

The Regulator's Toolkit

NTC-ITU Workshop on Telecommunications Policy and Regulation for Competition

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Competition: Key Regulatory Challenge

Managing the legacy to create an enabling competitive framework

- Legal & Contractual Legacy
- Institutional & Attitudinal Legacy
- Network legacy
- Technical Legacy

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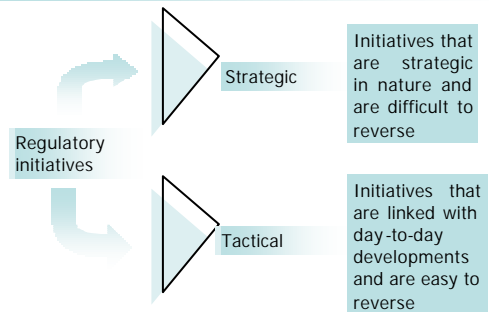
Key Competitive Challenge

Stakeholder preparedness

- **Information preparedness**
 - Data of legacy networks in terms of costs, revenue, traffic, network capability
 - Consultation process and regular reporting requirement is a good data acquisition strategy
 - Preparedness in terms of future regulatory initiatives
- **Attitudinal preparedness**
 - General behaviour of incumbent to deter / delay competition while general behaviour of new entrant to demand concessions
 - Competition can manage legacy better than regulatory intervention
 - Micro management by the regulator necessary for regulating
 - access to bottleneck facilities e.g. interconnection, spectrum
 - in consumer interest, e.g. USO, Quality of Service, Equal Ease of Access
 - Transparency in regulatory attitude would reflect strength and credibility
- **Technical preparedness**
 - Judgement of technical preparedness of existing networks is important
 - Regulatory requirements necessitating technical upgradation raise disputes on sharing costs and involve long time frames
 - e.g. cost of implementing equal ease of access (Preselection, Call – by- Call Selection), Number Portability

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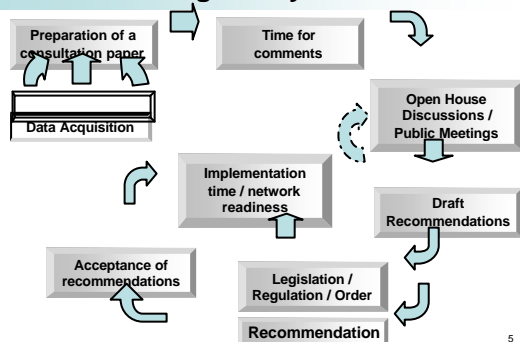
The strategy factor



Strategic initiatives generally have strategic response

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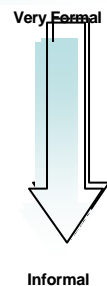
General Regulatory Procedure



