# Role of National Institutions in Telecom Standards- Discussion

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# Background

- **Indian Telecom Market**
  - Second largest in the world
  - Telecom identified as one of the drivers of inclusive economic growth
  - Large investments planned in expanding the sector
- **Indian Telecom Industry**
  - Fewer products made in India – large part is still imported
  - High outflow of Foreign Currency
  - Only country in the top telecom markets with no umbrella body focusing on standards
  - No common interface to represent Indian industry and requirements in global forums

# Global Scenario

- Nations are becoming increasingly aware of IPR and use their IPR reserves to position trade policy
- China – good example
  - Has pushed its IPR in major 3G/4G standards
- We need to prepare India to lead future generations of technology
  - Indian IPR
  - Indian requirements

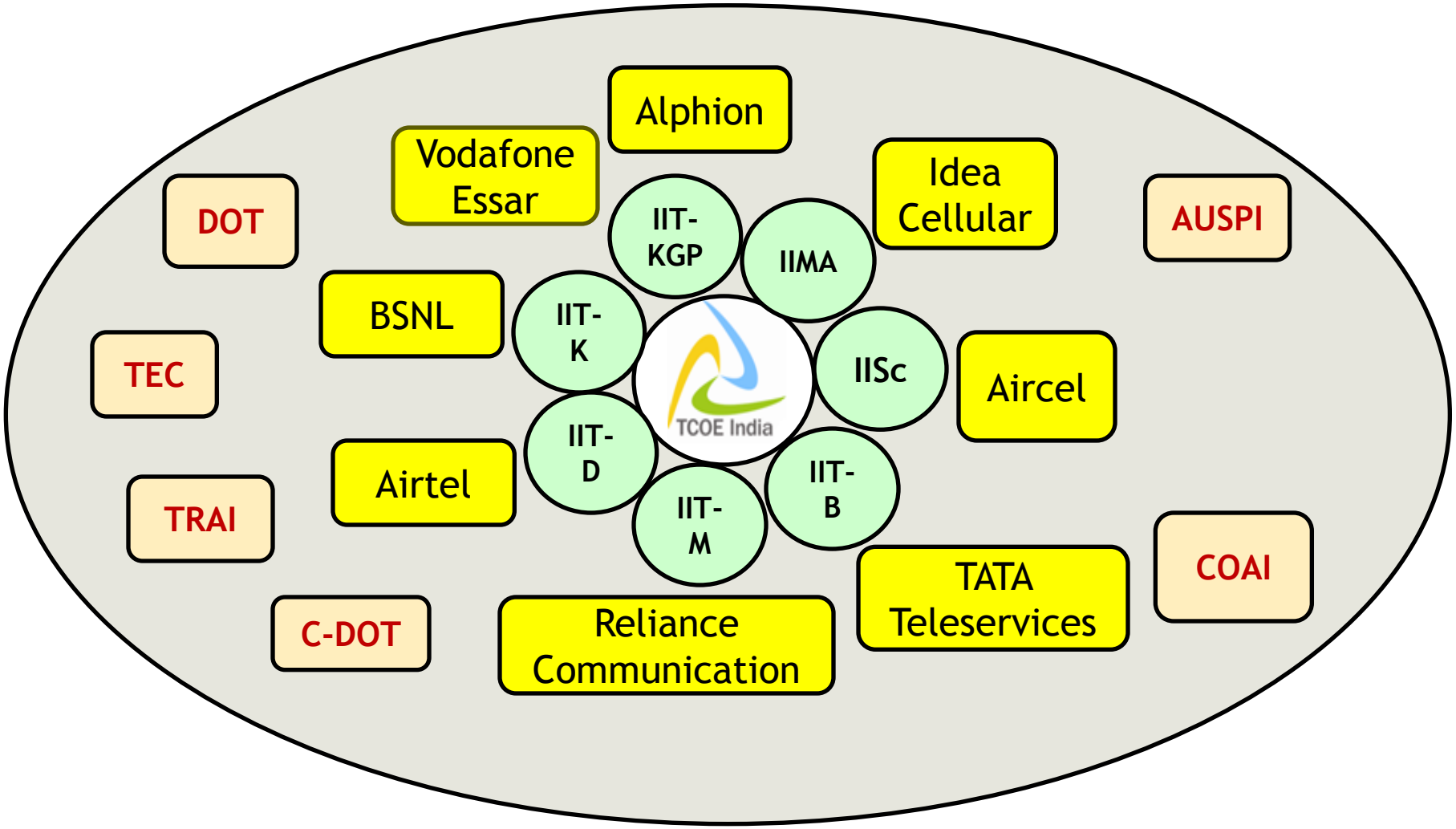
# Indian Efforts

- **Centre of Excellence in Wireless Technology (CEWiT)**
  - A PPP initiative of DIT and industry set up in 2005
  - specifically to focus on increasing Indian presence and IPR in international wireless standards
- **Telecom Centers of Excellence (TCOE)**
  - An initiative by DoT and setup in PPP mode in IITs, IISc and IIMA in 2008
  - Accelerate technology development, generate IPR and make contributions to standard bodies

