

**Ministry of Transport and Communications  
Post and Telecom Department**

**EXECUTIVE SUMMARY  
Universal Service Strategy for Myanmar  
(2018 to 2022)**

January 2018

## Acronyms / Abbreviations

2G	Second Generation Mobile Communications
3G	Third Generation Mobile Communications
A4AI	Alliance for Affordable Internet
ADB	Asian Development Bank
ASL	Application Service Licence
ARPU	Average Revenue Per User
BSC	Base Station Controller (in GSM networks)
BTS	Base Transceiver Station
CAPEX	Capital Expenditure
CSO	Civil Society Organization
GIS	Geographic Information System
GOM	Government of Myanmar
GPS	Global Positioning System
GSM	Global System for Mobile Communications
ICT	Information and Communications Technologies
INGO	International Non-Government Organization
ISP	Internet Service Provider
LTE	Long-Term-Evolution
MCF	Myanmar Computer Federation
MCRC	Myanmar Communications Regulatory Commission
MIMU	Myanmar Information Management Unit
MoE	Ministry of Education
MOTC	Ministry of Transport & Communications
MPT	Myanmar Post and Telecommunications
NFS-C	Network Facilities Licence - Class
NFS-I	Network Facilities Licence - Individual
NTL	National Telecommunications Licence
OPEX	Operating Expenditure
PTD	Post and Telecommunications Department in MOTC
UA	Universal Access
US	Universal Service
USF	Universal Service Fund

## Executive Summary

### **GENERAL INTRODUCTION**

This document is an Executive Summary of the draft Universal Service Strategy for the Republic of the Union of Myanmar (Myanmar) prepared by Posts and Telecommunications Department with the assistance of Intelcon. The Universal Service Strategy is part of the government's objective to reform the telecommunications sector, which the Ministry of Transport and Communications (MOTC) is pursuing.

Universal Service is a policy goal to ensure that all people in a country have access to, and are able to use telecommunications services. This focuses in particular on people living in rural and remote parts of the country, as well as poorer households country-wide, and persons with disabilities. A universal service policy defines a minimum set of telecom services, for voice services and broadband Internet, which all people should be able to use. This also means that these defined telecom services must be affordable.

In the digital information age, communications services – whether they are voice communications or broadband Internet – have become indispensable for modern life. They are crucial for governments, business and individuals alike, both for economic growth and social development, as well as for the functioning of a democracy.

Good sector policies and regulation have a huge effect on universal service, in terms of market expansion and lowering of prices. However, some difficult areas cannot be reached by market forces alone.

The government's Universal Service Strategy ensures that areas and communities that cannot be reached commercially by the industry, will also be served. Universal Service policies and Universal Service Funds (USFs) are internationally wide-spread practices and there are over 90 USFs world-wide. Myanmar's strategy is building on this international experience, while still tailoring its own Universal Service Strategy to local circumstances and needs.

The Telecommunications Law from 2013 gives the MOTC the option to establish a Universal Service Fund (USF). A USF is both a legal and institutional structure, as well as a financing instrument. A USF would be largely responsible for the implementation of the Universal Service Strategy and its individual programs, and projects. Thus, the terms Universal Service Strategy, USF and USF programs are used in this document. A separate Guide on establishing the USF has been prepared, as well as a USF Operating Manual. This Guide on how to establish the USF, and the Operating Manual, cover the legal structure, the governance of the USF, the management of the programs and all related administrative details and processes.

It is important to note that this Universal Service strategy is focussing on addressing the most important identified universal service needs for the

next five years from 2018 to 2022. While including definitions, objectives and key principles, it is not a policy document.

This draft Universal Service Strategy was developed using a combination of the following main methodologies:

- Data and evidence collection;
- Independent and extensive ICT sector analysis;
- Consultation with a wide range of industry and other key stakeholders;
- Myanmar ICT projects experience and analysis of wider relevant context; and
- International experience and best practice.

