource allocation (Ministry of Information Technology: Government of Pakistan).

The USF Amendment Rules of 2007 state that the lowest subsidy bid that meets all the specified requirements shall be forwarded to the auction committee by the Chief Executive Officer of the USF Company for approval. Licensees must pay a USF charge of up to 1.5 percent of gross revenues minus inter-operator payments and related authority/Frequency Allocation Board mandated payments, as determined by the Government. Inflows to the Fund are of two types: USF contributions and funds from the Access Promotion Charge (APC).

**Sri Lanka**

The Finance Act, No 11 of 2004, states that an International Telecommunications Operator Levy (ITOL) must be paid by all licensees who provide international telecommunications services with respect to the total number of minutes of international incoming and outgoing calls during a calendar month (Parliament of the Democratic Socialist Republic of Sri Lanka, 2004). The levy effective from January 2012 was USD 0.09 per minute of incoming calls. (Government of the Democratic Socialist Republic of Sri Lanka, 2011) The Gazette notification
No. 1386/24 of 31 March 2005 states that the levy will be credited as the Incoming Local Access Charge (ILAC) and Telecommunications Development Charge (TDC) according to the said regulations. The ILAC is paid to the terminating entity of the respective calls. The TDC is akin to a universal service levy; the rate effective from 2012 was USD 0.03 per minute (Government of the Democratic Socialist Republic of Sri Lanka, 2011). The regulations allowed domestic PSTN operators to claim two thirds of the TDC within three years against the cost of development of its telecommunications networks in unserved and underserved areas as determined by the TRC (Sri Lanka Telecom, 2008).

5. Disbursement efficacy

Are the funds efficiently disbursing the moneys collected? In Nepal, for instance, it was found that only 2.6 percent of funds of universal service funds collected over 17 years had been disbursed (Samarajiva, 2015). This is particularly pertinent in the case of Pakistan, where the fair and effective utilization of the Fund is listed as an objective.

This section analyzes the collections and disbursements of the four USFs in the study, to ascertain the extent of utilization of the funds collected. ADRs and YDRs, as described in Section 3 above, are calculated for this purpose.

*India*

![Figure 2: Status of Indian USOF](image)
Figure 2 illustrates an increase in the inflow of funds through Universal Access Levy (UAL) collections into the USOF, growing at a compounded annual growth rate (CAGR) of 10.36 percent. The increase in the levies is caused by growth in the top-line revenues of operators. While the disbursement of funds has fluctuated, it has constantly been lower than the inflows. The difference between the inflows and disbursements on average was USD 716 million. Forty two percent of accumulated funds were disbursed in 2004/2005, but the ADR has fallen since. The YDR follows a pattern similar to that of the ADR, although with greater fluctuations.

**Malaysia**

![Graph showing inflows, disbursements, accumulated funds, and Y-o-Y disbursement rate for Malaysia from 2003 to 2014.](image)

**Figure 3: Status of Malaysian USPF**

Note: Disbursement numbers include accruals payable. The fund status in 2015 and 2016 could not be determined.


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5 The reimbursements of license fees and spectrum charges (to BSNL) were not taken into consideration when calculating the disbursement rates. They were merely accounting allocations- the USOF states that the negative fund balance was only notional.
Disbursements in the first five years of operation were extremely low with USD 8.9 million, a mere 4.3 percent of the inflows, being disbursed annually on average. Disbursement levels picked up in 2008, but dropped to USD 13.6 million once again in 2009. They have increased since, with the exception of 2014.

Disbursements came close to matching prior-year USPF contributions in 2012 and 2013 given YDRs of 98 and 99 percent, respectively. The backlog of funds, which had built up over the years, prevented the accumulated disbursement rate from exceeding 25 percent. All funds with accumulated balances must exceed the 100 percent YDR in several years, if they are to improve overall disbursement efficacy. Only Malaysia has come close to achieving that.

![Diagram: Status of Pakistan USF](image)

*Figure 4: Status of Pakistan USF*

Source: Ifthikar (2015) Calculations by authors

Figure 4 illustrates a varying pattern in the inflow of funds into the USF. The highest recorded inflow was in 2009/2010, after which contributions decreased and rose once again. The inflows in 2014/2015 were lower than in the previous year. Usually, however, contributions to the USF increase Y-o-Y, in line with increased operator revenues. A satisfactory explanation for the varying patterns is yet to be given.

