

A man in a red shirt and dark vest is operating a large industrial machine in a brewery. The machine has several large stainless steel tanks and pipes. The background is a brick wall with a large archway. The scene is overlaid with a blue digital interface featuring binary code (0s and 1s) and various technical diagrams and data visualizations. The text "Digital and IT standards: Meeting future challenges" is prominently displayed in white on a teal background. Below the title, the text "Manoj Belgaonkar / New Delhi, May 1st – 2nd 2017" is also in white. At the bottom, there are two white bars containing copyright information and a Siemens logo reference.

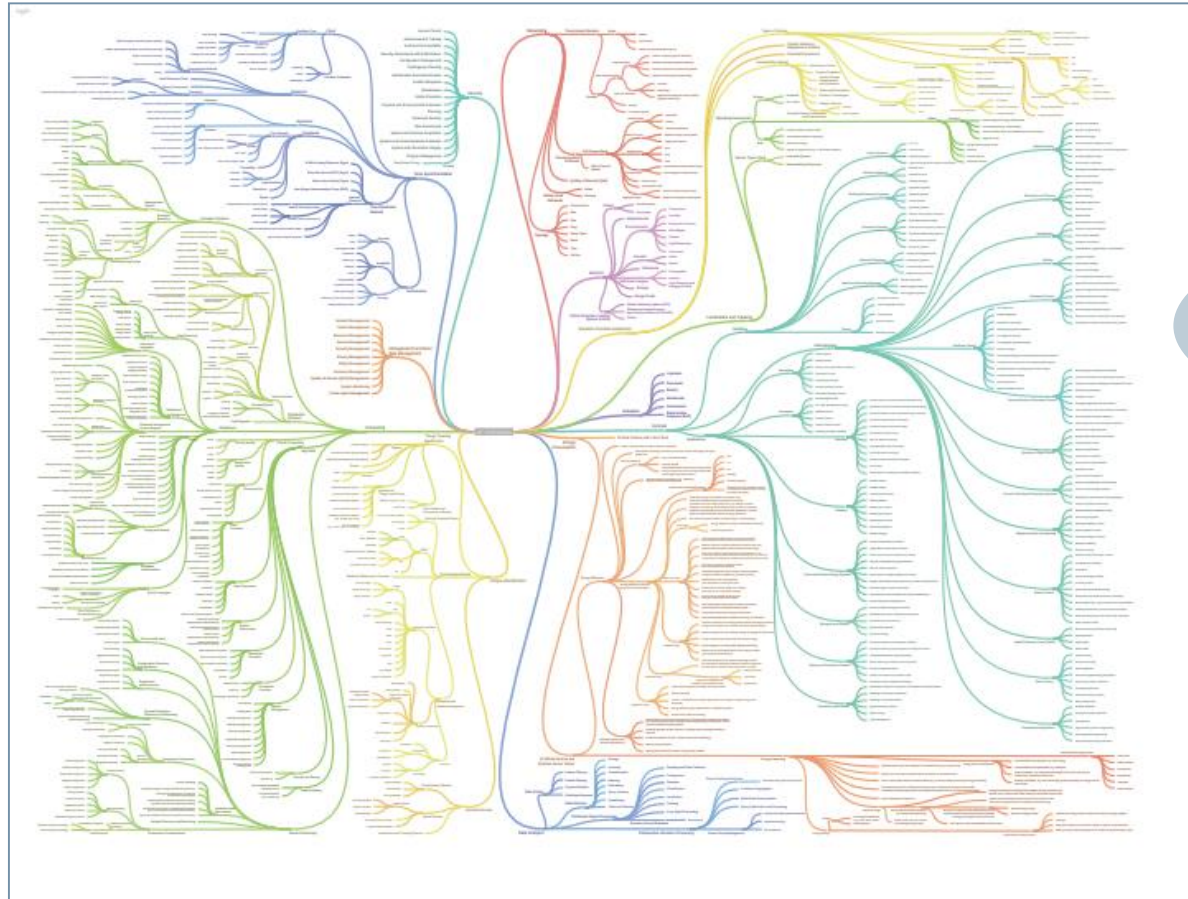
Digital and IT standards: Meeting future challenges

Manoj Belgaonkar / New Delhi, May 1st – 2nd 2017

Digitalisation is seen as a major enabler to deliver customer value but standardisation is very complex