#### **UNIVERSAL SERVICE OBJECTIVES FOR MYANMAR**

An analysis was undertaken to determine the gaps and needs in terms of universal service, and what programs and projects are required to close them. The analysis was guided by the following four key dimensions of universal service:

Table 1		
Issue	Basic meaning	Specification
<b>Availability</b>	All inhabitants have service available	Coverage of inhabited geographic territory <ul style="list-style-type: none"> <li>• Region /area</li> <li>• Locality size (e.g., towns, villages, settlements with varying number of inhabitants)</li> </ul>
<b>Accessibility</b>	All inhabitants can access the service	<ul style="list-style-type: none"> <li>• Gender</li> <li>• Ethnicity, religion</li> <li>• Ability /disability</li> </ul>
<b>Affordability</b>	All inhabitants can afford to pay	<ul style="list-style-type: none"> <li>• Access device (e.g., mobile phone)</li> <li>• Cost of calls &amp; services</li> <li>• Minimum “basket” below a certain national limit (e.g., 3% of family income)</li> </ul>
<b>Ability (Capacity)</b>	All inhabitants have the basic ability to use telecom services	With increasing focus on the broadband Internet, user capabilities become important <ul style="list-style-type: none"> <li>• Awareness of services and their benefits</li> <li>• Ability to use computers &amp; devices</li> <li>• Ability to navigate the Internet &amp; use ICT services</li> </ul>

Source: Intelcon

The objectives for this Universal Service Strategy are also framed according to the above four key dimensions of universal service, and are as follows:

**Availability of voice and broadband Internet services**

*Voice services - The target for universal service in the next five years is to reach 99% of the population to be covered by a mobile signal and having basic mobile voice services available. In addition, any significant voice and data gaps of a specific set of 28 major national highways and roads, shall be covered.*

*Broadband Internet - The target for universal service in regards to broadband Internet availability in the next five years is to ensure that 95% of the population are covered by mobile broadband services.*

*A major program on infrastructure investment and supply is therefore a key part of this Universal Service Strategy.*

**Accessibility regardless of gender, religion, ethnicity or ability**

*This strategy includes measures to close the gap in regards to access, as follows:*

- *The USF infrastructure program will bring improved communications.*
- *The broadband connectivity and ICT training program will include a focus on women to ensure their digital capabilities improve.*
- *The special projects program includes initiatives to provide tools for persons with disabilities to better use communications services.*

**Affordability of communications services**

*Affordability of communications services is very important for people, and a key element of universal service. It means that services are reasonably priced, and even low-income people can afford to use a minimum amount of services. At this time, no special measure in this area is proposed. However, the USF will, on an ongoing basis, monitor and if required, investigate affordability issues for the lowest income groups.*

**Awareness/ ability**

*The analysis has identified that there is a major gap between the ownership of data-capable mobile phones and the awareness and ability to take full advantage of Internet information and services. For example, in 2016 only 22% of mobile Internet users state that they have the required skills to use the Internet. In addition, the penetration of computing devices (laptop, notebook, tablet or desk-top computer) is very low with only 6% of households having a computing device.<sup>1</sup> Further, awareness is low on how to protect privacy and sensitive data, while using the Internet, leading to risks for consumers. The strategy has therefore included a program focussed on capacity building and enabling digital skills.*

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<sup>1</sup> Data from LirneAsia/MIDO National ICT study, 2016