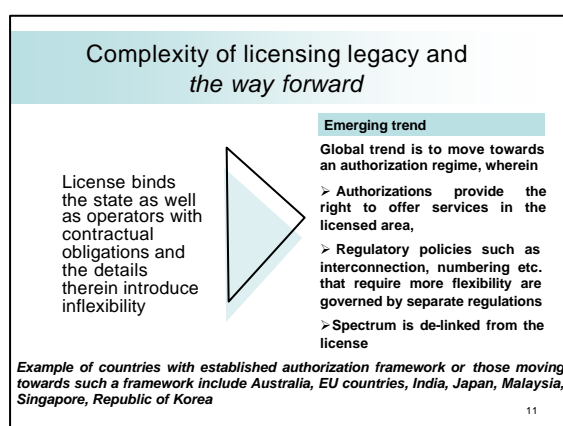
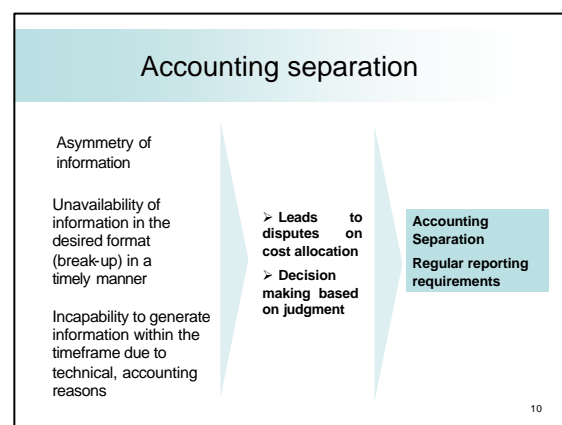
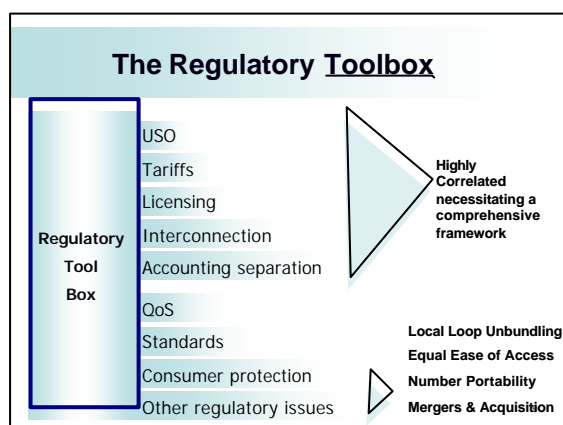
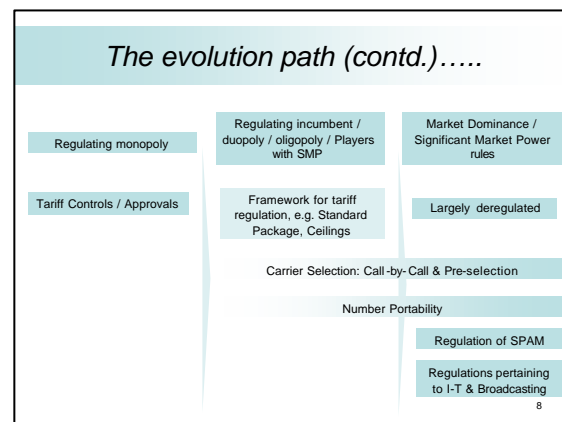
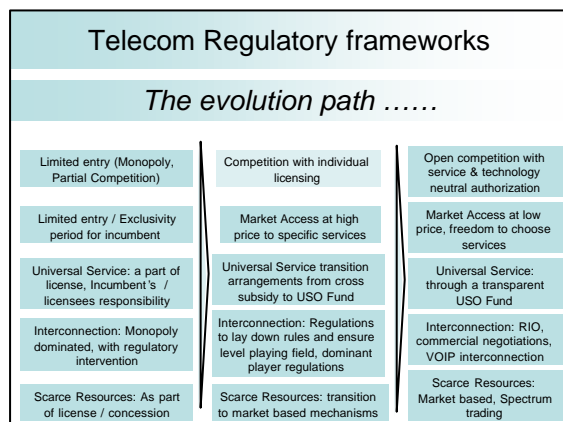
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Manifestation of regulatory decisions

- Legislation
- Licenses / Concessions
- Regulations
- Orders / Directives
- Mutual Agreements
- Codes / Guidelines
- Press Releases
- Prevailing Business Arrangements



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Annual non spectrum License fees

Country	Annual non-spectrum license fees	Fee type	Advance type
Austria	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Belgium	1% of gross revenue	Revenue sharing	Mobile
Denmark	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
France	Variable based fee	Revenue sharing	40% revenue
Germany	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
India	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Japan	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Malaysia	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Portugal	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Spain	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Sweden	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Switzerland	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
UK	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
USA	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
South Korea	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Singapore	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Taiwan	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Thailand	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Philippines	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Indonesia	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Vietnam	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Myanmar	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Laos	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Cambodia	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Burma	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Nepal	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Bhutan	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
Maldives	0.1-0.2% of gross revenue	Revenue sharing	40% revenue
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Interconnection

Interconnection always existed, but then what makes it such a disputed issue now?

