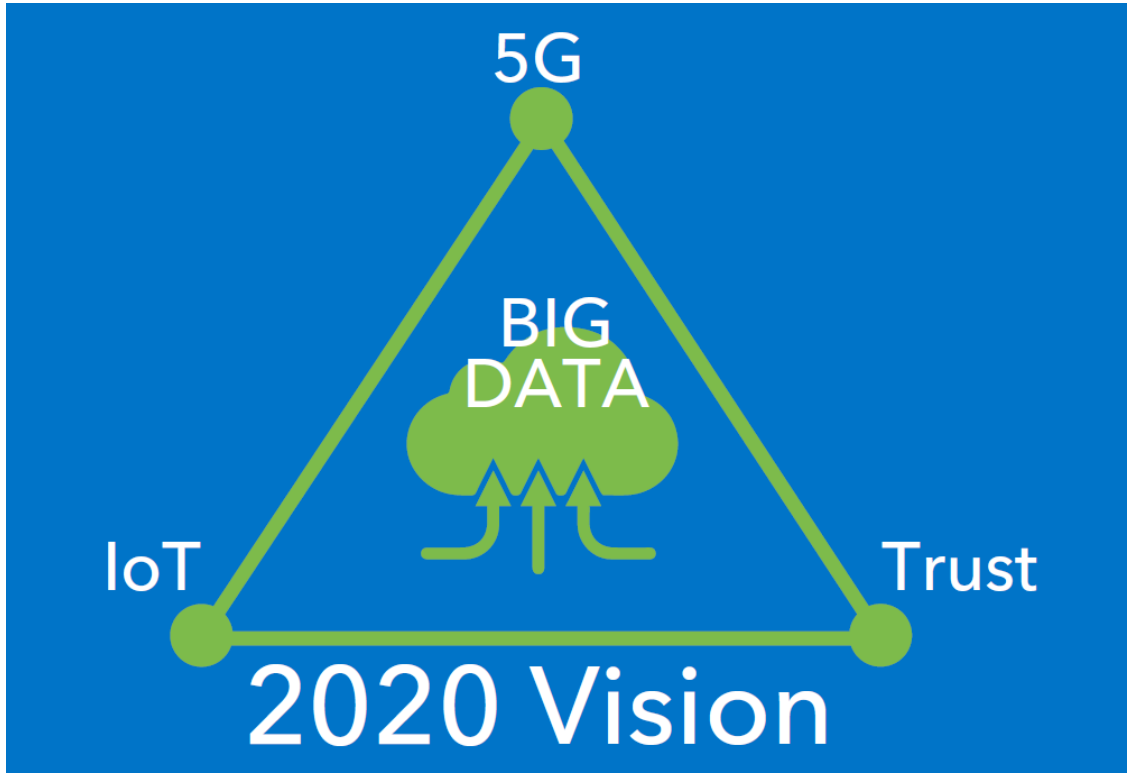

WTSA 2020

Standards-R&D-Innovation Division, DoT
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08-04-2020

Presentation Flow

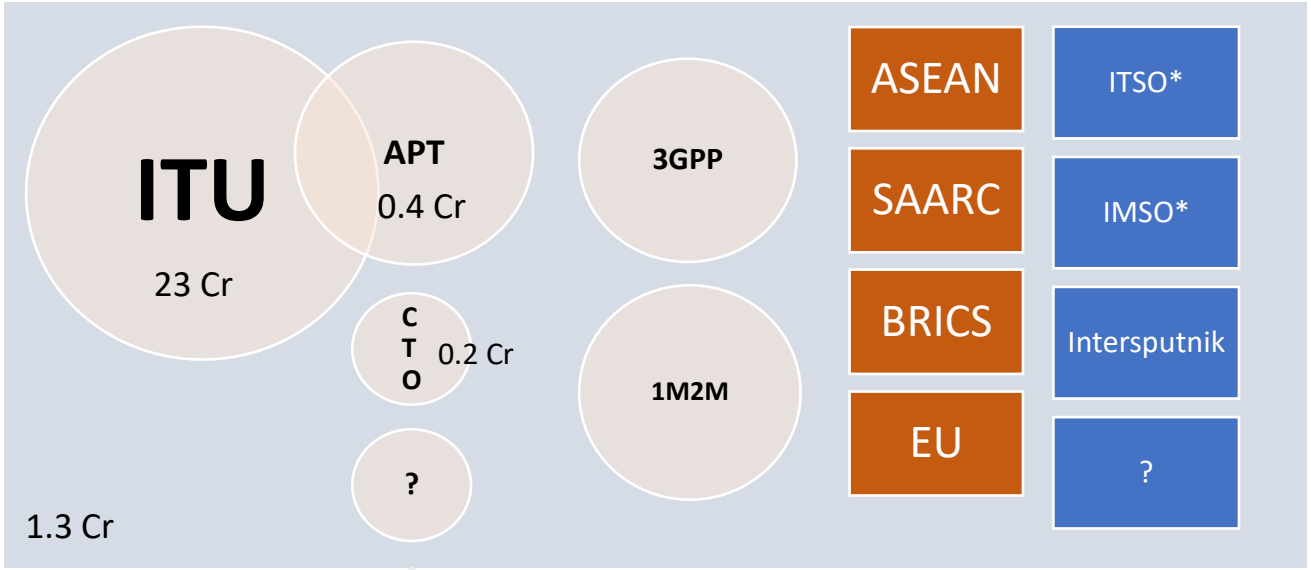
- ITU
- Indian Engagement
- Mandate
- WTSA 2016
- Future areas for discussion
- New waves towards 2020
- Potential areas for consideration

International Texts

- Basic Texts (Constitution, Convention, ARs)
- Budapest Convention (2001)
- UNIDROIT conventions (2000)
- WSIS declarations – Geneva Action Plan, Tunis Agenda (2003, 2005)
- Administrative Regulations (ITR, PP, WRC)
- Summit level Conferences Outcome Documents / Acts
- Addis Ababa Action Agenda (Third International Conference on Financing for Development) (2015)
- Transforming our world: the 2030 Agenda for Sustainable Development
- WSIS+10 High Level Review (2015)
- BRICS ICT Development Agenda and Action Plan (2016)