**POPULATION COVERAGE ANALYSIS FOR VOICE AND BROADBAND INTERNET**

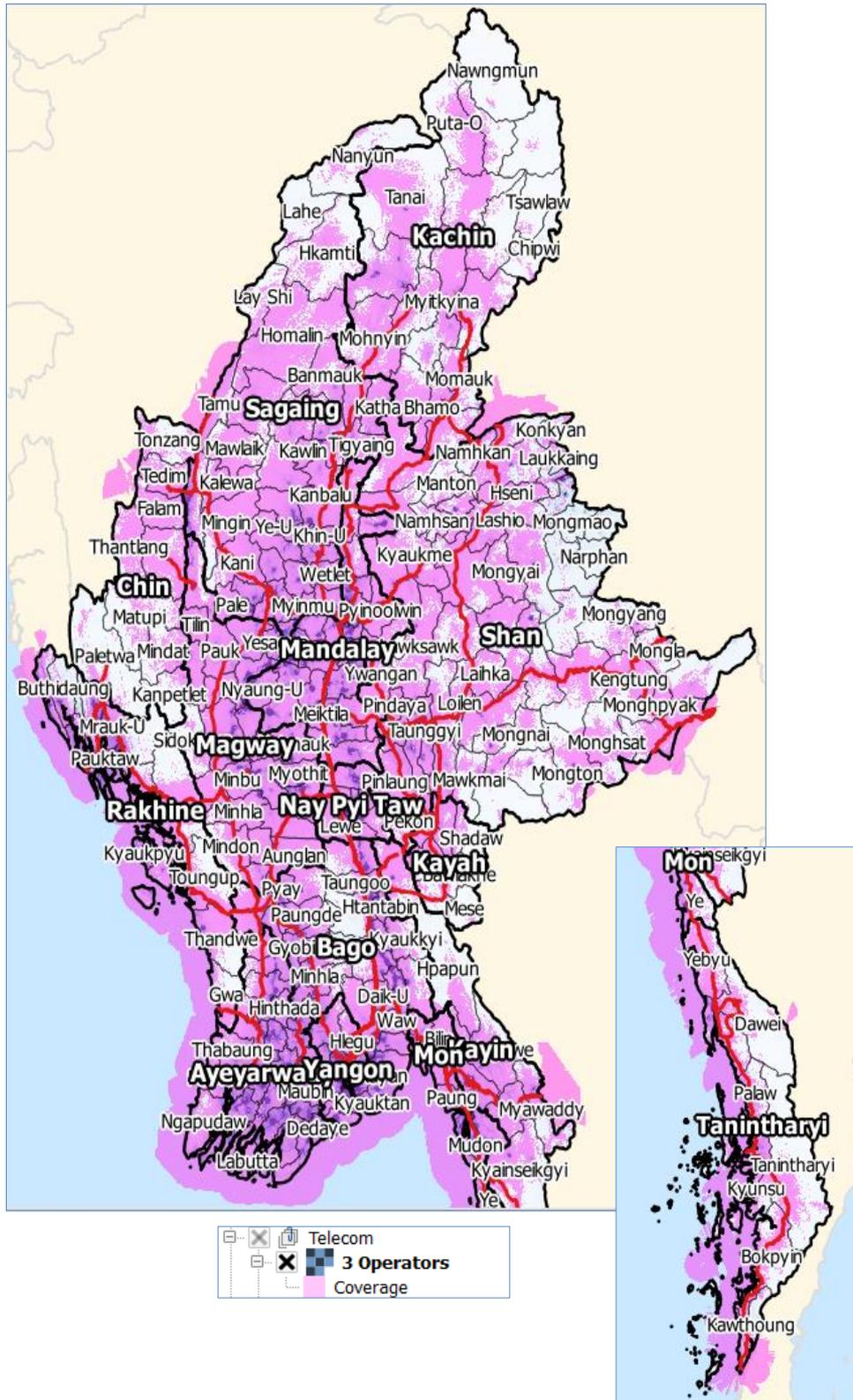
At the end of 2016, the three mobile network operators jointly covered approximately around 85% of the population. The GIS analysis determined that the projected total coverage of the three current mobile networks from MPT, Telenor and Ooredoo may reach 94.8% of the population coverage by end of Q1 2019. The analysis includes operators network roll-out obligations and plans by the 4<sup>th</sup> mobile network operator Mytel. Therefore, up to 2.6 million people (5.2% of total official population) will remain without service after Q1 2019 and will need the intervention by the USF.

Details by state and region can be seen in Table 2 below.