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*Notes: Contributions and disbursements of 2005/2006, 2006/2007 & 2007/2008 have been combined. The disbursement figures for 3 years differ slightly from that calculated from the USF Annual Report.*
Almost 30 percent of the funds in the USF at the beginning of 2008/2009 were disbursed within the year. However, the disbursement rate has seen a general downward trend since then. The most recent data indicates that only a fifth of the total inflows are disbursed. Despite the disbursed funds almost doubling (173 percent) between 2012/2013 and 2013/2014, the ADR only increased by 2.1 percent. The YDR remained stable at 35 percent for the last two years.

Contrary to perception, the Pakistan USF has never been strong in disbursing funds.

Sri Lanka

![Graph: Status of Sri Lankan TDC](image)

**Figure 5: Status of Sri Lankan TDC**


Figure 5 indicates that the disbursement of the TDC in Sri Lanka started well, with nearly half the accumulated funds being pushed out in 2008. A sharp decline in the disbursement rate has been observed since. The collection of the TDC, however, continued. This has led to an accumulation of nearly USD 351 million by 2015.\(^7\)

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\(^7\) The disbursement figures provided by the TRCSL suggested that disbursement dropped to zero after 2010. The annual reports of two largest mobile operators (the annual reports of the other operators are unavailable) indicate otherwise. Hence, since the TRC reported numbers were greater than the combined refunds claimed by the two operators, the TRC numbers were used up to 2010. Thereafter, the sum of the
numbers reported by the two operators was used, though it is possible that overall disbursements are larger.
Comparative assessment of disbursement rates

Table 1: Comparative accumulated disbursement rates (ADRs) (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>ADR</th>
<th>Year</th>
<th>ADR</th>
<th>Year</th>
<th>ADR</th>
<th>Year</th>
<th>ADR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004/2005</td>
<td>41.66</td>
<td>2004</td>
<td>2006/2007</td>
<td>22.00</td>
<td>2006</td>
<td>0.86</td>
<td></td>
</tr>
</tbody>
</table>

Source: Calculated by authors

Table 2: Comparative year on year (Y-o-Y) disbursement rates (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>YDR</th>
<th>Year</th>
<th>YDR</th>
<th>Year</th>
<th>YDR</th>
<th>Year</th>
<th>YDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009/2010</td>
<td>42.35</td>
<td>2009</td>
<td>29.09</td>
<td>2011/2012</td>
<td>55.77</td>
<td>2011</td>
<td>77.91</td>
</tr>
<tr>
<td>2010/2011</td>
<td>55.77</td>
<td>2010</td>
<td>77.91</td>
<td>2012/2013</td>
<td>8.24</td>
<td>2012</td>
<td>98.66</td>
</tr>
</tbody>
</table>

Source: Calculated by authors

A comparative assessment of the performance of the USFs in Tables 1 and 2 indicate that the funds in Sri Lanka and India had been able to disburse over 40% of the accumulated funds in their early days. However performance deteriorated subsequently, dropping to single digit ADRs. Pakistan too,
performed best at inception and then saw its performance diminishing. Its disbursements have picked up, seeing a YDR of 35 percent for two years. This has not been enough to make a significant difference to the ADR. In contrast, Malaysia disbursement rates in its early days were low, but picked up after 2011. It nearly reached a 100 percent Y-o-Y disbursement rate over two years, leading to an increase in the disbursement of funds until mid-2014.

6. Performance in relation to objectives

This section compares and contrasts the objectives of the USFs of India, Malaysia and Pakistan, and the progress made towards achieving the objectives. The Sri Lankan Fund is not addressed in this section. It is a reimbursement model, where the operators make investments in rural areas that are then submitted to the regulatory agency for approval. When ruled as qualifying, the expenditures are reimbursed from the funds generated as a result of their international operations.