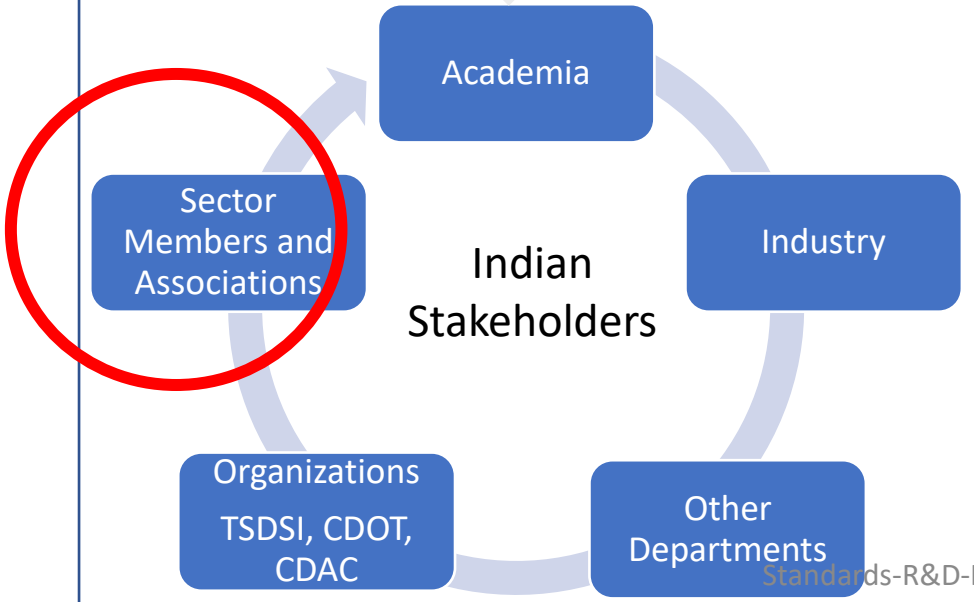
Need to Develop Competencies in

- 2000 + Resolutions
- 50 + Administrative Regulations & Conference Documents
- Tens of thousands of provisions



MULTILATERAL ENGAGEMENT

LANDSCAPE



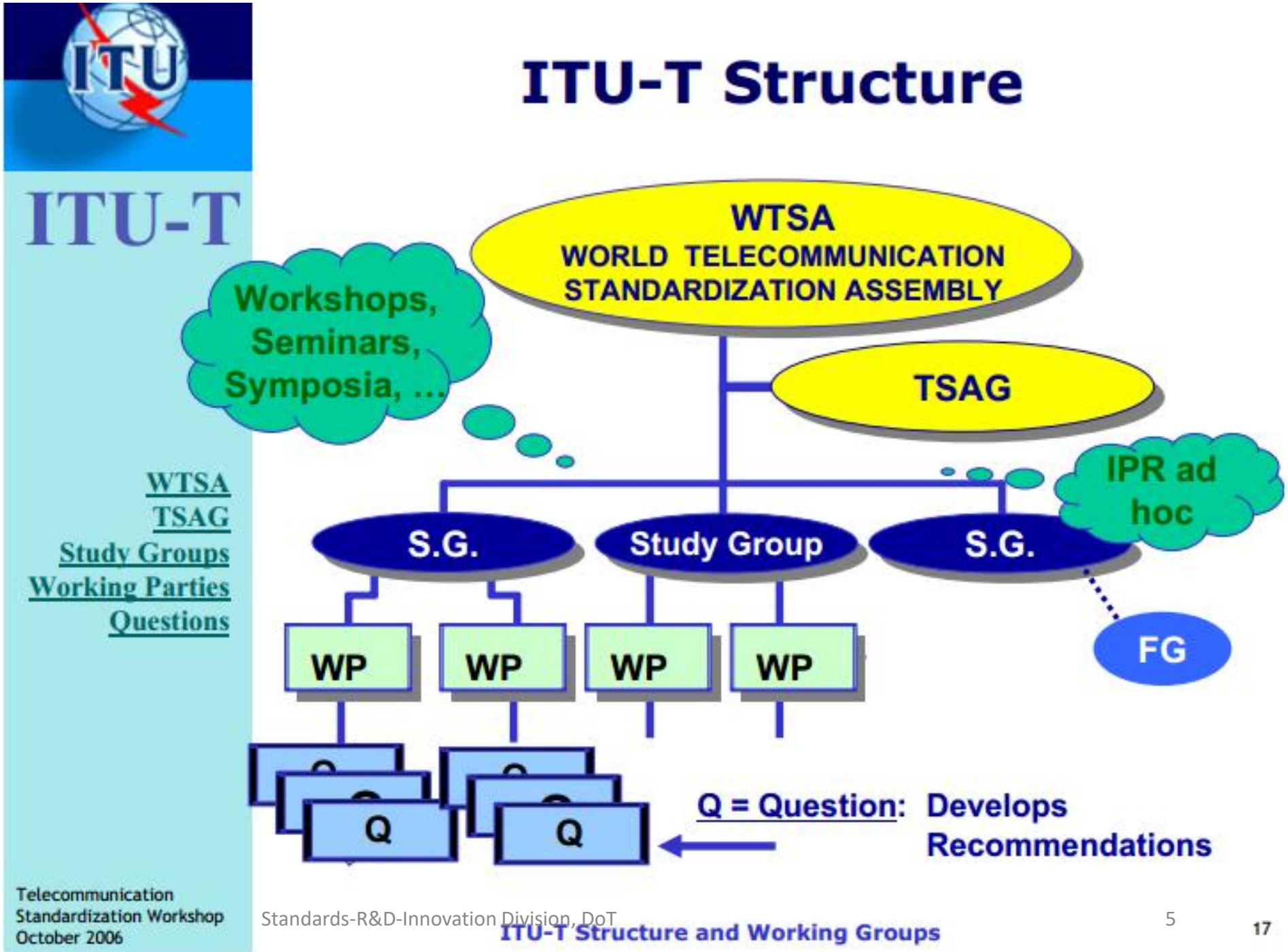
Objectives

1. Targeted engagement
2. Global visibility for Digital India
3. ICT Standardization
4. Ques and mapping of New technologies
5. Indian Products abroad
6. Capacity building for Indian institutions
7. One stop proactive repository of best practices
8. Indian voice on new platforms

Transformation from 'event driven activity' to 'objective oriented engagement'

*International Telecommunications Satellite Organization; *International Maritime Satellite Organization ; Commonwealth Telecom Organization
Contributions – 23 Cr ITU, 0.4 Cr APT, 0.2 Cr CTO, 1.3 Cr travel expenses

ITU-T Structure



ITU Convention – Article 13: WTSA

World Telecommunication Standardization Assembly

1 In accordance with No. 104 of the Constitution, a world telecommunication standardization assembly shall be convened to consider specific matters related to telecommunication standardization.

