

# Implementation of USF Obligations in Pakistan

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## Abstract

Universal service is intended at growing the number of individual houses with telecommunications facilities and providing telecommunications services to all houses within a country, together with those in countryside, far-off and high price places. All telecommunications carriers that provide service internationally and between states pay contributions into the USF. Variations in technology force strategy makers to reconsider the objective of universal service. Major factors upsetting service supplier contribution in USF projects in Pakistan are government factors, legal factors, incentives and other critical success factors. Scope of universal service will perhaps be growing in accordance with the information society targets and universal service funds which are funded by more market troupes will be commonly used.

## Keywords

Universal Service Fund (USF), Policy Design and Major Impacting Factors

## I. Introduction

Universal service theory is one of the most challenging subjects in telecommunications. Its explanation and opinion vary from country to country. The Government's Universal Service policy is intended to guarantee that these chosen populations and terrestrial areas receive sufficient service in a justifiable manner as resources authority.

There is no single optimum methodology so as to achieve universal service goals and a method a given country implements is the policy choice of that given country. All countries try to achieve these goals by taking into attention to their distinct circumstances. The establishment of USF was envisioned in Pakistan Telecom Act 1996/2000 according to which all approved telecom operators subsidize to this Fund. In order to use this deposit for accomplishment of targets, Government of Pakistan certain to trail a "Public Private Partnership" Model. USF started to attain its objective by taking the first step of distributing the country into attended and un-served zones.

The goals of Universal Service, as directed by the Telecommunications Act of 1996, are:

- To promote the availability of quality services at just, reasonable, and affordable rates.
- To increase access to advanced telecommunications services throughout the Nation.
- To advance the availability of such services to all consumers, including those in low income, rural, insular, and high cost areas at rates that are reasonably comparable to those charged in urban areas.[1]

This research proposal is to guide the USF committee for the growth of a low investment network ready to cover areas which are difficult to cover (or are normally not covered by the service providers), with the help of libraries; schools and rural health care are not being covered with current Policy of USF

## II. Literature Review

The Universal Service Fund (USF) was formed by the Federal Communications Commission in 1997 to increase access to advanced telecommunications services throughout the Nation. All telecommunications carriers that deliver facility worldwide pay contributions into the USF. The Universal Service Administrative

Company (USAC) submits fund size and organizational cost projections for each quarter in accordance with FCC rules. All telecommunications carriers that provide service internationally contribute into the Universal Service Fund.

## A. USF ongoing Programs

It has four programs:

- **High Cost** - This support assures that customers in all regions of the nation have access to and pay charges for telecommunications facilities that are sensibly comparable to those in urban areas.
- **Low Income** - This support, normally known as Lifeline and Link Up, provides discounts that make elementary, confined telephone service reasonably priced for more than 7 million low-income customers.
- **Rural Health Care** - This support provides cheap rates to rural health care earners for telecommunications and Internet services so they pay no more than their city counterparts for the same or similar telecommunications services.
- **Schools & Libraries** - This support, commonly talk about as E-rate support, provides reasonable telecommunications and Internet access facilities to connect schools and libraries to the Internet. This support goes to service providers that provide reductions on appropriate services to eligible schools, school districts, libraries, and groups of these entries.[3]

The universal trend to liberalize telecommunications is motivating the progress of new universal service funding policies

## B. Policy design of USF in Pakistan

The Objectives for the Universal Service Fund (USF) are based on the Universal Service Policy and on the Fixed and Mobile Policies. The Government has designed the market liberalization policy to maximize the commercial availability and coverage of telecommunications and ICT services in Pakistan. The Government's universal service policy is intended to guarantee that these selected populations and geographic areas progressively receive defined adequate services (including e-services) in a sustainable way as resources permit.

Access to services shall be offered by operators, both through shared access points as appropriate, and to all customers requesting

service in the areas now covered through the support of the USF, at published national tariffs. Services shall be affordable to the majority of households and individuals

So far, only 80% of Pakistan’s total population has been covered by the fixed line, WLL, and cellular operators jointly. Rural teledensity to-day, including fixed, WLL and mobile services, is estimated at about 1%. [2]

USF is expected to shift the focus of the telecom operators from urban towards rural population coverage.

**1. Universal Service Fund Policy to achieve scope is:**

- Consistent with fair competition in the telecoms sector amongst mobile, fixed line and broadband operators
- In any case MoIT will review the Universal Service Policy regularly.
- It is expected that basic service availability will eventually reach 100% of the population.

