



Global ICT Standards – An Industry Perspective

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Global Standards – India Relevance

- **Private Sector: India IT-BPM revenues at US\$ 118 billion (FY2014). Digital enterprises (SMAC) business at US\$ 225 billion by 2020. 72+% of revenues from export of IT services**

Adherence to Global standards play a critical role in the continued global acceptance of IT services from India. Standards impact IT services across industry verticals – automotive, healthcare, banking, defense, education, pharma, media and others
- **India's Internet Economy will reach US\$ 100 billion by 2015 (EIU study)**

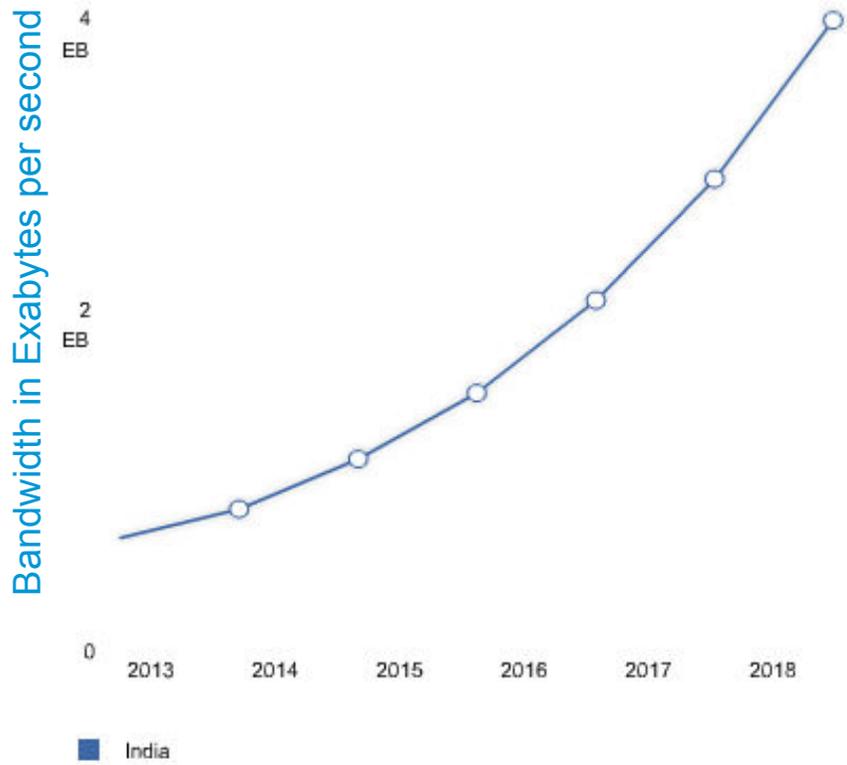
Global standards will help deliver ICT infrastructure & services at reasonable cost to cater to this demand
- **Public Sector: National-level initiatives in 'Smart Cities' and 'Digital India' including Cloud Services**

Global standards will be critical to build cost-effective, interoperable and secure IT infrastructure to deliver citizen services and applications
- **'Made in India' – India's renewed push to become a global manufacturing hub**

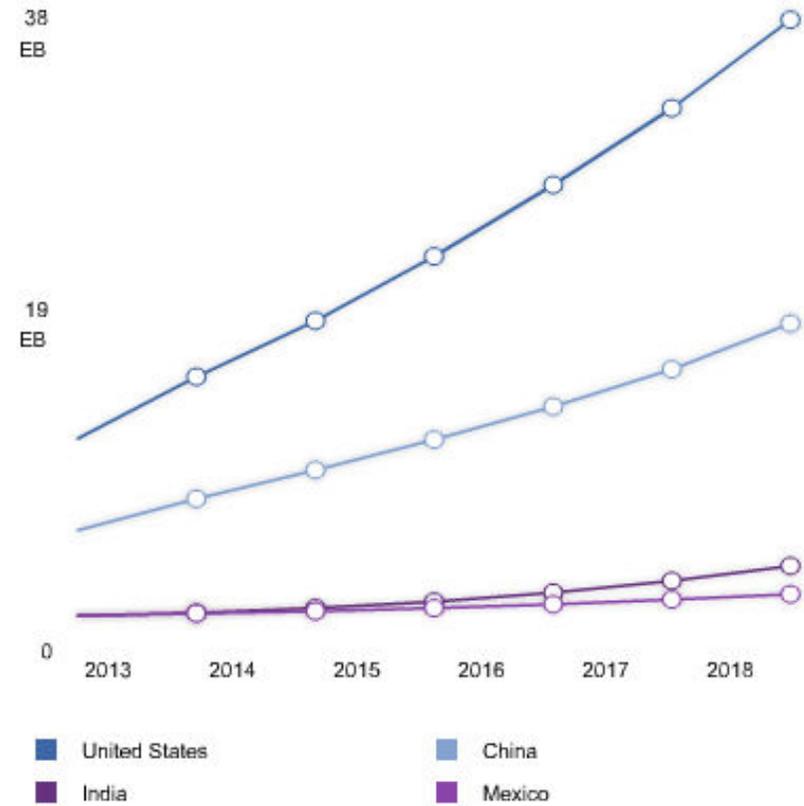
Global standards will help Indian manufacturers access global markets and acceptance, drive quality at lower cost, and encourage global players to set-up facilities in India that ensures both domestic and international consumption of products
- **Enable New Business Opportunities – For example, India as a low-cost IT testing hub**