1 *bis)* The world telecommunication standardization assembly is authorized to adopt the working methods and procedures for the management of the Sector's activities in accordance with No. 145A of the Constitution.

2 The questions to be studied by a world telecommunication standardization assembly, on which recommendations shall be issued, shall be those adopted pursuant to its own procedures or referred to it by the Plenipotentiary Conference, any other conference, or the Council.

3 In accordance with No. 104 of the Constitution, the assembly shall:

a) consider the reports of study groups prepared in accordance with No. 194 of this Convention and approve, modify or reject draft recommendations contained in those reports, and consider the reports of the telecommunication standardization advisory group in accordance with Nos. 197H and 197I of this Convention;

b) bearing in mind the need to keep the demands on the resources of the Union to a minimum, approve the programme of work arising from the review of existing questions and new questions and determine the priority, urgency, estimated financial implications and time-scale for the completion of their study;

c) decide, in the light of the approved programme of work derived from No. 188 above, on the need to maintain, terminate or establish study groups and allocate to each of them the questions to be studied;

d) group, as far as practicable, questions of interest to the developing countries to facilitate their participation in these studies;

e) consider and approve the report of the Director on the activities of the Sector since the last conference.

f) decide on the need to maintain, terminate or establish other groups and appoint their chairmen and vicechairmen;

g) establish the terms of reference for the groups referred to in No. 191A above; such groups shall not adopt questions or recommendations.

4 A world telecommunication standardization assembly may assign specific matters within its competence to the telecommunication standardization advisory group indicating the action required on those matters.

ITU-T collaboration

44 formal partnerships

- Vienna Agreement between the international standards orgs and their European regional counterparts.
- World Standards Cooperation
  - Patent policy & Joint events
- ITU-T and IEEE
  - MoU & Joint events
- Global Standards Collaboration
  - Supports ITU as preeminent global ICT standards organization.
- ITU-T and 3GPP
- ETSI
  - Management meetings
- ITU-T and IETF
  - Management meetings
- ITU-T and ICANN
  - Management meetings
- E-Business MoU: IEC, ISO, ITU and UN/ECE

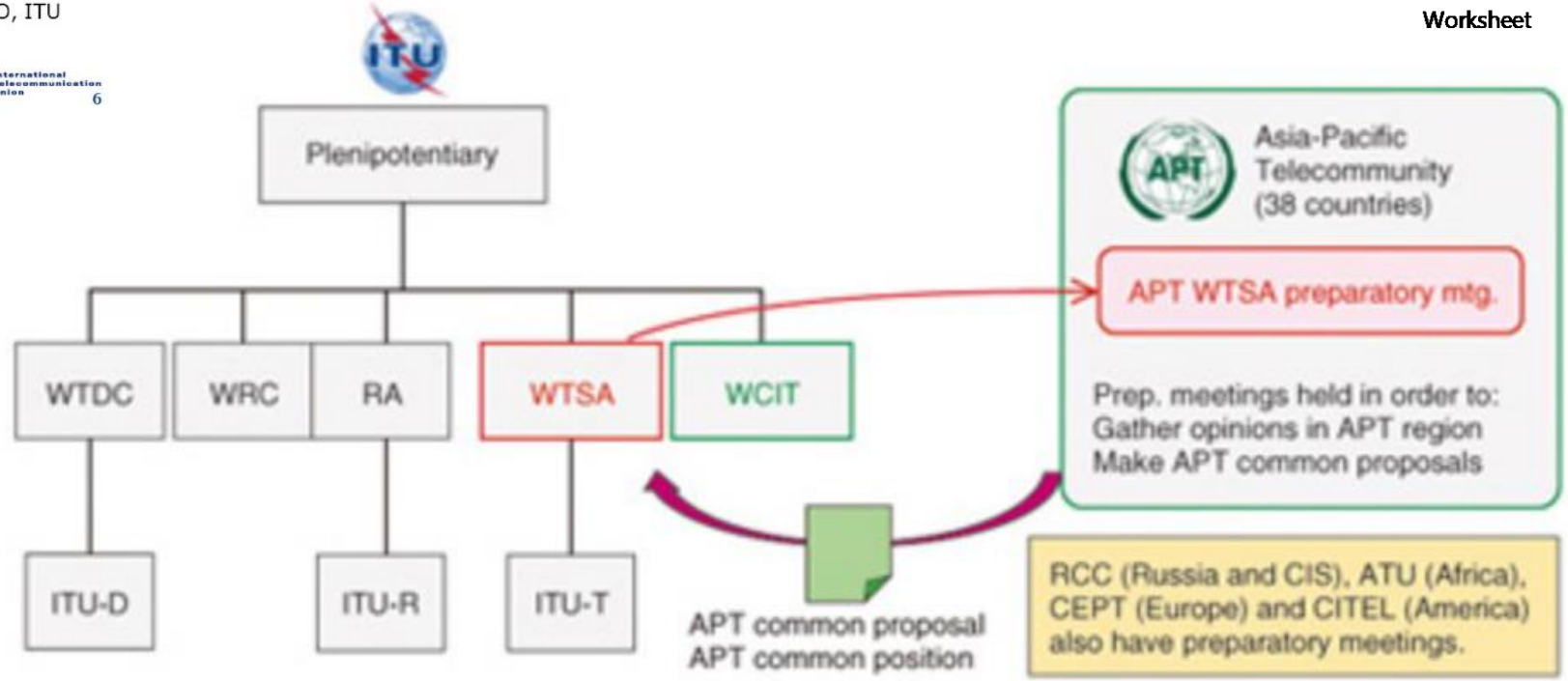
Committed to Connecting the World

6

Partnerships

Process

Microsoft Excel Worksheet



ATU: African Telecommunications Union
CEPT: European Conference of Postal and Telecommunications Administrations

CITEL: Inter-American Telecommunication Commission
RCC: Regional Commonwealth in the field of Communications