**2. The primary goals for Universal Service are therefore:**

- MoIT notes that access to telecommunications services from their home location is available to only about 80% of the Pakistan population overall to-day. The primary goals for Universal Service are therefore:
- To kick-start the broadband and ICT markets, facilitating e-services.
- 85% of country population to have coverage and therefore access to service if desired
- Teledensity: 5% in rural areas (fixed and/or mobile) [6]

**3. Funding strategy**

The USF will be predominantly financed by revenues collected from telecommunication licensees. Medium priority will be given to areas with smaller population or with limited access to services, and hence with very low teledensity.

All licensed operators which have contributed and continue to contribute to USF shall be eligible to apply for Universal Service Fund contracts, including Special Projects. USF policy will ensure optimal benefits to the operators, people and the economy. Individual services in USF coverage areas at prices capped by nationally available retail prices

‘Negative auction’ to determine USF contract winners and encourage innovation, ensure market discipline and minimize costs. There may also be contracts for specialized ICT public and community services. It is expected that basic service availability will eventually reach 100% of the population.

The USF may also receive funds from the Government, and also funding from international or bilateral development agencies or donors.

The need for Universal Service is great, so the USF contribution will be set at the maximum 1.5% initially. APC for calls terminating on mobile networks shall also be paid to the Universal Service Fund. All profits earned through investment of unspent or undisbursed USF funds shall be deposited in the USF fund. PTA shall enforce national price caps in USF areas.[4]

**C. Fund administration**

USF will be controlled and monitored by MoIT, and administered by an independent but wholly state-owned company ‘Universal Service Fund Guarantee Limited’. Universal Service contractors will be required to report their performance under each contract

regularly:

Services offered, and number of services in operation

Quality of service achieved

Prices charged and tariff conditions

USF Company Guarantee Limited shall monitor and inspect performance under US contracts.

**III. Methodology**

It is a pragmatic study and reports the findings of the questionnaire survey and interviews of key participants of the construction industry.

After complete and widespread literature review, factors that policy design and implementation for USF were identified and then a questionnaire was developed. A pilot survey was steered to check the applicability of questionnaire in local environment

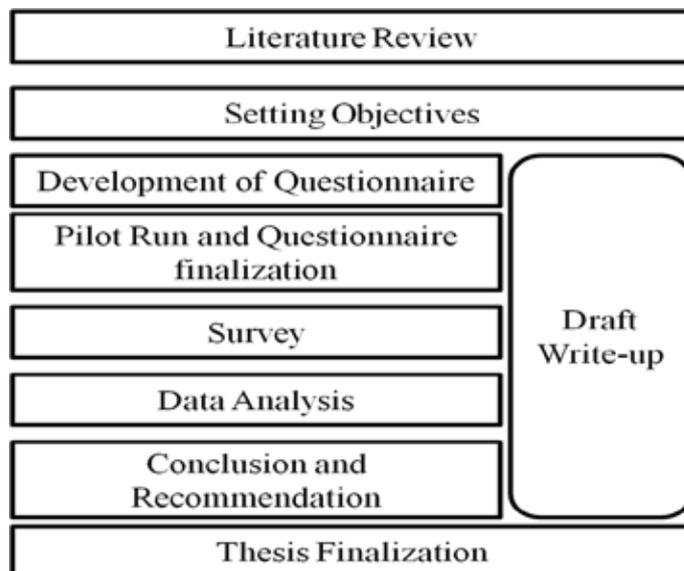
Final questionnaire has an introduction of five dimensions:

- Government,
- Financial,
- Legal,
- Social,
- Incentives and Guarantees.

In first section, out of 18 factors, 11 factors are identified after extensive literature review, and rests are adopted from input of experts of pilot survey. In second section, 13 different factors are identified, out of which 9 are adopted from literature review, and rests are adopted from input of experts of pilot survey. Third section has 3 factors. In fourth section 6 social factors which are barriers to implementation of BOT projects. In last fifth section 4 factors are identified from literature review. The questions are applied on a five point Likert scale, allowing different statistical techniques for analysis.

Based upon the geography of these areas, it may be assumed that these districts have significant share in construction industry of Pakistan.

