6th SG13 regional workshop for Africa on "Standardization of future networks: What are the future opportunities for Africa?" (Abidjan, Côte d'Ivoire, 26 – 27 March 2018)

Trust Standardization in SG13 and Trust in Technology Convergence

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Trust Standardization in SG13

- **ITU-T CG-Trust under Q16/13**
- **Three Recommendations** on Trust
  - **Y.3051 (Y.trusted-env):** The basic principles of trusted environment in ICT infrastructure
  - **Y.3052 (Y.trust-provision)**: Overview of trust provisioning in ICT infrastructures and services
  - **Y.3053 (Y.trustnet-fw)**: Framework of trustworthy networking with trust-centric network domains
- Other on going draft recommendations
  - **Y.trustworthy-media**, **Y.trust-index**, etc.

What is Trust?

Trust of a party **A** to a party **B** for a given task **S** is the measurable belief of **A** in that **B** accomplishes **S** dependably for a specified period **P** within a particular trust context **T** (in relation to the task **S**)

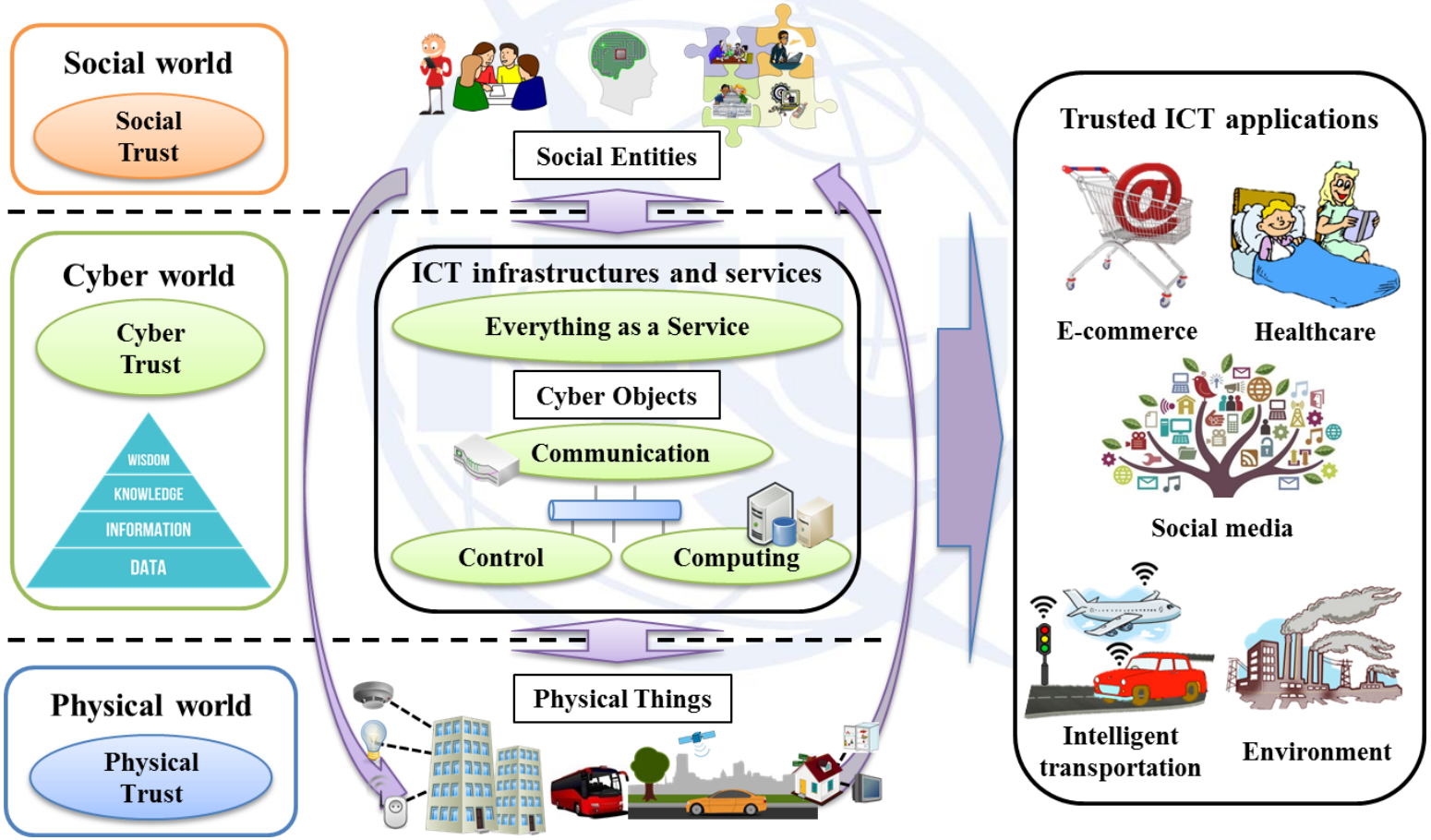
Trust is **relative** to a specific task (a service). Different trust relationships appear in different business contexts

