Universal Service Policy and Its Implementation Strategy

Telecommunications Regulatory Authority (TRA)
Sultanate of Oman

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1 Background

The communications sector in Oman has already been partially liberalised and is in the process of being fully liberalised. However, even in the presence of effective competition some areas of the country are unlikely to be provided with all desirable communications services on a commercial basis so that measures need to be taken to ensure the universal provision of communications services.

In a competitive environment the burden of universal service provision should be shared between operators. At present, telecoms operators in Oman contribute a percentage of revenues to the treasury as contribution towards the costs of providing universal service. The provision of universal service is enshrined in the Telecommunications regulatory Act issued by the Royal Decree No. 30/2002 and the TRA aims to implement measures to further the provision of universal service.

In accordance with the provisions of Article 38 of the Telecommunications regulatory Act issued by the Royal Decree No. 30/2002, the Minister of Transport and Communications ('The Minster'),

> *"in the course to achieve the economic and social objectives of the telecommunications sector and after presentation to the Counsel of Ministers, shall decide the following:*
>
> *1. To expand the telecommunications services and networks in defined areas according to their geographical location, or number of inhabitants; and to establish public telecommunications centers including the installation of public payphones in these areas.*
>
> *2. To specify the basic public telecommunications services which the licensee is obliged to provide to any requesting beneficiary at a reasonable price as decided by the Authority in the service areas.*
>
> *3. To provide maritime telecommunications services.*
>
> *4. To provide telecommunications services to persons with special needs.*
>
> *The Authority shall be notified of the requirements of the universal service specified in this clause, which shall be funded by the Public Treasury pursuant to the provisions of the last paragraph of Article (39) of this Act."*

The role of the TRA in this process, according to the provisions of Article 38 of the Telecommunications regulatory Act issued by the Royal Decree No. 30/2002, is as follows:

> *"the Telecoms Regulatory Authority of Oman ('TRA'), "shall float the services and works stated in Article (38) of this Act in a public tender to be handled according to the same terms and regulations issued by the Authority."*

The purpose of this document ('TRA Universal Service Implementation Policy') is to set out how the TRA proposes to meet its obligation set out above.

2 Universal Service Policy

2.1 Definition of Universal Service

The TRA proposes to take measures in the context of its Universal Service Policy aimed at ensuring the increased availability of a set of communications services in Oman.

2.1.1 Scope of universal service in Oman

The TRA believes that the availability of a set of basic communications services throughout the country is desirable. This set of services ('scope of universal service') will comprise the following services:

- Basic Telephony services (voice) should be provided on reasonable request (either through the fixed and mobile telephony networks).

- Dial-up internet access should be provided at minimum dial-up speeds of at least 28 Kbit/s at the beginning, where practicable (FIA) and the speed should reach minimum 512 Kbit/s within three years of the USO license effective date.

- Broadband services to be provided to institutions (for schools, hospitals, Wali offices, government offices, post offices and police) in a phased approach, by region or area.

- Operator services (directory and fault reporting) should be made available. Fault reporting should be free of charge and directory enquiries should incur an affordable, ideally cost based, charge. In addition, an on-line directory should be provided to consumers free of charge.

- Emergency Service Access; Police, Fire, Ambulance & Coastguard should be available free of charge.

- Public Call Boxes should be provided in hospitals, health centres, police stations and other locations where use of mobile telephones is prohibited.

- Tele-centres – staffed centres where voice[1], fax and broadband internet services are available to members of the public.

- Maritime services: should be provided along the Omani coast line. Implementation through separate tender for the provision of maritime services.

This definition of the scope of universal service reflects the objectives of the TRA, the ITA, the MoTC and other government stakeholders, in particular the 'Digital Oman' strategy which will require wide spread internet access across Oman.

2.1.2 Rationale for the inclusion of services in the scope of universal service

The availability of voice services is now widely regarded as a right for every citizen in developed countries and as a prerequisite for the participation in society. Voice services are required by the vast majority of the population for social, commercial and occupational reasons as well as for safety reasons, especially in remote areas.

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[1] Including operator services and free emergency services.

Internet access is n a pre-requisite for the implementation of the Digital Oman Strategy and access to e-Government services, and it is required for access to markets and information. The TRA believes that broadband internet access is desirable due to its superior quality and speed. At present, broadband internet access for institutions such as schools, hospitals, Wali offices, government offices, post offices and police, is included in the scope of universal service. Dial-up internet services are included in the scope of universal service for any fixed location subscribers.