<b>State</b>	<b>% Geog. Area Covered</b>	<b>Total Population</b>	<b>Population covered</b>	<b>% Population uncovered</b>	<b>Total Townships</b>	<b>Townships with &lt; 50% Population Coverage</b>
Chin	48.0%	478,801	317,976	33.6%	9	2
Shan (North)	59.2%	2,520,258	1,792,718	28.9%	24	7
Shan (East)	50.0%	898,191	632,777	29.5%	10	2
Shan (South)	63.5%	2,405,983	2,192,373	8.9%	21	0
Tanintharyi	44.5%	1,408,401	1,176,288	16.5%	10	0
Kachin	45.0%	1,642,841	1,419,786	13.6%	18	4
Kayin	60.3%	1,504,326	1,327,803	11.7%	7	1
Kayah	51.8%	286,627	258,419	9.8%	7	1
Rakhine	63.8%	2,098,807	1,978,993	5.7%	17	0
Sagaing	73.9%	5,325,347	5,101,269	4.2%	37	2
Bago East	71.6%	2,894,140	2,788,891	3.6%	14	0
Bago West	87.3%	1,973,233	1,953,012	1.0%	14	0
Mon	89.9%	2,054,393	2,033,077	1.0%	10	0
Magway	91.7%	3,917,055	3,888,057	0.7%	25	0
Mandalay	95.8%	6,165,723	6,141,393	0.4%	28	0
Yangon	94.3%	7,360,703	7,331,684	0.4%	45	1
Nay Pyi Taw	94.2%	1,160,242	1,156,827	0.3%	8	0
Ayeyarwady	92.9%	6,184,829	6,172,582	0.2%	26	0
<b>Total</b>	<b>65.9%</b>	<b>50,279,900</b>	<b>47,663,925</b>	<b>5.2%</b>	<b>330</b>	<b>20</b>

In addition to covering population centres with mobile communication services, a further goal is to ensure there is voice and data service available along a specified set of 28 major national highways and roads. The key purpose is to ensure the safety of motorists and travellers, and ensure they can call emergency services, such as police, ambulance or fire department. In addition, this will also have positive impact on businesses and the economy as a whole, as important economic trade corridors are covered with service, and also for the tourist sector.

Figure 1 illustrates the mobile network coverage achieved by the combination of all the NTL operators including current or projected coverage to Q1 2019. The map also shows the 28 major national roads and highways with a red line, thus indicating the few uncovered areas remaining.



The mobile network coverage applies for both voice coverage and broadband Internet (3G) since all NTL are rolling out modern telecoms networks.

### **OVERVIEW OF UNIVERSAL SERVICE PROGRAMS**

The Universal Service Strategy will focus on three main program streams:

**Program 1 - Infrastructure deployment for basic voice and broadband services**

**Program 2 - Broadband connectivity and ICT training - Enabling the digital future**

**Program 3 - Special Projects incl. content, applications, pilots, disability**

Program 1 will be the main priority and investment stream and ensure the supply of infrastructure so that all regions of the country and all identifiable population centres have access to national telecommunications infrastructure services.

Program 2 is centred on broadband connectivity and the development of basic digital skills and literacy.

Program 3 is to focus on special projects. These special projects will be smaller in size, but nevertheless promote important aspects of universal service, such as:

- promoting relevant local content and applications, especially minority language content;
- catering for the needs of persons with disabilities; and
- projects such as connecting rural hospitals to broadband Internet that have the purpose of illustrating the benefits of ICT in key public sectors.

### **PROGRAM 1 - INFRASTRUCTURE DEPLOYMENT FOR BASIC VOICE AND BROADBAND SERVICES**

#### ***The Overall Project Broadband Roll-out Program***

The realistic 5 Year target of the USF Strategy is to reach 99% of population, assuming that problems currently causing hindrance to network deployment (for example in Shan, Kayin, Kachin and Rakhine States) can be resolved. Over half of the uncovered populations (up to 1.8 million) are in townships with problems and contested areas. Most unserved communities beyond the 99% level of coverage, are in the most remote, small population centres.