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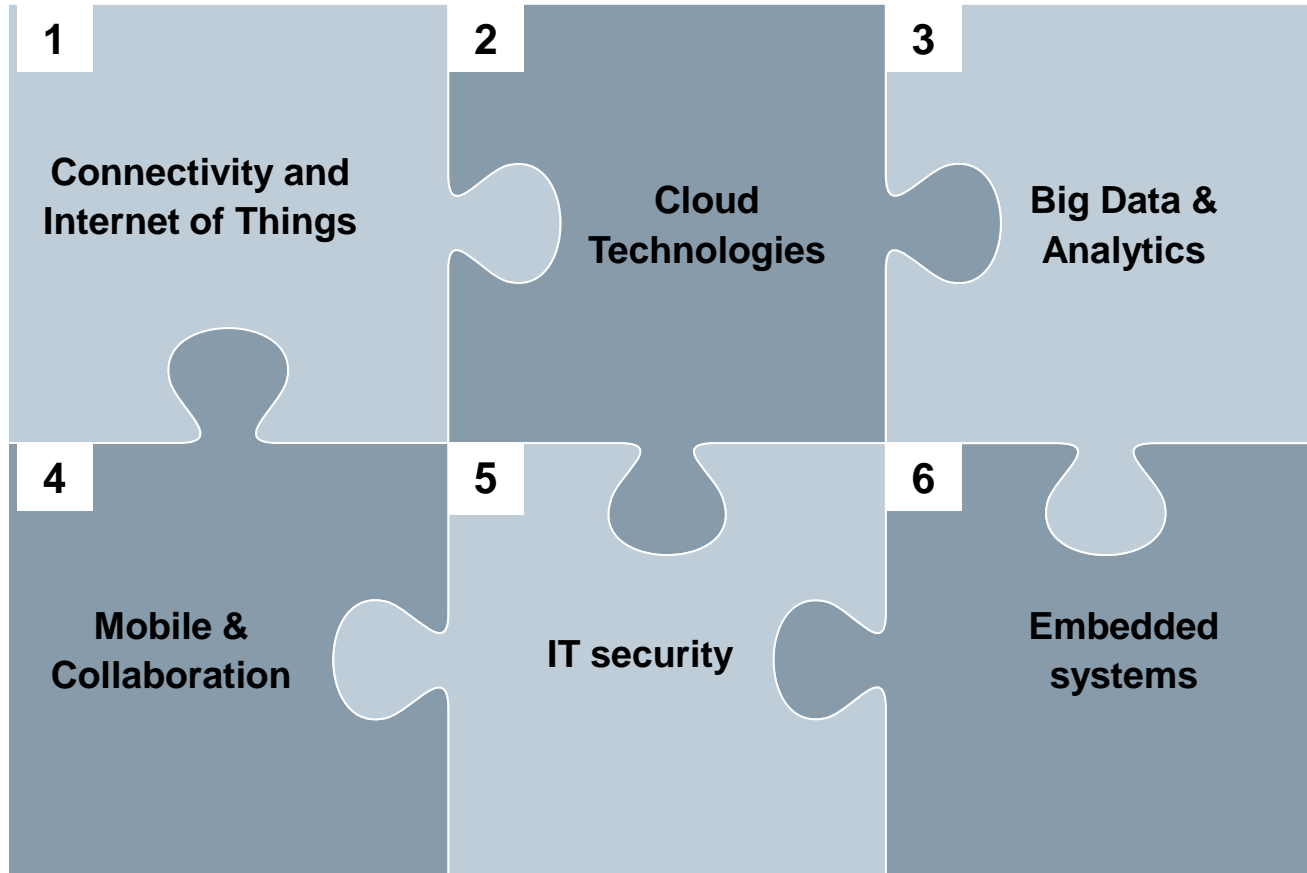
Mind map of IoT Technologies