Operator services are essential to ensure that citizens and businesses can use the Omani communications services to their full potential. Fault reporting should be made available free of charge to incentivise customers to report faults and operators to rectify them. The availability of free access to emergency services is socially desirable as it helps to ensure that emergency assistance can be requested when required.

The use of public call boxes is not wide spread in Oman due to the wide availability of mobile phones. However, in locations where the use of mobile phones is prohibited (e.g. in hospitals, health centres, and police stations) the availability of public call boxes is essential to ensure that basic communication needs can be met in these locations.

The establishment of tele-centres is an additional measure that is aimed at providing communications services to persons who might otherwise be excluded from these services. This may include assisted phone calls for illiterate persons or other persons who have difficulties in using phones. The availability of internet access at tele-centres would give internet access to persons who are not able to afford PCs or other internet enabled devices.

The need for the availability of maritime service along the Omani coast line is an obvious requirement for the safety of Omani and foreign vessels in these areas.

Whereas the TRA's policy of making the above services available applies to all settlements in Oman the implementation of the above will be based on a phased approach based on USO tenders for specified areas as set out in the remainder of this Policy.

2.1.3   Un-served and Under-served Areas

The above measures will be targeted at areas that, to date, remain un-served or under-served. Un-served areas are defined as areas in which no communications services are available. Under-served areas are defined as areas in which some communications services are available but not the entire[2] set of services defined as 'scope of universal service' in this section.

2.2 Selection Criteria for Project Areas

The TRA proposes to target universal service funds at priority areas. The TRA proposes to take into account a number of criteria in selecting priority areas, including the following:

- The presence of institutions such as schools, hospitals, government offices, police stations, and post offices;

- Potential welfare increases through demand (consumer surplus) and economic development potential.

- Current lack of provision of USO services ('un-served' and 'under-served' areas)

- High cost areas

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[2] With the exception of maritime services, unless applicable (in coastal areas).

- Low likelihood of commercial viability.

Given the large number of settlements in Oman (around 5,000) it is important to find a suitable way of operationalising the above criteria in a form that lends itself to database interrogation. The TRA will therefore use a number of variables as measures for the above criteria. This is illustrated in Table 2-1 below.

Table 2-1: Definition of Selection Criteria

Criteria	Measurable Variables
Presence of institutions	# schools # hospitals # government offices # police stations # post offices
Welfare (demand and economic development potential)	- E.g: - population > 20 - AND: at least one institution - Or: Population > 100
Current lack of USO services	Lack of internet services, proxied by lack of fixed line services (settlements with 0, 1 or 2 fixed lines may treated as 'un-served' because a payphone and/or a satellite phone may be included).
High cost	- Distance from nearest exchange < 10 km → low cost 10 – 30 km → high cost > 30 km → very high cost - Mountainous terrain (as per maps of Oman)
Low likelihood of commercial viability	- Exclusion of (mainly coastal) areas that are likely to be covered by commercially viable expansion plans - Exclusion of known development sites (such as Ad Duqm).

Source: PwC

The TRA's database includes detailed demographic data on each settlement. This data was compiled from a number of sources including the Socio-Economic Atlas 2007 (based on the most recent census of 2003) as well as information on the availability of telecoms infrastructure which was sourced from the TRA's MapInfo programme. In addition, information from other sources was added to the database including, for instance, the numbers and locations of government offices, police stations, and post offices. As a result, the TRA can identify priority settlements within the database depending on the criteria listed in Table 2-1 above.

2.3 Execution Mechanism

The primary execution mechanism for the implementation of the TRA's Universal Service Policy will be competitive tenders as stated in Article 38 of the Telecommunications regulatory Act issued by the Royal Decree No. 30/2002. In addition to competitive tenders a number of other mechanisms may be used as supportive measures:

- Licence Obligations on existing operators

- Competition as such (as a mechanism to increase the availability and quality of services)

- Infrastructure provision through state owned networks, especially of duct in roads, etc.

Depending on the delivery vehicles chosen to implement a given USO service or objective, different actions will need to be taken (e.g. issuing tenders, reviewing existing licences, etc.). Some of these actions will be taken as part of the USO programme itself whereas others will have to be taken in the context of adjacent policy areas such as the liberalisation of the access market or Omantel's licence reviews. This is summarised in the table below:

Table 2-2: Services and Delivery Vehicles

Services and objectives	Delivery Vehicle	Action to be taken	Policy context
Access to 'fixed' line, on demand, in settlements of a given minimum size	1. In areas served by Omantel: licence 2. Elsewhere: by tender	3. Maintain Omantel's licence condition 4. Issue tender(s)	Licence review USO
Functional Internet Access (FIA)	5. In areas served by Omantel: licence 6. Elsewhere: by tender	7. Modify Omantel's licence condition from 'data' to 'FIA' 8. Issue tender(s)	Licence review USO
Broadband service availability (2 Mb/s) to institutions	Tender	9. Issue tender 10. Ensure availability of backhaul capacity through Omantel RAO	USO Liberalisation of Access market
Broadband enabled exchanges	Competition	Introduce competition in broadband provision	Liberalisation
Broadband Speed	Competition	Introduce competition in broadband provision	Liberalisation of Access and ISP segment
Payphones	Tenders	Issue tender	USO
Telecentres	Tenders	Issue tender	USO
Maritime services	Tender	Issue tender	USO

Source: PwC

2.3.1 Tendering

The TRA is committed to implementing universal service in a cost effective manner whilst at the same time ensuring high quality standards of service provision for all citizens, businesses, and other stakeholders in Oman. The TRA therefore proposes the following three stage process in the context of USO tenders: the first two stages serve as formal and technical prequalification, respectively. The third stage relates to the subsidy requirement.

- **Stage 1: Invitation and Prequalification** - The TRA issues an invitation for operators to provide the TRA with an Expression of Interest setting out the bidder's qualifications, experience and general suitability.

- **Stage 2: Technical** - The TRA will issue the tender document and assess the submissions received from operators with regard to

    o **Formal criteria** (check of completeness, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Tenders are generally in order. Compliant bidders will pass to the next stage.

    o **Technical and legal criteria** (assessment of technical merits and legal compliance of submissions).

- **Stage 3: Bidding:** From the bidders that have successfully passed the previous stages, the bidder requesting the lowest subsidy will be selected as the preferred bidder.

If contract negotiations with the preferred bidder fail then the next bidder on the short list is to be invited for contract negotiations.

2.3.2 Licence Conditions

The TRA further uses operators licences as instrument in the provision of universal service. Omantel is under an obligation to comply with licence conditions relation to 'System Expansion' which are listed in 'Annex B – System Expansion Requirements' of its licence.

The TRA will use the opportunity of periodic licence reviews to ensure that these licence conditions remain up to date and aligned with the TRA's Universal Service Policy.

2.4 Assessment and Identification of Suitable Technologies

Following a policy of technology neutrality the TRA does not wish to be prescriptive in relation to the technologies that may be used by Omantel and/or other licence holders in Oman.

The TRA's expectation, however, is that due to the nature of the provision of universal services it is likely that widespread use will be made of wireless technologies such as microwave links, CDMA, and WIMAX technologies.

3 Universal Service Funding

3.1 Funding Mechanism

Operators in Oman currently contribute a percentage of their respective revenues towards the implementation of universal service. This amount is paid as royalty into the Omani Treasury. Under the Telecoms Act USO projects are funded by the treasury but USO tenders are issued by the TRA. This will necessitate continued interaction between the TRA and the Treasury. Further complexity will arise from the fact that payments to operators will be contingent on conditions (such as mile stones and QoS levels) which will have to be verified by the TRA.

The TRA believes that the implementation of a universal service fund would be better suited to further the implementation of universal service and to ensure that royalties paid by operators can be allocated to universal service projects in an efficient and timely manner. The TRA therefore favours this approach. Until such time that the required modifications to the legal framework can be made the TRA will use the existing procedures for requesting funds as set out in the following section.

3.2 Procedures for Requesting Funds

The TRA's USO unit will apply for treasury funding for each planned USO project. This application should set out the services to be provided, a high level plan of the infrastructure deployment envisaged, and a calculation of the projected costs and revenues in connection with the project concerned.

The application should also set out the rationale for designing the project in this way and the reason why the TRA believes that the envisaged services are unlikely to be provided on a commercial basis.

We would propose that a Project Requirements Definition (PRD) may be used by the TRA in its submissions in order to ensure completeness and a degree of uniformity across applications. A sample PRD is provided in PwC's Report 3.

3.3 Subsidy Estimation

USO tenders in Oman will primarily relate to the build-out of communications infrastructure in areas where no or little such infrastructure exists. The main components to the costs incurred by the bidder / operator are the following:

- **capital investment** required to serve the area which may include extending the core network, deploying backhaul to a number of settlements, distributing access connectivity to the end customers, and will always include a requirement for a fair return on the capital invested.

- the ongoing cost of **operation and maintenance** which will include maintaining the required engineering staff, the cost of power, repair of damaged equipment, replacement of obsolete equipment, dealing with the effects of a hostile environment, etc.