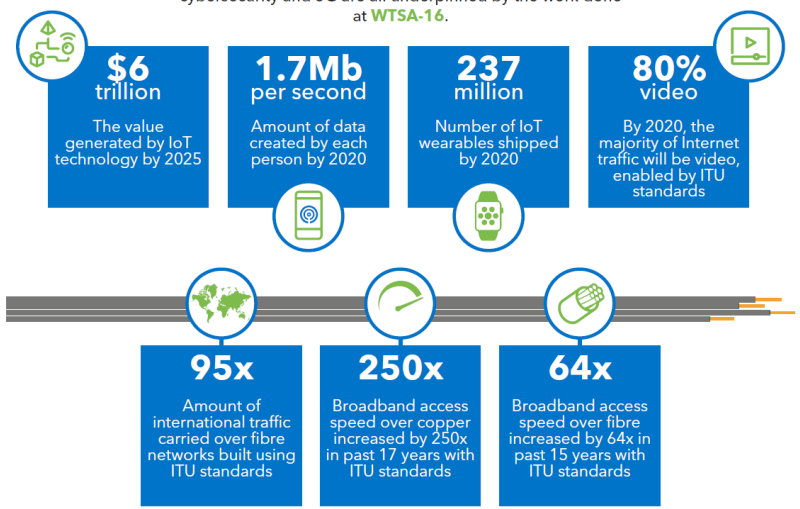
Setting the agenda …

At **WTSA-16**, ITU members met to refine the strategic direction, leadership and structure of ITU's standardization arm. **WTSA-16** fortified the inclusivity of ITU's standardization platform, helping to bridge the digital divide.

193 Member States	**700+** industry players	**130+** academic and research institutes
100+ meetings worldwide +5000 participants	**1000+** virtual meetings +5000 virtual participants	**20+** WTSA-16 regional preparatory meetings

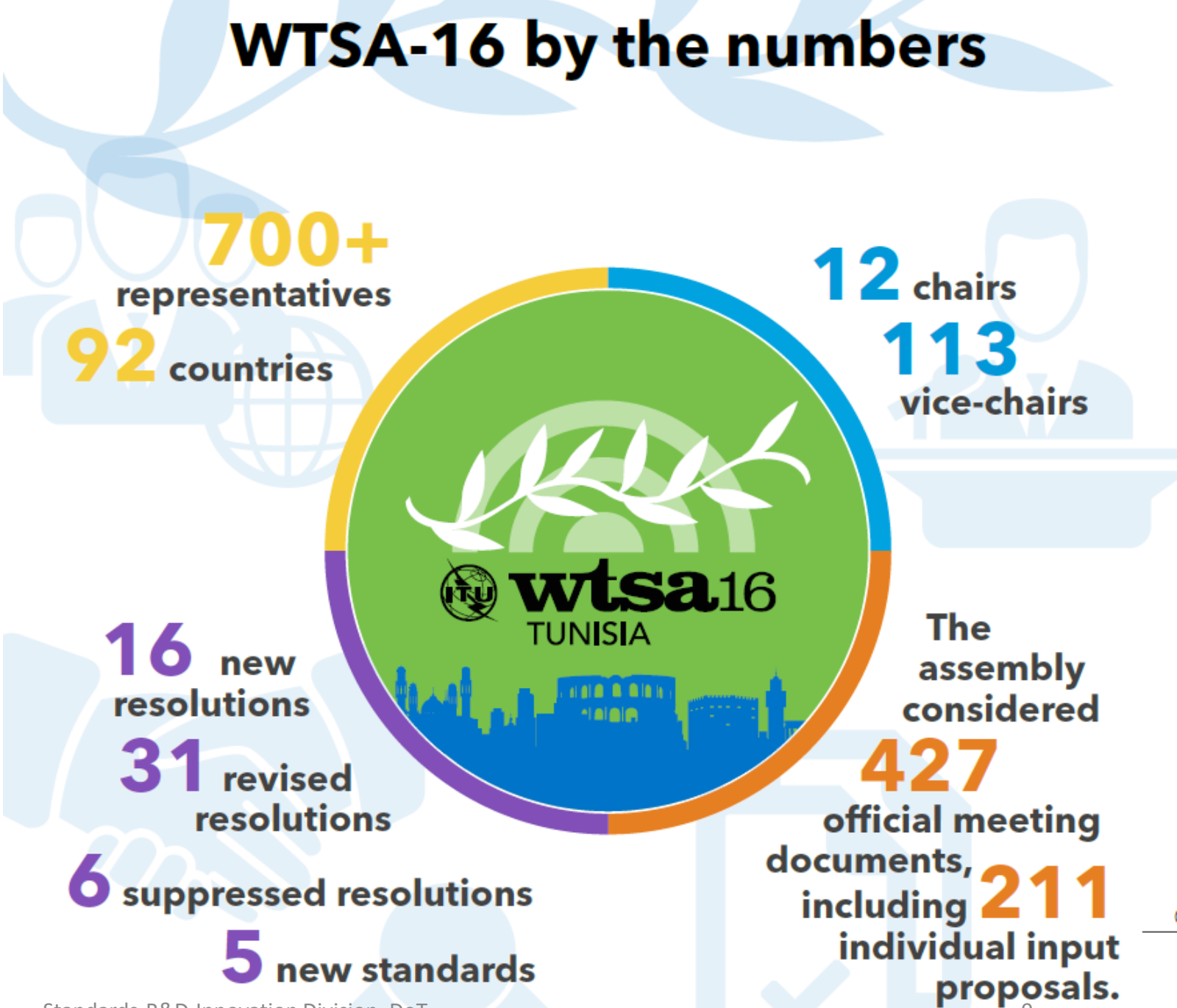
… to build the digital economy

The future shape of the Internet of Things (IoT), smart cities, cybersecurity and 5G are all underpinned by the work done at **WTSA-16**.