India's recent CCRA accreditation could enable Indian (and Global) IT companies to offer cost effective IT Security testing and certification services to regional and global clients

India By Numbers



*Cisco VNI, June 2014



Old World National Standards – Telephone Plugs



Denmark



France



Germany



Belgium



Australia



Hungary



Italy



Netherlands

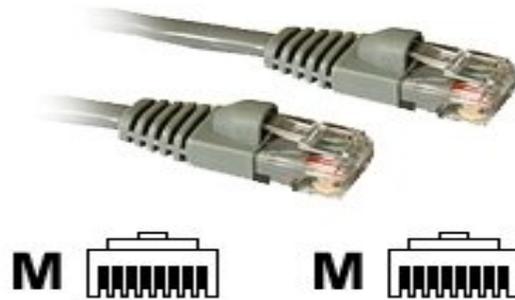


UK

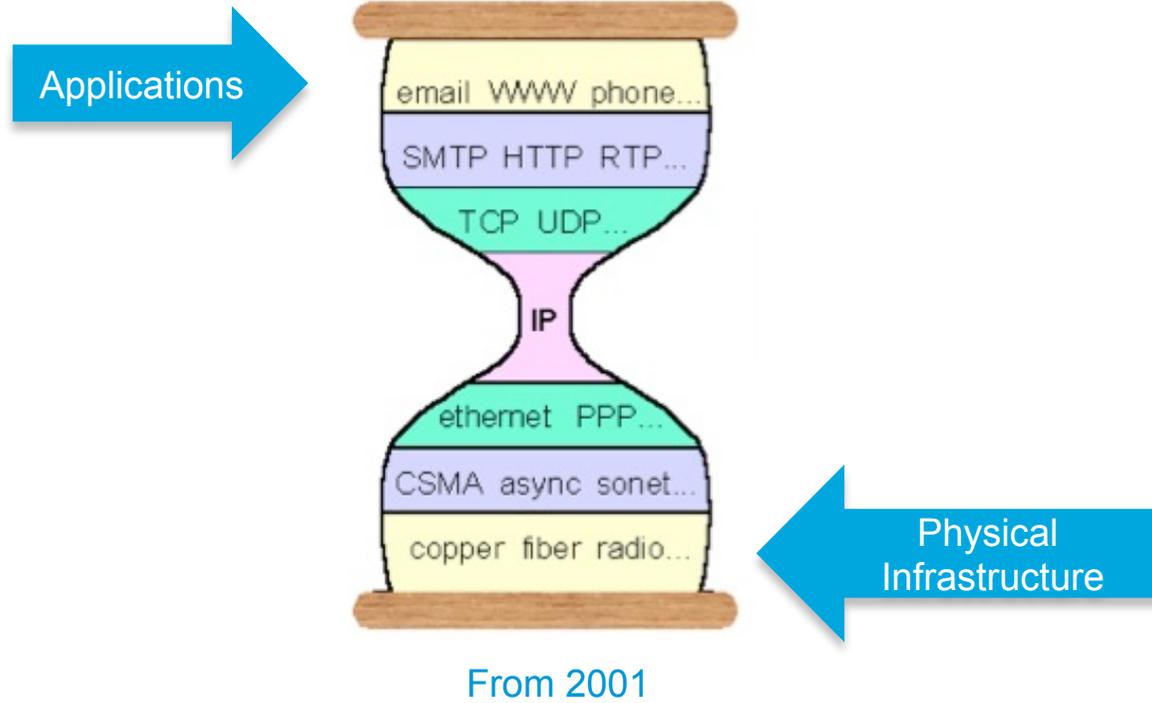


Switzerland

Modern Global Standards – Ethernet Plugs & Jacks

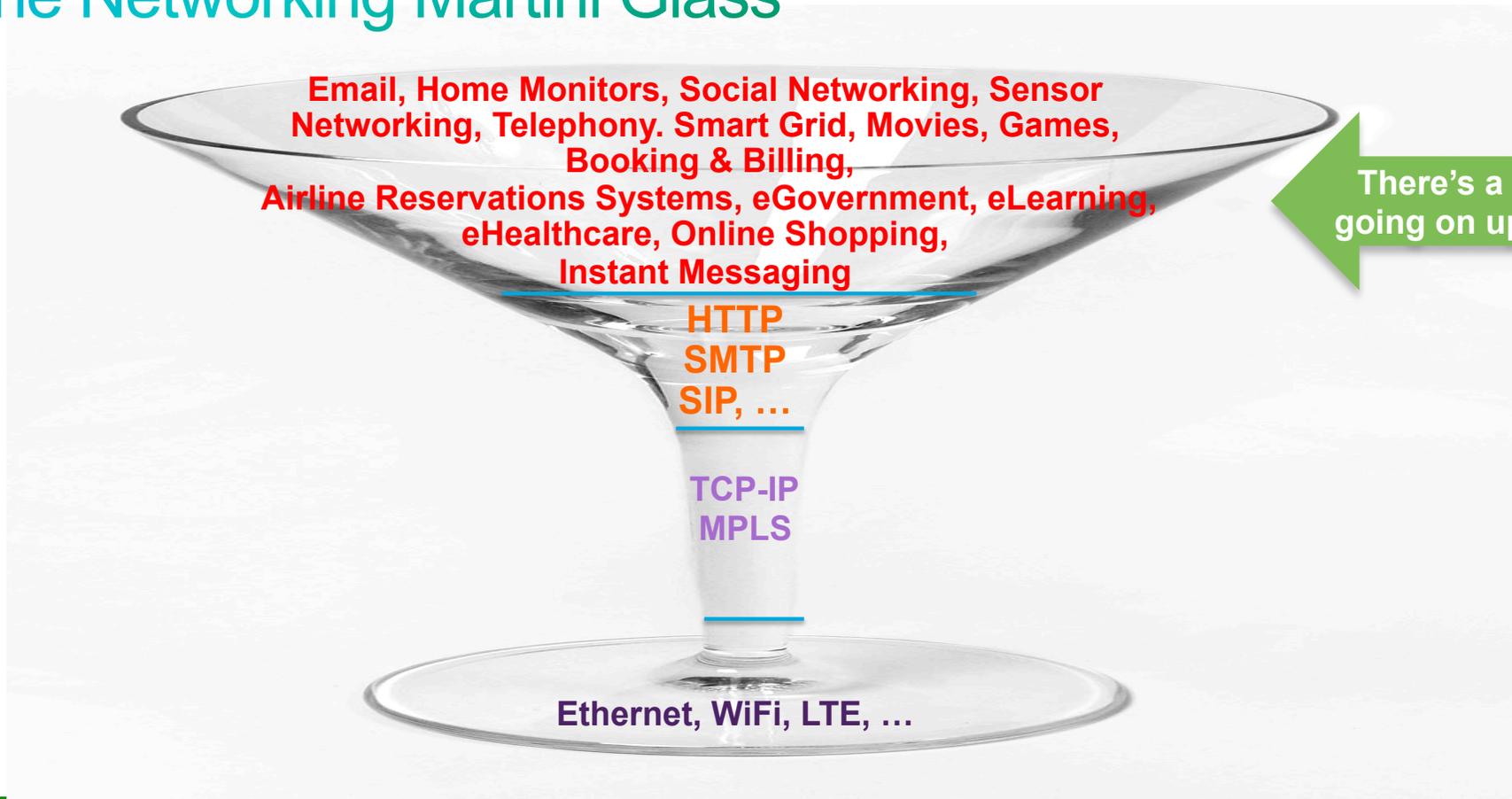


The “Hour Glass” Layering Model



Today

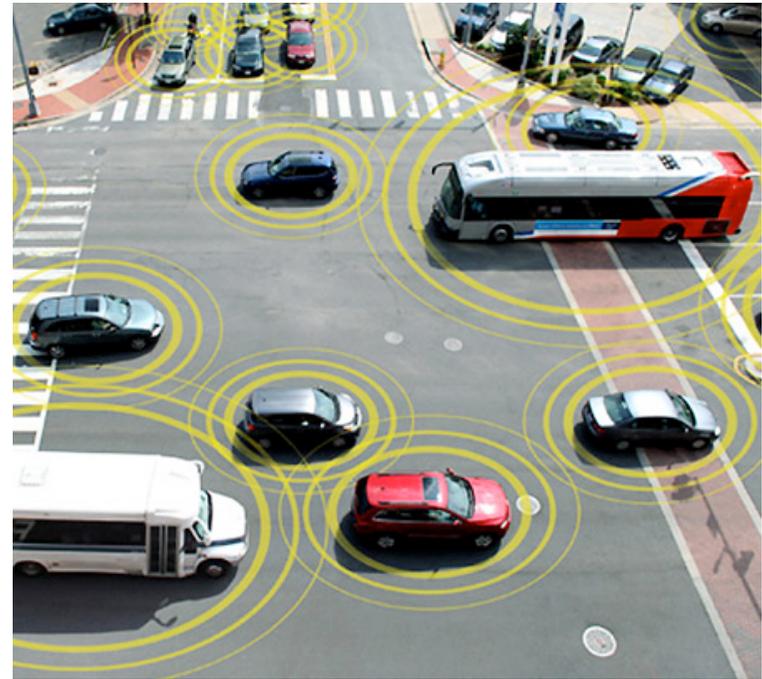
The Networking Martini Glass



There's a party going on up here!

A Few Challenges and Opportunities

- Security is still a key focus
 - We are re-examining key standards to improve their security
 - HTTP2
 - Email
- Getting to IPv6 is important, but not easy
- New paradigms for secondary frequency use are just beginning to develop
- The Internet of Everything provides rich opportunities to improve integration both in and between vertical market segments



Intelligent vehicles

Picture source: [September IEEE Spectrum](#)

Potential Missteps

- Mandatory encryption algorithms may harm security **and** interoperability
Imagine the number of bugs that would be associated with 192 mandatory encryption algorithms running in a device.
If Country A requires one set of standards and country B requires another, there may be no common means to communicate between products built in the two different markets
- Mandatory national standards can actually harm interoperability
If your national standards disagree even slightly with other large markets, you may not be able to communicate
Cost of goods and services is increased for your industry when they export
- National conformity assessment centers can slow manufacturing and add costs