- Non-network costs, both capital expenditure related for items such as administrative buildings, and non-network operating costs such as HR, Finance, Legal, Customer Care, etc.

Capital expenditure, especially for network related investment, will occur, to a large extent, towards the beginning of the project. The incidence of operating expenditure, on the other hand, will be

spread more evenly over the duration of the planning horizon (say, 10 years), and revenues will typically start once the network is operational and customers have been signed up, and then grow over the term of the project. The TRA proposes to use a standard discounted cash flow (DCF) approach as a measure for the total costs, revenues and hence subsidy requirements.

The subsidy estimate for a given USO project would be equivalent to the absolute value[3] of the Net Present Value (NPV) of this project.

3.3.1 Economic and Financial Model

The TRA proposes to use an economic and financial model with a view to estimating the likely subsidy requirements. The model calculates the costs associated with the capital expenditure associated with network roll out as well as the non-network costs which a new operator would need to incur in establishing an operation on Oman. The model allows the user to specify the number, length and type of networks links required to serve the project area. The model then uses cost functions for the different types of technology in order to assess the costs of building the various fibre, microwave and other links, including civil works and equipment costs.

Our revenue modelling is based on the number of households and businesses in an area to be served and take-up assumptions for each group of services to be provided. Pricing assumptions should be in line with the safeguard caps specified in the respective tender document.

3.4 Timing of Payments and Operational Sustainability Provisions

In order to ensure the operational sustainability of USO projects the TRA will take a number of measures including the following:

- Subsidy payments will be made over a period of [10 (ten)] years, at the end of each year. The maximum proportion payable at the end of year 1 will be [40% (forty per cent)] of the total subsidy. The remainder will be paid in equal instalments at the end of each of the following [9 (nine)] years.

- Use of performance bonds to generate high incentives for operators to ensure timely completion of rollout and high performance standards of operation.

- Transfer of licence will be possible in case of continued licence breach, bankruptcy, or dissolution of a USO operator.

- Transfer of infrastructure associated with a USO licence will be possible in case of continued licence breach, bankruptcy[4], or dissolution of a USO operator.

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[3] As USO projects tend to be commercially non-viable the NPV of all cash flows is assumed to be negative.

[4] After creditors' claims have been met.

3.4.1 Monitoring, reporting and evaluation of USO projects

The TRA's USO Unit will be responsible for the management of USO projects, including the monitoring of these projects, will comprise the following areas:

- Agreement of detailed project plan with selected operator: as part of the negotiation with the preferred bidder, the TRA would agree on a detailed project plan for the USO project in question, including the definition and timing of mile stones such as start of network rollout, interconnection, testing, etc.

- Monitor monthly updates to be received from operator: the USO operator would be expected to provide the TRA with monthly updates on progress and, in particular, on any delays and the remedial course of action proposed.

- Monitor licence compliance: the USO operators' compliance with their respective licences would be monitored in line with the TRA's procedures for monitoring licence compliance.

- Make subsidy payments: the TRA would disburse annual subsidy payments to USO operators conditional on the relevant mile stones having been met, and on licence compliance.

- Internal reporting within TRA (to Senior Manager USO, the USO Steering Committee, and the Members): the TRA would ensure that reporting mechanisms are in place to support the smooth running of USO projects from conception to operation.

4 Strategy for implementing the Universal Service Policy

4.1 Type of Licenses awarded to the USO operator:

The TRA intends to use promote the deployment of communications infrastructure through its Universal Service Policy. Consequently, under the current licensing regime, USO providers would need to obtain a licence for infrastructure based operators, i.e. a Class I licence. It is envisaged that a USO licence will entitle the respective operator to provide Class I communications services within the area specified in the licence. In addition, USO operators may apply for the right to provide communications service within other parts of Oman against payment of the applicable fees.

4.2 Tariff Regulation

In order to avoid potential abuse of market powers by USO operators the TRA proposes to impose safeguard caps. As detailed cost information is unlikely to be available for the USO operators in question the TRA proposes to set safeguard caps with reference to Omantel's retail prices (Omantel's costs are not directly relevant either because USO project areas tend to be higher cost areas). Safeguard caps will cover a set of basic services including line rental, local and national calls, international calls and broadband services. The USO operator's prices for these services will be capped at the level of Omantel's retail prices for these services.

The USO operators' licences will state that price caps apply. The price caps themselves will be specified in the form of a separate price regulations setting out the regulated services and their respective applicable prices.