# Recent Contributions from India in Global Standards

- **IEEE 802.1 (carrier Ethernet) leading the effort on 802.1Qbf**
  - TCOE of IIT Bombay
  - Tejas Networks
- **IEEE 802.16m (WiMAX)**
  - India now holds some essential patents
  - More than 20 contributions by CeWiT and IIT Madras in Physical layer
    - An entire new MIMO mode to take care of high-interference scenario in India
    - An alternative to femto cells in Indian context
- 14 contributions by IIT Bombay in Bandwidth reservations, QoS, Relay

# TCOE India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TRAI
IIT-M
TATA Teleservices
COAI
C-DOT
Reliance Communication

# CEWiT

- Supported partly by industry
- Extensive Collaboration with industry

# Telecom Standards

- Standards are defined by industry forums, research labs and academia
- Major standards bodies
  - 3GPP/2, IEEE, IETF
  - Forums like WiMAX forum, Metro Ethernet Forum, MPLS Forum etc
- Role of ITU
  - Mostly performing consolidation task of work being carried out in other forums

# Indian Presence

- **Modest (practically nil till recently)**
  - CeWIT, TICET IIT Bombay and Tejas Networks among few exceptions
- **Indian presence in major wireless standards bodies 3GPP, 3GPP2 meagre**
  - Requires participant to be a member of a partner SDO of 3GPP/3GPP2 to participate
  - With no India SDO participation, CEWiT, et al have become members of ETSI or TIA to participate
    - Not a scalable model
  - Need Indian SDO which can become partner in major standards forums