Table 3 shows the categories of infrastructure projects to be implemented, starting from the pilot program through to Year 2022. The projects target the least covered townships in Year 2, and target progressively areas with higher coverage percentage in following years.

Table 3: Program 1 Projects and Targets							
Project Type	Target approx. no. townships	Main targeted regions	Provisional Annual Targets				
			Year 1 2018	Year 2 2019	Year 3 2020	Year 4 2021	Year 5 2022
Approx. subsidy per unserved inhabitant (USD)			\$23.96	\$17.04	\$9.30	\$16.30	\$7.02
New population coverage			1.0%	1.4%	0.9%	0.4%	0.3%
Final year-end population coverage			96%	97.4%	98.3%	98.7%	99.0%
Approx. USF Subsidy targets (USD M)			10.0	8.9	7.5	7.0	0.4
Pilot project selection of townships	20	Kachin, Chin, Sagaing, Tanintharyi					
Townships with less than 50% coverage	26	Kachin, Kayin, Kayah, Shan,					
Townships with 50-75% coverage	22	Shan, Kayin					
Townships with 76-90% coverage	40	Tanintharyi Sagaing					
Townships above 90% coverage	40	Rakhine, Bago East					
	148						

### ***Piloting***

A preliminary list of **44 townships** has been selected as representing the best possibilities for piloting through detailed assessment and field visits. From the 44 townships, a total of 23 townships have been selected for piloting.

### ***Implementation approach***

International best practice for USFs is to use public competitive tender processes for selecting service providers, and offer a smart subsidy for the provision of specified universal services. The smart subsidy approach and principle is described in Section 3 of the main document.

In general, the Myanmar USF will use a competitive tendering approach for the least amount of subsidy requested, for providing universal service from qualified bidders. This has two elements: first bidders need to demonstrate that they meet the prequalification criteria. During the second stage, only the qualified bidders will have their financial proposals

considered. Among these qualified bidders, the bidder with the lowest request for subsidy is awarded the project.

**PROGRAM 2 – BROADBAND CONNECTIVITY AND ICT TRAINING - ENABLING THE DIGITAL FUTURE**

Program 2 will focus on capacity building, ICT training and digital skills development, and where required, connect educational institutions to broadband Internet.

Based on the analysis and consultation undertaken, Program 2 of the Universal Service Strategy has two sub-components:

- 1. Broadband Internet connectivity and ICT training in schools**
- 2. Digital literacy training in various alternative learning centres and other community institutions, including broadband connectivity where required**

***Broadband Internet connectivity and ICT training in schools***

The main focus will be on high schools. For USF support, it will be important that high schools are either Internet ready or have a partner or other resources to become “Internet-ready” (see explanation in the Strategy Document).

***ICT capacity building in digital learning centres***

The Universal Service Strategy will also support alternative digital learning centres, which provide access to ICT and digital literacy to a wider audience. This shall provide ICT access and training outside of schools, that will benefit not only students but also other non-formal learners and the wider public.

Digital learning centres would need to be institutions that have existing infrastructure, especially in terms of an existing suitable building for training activities, as well as existing training staff. This could include, but not be limited to:

- Public libraries,
- Monastic schools,
- Existing computer training schools,
- Certain government institutions, and
- Non-government organizations.

The USF will fund a range of digital literacy projects, and will have a range of target groups.

***How it will be funded and implemented***

Program 2 will be implemented in two stages:

1. First stage: Annual application process for eligible organizations to make proposals to request funding.
2. Second stage: After the conclusion of the evaluation for the first stage, a list will be prepared with all the locations of the winning applicants

where broadband Internet connectivity is requested. This will then be divided in several bidding lots and a competitive tender will decide which operators and service providers will be selected to supply broadband Internet. The winning service providers will bid for these lots to receive a subsidy.