The measurement may be **absolute** (e.g. probability) or **relative** (e.g. Level of Trust)

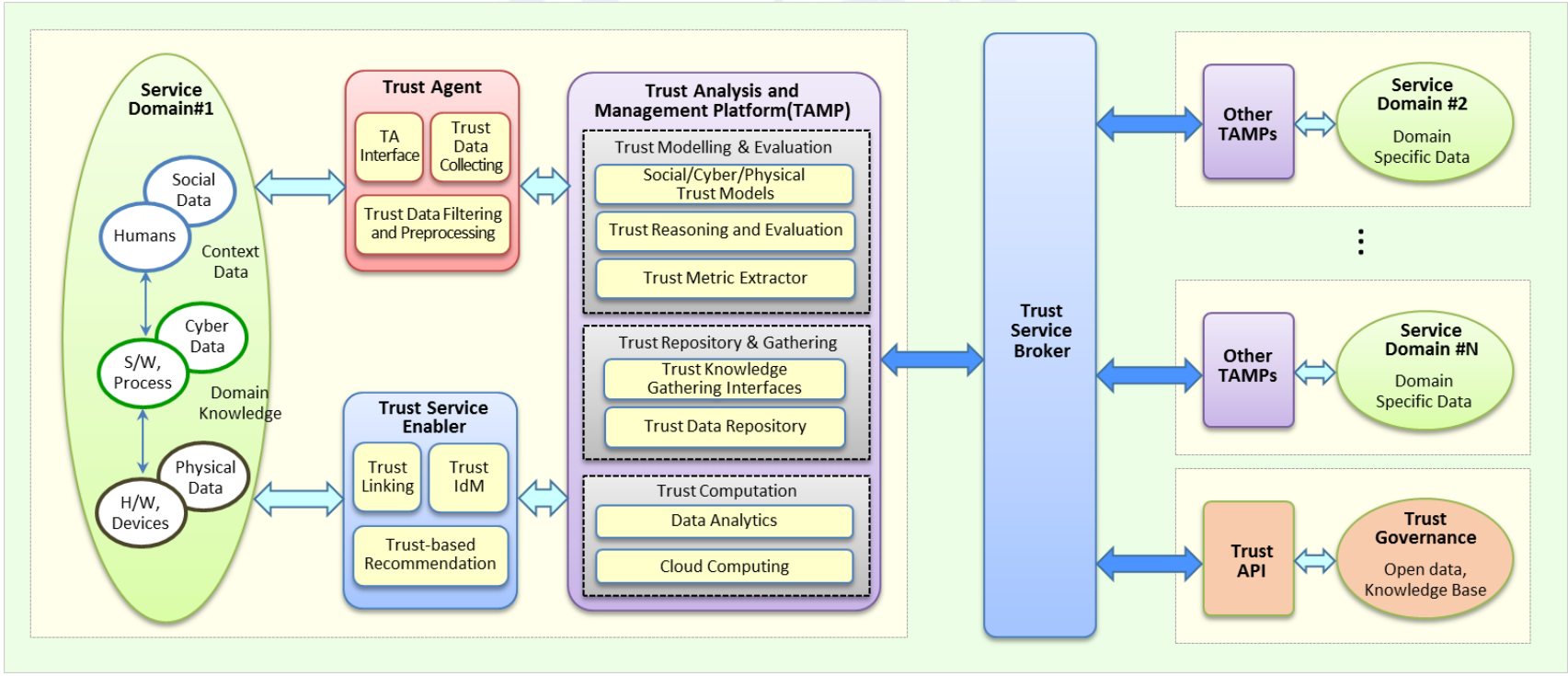
This period may be in the **past** (history), the **duration of the service** (from now and until end of service), **future** (a scheduled or forecasted critical time slot), or always