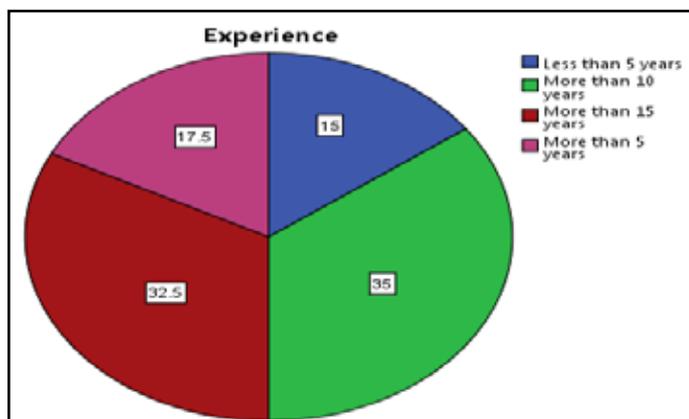
Keeping in view the geographical locations of these areas, their population size, industrial development contribution and extensive experience of the respondents to variety of the projects, the data collected was extensive and is categorized to be representative of the construction industry.



**IV. Results and Analysis**

Data analysis and results of the questionnaire based survey

conducted in Pakistan on factors affecting USF policies is discussed in this chapter. The data collected with the help of questionnaire based survey is compiled and is ready to be analysed. The chapter describes the complete analysis stage as to how the collected data is analysed and results presented for necessary conclusions and recommendations



**A. Reliability Analysis**

Hinton et.al (2004) have also defined reliability as a questionnaire tested to study any topic at different times and across different populations, if produces same results, the questionnaire is a ‘reliable one’. Cronbach’s Alpha for continuous data (Likert-scale type items) is mostly used method. Hinton et.al (2004) explained that Cronbach’s Alpha value range from 0 (un-reliable) to 1 (reliable) with 0.75 being considered the most sensible value. They have also provided a guide line to assess the reliability of any data Reliability test was applied to check the reliability of data. Cronbach’s Alpha value is 0.82 for our research and the value achieved was above 0.7, which shows high reliability of data.

Table: Data Reliability Values

Reliability	Cronbach’s Alpha
Overall reliability of 43 Items	0.828

**B. Importance of Factors**

Respondents were require to provide responses on the importance of 43 factors affecting the implementation and execution of USF projects in Pakistan on Likert scale 1-5, where 5 represented “extremely critical” and 1 represented “not critical”.

The different factors that were already highlighted from literature review and discussion with the industry experts are combined in the questionnaire to find their importance. Total 43 factors are incorporated in the questionnaire for which the respondents were required to give scoring on Likert scale (1-5).

The data collected from the filled questionnaires for this portion was entered and compiled in the excel sheet. Once the data was compiled, percentage score was calculated for each of the factor which identifies its significance.

$$\text{Percentage Score} = \sum \frac{W}{A \cdot N} * 100$$

Where “W” is the score obtained from each respondent, “A” is the maximum score which is “5” in this case and “N” is the total number of respondents.

Top factors effecting USF are:

- Political intervention at approval stage
- Poor Government Procedures
- Lack of diligence of Authorize Government
- Banks in Pakistan do not have capacity nor the financial depth to provide long term financing
- Inflation
- High cost of financing
- Improper Selection and Evaluation Procedure

**C. Correlation Analysis among various factors impacting in implementation of USF**

Correlation is useful for predictive relationship that can be exploited in practice. The following table shows the correlation matrix among the critical factors of USF at 0.05 and 0.01 levels of significance. To make the research more effective and accurate, the data was analysed through correlation statistic. It was observed that factors we have assumed in our literature review are positive and significant.

Hypothesis 1: Political Involvement at Approval Phase has positive relationship with Poor Government Policy

The relationship between Political involvement at approval phase and poor government policy is positive and significant with values (0.440\*\*, p=0.005). Hence it shows that poor govt. policy leads to political involvement at approval phase.

Hypothesis 2: Lack of diligence of Authorize government has significant positive relationship with Political Involvement at Approval Phase

The relationship between Lack of diligence of authorize govt. and inappropriate procedure for selection and evaluation was significantly positive with values (0.579\*\*, p=0.000). Hence it shows that political involvement increases when there is absence of determination of empowered govt. This relation also satisfies our assumption.

Hypothesis 3: High investment prices has significant positive relationship with poor government procedures

The relationship between High investment prices and poor govt. procedures was significantly positive with values (0.646\*\*, p=0.000). Hence it shows that if the government procedures are deprived, it will leads to high financing prices.