Most regulatory authorities have a cost model for the purpose.

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What's new in Interconnection?

- In a monopoly situation, the commercial settlement of bulk traffic does not affect the interconnecting Service Providers;
- However, in a competitive situation,
 - It is a forced agreement between competitors;
 - Interconnection charges are recovered from the competitor's customers and hence gets reflected in competitor's tariffs rather than one's own;
 - Poor quality of interconnection affects competitors quality as well
 - It is a very complex analysis as the parameters governing interconnection terms & conditions (traffic, tariff, subscriber base) are themselves dynamic.

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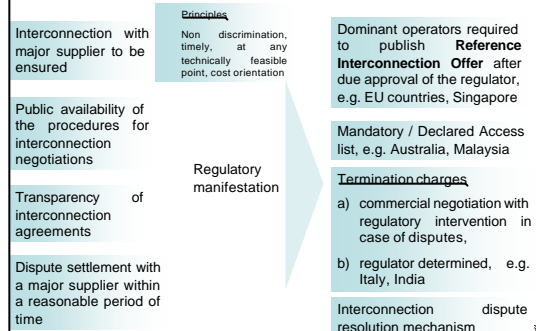
Key issues in Interconnection

- While there is competition in origination, termination is always a monopoly,
 - Regulation of termination charge is a key regulatory agenda
 - Most of the disputes are in and around inter-connection
- The interconnection policy influences the choice between build and buy for operators
 - Network based competition Vs Service based competition
- How to determine interconnection charges?
 - Basis for interconnection charges (Regulator determined cost based principles Vs Mutual agreement)
 - Costing approaches models (Full Cost Vs. Incremental Cost)
 - Accounting practice (Historical Vs Current)
 - Modeling (Top Down Vs Bottom Up)
 - International benchmarks
 - Domestic benchmarks

Most regulatory authorities have a cost model for the purpose.

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Interconnection: WTO Reference Paper



Spectrum Policy: Deciding the objective

Policy objectives

- Promote spectrum efficiency;
- Simplicity and transparency;
- Cost recovery;
- Reflecting market value of spectrum;
- Promoting competition;
- Increasing rural roll out;
- Raising government revenue

Key concerns

- Rising demand for mobile services and growing applications impose pressure
- Concentration of market power in hands of those having higher amount of spectrum
- Hoarding of spectrum & inefficient use
- Large amount of mobile spectrum used by other government agencies such as defence

In the telecom sector, the most hotly contested spectrum bands have been those relating to mobile communications 800/900/1800/1900/ 3G.

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Spectrum allocation & efficiency

Spectrum Allocation

- Initial allocation
- Additional allocation

Spectrum Pricing

- Administrative pricing
- Auctions
- Cost based

Ensuring efficient usage of spectrum

- Technical criteria
- Economic criteria

Spectrum re-farming & Surrender

Legacy issues

- Spectrum already allocated difficult to retrieve even if it is used inefficiently

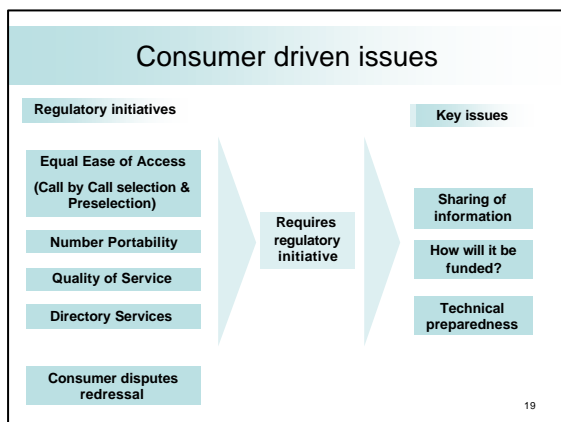
- Previous cost of spectrum allocation often a precedence