WTSA Outcomes

Adobe Acrobat Document



1

Interconnection of 4G, IMT-2020 networks and beyond

- broker the international agreement of a framework for the interconnection of LTE-based networks to enable VoLTE/ViLTE 'roaming'
- support interoperable, high-quality voice and video communications through 4G, 5G and beyond

2

Enhancing ITU-T standardization activities related to non-radio aspects of international mobile telecommunications

- match innovations in radio transmission with innovations in underlying backbone networks
- study the wireline networking innovation necessary to achieve performance targets of 5G systems
- align this work with related studies in ITU-R, ensuring that the fixed and wireless elements of 5G systems work in harmony

3

Enhancing the standardization of Internet of Things and Smart Cities and Communities for global development

- ensure IoT technologies and applications assist the achievement of the UN Sustainable Development Goals
- develop standards to drive the coordinated development of IoT technologies and applications
- provide a reliable foundation for smarter cities and communities
- run pilot projects and peer-learning initiatives to establish best practices in smart urban development

4

ITU-T studies for combating counterfeit telecommunication/ICT devices

- explore means to combat counterfeiting
- protect government, industry and consumers from harm caused by the practice
- develop the necessary standards and support ICT stakeholders to increase their capabilities

5

Combating mobile telecommunication device theft

- explore all applicable solutions to the challenge of mobile device theft
- develop technical solutions to assist in counteracting the duplication of device identifiers
- prevent lost or stolen devices from accessing the network
- provide a platform for associated international collaboration

6

Open source in ITU-T

- study the merits of enabling open-source projects in relation to ITU standardization work
- expert groups to continue collaborating with open-source communities
- collaborate with open-source communities to provide training in relation to open-source work

International mobile roaming

- ensure operators see fair return from investments that enable their customers to roam
- ensure end users pay a fair price for roaming services
- promote international cooperation for affordable mobile roaming rates
- encourage competition in roaming markets

8

Enhancing access to electronic repository of information on numbering plans published by ITU-T

- enhance the electronic repository of numbering plans, recognizing that this function of ITU-T is essential to the reliability of ICT networks and services

9

Studies concerning the protection of users of telecommunication/ICT services

- develop standards and guidelines to

10

- collaborate with open-source communities to provide training in relation to open-source work

7

Promoting the use of ICTs to bridge the financial-inclusion gap

- bring life-changing basic financial services to the over 2 billion adults worldwide without access to a bank account
- develop standards and guidelines targeting interoperability, digitization of payments, consumer protection, quality of service, big data and security of digital financial transactions
- provide platform for peer-learning among the diverse set of interests leveraging ICTs to increase financial inclusion

10

Studies concerning the protection of users of telecommunication/ICT services

- develop standards and guidelines to protect users of ICT services
- ensure services are of appropriate quality – and are affordable
- ensure levels of security necessary to instill confidence in users

11

Standardization work in ITU-T for cloud-based event data technology

- develop standards on the use of cloud computing to record event data from aircraft, cars and other connected machinery
- organize events to collect associated requirements and technical input from as many stakeholders as possible

12 Facilitating the implementation of the Smart Africa Manifesto

- contribute technical expertise in support of the Smart Africa Manifesto – the foundation of the Smart Africa Initiative – which aims to place ICT at the centre of African countries' social and economic development agendas; improve access to ICTs; improve accountability, efficiency and openness using ICT; put the private sector first; and leverage ICT to promote sustainable development

13 ITU-T initiatives to raise awareness on best practices and policies related to service quality

- match ITU-T standardization work on the assessment of ICT performance, quality of service (QoS) and quality of experience (QoE) with the development of more comprehensive guidelines to regulators, assisting them in their efforts to define strategies and testing methodologies to monitor and measure QoS and QoE

16 Participation of ITU-T in the periodic review and revision of the International Telecommunication Regulations

- contribute expertise to the periodic review of the International Telecommunication Regulations, an international treaty intended to "facilitate global interconnection and interoperability"

14 Evaluation of the implementation of resolutions of the WTSA

- strengthen the assessment and reporting of the response to WTSA Resolutions
- reporting essential to strategic reviews of ITU-T activities

15 Strengthening and diversifying ITU-T resources

- investigating possible measures to generate additional revenue for ITU-T
- explore revenue generation from international numbering resources and conformance and interoperability testing

ITU-T D.52

"Establishing and connecting regional Internet Exchange Points (IXPs) to reduce costs of international Internet connectivity" will guide regional collaboration to establish central hubs (IXPs) that enable local Internet traffic to be routed locally, saving international bandwidth and reducing the costs of international Internet connectivity.

ITU-T D.53

"International aspects of Universal Service" offers guidelines to increase compliance with Universal Service policies as well as the extent to which they achieve their goal of delivering a minimum level of ICT services to every inhabitant of a country.

ITU-T D.271

"Charging and accounting principles for Next-Generation Network (NGN)" (revised) sets out the general principles and conditions applicable to the use of packet-based networks to transport packets between standards-based interfaces and the services that they support.

ITU-T D.97

"Methodological principles for determining international mobile roaming rates" proposes a possible approach to the reduction of excessive roaming rates, highlighting the need to encourage competition in the roaming market, educate consumers and consider appropriate regulatory actions such as the introduction of caps on roaming rates.

ITU-T D.261

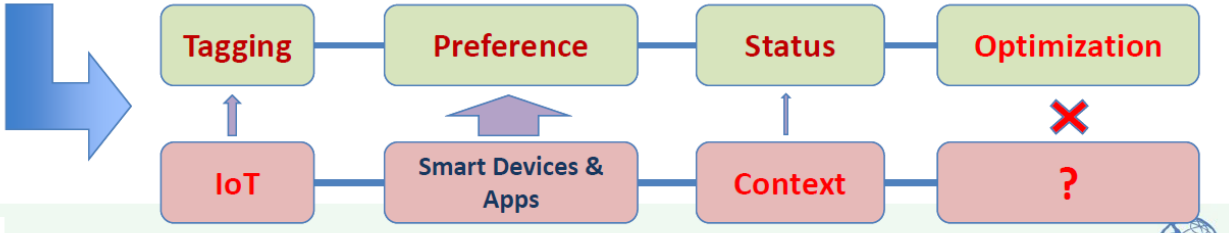
"Principles for market definition and identification of operators with significant market power" proposes principles and guidelines to assist countries in defining and identifying significant market power and assess whether or not, and the degree to which, this power has been abused by international telecommunications companies.