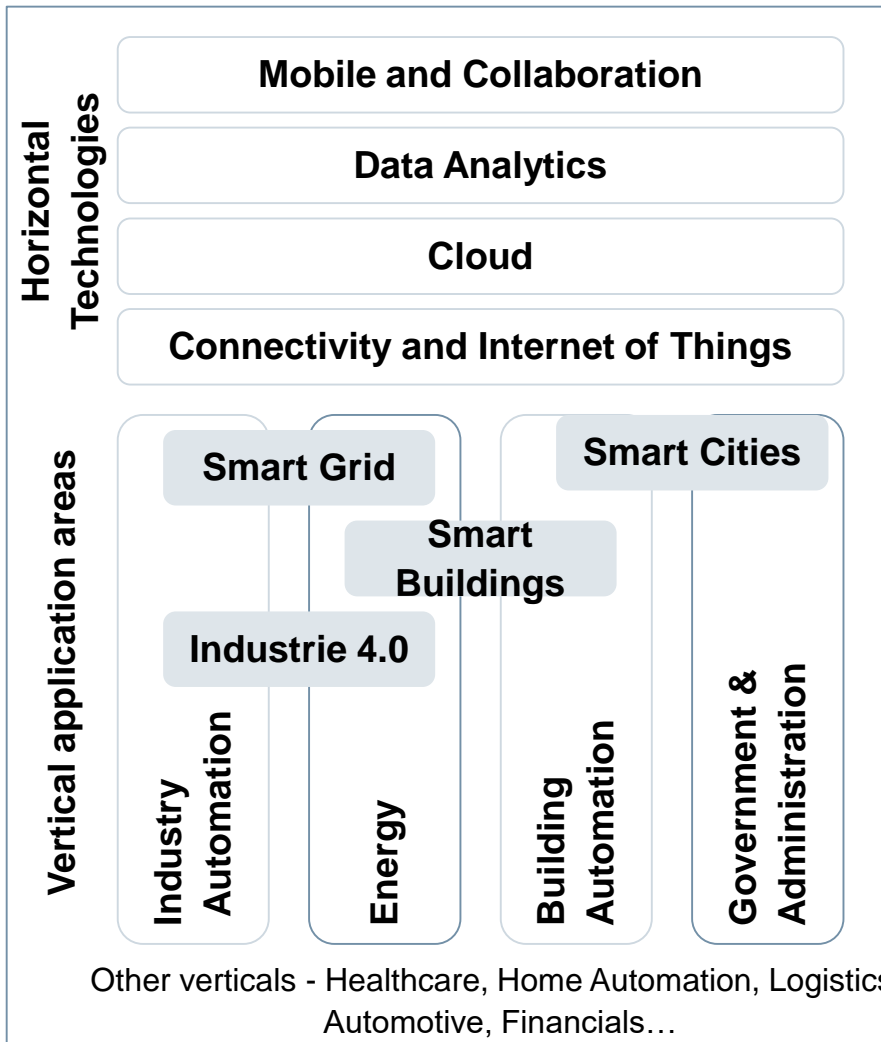
**More than
150 SDO**

ICT technologies when applied horizontally to digitalisation deliver key system characteristics and need to assure interoperability

Major Information and Communication Technologies (ICT)



Over last 4 years major developments are happening in ICT / digitalization related standards



- New “SMART” solutions that lead to **increased interaction and overlap between the application areas** are based upon ICT. In addition to product standards, complex systems and their **interaction with systems from other application areas** have to be considered.
- Vertical application area specific ICT solutions are more and more **being complemented and linked by horizontal technologies** like Ethernet, WLAN, IP, web protocols. These off the shelf technologies **will decrease** development, production and maintenance **costs**.
- **IT Security*** and **embedded systems** are the essential components of this interplay

BIS has taken a lead in digital standards

- BIS is P member of ISO/IEC JTC1 + specific IEC / ISO committees
- BIS LITD has proposal / established following committees
 - LITD 16 Smart Grid
 - LITD 28 Smart infrastructure
 - LITD 13 ICT
 - LITD 27 Internet of Things

MeitY has initiated many steps and outlined strategies on digital standards

- To **facilitate international and national participation of industry and research bodies with relevant international SSOs** (Service Setting Organizations) for promoting standards around IoT technologies developed in the country.
- To **appoint relevant nodal organization** for driving and formalizing internationally acceptable standards relating to technology, process, interoperability and services
- To **create national expert committee** for developing and adopting internationally established and interoperable IoT standards in the country.
- To **provide technical and financial assistance for patenting and standards creation** related to IoT technologies especially for Indian products.
- **IoT Centre of Excellence is established** at Bengaluru – MeitY, Govt of Karnataka, ERNET and NASSCOM initiative in July 16

Internationally harmonized standards will be the key to reap promised benefits of digitalization

IEC Technical Committees addressing ICT according to their scope e.g. IEC TC 3,9, 10,57,65, SyC, AAL, Smart City, Smart Energy, SEG 7...

- International Standards development Organisation (SDO)
- Membership – National TC
- Indian members – BIS (P)

Joint Technical Committee 1 of ISO and IEC (JTC 1)

- International Standards development Organisation (SDO)
- Membership – National TC
- Indian members – BIS (P)

ISO Technical committees addressing ICT according to their scope e.g. TC 268...

- International Standards development Organisation (SDO)
- Membership – National TC
- Indian members – BIS (P)

European Telecommunication Standards Institute (ETSI)

- Telecom standardization
- Membership - National TC and Companies
- Indian Members – CDOT, WIPRO, HCL

Industry should take lead in participation and harmonization of digital standards

Open Interconnect Consortium (OIC)

- Software components for IoT
- Membership – Companies
- Indian members – TCS

World Wide Web Consortium (W3C)

- Web standards for open web platform
- Membership – Companies
- Indian Members – CDAC, NIC, NPCI, IRCTC

Industrial Internet Consortium (IIC)

- Industrial internet
- Membership – Companies
- Indian members – TCS, Tech Mahindra, HCL, WIPRO, L&T Infotech

Organisation for the Advancement of Structured Information Standards (OASIS)

- Open IT standards for cloud, security, IoT..
- Membership – Companies
- Indian members – TCS, Tech Mahindra, HCL, WIPRO, L&T Infotech

New approaches to deal with standardisation are to be explored

Possible approaches / ways to harmonise standards

- Joint working groups / system committees with all relevant stakeholders
- Monitor potential standardisation developments especially in/from consortiums
- Active participation in vertical standardization committees as well as horizontal consortiums.
- Individual experts should feedback lessons learnt thru industry associations
- Collaborative approach among various industry associations e.g. CII and NASSCOM
- Develop necessary requirements related to critical infrastructure in security standards
- Update regularly data protection and privacy laws in line with digital evolution
- Prevent over regulation to promote innovation

For more information -



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