Dependability is deliberately understood broadly to include
availability, reliability, safety, confidentiality, integrity and serviceability

Social Cyber Physical Trust

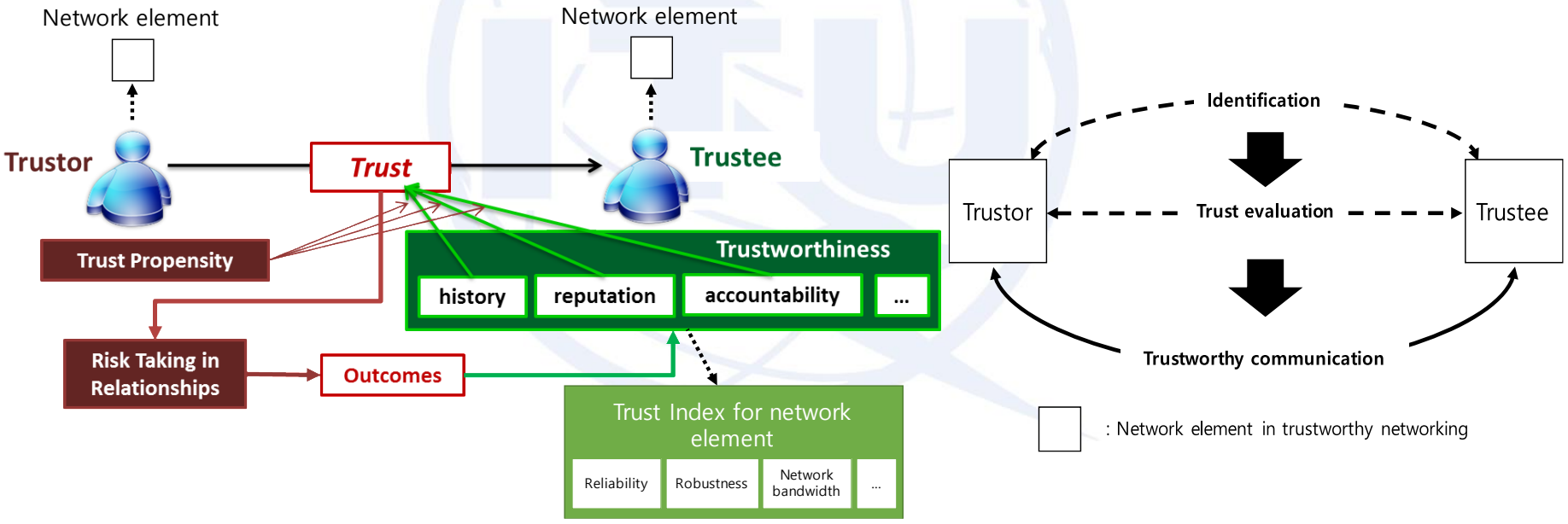


Architectural Framework (Y.3052)