1

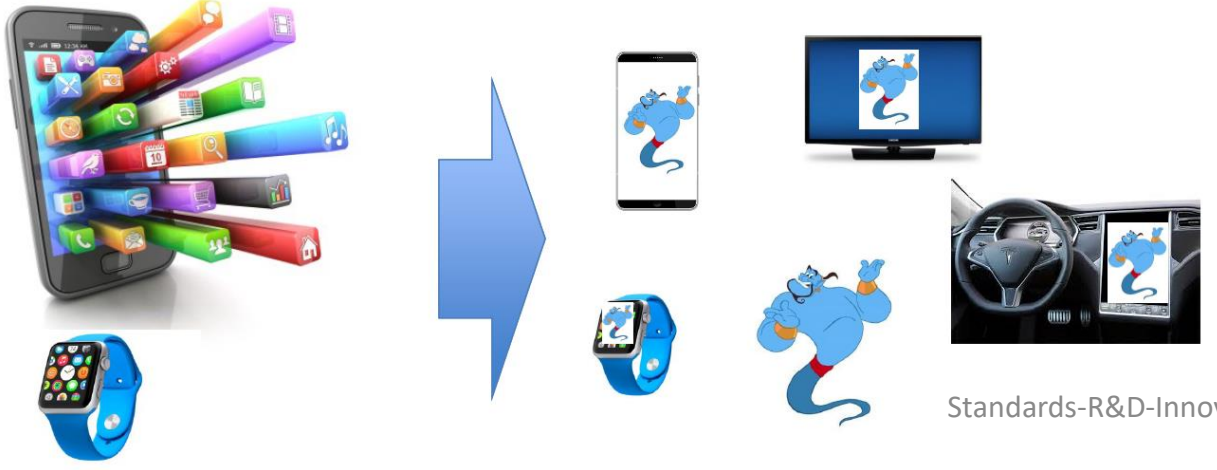
New Waves towards 2020

New Wave 1: Autonomy

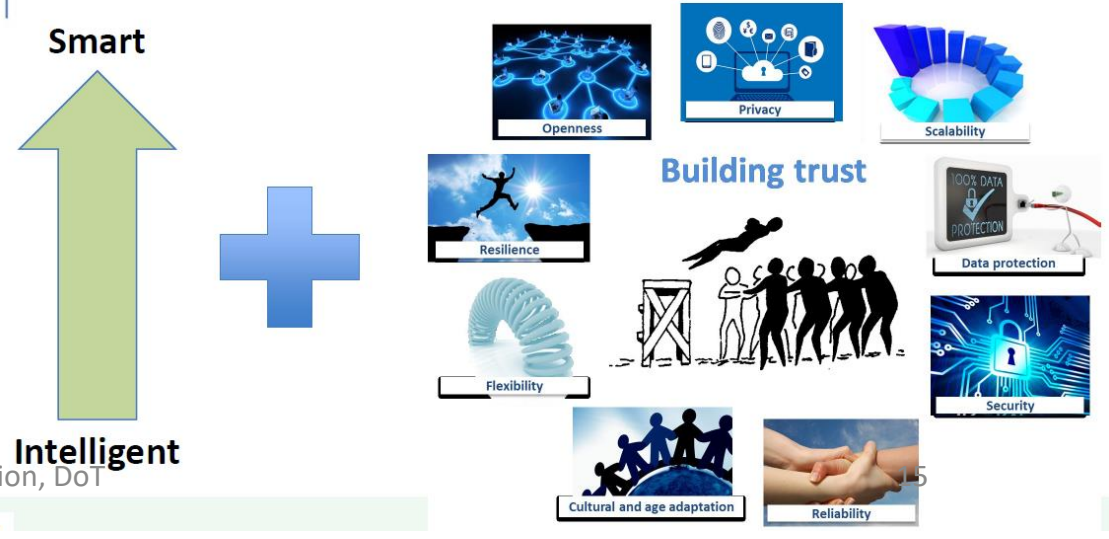
- Increase **distributed** processing, computing & communication
- More **software** based environments
- Expand **automatics:** functions, systems, services & application (Automatic driving)
- Becoming **Resources: sharing** and **binding** (slicing and virtualization)



New Wave 2: Agent



New Wave 3: Trustworthy

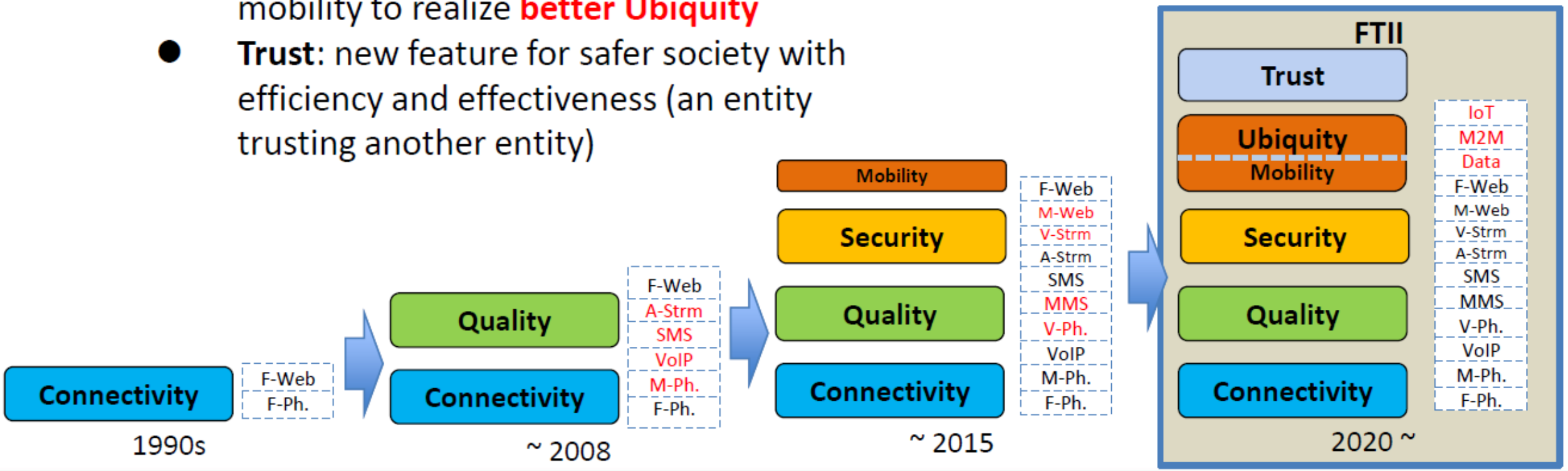


Hot ITU-T Topics

- 5G (non-radio) and Future networks
- IoT including M2M, MOC, WoO (for smart sustainable cities)
- Security, Privacy and Trust
- Transport, Access, Home
- Video coding, e-everything (e.g., e-health)
- ICT and the environment
- Digital Financial Service (e.g., Mobile money)
- Global roaming, Over The Top
- Bridging Gaps (standards, technology)
- …