**PROGRAM 3 - SPECIAL PROJECTS**

Special projects include programs for the following types:

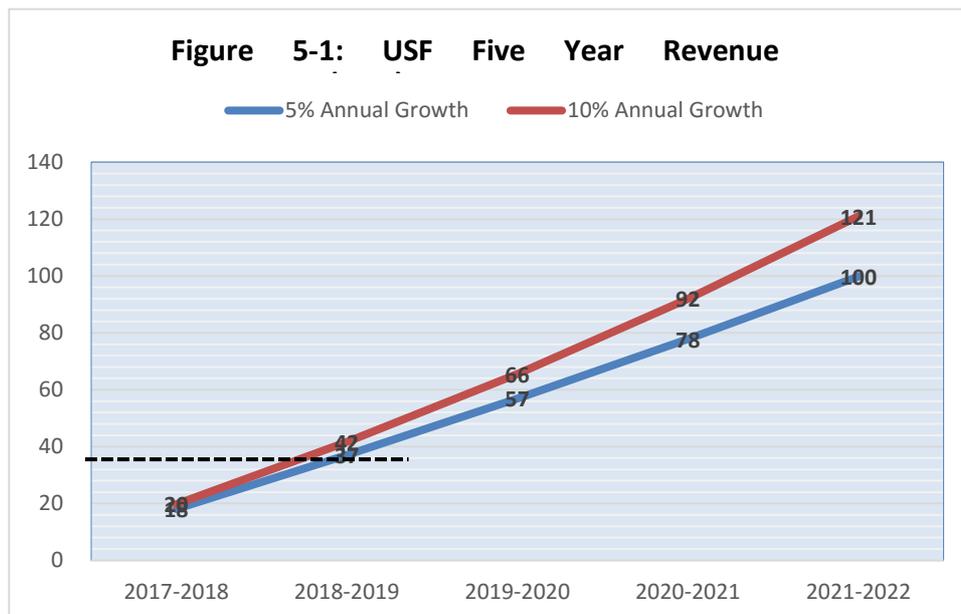
- For rural users and/or lower income groups, including especially for minority languages;
- For disabled people;
- For supporting ICT access and broadband connectivity in certain additional sectors (e.g., health); and
- Other pilot projects.

**USF COLLECTION AND ITS PROJECTION**

Chapter XV in the 2013 Telecommunications Law provides for MOTC to establish the USF and to instruct the PTD to develop its programs. NTL operators are required to pay a USF levy of 2% of relevant revenue on an annual basis to the US Fund.

***USF collection projection***

The estimated collection to the USF over the 5 year planning period is shown in Figure 5-1. Over the initial five years period, the USF would collect between 100 USD and 121 million USD from operator levies. It also indicates that the fund required for the main expenditure program will be collected within the first two years.



***Myanmar's USF funding approach***

International experience shows, a careful balance needs to be achieved between collecting sufficient funds for the needed USF programs, and not setting the USF levy too high. If USF levies are too high, they could affect affordability.

This Universal Service Strategy looks towards achieving this balanced approach. For that purpose, it will monitor during the first few years of the USF, the following:

- Actual USF levy collections;
- USF fund disbursements;
- Program and project financial needs, as well as early impact; and
- Price development and financial health of the telecom sector.

Based on the monitoring results, the MOTC may review, as part of the regular USF Strategy review process, the USF collection.

**MONITORING AND EVALUATION**

The USF and its Universal Service Strategy need a monitoring and evaluation system for the following key purposes:

- To assess if the intended objectives and benefits of the Universal Service Strategy are indeed achieved through the implementation of the strategy;
- To assess if the objectives and benefits are achieved efficiently in terms of costs and administrative efforts; and
- To be able to modify or implement corrective measures in the event that a program meets problems or underperforms.

Monitoring and evaluation is key to the success of the Universal Service Strategy, as it is for any strategy implementation. It needs to commence with an effective acceptance testing program that checks milestone achievements of infrastructure roll-out, service delivery and other program targets. This should be accompanied by baseline surveys to ensure that future monitoring and evaluation can be assessed against conditions existing at commencement of the program.