Trends

- Increasing use of market based mechanism to address spectrum allocation and pricing

Visit ITU spectrum fee database (68 countries) at http://www.itu.int/ITU-D/study_groups/SGP_2002-2006/SFDatabase/index.asp

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'Strategic' - 'Tactical'		
Regulatory issue	Strategic initiatives	Tactical initiatives
Interconnection	RIO, Access Charge Regulations, Costing Principles	Availability of POI, POI disconnection issues, co-location issues
Universal Service	Universal Service Policy, Choice of funding mechanism, Coverage Plan	Periodical monitoring of contracts
Licensing issues	Licensing framework, Fees, interpretation of license	Compliance monitoring
Consumer issues	Equal ease of access, Ombudsman, Number Portability	Addressing individual complaints, Investigations
Accounting Separation	Deciding the format and reporting mechanism	

'Strategy' factor: *C*hallenge of Convergence

Internet Telephony

- > The gap between PSTN and Internet Telephony is filling up fast, raising regulatory implications
 - > Interconnection
 - > Quality
 - > USO
 - > Numbering

Content & I-T applications

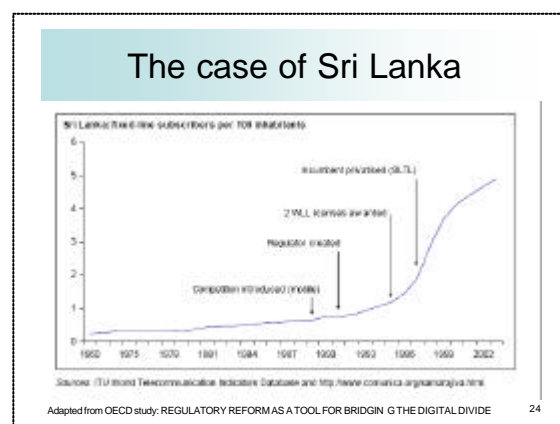
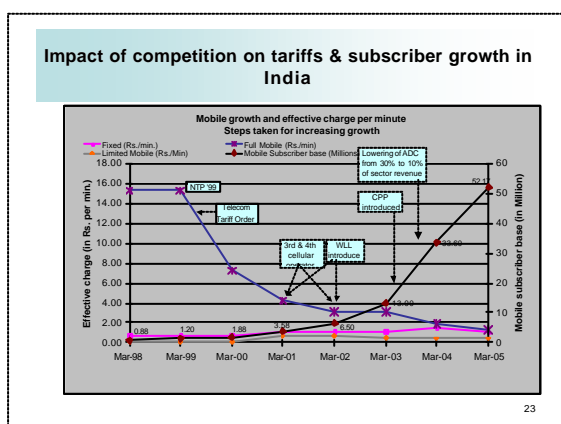
The use of common telecommunication carriage to deliver services beyond voice is now enhancing the number of stakeholders in the sector. While on one hand it increases the size of the sector, on the other it entails overlap of regulatory frameworks.

e.g. if USO includes Internet Services and provides e-governance, e-learning services, should it be funded from general TAX?

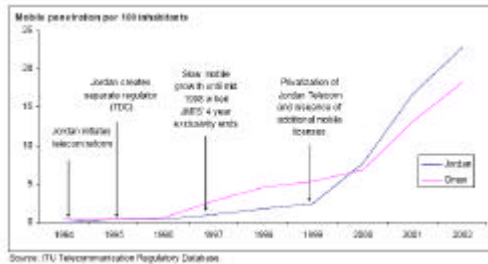
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Impact of competition: Evidences

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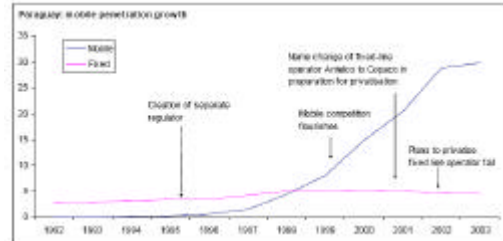
The case of Jordan