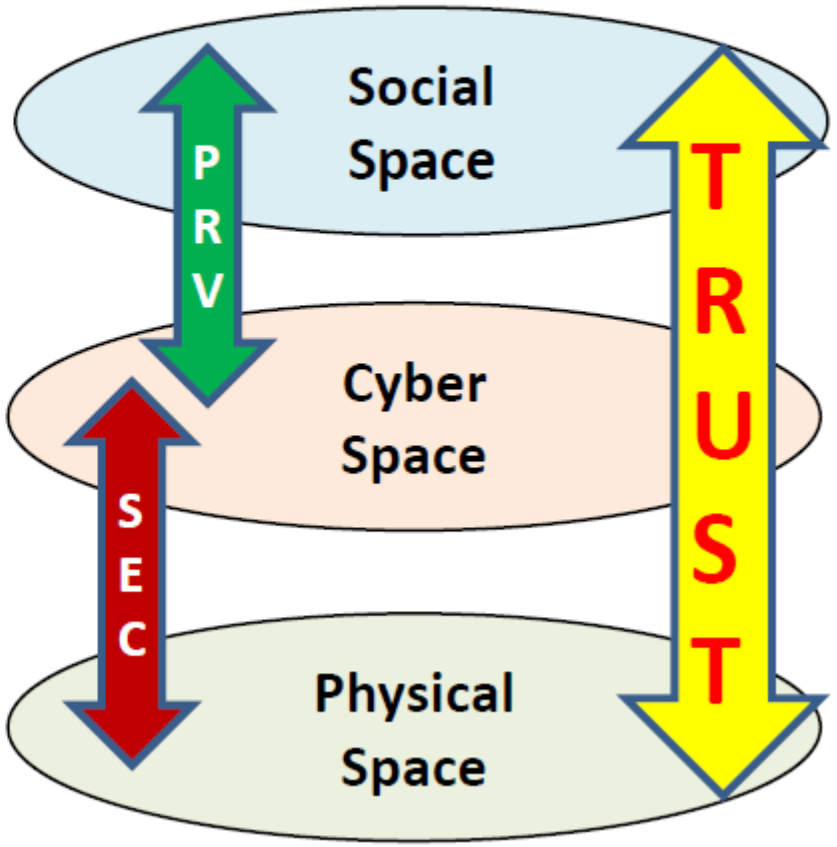
Future Trustworthy Information Infrastructure @2020

- Better solution for **Safer and Smarter operation of Infrastructure**, while enhancing quality (including enhanced Broadband)
- **Ubiquity and Mobility**: need enhancement (e.g. seamless) of mobility to realize **better Ubiquity**
- **Trust**: new feature for safer society with efficiency and effectiveness (an entity trusting another entity)



FTII@2020: SCPS as for Security and Privacy

- **Living space@2020: Social-Cyber-Physical**
- **Social-Cyber-Physical Relationships**
  - Co-existence
  - Connectivity
  - Interactivity
  - Spacio-temporal situations
- **Human-Thing Relationships**
- **Need more than "Security and Privacy"**
- **Trust as a cross domain relationship**



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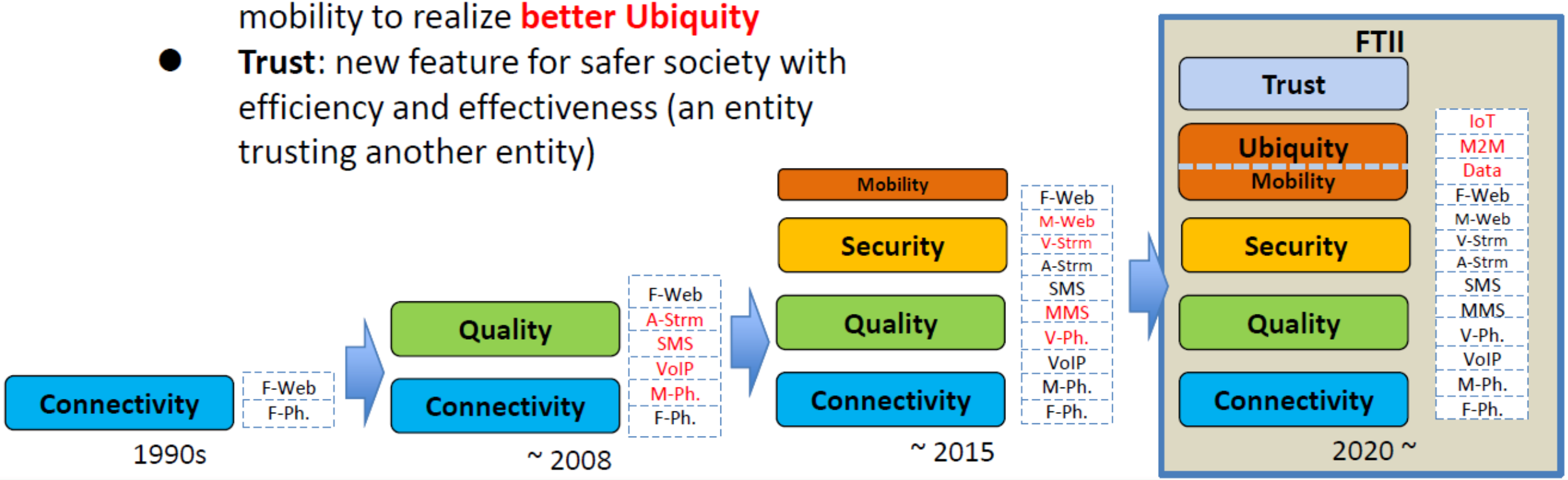
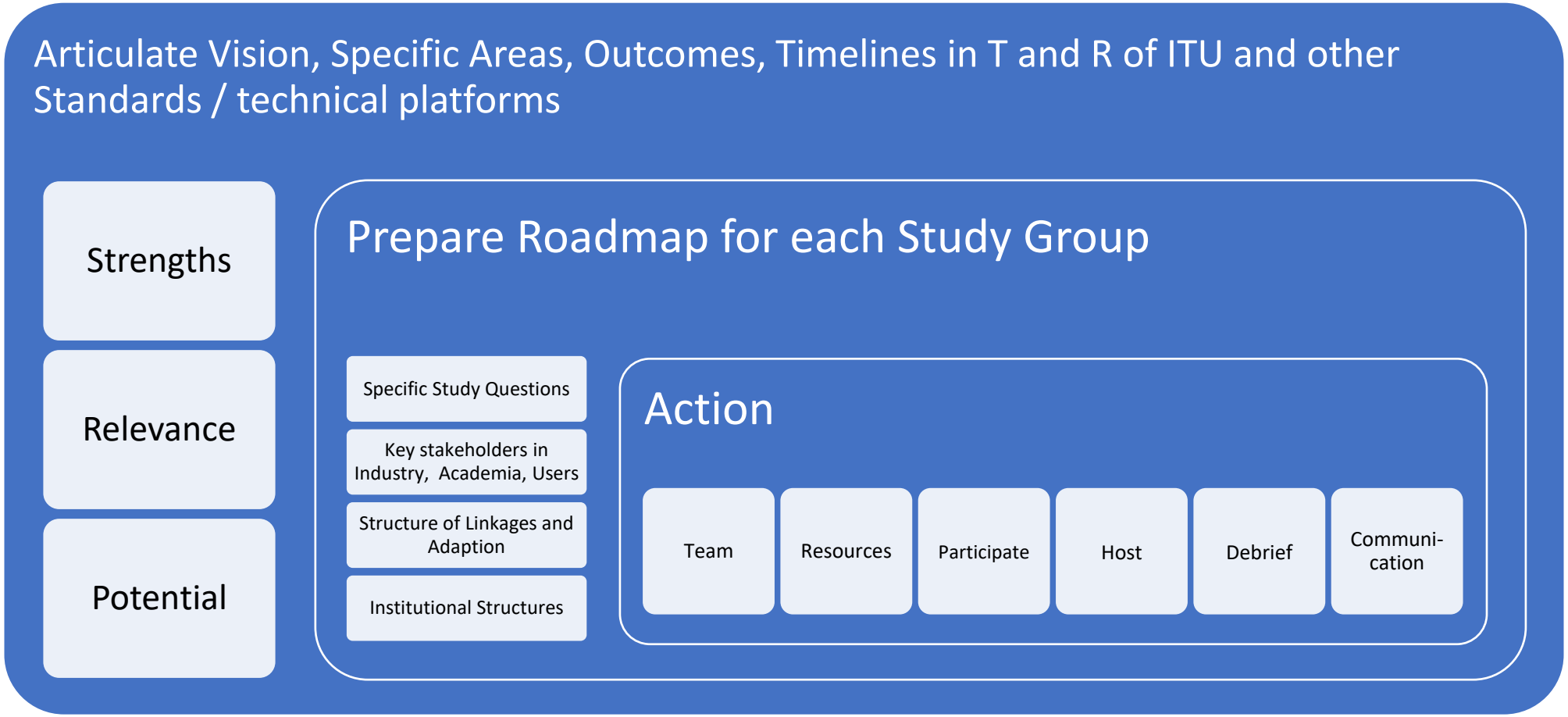