Table 3: Comparative objectives of the Universal Service Funds of India, Malaysia & Pakistan

<table>
<thead>
<tr>
<th>India</th>
<th>Malaysia</th>
<th>Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network extension &amp; stimulation of uptake of ICT services</td>
<td>Provide collective and individual access to communications in underserved areas and to underserved groups</td>
<td>Bring the focus of telecom operators towards rural population and increase the level of telecom penetration significantly in the rural areas through effective and fair utilization of the fund.</td>
</tr>
<tr>
<td>Mainstream the underserved &amp; unserved areas or groups by bridging the Access Gap</td>
<td>Bridge the digital divide</td>
<td>Improve broadband penetration</td>
</tr>
<tr>
<td>Enable equitable distribution of the fruits of the telecom/digital revolution and fair allocation of national resource (pooled USO levy) via targeted subsidies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enable citizens exercise their political rights in an informed way</td>
<td>Encourage the use of ICT to build a knowledge-based society</td>
<td>Advance enhancement of e-services, in rural as well as urban areas of the country.</td>
</tr>
</tbody>
</table>
Contribute towards the socio-economic development of local communities.

Accessed: 23 May 2017

The USFs of India, Malaysia and Pakistan strove to achieve greater geographical network coverage by encouraging operators to provide services in underserved areas. Additionally, India and Malaysia state their desire to serve underserved groups. Sentiments on equity, in the form of bridging access gaps and the digital divide and enabling equitable distribution, were expressed in both countries. Interestingly, Pakistan spoke of the effective and fair utilization of the Fund while working towards these objectives.

Performance on the objective of increased coverage to underserved areas and groups is relatively easier to measure.\(^8\) The other objectives, which are expected to take place once infrastructure rollout occurs and ICTs services are deployed, are more challenging to pinpoint as outcomes of the program. These objectives aim to achieve larger goals such as economic development and political participation. This was most explicit in the case of India, where the goals were tagged economic, social, political and constitutional. The Indian USOF was seen, among other things, as a means of providing information to citizens to exercise their political rights. Pakistan hoped it would contribute to advances in the e-services sector. Malaysia viewed it as a way of attaining broader developmental objectives such as building knowledge-based societies, and contributing towards the socioeconomic development of local communities.

The section below assesses the performance of the funds in relation to their objectives, wherever possible, by looking at the targets set out by each fund, amounts disbursed towards each activity, and outputs.

**India**

The Universal Service Obligation, according to the Indian Telegraph (Amendment) Act 2003, was meant to provide access to basic telegraph\(^9\) services

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\(^8\) But this depends on the metrics. If it is simply base transceiver stations (BTRs) located in defined areas, it is easy. If, on the other hand, the metric is geographical area within coverage of the wireless signals, it is much costlier to measure and liable to contestation. Intermediate solutions such as the number of customers who can be identified as residing in the target areas using analysis of call detail records (CDRs) exist. Using this indicator, a Fund may be able to deny subsidies to the placement of BTRs in remote locations that primarily serve tourists.

\(^9\) The Telegraph Act of 1885 refers to a telegraph as any appliance, instrument, material or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual or other electro-magnetic emissions, Radio waves or Hertzian waves, galvanic, electric or magnetic means.
to people in remote areas at affordable prices. The Indian Telegraph (Amendment) Bill 2006 refers to basic telegraph services as wire line and fixed wireless terminals. The projects included the installation of Village Public Telephones (VPTs), the replacement of the Multi Access Radio Relay (MARR) phones and the Rural Community Phone (RCP). However, this definition was deemed too restrictive, and the Indian Telegraph (Amendment) Act of 2006 broadened the scope of the USOF.

The word basic was removed in the subsequent amendment, allowing the USOF to provide a wider range of services to facilitate universal access and service. Following the amendment, projects such as NOFN (now termed Bharat Net) and wire line broadband were launched to provide Internet access in rural areas. The broad objective of network extension has allowed the USOF to adapt to changing trends and needs.

![Figure 6: Disbursement of funds by activity in India](http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN025618.pdf)

Source: Universal Service Fund of India (2015, Oct 21) disbursements from USO Fund

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Although the Indian USOF publishes the amounts disbursed by project, clear conclusions cannot be drawn due to sparse information regarding the nature of the projects.

The appropriateness of disbursements on specific technologies may be examined through an example. India’s village public telephones were established using public funds in the 1990s. They provided useful services in that period. However, disbursement of USO funds continued even as the rapid growth of mobile telephony was beginning to make them redundant. USOF funded VPT OPEX (operational expenses), New VPT-1 and New VPT-2 in the 2002-03 to 2016-17 period for which data are available.

![Figure 7: Expenditure on VPT programme](http://usof.gov.in/usof-cms/subsidy_tabular.jsp)

The subsidies amounted to 79 percent of disbursements in 2002-2003, but have remained below ten percent since 2003-2005.