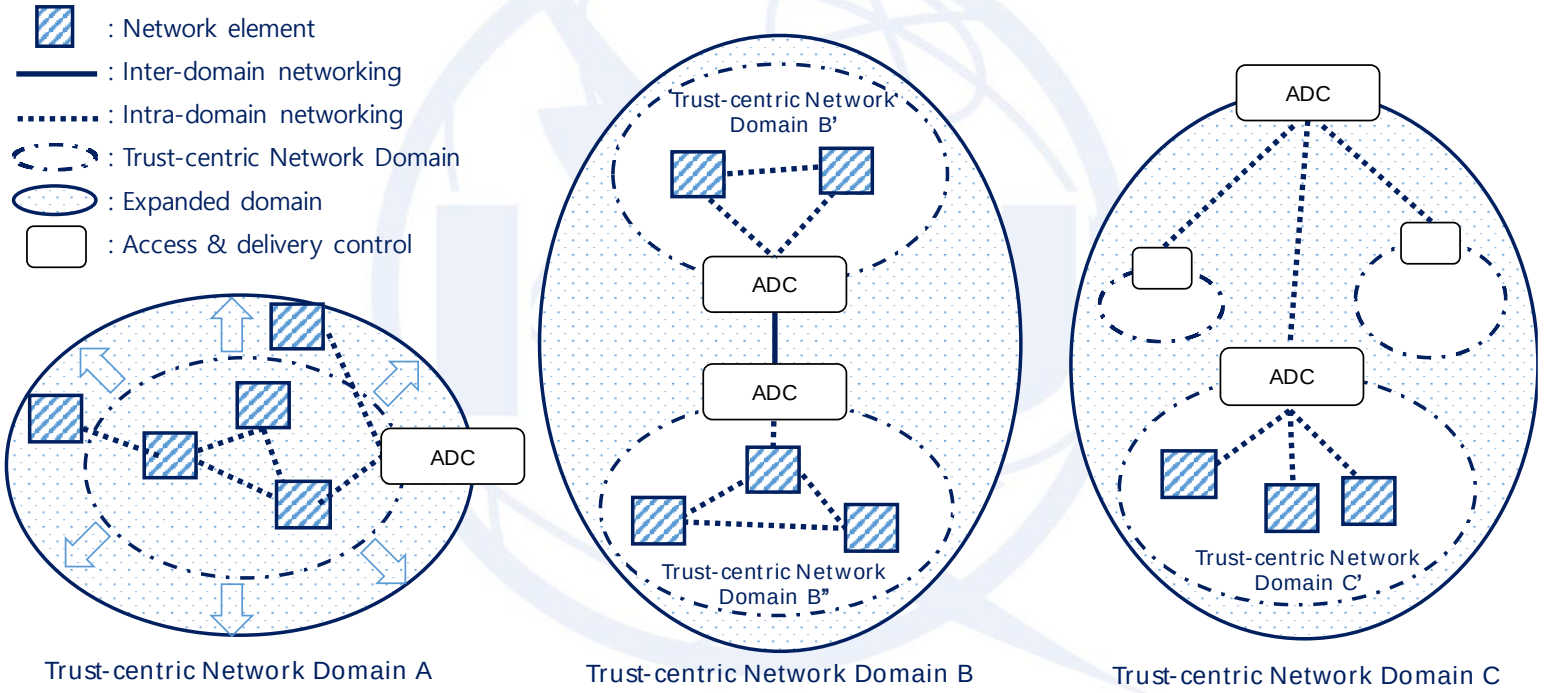


Trustworthy networking (Y.3053)

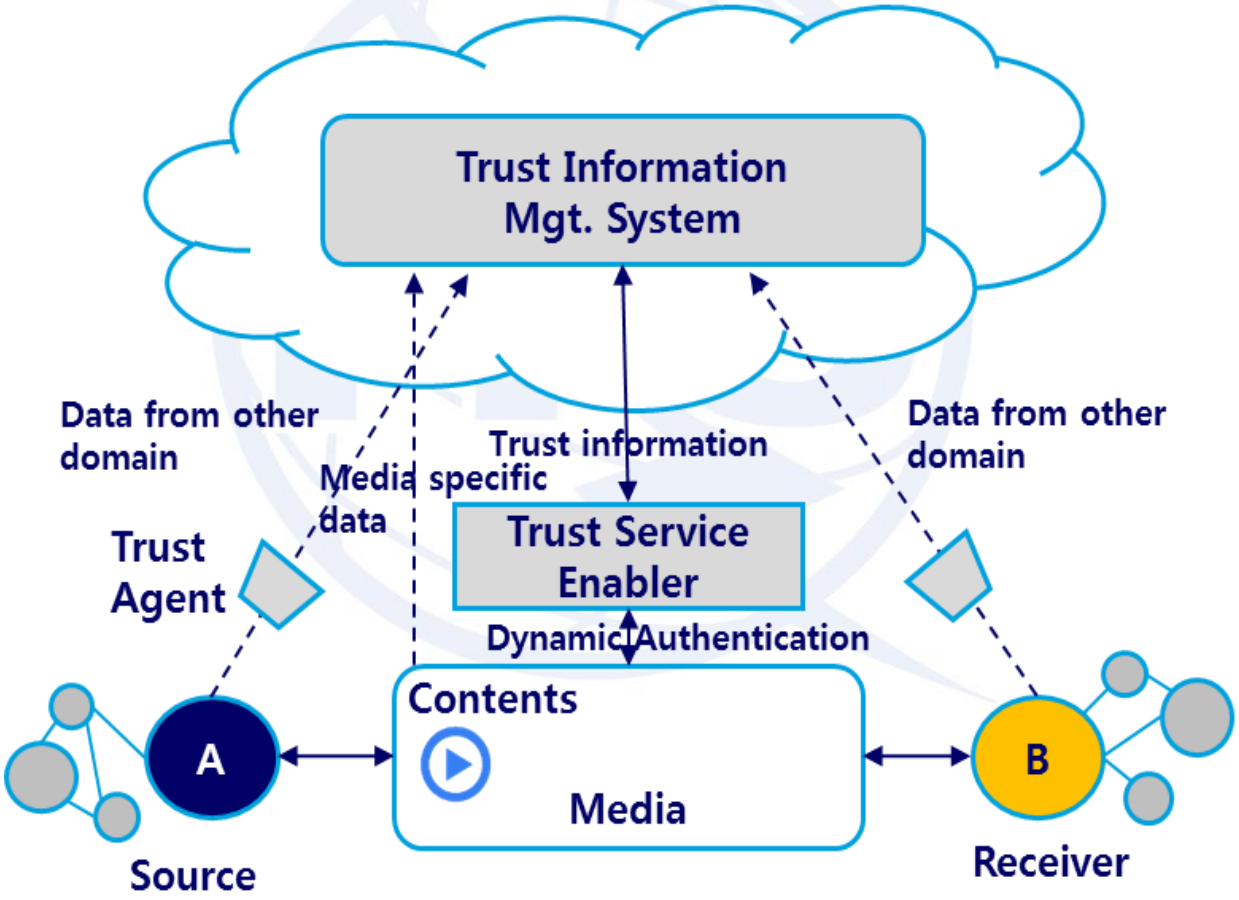
- A conceptual model of trustworthy networking