4.3 Royalty and Fees

USO licence holders will pay to the government of the Sultanate of Oman a percentage of the Licensee's Gross Revenues (including the subsidies received) as a Royalty each year during the License Term, with each annual Royalty calculated on the basis of revenues realised through 31 December of the relevant year and paid before 30 January of the following year. The Royalty shall be proportionately calculated with respect to the first year of this license.

The Licensee will not be required to pay a license fee for a USO licence.

4.4 Allocation of Frequency Spectrum for USO

The TRA believes that the availability and efficient use of suitable spectrum will be crucial for the development of Universal Service Policy. In particular, the TRA would expect that spectrum requirements for the provision of universal service are likely to include spectrum from the following bands:

- WLL bands

- Wimax bands

- Microwave backhaul

- Maritime services.

At present, the TRA proposes to reserve spectrum for this purpose as set out in the table below.

Table 4-1: Estimated requirement ranges for different frequency bands

Frequency Bands	Technology	Bandwidth Available	Bandwidth Required	Bandwidth Remaining
2025-2070 MHz	CDMA WLL Voice and Broadband	45MHz	7.5 MHz	35MHz
3300-3400 MHz	WiMax	100 MHz	22 MHz	56 MHz
27.5-29.5 GHz	Maritime Services			

Source: TRA

Additional and/or different spectrum may be allocated to USO operators in the light of their respective tender submissions, technology choices, and demand developments.

The USO operator will be entitled to use the spectrum in question within the USO area specified in the licence for the USO project concerned. In addition, the operator may apply separately for use of this spectrum outside this area.

The table below shows the available bands to be utilized for USO purposes in the Sultanate of Oman at the time of writing this Policy.

Frequency band	Available spectrum	Remarks
2025-2070 MHz	7.5-10 MHz	Main focused band. Shall be shared among USO operators (see comments below)
3.3-3.4 GHz	14x2 MHz	Main focused band. Shall be shared among USO operators (see comments below)
5.470-5.725 GHz	255 MHz	Wireless Access Systems (incl. RLANs). Exempted band (Decision No.198/2007)
5.725-5.850 GHz	125 MHz	Fixed Wireless Access Systems. Exempted band (Decision No.198/2007)
10.15-10.30/10.50-10.65 GHz	Partially available	Adequate band can be assigned on request provided that persuasive technical justification is provided by the USO operator
24.5-25.5/25.5-	Partially	Adequate band can be assigned on request provided that persuasive technical justification is provided by the USO

26.5 GHz	available	operator
27.5-28.5/28.5-29.5 GHz	Partially available	Adequate band can be assigned on request provided that persuasive technical justification is provided by the USO operator
31.0-31.3 GHz	Partially available	Adequate band can be assigned on request provided that persuasive technical justification is provided by the USO operator

Source: TRA

The minimum required bandwidth for a given USO project tender shall be estimated, justified, and requested for each tendered group of un-served settlements by the bidders when the appropriate tender is floated. The selection of suitable technologies in the tendered bands is up to bidders. To guarantee the efficient spectrum utilization and compatible operation of access networks in adjacent areas and overlapping bands the USO operators of adjacent areas in overlapping bands need to coordinate their networks mutually and develop bi-lateral agreement that will be deposited in the TRA.

4.5 USO programs Administration

The TRA will establish a Universal Service Department within the TRA that will be responsible for the identification of universal service projects, the calculation of the costs and subsidy requirements associated with such projects, the issuance of tender documents, the selection of operators, and the disbursement of funds to the operators concerned. The USO Department's responsibilities also include the monitoring of the implementation of USO projects and reporting.

The activities of the USO department will be guided by a set of Operating Procedures.

5 Miscellaneous

5.1 Omantel Obligations to Facilitate Interconnection with USO Operators

Omantel will be required to grant negotiate interconnection arrangements with winners of USO tenders and with USO licence holders. In this respect Omantel will comply with the relevant provisions of the Telecommunications Act and Omani interconnection regulations.

In addition to the Points of Interconnection (PoI) currently offered in Omantel's Reference Access Offer (RAO) Omantel will be obliged to provide, upon request, interconnection to universal service licence holders at any Local Exchange and virtual interconnection at any Remote Switching Unit to serve the respective USO Project area.

In other respects the conditions and procedures of interconnection will be governed by and interconnection reference offers (RIO and RAO).

5.2 The Costs of Interconnection

Payments for the establishment of interconnection link and for the provision of interconnection services will be made between Omantel and USO operators on the basis of the tariffs set out in Omantel's reference offers (RIO and RAO).

Where Local Exchanges or RSUs have been upgraded in order to be enabled for interconnection or virtual interconnection Omantel shall be entitled to levy cost based charges for interconnect circuits to the requesting USO operator.