**Malaysia**

The Malaysian fund has conducted a series of activities to promote collective and individual access to underserved areas and groups, as stated in the objectives. It has completed a number of initiatives to promote community access: The 1Malaysia Internet Centers (PI1M) is one such example. Variants such as Mini PI1Ms for areas with a population density of less than 800 also exist. The MCMC also reports a focus on underserved groups such as the disabled since 2013, contributing towards achieving the goal of bridging the digital divide.

Projects have also been undertaken to promote individual access. One of the more visible initiatives is the 1Malaysia Netbook project (Lucas-Gunaratne, 2014), where devices have been distributed to students and selected
communities. Over USD 500 million was directed towards this activity between 2011 and 2013. (Malaysia Communications and Multimedia Commission, 2014) As at end 2015, approximately 1.6 million netbooks had been distributed. (Malaysia Communications and Multimedia Commission, 2016). Another project that offers subsidized smart devices along with the Internet subscription for a year, as opposed to distributing free devices, has also been initiated.

The outcomes of the USFP are also in line with the country’s vision to become a Smart Nation by the year 2020, according to the Chairman of the MCMC, Dr. Halim Bin Shafie. New projects such as the Suburban Broadband (SUBB) initiative, which aims to provide broadband infrastructure with speed up to 20Mbps in underserved areas in suburban and rural areas, have been undertaken.

**Pakistan**

Pakistan’s USF too, has also changed over time. As at end 2015, the USF funded four types of programs: the rural telecom program, the optical fiber program, the broadband program and special projects. The rural telecom program that aimed to provide basic telephony and data services to several rural areas in Pakistan, accounted for 58 percent of disbursements as at end 2015. This, however, was redesigned as the broadband for sustainable development program (BSDP), to include the broadband equivalent data (Internet) services as a compulsory component.

Pakistan’s USF clearly states its strategy and tracks progress towards it in a transparent manner. Figure 3, obtained from the USF website clearly indicates the 26 lots that were to be covered via the program, and marks progress made in each of the lots. Details for each lot, such as the date advertised, bidders, financial bids made and results, are all published on the website.
This availability of data forces the USF to be more accountable to the public. For instance, the Sibi lot was advertised in 2008 as a part of the third phase of the rural telecom program. The lowest bid received was for USD 4.3 million by PTCL, but was rejected. The funds only got mobilized in phase ten when the project was awarded to Pakistan Telecom Mobile Limited (Ufone). A contract worth USD 3.2 million was awarded for this bid received in 2015.\(^{11}\) The rejection of the original bid resulted in savings of over USD 1.1 million, without taking into consideration the time value of money.

The BSDP program, which addresses the USF objective of directing operators’ focus to rural areas, had completed work in eight of the 26 lots it set out to work in by May 2017. Work in the Mansehra lot was half complete, the USF reported. A further ten lots were contracted.

The broadband program, in contrast to the BSDP program, aims to connect those in second or third tier urban areas. Operators are given a target number of broadband connections, and tasked with setting up community and educational broadband centers. Work in six ‘broadband regions’ was completed, while three were contracted. In some areas multiple operators undertook the work: Worldcall, PTCL and Wateen were contracted in the Gujranwala Telecom Region.

\(^{11}\)\text{http://www.usf.org.pk/publiclot.aspx?lotid=111&pgid=1&bphid=75&phname=Phase%20X&lotname=Sibi%20Lot}
The optic fiber program aims to extend optic fiber connectivity to the un-served Tehsil HQs. Approximately 3000kms of optic fiber has been deployed in unserved areas in the Sindh and Baluchistan regions.

Many of these projects are the first steps towards achieving the USF’s objectives of higher broadband penetration. In addition, a number of special projects have been undertaken.

Efforts to provide e-services may be seen in the telemedicine program, where three main hospitals and 12 remote sites were connected, so that medical professionals at the hospitals would be able to remotely diagnose those in the remote sites.

**Policy implications**

The universal service schemes in the case-study countries are failing. Money is being extracted from current consumers of telecom services and is being kept unspent (or used for purposes other than the intended) in government accounts.