Hypothesis 4: Rise in prices (Inflation) has significant positive relationship with poor government procedures

The relationship between inflation and poor government procedures and policy was significantly positive with values (0.464\*\*, p=0.003). Hence it shows that poor govt. policies have direct impact on inflation

Hypothesis 5: High investment prices have significant positive relationship with Banking in Pakistan

The relationship between high investment prices and poor government procedures and policy was significantly positive with values (0.544\*\*, p=0.000). Hence it shows that banking in Pakistan is directly linked with high financing prices which also satisfy our assumption.

Hypothesis 6: Rise in Prices has significant positive relationship with Banking in Pakistan

The relationship between inflation and banking in Pakistan is significant with values (0.418\*\*, p=0.008). Hence it shows that banking in Pakistan is directly linked with high financing prices which also satisfy our assumption.

Hypothesis 7: Poor Government Procedures has significant positive relationship with Banking in Pakistan

The relationship between poor govt. procedures and banking in Pakistan is significant with values (0.564\*\*, p=0.000). Hence it shows that poor govt. procedures have direct impact on banking in Pakistan which highly effects implementation of USF policies.

Table: Correlation analysis among various variables and factors impacting USF obligations

		PIAP	LDAG	PGP	IPSE	HIP	RP	BP
PIAP	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	40						
LDAG	Pearson Correlation	.410**	1					
	Sig. (2-tailed)	.009						
	N	40	40					
PGP	Pearson Correlation	.440**	.218	1				
	Sig. (2-tailed)	.005	.177					
	N	40	40	40				
IPSE	Pearson Correlation	.360*	.579**	.124	1			
	Sig. (2-tailed)	.022	.000	.447				
	N	40	40	40	40			
HIP	Pearson Correlation	.334*	.353*	.646**	.233	1		
	Sig. (2-tailed)	.035	.025	.000	.148			
	N	40	40	40	40	40		
RP	Pearson Correlation	.246	.029	.464**	.181	.302	1	
	Sig. (2-tailed)	.126	.859	.003	.264	.058		
	N	40	40	40	40	40	40	
BP	Pearson Correlation	.483**	.407**	.564**	.440**	.544**	.412**	1
	Sig. (2-tailed)	.002	.009	.000	.004	.000	.008	
	N	40	40	40	40	40	40	40

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**D. Regression Analysis of the Model**

Regression analysis finds out relationships between variables. The following summaries and the coefficients show that there is a reliable relationship between all the variables we assumed. Most commonly, regression analysis estimates the conditional expectation of the dependent variable given the independent variables – that is, the average value of the dependent variable when the independent variables are fixed. [19] The results shows that this research has significance (p-value < 0.05) which interpret a firm relationship between all dependent and independent variables. The model is tested for individual basis hence strong significance found for all variables. Regression results are shown in below table. All relations are positive and significant.

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	63.498	5	12.700	6.653	.000b
Residual	64.902	34	1.909		
Total	128.400	39			

a. Dependent Variable: BP

b. Predictors: (Constant), RP, LDAG, HIP, PIAP, IPSE

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-3.028	1.261		-2.401	.022
	PIAP	.257	.170	.213	1.508	.141
	LDAG	.156	.312	.081	.500	.620
	IPSE	.410	.317	.199	1.296	.204
	HIP	.521	.219	.331	2.381	.023
	RP	.350	.211	.221	1.658	.107

**V. Major Impacting Factors**

**A. Overview**

Factors affecting service provider participation in USF projects in Pakistan have been analysed and based on the findings of the results, discussion will be done.

**B. Major Barrier**

**1. Political intervention at approval stage**

Another factor affecting private sector participation in USF projects in Pakistan is Political intervention. Bidding of USF projects is not an easy assignment and requires too much efforts and time to assess and then bid for a project, including fiscal analysis, viability studies, cash flow calculations over the years, agreements with some financing body etc. But after such time taking evaluations and research, political intervention at approval stage is discouraging private parties. Interviews with management of some big service providers

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.703 <sup>a</sup>	.495	.420	1.382	1.511

a. Predictors: (Constant), RP, LDAG, HIP, PIAP, IPSE

b. Dependent Variable: BP

revealed that they have lost the interest even to bid for such type of projects due to rejection of their bids in past because of political

involvement.

