Historical Perspective of Regulations under TRAI Act 1997 and Future Trends

K. Sridhara
Member (T), TC
Regulation Vs Growth
Regulation Vs Growth

**TELE DENSITY**

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<th>Pre TDSAT</th>
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TRAi Act 1997

Salient Features

➢ Enacted under Act of Parliament on 28 March 1997

➢ Chairman and not less than two Members but not exceeding six members

➢ Need and timing of new services

➢ License conditions

➢ Interconnect Issues

➢ Monitor Quality of Service

➢ Tariff

➢ Dispute resolutions
Salient Features

➢ Chairman and not more than two whole time and not more than two part time
➢ Functions redefined and expanded
➢ Dispute settlement given to TDSAT
➢ Amendment quite extensive
➢ Qualifications for Chairman was also redefined
Four/Five Functions

- Policy Making
- Licensing
- Regulation
- Operations

Traditionally all over the world these functions were rolled into one department, including in India. In India these were in DOT.

With Liberalization another function has been added i.e. Dispute Resolution
Important Policies and Acts

➢ National Telecom Policy 1994
➢ TRAI Act 1997
➢ National Telecom Policy 1999
➢ TRAI Amendment 2000
### Regulations by TRAI

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### Consultation Papers by TRAI

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Important Regulations

➢ Interconnection (Charges and Revenue Sharing)
➢ Interconnection Usage Charges
➢ Quality of Services (QoS)
➢ Tariff Regulation
➢ Regulation on Unsolicited Commercial communication
➢ Regulations on Broadcasting and Cable services
➢ Consumer protection and redressal of Grievances
➢ Consumer Education and Protection
Important Consultation Papers

- Calling Party Pays (CPP)
- QoS
- Numbering Plan
- IUC
- Introduction of Net Telephony
- Domestic Long Distance Communication
- Next Generation Network (NGN)
- Broadcasting and Distribution of TV Channels
- Billing Issues
- Transition from IPv4 to IPv6
- Licensing issues related to DTH
- Resale of IPLC
- ADC
- HITS
- IPTV
Process of Issuing Regulation

➢ Receive Request from DOT/Govt or Suo Motto
➢ Trigger the Consultation Process
➢ Have in-house discussion
➢ Prepare the draft
➢ Get the requisite approval
➢ Issue Regulation
Seven Future Regulatory Challenges

1. **Adaptability in Regulation:**
   - Slow adaptability
   - Medium Pace
   - Quick adaptability
   - Now technology changes faster than laws

2. **Infrastructure sharing**
   - No Sharing
   - Passive
   - Active
   - Airtime
   - Dynamic Allocation of Spectrum

3. **Services**
   - Voice Centric
   - Data Centric
   - Multiplay Centric

4. **Regulation**
   - National
   - Regional
   - Harmonisation
Seven Future Regulatory Challenges

5. Licencing
Technology Rigid → Universal → Delicencing → No

6. Tarriff
Fixing → Ceiling → Forbearance → User preferred

7. Spectrum
Technology → Services → Harmonisation
Today’s Network Infrastructures

1. Management
   - Switching
   - Transport
   - Access
   - PSTN/ISDN

2. Management
   - Switching
   - Transport
   - Access
   - MOBILE TELEPHONY

3. Management
   - Switching
   - Transport
   - Access
   - DATA/IP

4. Management
   - Switching
   - Transport
   - Access
   - CABLE TELEVISION
Vertical Integration to Horizontal Integration

Current
Vertical Integration of network and services

Evolving
Horizontal Integration of network and services

- Connectivity
- Communications control
- User applications

Wireless Networks
Wireline Networks
Data/IP Networks
Cable TV Networks
Convergence of Regulation

Technology

Economy

Services

Regulation
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Technology \(\rightarrow\) Services \(\rightarrow\) Harmonisation
Spectrum Inflexibility

applications

ownership

spectrum
Harmonisation of Vs. Liberalisation

- Homogenous network (GSM) - Simplicity
- Heterogeneous Network (Wi-Fi, Bluetooth) - Complexity
Convergence of Devices & Technologies

maximise user utility
Dev_1
dev_2
...

device

access technology
tech_1
tech_2
tech_3
...

core network

Converged connectivity
Intelligent Devices

- scan the environment
- measure power density levels
- decide on access technology
- decide on transmit power
- decide on rate/modulation
- antennas – MIMO, etc
Spectrum Masks

- **in band**
  - EIRP/MHz

- **Out of band**
  - (1 MHz BW)
  - (30 KHz BW)

frequency, MHz relative to the centre of a 5 MHz block
Spectrum Trading

Broker

licence-exempt

Central Controller

Devices

licensed
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Thank You