Adapted from OECD study: REGULATORY REFORM AS A TOOL FOR BRIDGING THE DIGITAL DIVIDE

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The case of Paraguay



Adapted from OECD study: REGULATORY REFORM AS A TOOL FOR BRIDGING THE DIGITAL DIVIDE

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The 'Strategy' factor

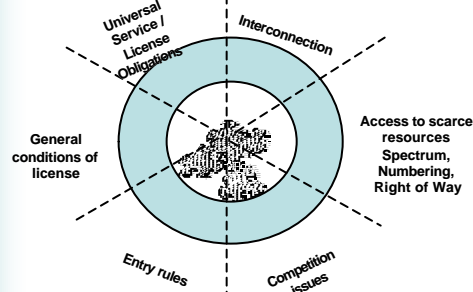
- **A strategic regulatory decision is a long drawn process and also has a long term effect**
 - e.g. terms & conditions of license, interconnection agreement
- **Not only is the quality of decision important but the perception and acceptance is equally important;**
- **Mostly, Regulatory decisions result in redistribution of revenue amongst stakeholders (in some cases it expands as well), and thus there would always be gainers and losers,**
 - An assessment of the impact would provide the likely reaction (strategic / tactical)
- **Market is the first choice as a decision maker, but timely regulatory intervention is a must where markets are likely to fail or exhibit inordinate delays,** e.g., negotiating interconnection between unequal players, access to spectrum
- **Regulatory decisions require objective analysis of data, but acquisition of data is often a long, tedious and disputed process,**
 - Creating the requirement to keep all data

Regulatory evolution

The case of India

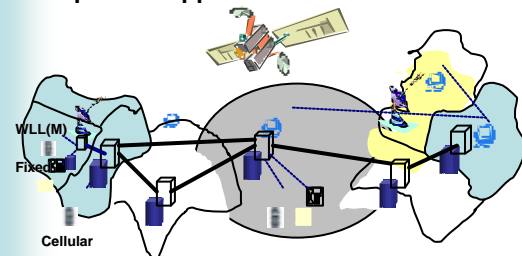
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What are the elements of the framework?



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A phased approach to Unified License



Phase 1: Unified Access Service License (Unification of Fixed, WLL(M) & Cellular)

In the first phase only the access segment of Basic (Fixed & WLL(M)) and Cellular were combined as these remained confined within the license areas and did not clash with the licensing terms & conditions of National and International Long Distance

Phase 2: Encompasses all types of services through a hierarchical license structure

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Entry Conditions

Monopoly until 1994

National Telecom Policy 1994 announced start of Duopoly in Fixed & Mobile, National & International Long Distance still a monopoly

Duopoly introduced in Cellular Mobile & Fixed Service (1994 -98). Licenses granted through auctions. Unsustainable bid amounts

New Telecom Policy 1999 envisaged opening up of the sector to further competition. End of duopoly. Policy to migrate to revenue share.

Two more cellular licenses granted in 2001 (1 auctioned and 1 granted to govt. owned incumbent). Open competition in fixed & long distance services on payment of a fixed fees

Unified Access License introduced in 2003. Fixed entry fees. Freedom to choose technology

Unified License proposed. Freedom to choose service. Entry fees to be reduced to nominal levels in 5 years

Annual License fees

In duopoly, annual license fees was decided by the amount bid by the licensees

In 1999, the annual License fees fixed at 15% of Adjusted Gross Revenue

In 2001, the annual license fees was reduced to 8 - 12% depending on the license area (including USO ~ 5%), National & International Long Distance 15%

In 2003, the license fees for cellular mobile services reduced to 5 - 10% depending on the license area (including USO ~ 5%)

In the proposed Unified License framework, Annual license fees is proposed as 6% (including USO)* (except some excluded categories)

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Interconnection framework

Regulations / Determination covering

- > Timely availability
- > Interconnection charging
- > Technical issues pertaining to routing and handover
- > Maintenance of Interconnect Register
- > Publishing of RIO
- > Provision of Equal Access

Fixed - Mobile interconnection: one of the most contentious issues in India

A separate Tribunal (Telecom Dispute - Settlement Appellate Tribunal) has been set-up where the decision of the Regulator can be challenged and the disputes between service providers can be resolved.