Key Success Factors for Standards Bodies

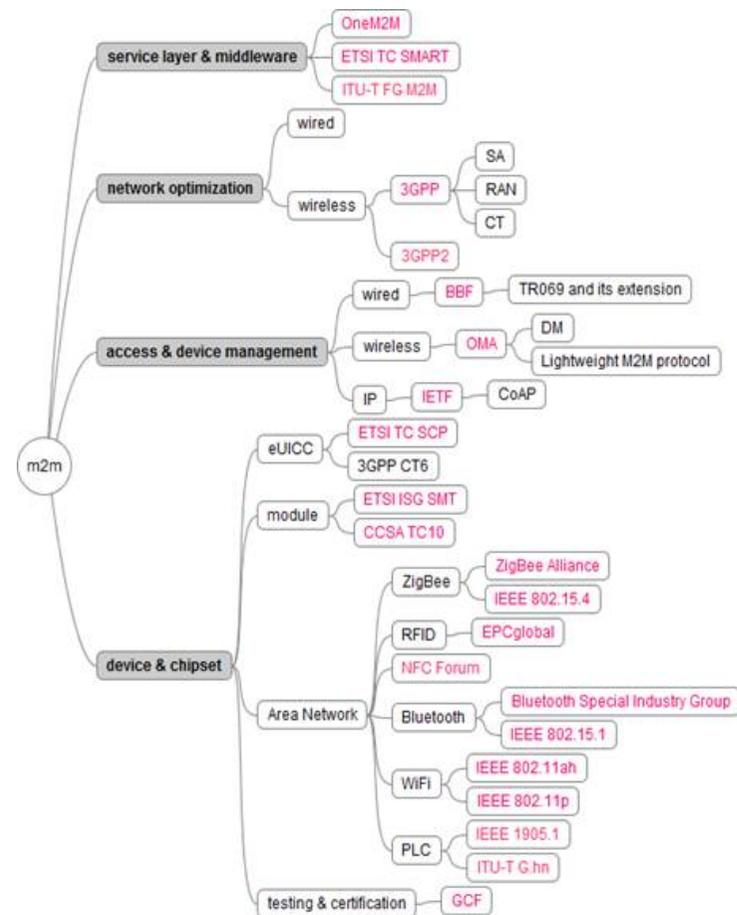
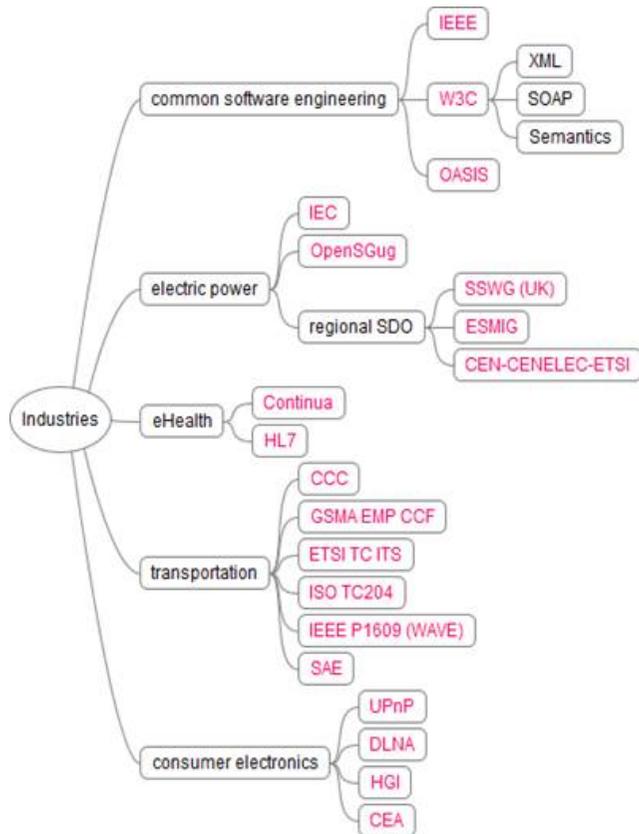
- Global applicability – don't limit export markets
- Voluntary adoption – take from very best and leave the rest
- Openness: All the experts in the room to determine best approach
- Transparent decision processes: so that people know they're going to deliver or get the best
- Decisions reflect broad consensus, so that everyone uses the results
- Results are easily accessible to implement



Find the Expertise - A Few Examples

Technology	Mechanism	Standard	Organization
Cloud	Portable VM	OVF	DMTF
	Enterprise Authentication	SAML	OASIS
	Resource sharing	OAUTH	IETF
	Simple structural exchange	JSON	ECMA/IETF
	Basic connectivity	WiFi, TCP/IP, 3/4G	IEEE, IETF, 3GPP, ITU-R
M2M	Bootstrapping	DHCP options	IETF
	Basic Connectivity	WiFi, TCP/IP, 3/4G	IEEE, IETF, 3GPP, ITU-R
	Resource sharing	OAUTH	IETF

M2M Standards Landscape



Influencing Global Standards

- Develop strong skills
 - Cisco Network Academies are one way
- Have a few great ideas and some people who want to build to them
- Help Indian industry to engage directly in global standards organizations
- Sponsor workshops and conferences in India
 - IETF, IEEE, W3C, and others all require strong facilities support



ICCC New Delhi 2014



Lessons We've Learned

- Global voluntary standards are a critical aspect to growth and innovation
- Be careful not to ossify around yesterday's requirements
- Facilitate **direct participation** in global standards activities
- There is no “king of the mountain”, but rather a healthy ecosystem of standards organizations
- A global standard that has been locally augmented is not a global standard
- Don't buy or build when something is being given away



Thank you!