## 2. High cost of financing

As such projects needs heavy investment and there is scarceness of specialized infrastructure financing institutions in Pakistan, so most of the construction industry players do not want to peril their own venture and they look for some association or investment firms. USF projects are public infrastructure projects which employ a particular form of structured financing. The participation of the private sector in the development of infrastructure in Pakistan by way of USF projects is proving to be a difficult exercise. The lead time of a project is very long, and associated up-front costs are significant. Such projects are complex by virtue of the number of parties involved and the corresponding number of contracts, which must all intermingle. Furthermore, each party is dependent upon the performance of not only its counterpart, but also the performance of all parties to the project. USF projects are generally structured on a project basis requiring all parties to share the risks of the project.

## 3. Inflation

The risk factor which is external in nature is Inflation, and interviews revealed that inflation and price hike is the major concern followed by rupee exchange rate and taxes. The principle measure of price variation at retail level is Consumer Price Index (CPI) and generally represents inflation rate in the country.

## 4. Banks in Pakistan

Banks in Pakistan do not have financial depth to provide long term financing. USF projects required long term financing as these have long concession periods ranging from 10-30 years and long term financing is required to deliver such projects. The capital supply and cash flows are internal to an organization, interest rates are external factors mostly governed by policies of the State Bank of Pakistan. Most of the corporate loan agreements have floating rates; it means automatic adjustment of interest rate with KIBOR, which may affect project cash flows and capital supply. Changes in cash flows and capital supply may affect the project negatively in many ways including but not limited to delays, cost overruns, poor quality and at times abandonment of the project. Equipment manufacturers relying on corporate lending to bridge financial gaps become more vulnerable. Interviews revealed that contractors are concerned about the fate of such long term USF projects because of the scarcity of financing institutions in Pakistan. The financial factors assume leading position in the listing of factors for the reason that if not addressed timely, they have the potential to choke the project completely. A financially healthy project is likely to meet its intended objectives more aggressively.

## C. Critical Success Factors

Following are some critical success factors described by most of the authors and researchers that are prerequisite for success of USF projects.

- Political stability and support Qiao et al (2001).
- Stable macro-economic environment including low inflation, stable exchange and interest rates; Qiao et al (2001); Tiong (1996).
- Available financial market; Qiao et al (2001).
- Transparency and competition in procurement; Jefferies et al (2002).
- Favourable legal framework; Tiong (1996)

- Appropriate risk allocation and risk sharing in doing business; Qiao et al (2001)
- Grant (1996).
- Projects that are socially and environmentally feasible; Qiao et.al (2001).
- Projects that are technical feasible; Qiao et.al (2001) Keong et al (1997).
- Good governance; Qiao et al (2001) and Keong et al (1997).
- Government involvement by providing supports; Stonehouse et.al (1996).
- Well organized local partners/public agencies; Salzmann and Mohamed (1999).
- Shared authority between public and private sectors; Kanter (1999); and Stonehouse et. al (1996).
- Commitment/responsibility of public-private sectors; Hardcastle et.al (2006).
- Strong private consortium; Jefferies et.al (2002) and Hardcastle et.al (2006).CHAPTER 6

## VI. Conclusion

When it was first mentioned, universal service meant interconnection of operators and aimed to sustain monopoly. Furthermore, in developed countries universal service funds were set up to meet these needs.

Subsidies or funding universal service from sector-based sources are argued to create market distortions. Furthermore, universal service is a social policy so it needs instruments to redistribute the sources. Changes in technology also force policy makers to rethink the scope of universal service. It is becoming common to include Internet access into the scope of universal service. Some policy makers hesitate to include broadband services into the scope in order to be technology neutral or because of the general accepted criteria of inclusion to the universal service scope which states that a service could be included into the scope in case it is used by majority of the population or being unable to access these services must create a disadvantage. Technology is a dynamic structure so should be the universal service. Therefore, changes in technology and social needs and competition engender the need to redefine universal service with the current social needs and in a technological neutral way. Universal service policies should be supported with social and public policies.

Major factors disturbing service provider participation in USF projects in Pakistan are government factors, legal factors, incentives and other critical success factors. Factor that is upsetting private sector participation in USF projects in Pakistan is Political intervention. The debate on the universal service concept is likely to last since changes in technology and thereby changes in social needs do not end.

## VII. AcknowledgEment

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