Strategy for Indian Participation in Standards and Study Group Activities

TSDSI
India
APT Prep
ITU



AI for Disaster Risk Reduction

QoI & Smart Agriculture

Smart tourism

AI for Disaster Risk Reduction

- To study the existing AI-based technologies for disaster risk reduction (DRR) and management;
- To explore the role of AI in DRR decision-making and capacity building
- To establish relationships with other international organisations which contribute to the development and implementation of DRR guidelines;
- To support the ongoing efforts for the implementation of the Sendai Framework for Disaster Risk Reduction (2015-2030) and SDG 2.4
- To identify challenges in the standardization activities for the utilization of AI for DRR activities.

Potential partners

UNEP
(PEDRR)

WMO

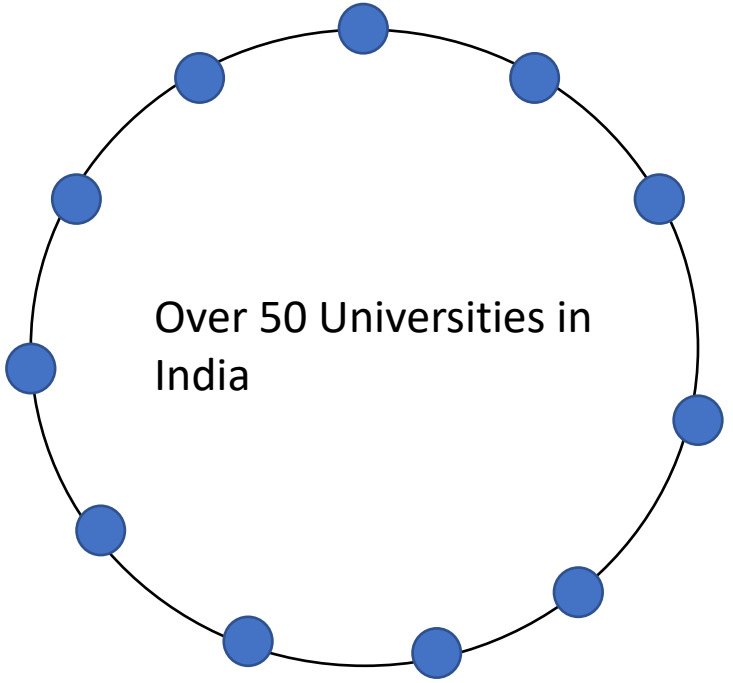
UNHCR

ITU-T Study Group 16

ITU-T Study Group 2

Smart Agriculture

- Develop methodologies relating to the integration of ICTs in smart farming and animal husbandry
- Establishing liaisons with other organizations which could contribute to the standardization activities relating to smart agriculture
- Foster the development of strategies and best practices related to policies and standards to help national government deliver smart agriculture services.
- Identify potential barriers in the use of ICTs in agriculture in developing countries
- To examine the concept of smart agriculture in line with the Sustainable Development Goals (SDGs)
- To study and produce a gap analysis of standardization in the domain of smart agriculture and food production lines to improve the quality of life



ITU-T Study Group 16

Smart Tourism

- To identify requirements for smart tourism to improve QoL;
- To identify existing standards (if any) and existing work that are related to the requirements for the designation of smart destinations;
- To analyse the intelligent digital administration and government-citizenship cooperation needed for smart tourism
- To study issues relating to habitat and technological planning to support smart tourism
- To study and review the existing terminology and e-services related to the concept of smart tourism
- To boost collaboration among ITU-T Study Groups, in particular SG16, SG5, SG11, SG20, SG13, SG15, SG16 and SG17, ITU-R, ITU-D and relevant organizations.

ITU-T Study Group 16

With Acknowledgements to
ITU, other Web sources, Experts for the content

Thanks