Pakistan’s USF provides detailed information on the funds allocated towards each project and tracks progress towards its objectives, but does not provide documentation on collections. The poor disbursement performance of the Pakistan USF determined by this paper contradicts the common perception that it is an exemplary fund (IEG, 2011). This vividly illustrates the necessity of proper metrics and regular reports that are available to the public. Anecdotes and personable spokespersons can only do so much.

Regular public reporting of the type mandated by the FCC (Goldstein, 2009) would be quite useful. It would prevent misconceptions from being propagated and would lead to the initiation of remedial action. Concerns about low cumulative and annual disbursement rates would hopefully be raised in the media and in the legislatures, resulting in new programs being initiated or the quantum of universal-service levies being reduced.

It appears advisable to hardwire emergency brakes into the designs of all universal service levies, so that collections are automatically reduced when disbursements are too slow. Once enormous balances have accumulated, there is little alternative but to come up with grandiose spending schemes such as Bharat Net (formerly known as NOFN) (Srinivasan & Ilavarasan, 2015), which accounted for over two thirds of the Indian USOF’s spending in 2015-2016, to get rid of the funds. This is not how things should be.

As the IEG (2011) recognized, the objectives of universal service are better achieved by normal rollout of services by competitive providers than by complicated government schemes. The Budget Telecom Network Model explicated by Samarajiva (2010) which has actually resulted in millions at the bottom of the pyramid being connected to ICT services relies on low costs. Excessive levies that sit unspent in government accounts do not help any universal-service related objective.
Levies or taxes that are directly charged to end users or the service suppliers depress demand. In a market with adequate levels of competition, reduction of such levies is likely to reduce prices and increase demand. One defense of these kinds of levies is that they are like fuel taxes. Bundling user charges needed for maintenance of the roads used by vehicles with fuel prices may be said to be a justified policy instrument. In the case of road taxes, the beneficiaries are the people who pay for the fuel. This is not the case with universal-service taxes, except in the indirect and partial sense of the payees benefiting from the increased calling opportunities afforded by the addition of new customers to the network. But in any case, there can be no benefit of the fuel taxes are not used for road maintenance, which is the case with telecom taxes.

The Sri Lankan model of reimbursement appears to have potential. If from the word go, it is recognized that the revenues resulting from universal-service levies do not belong to government, but are instead held in trust on behalf of the operators or the actual payers, the consumers of telecom services, the rationale for emergency brakes and similar devices to prevent accumulation of funds would be stronger. But the poor performance of the Telecom Regulatory Commission in 2009 suggests that this model too has flaws.

Malaysia achieved close to 100 percent Y-o-Y disbursement, but a large portion may have been directed towards distributing free netbooks. Information on the disbursement of funds towards each project, along with its outcomes, would help provide a more comprehensive view on the progress made. Measuring the utilization of the funds in the USFs necessitates information on the collections to also be reported.

In the same way the FCC mandated quarterly reporting, it is essential that all universal service funds regularly report collections and disbursements, ideally using the two metrics proposed in this paper. Quarterly reports would enable operators and other stakeholders to initiate action against counter-productive accumulation of funds and other inefficiencies and abuses.
Bibliography


International Telecommunications Union. (2013). *Universal service fund and digital inclusion for all study*. ITU.

Ladcomm Corporation. (2013). *Survey of Universal Service Funds: Key findings*. GSMA.


Samarajiva, R. (2010). Leveraging the budget telecom network business model to bring broadband to the people. *Information Technology and International Development*.

Samarajiva, R. (2015, April 2). *Only 2.6% of universal service funds collected in Nepal over the past 17 years have been disbursed*. Retrieved from LIRNEasia: http://lirneasia.net/2015/04/only-2-6-of-universal-service-funds-collected-in-nepal-over-the-past-17-years-has-been-disbursed/


**Annex 1: Exchange rates used**

ER = 1 USD = x local currency

<table>
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<th>ER</th>
<th>Year</th>
<th>ER</th>
<th>Year</th>
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<td>2010</td>
<td>3.31</td>
<td>2014</td>
<td>3.27</td>
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<td>3.27</td>
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<td>2012</td>
<td>3.31</td>
<td>2016</td>
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<td>3.27</td>
<td>2019/2020</td>
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</table>

**Notes:** The bid rate was used to compute the average exchange rate specific to the financial year of each country.


Source: [http://www.oanda.com/currency/average](http://www.oanda.com/currency/average)