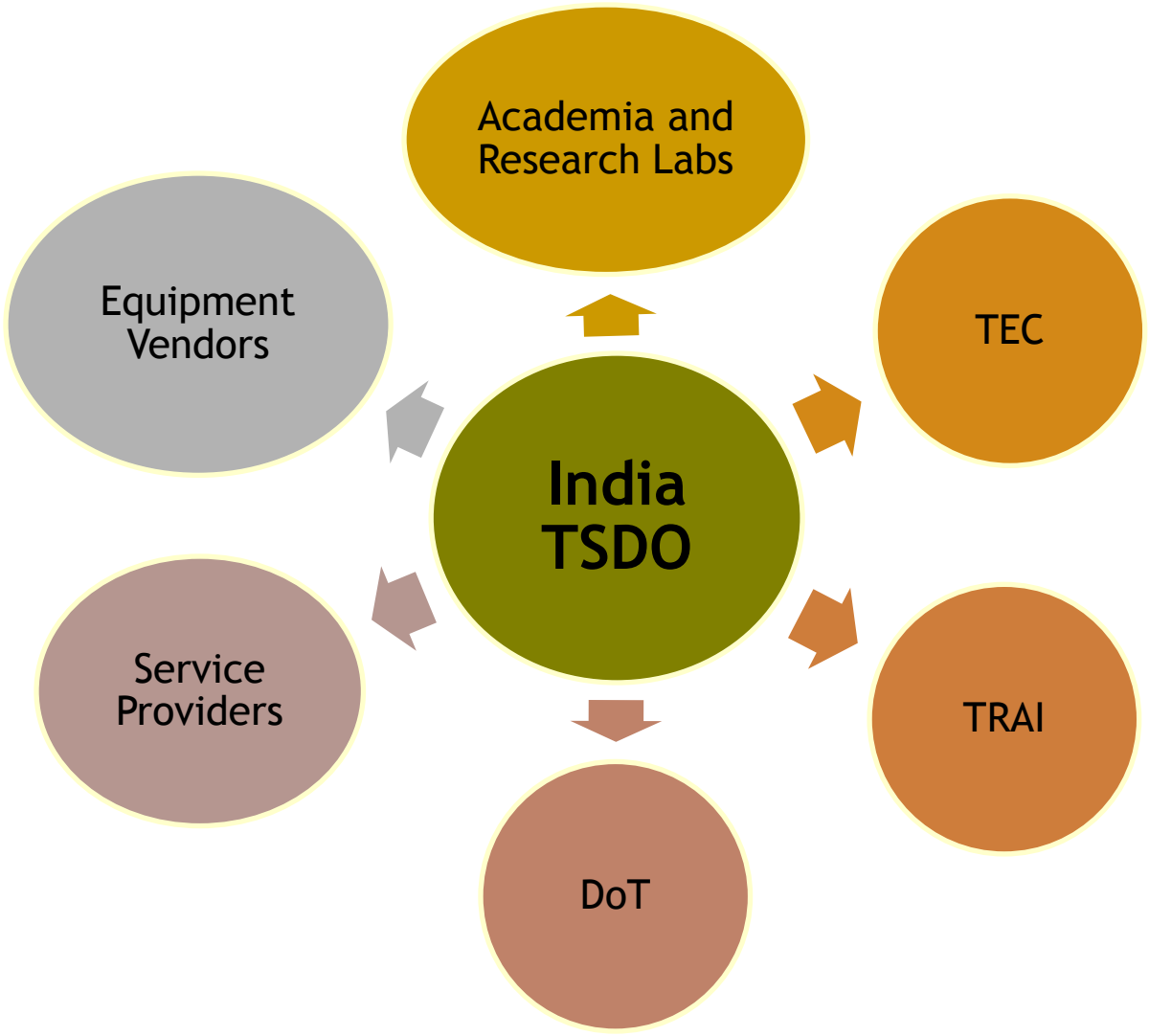
# What model to adopt?

Example of SDOs in advanced countries

| Country | SDO/ Standards Body | Model |
|---|---|---|
| US | TIA (Telecom Industry Association) | Industry consortia (Part of Trade Association) |
| Korea | TTA (Telecommunications Technology Association) | A private-sector-driven international IT standardization association. |
| Japan | ARIB & TTC (Association of Radio Industries and Businesses) & (Information and Commn Tech Committee) | Association of companies. |
| Germany | DIN (The German Institute for Standardization) | Registered non-profit association. By agreement with the German Federal Government. |
| Canada | CSA (Canadian Standards Association) | Not-for-profit membership-based association. |
| Sweden | SIS (Swedish Institute for Standards) | Independent organization with members from public and private sector |

**Recommended Model for Indian TSDO: Member-driven non-profit PPP based autonomous organization**

# TSDO Structure



# Benefits to Industry

- Participate in the standardization activities and become members in the international standard bodies without paying for membership individually
- Can present the Indian market requirements strongly in the international fora and to the multinational vendors.
- A platform for the industry to come together and try to address common issues and India-specific hurdles.
- Get knowledge of latest developments and gain competitive advantage in the market
- Leveraging IPRs and patents that emerge from the Indian research ecosystem which get into the international standards
- Industry will be able to play an active role in the defining India's future in Telecom

# THANKS