<http://www.tdsat.nic.in>

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Interconnection Charges

Pre 2003 (Revenue Share)

- > Fixed - Fixed
 - > Local : Bill & Keep
 - > National Long distance
 - > (Orig.) 60:40 (transit & term)
 - > International Long Distance
 - > (Orig.) 45:55 (transit & term)
- > Fixed - Mobile
 - > Receiving (Mobile) Party Pays regime (RPP / MPP)
 - > Mobile calls treated as retail calls

Post 2003 (Interconnection Usage Charges)

- > An IUC regime specifying the carriage (distance based slabs) and termination charge for Fixed & Mobile networks was specified
- > A transitory regime of Access Deficit Charge was put in place;
- > Migration to Calling Party Pays regime
- > Termination charges same for fixed and mobile services

> Details available at
<http://www.trai.gov.in/regulation/29thoct2003.htm>
<http://www.trai.gov.in/regu6jan05.pdf>

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Access to Scarce Resources

Service specific licenses

Spectrum
 > Spectrum granted as part of Basic & Cellular licenses
 > Annual spectrum fees varied from 2% - 6% of revenue based on the amount of spectrum

Numbering

> Fixed and WLL(M) had geographic numbering while Cellular had non geographic numbering

Unified Access Service License (UASL)

> No change in Spectrum policy
 > Migrating Service Providers not granted any spectrum
 > Spectrum allocation to be dealt in a separate spectrum policy

> New non geographic number levels were opened for UASL subscribers
 > Huge migration of WLL(M) to Cellular

New Spectrum Policy (Proposed)

> Spectrum has been de-linked from the Unified License framework. A separate set of recommendations is presently under consideration of the Govt.
 > Spectrum License fees (Annual) to be reduced to 4%
 > Spectrum allocation criterion for both GSM and CDMA operators to be technology neutral
 > IMT-2000 2GHz spectrum allocation to the existing operators as extension of 2 GHz spectrum allocation
 • No one time entry fee
 > Additional annual per MHz charge till service provider rolls out IMT-2000 services.

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USO / Roll Out Obligation/ADC

Service specific licenses

USO Policy
 > USO funded through a separate USO Fund
 > Administered by USO Fund Administrator

Roll out obligation

> Basic Service Providers & Cellular Service Providers had roll out obligations of varying degree (Basic being more stringent)

Unified Access Service License (UASL)

> No change in USO Policy on account of UASL implementation

> Roll out obligation of UASLs made same as that of Cellular Service Providers

Unified License (proposed)

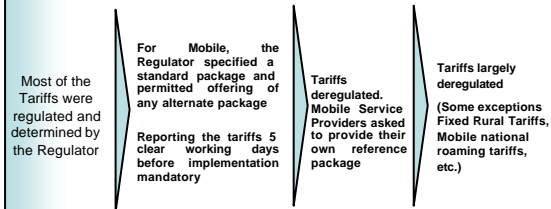
> No change in USO Policy on account of UASL implementation

> Change in roll out conditions of National Distance Operators on account of new migration

A transitory Access Deficit Charge regime to fund the below cost rental of the incumbent

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Tariffs



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Key success factors

- Managing legacy through informational, attitudinal and technical preparedness
- Sequencing the regulatory initiatives based on a strategic plan and the estimated time frames for each initiative
- Building up a transparent information sharing and decision making mechanism
- Developing the right internal expertise

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Thank you

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