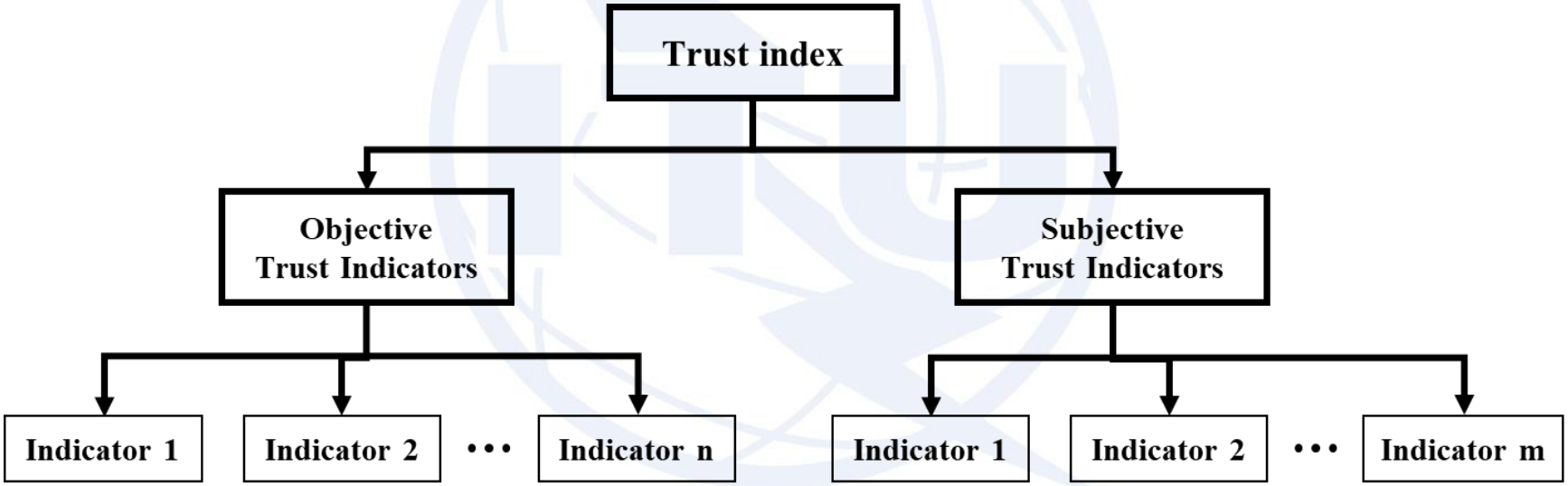
Expanding the trust-centric network domains



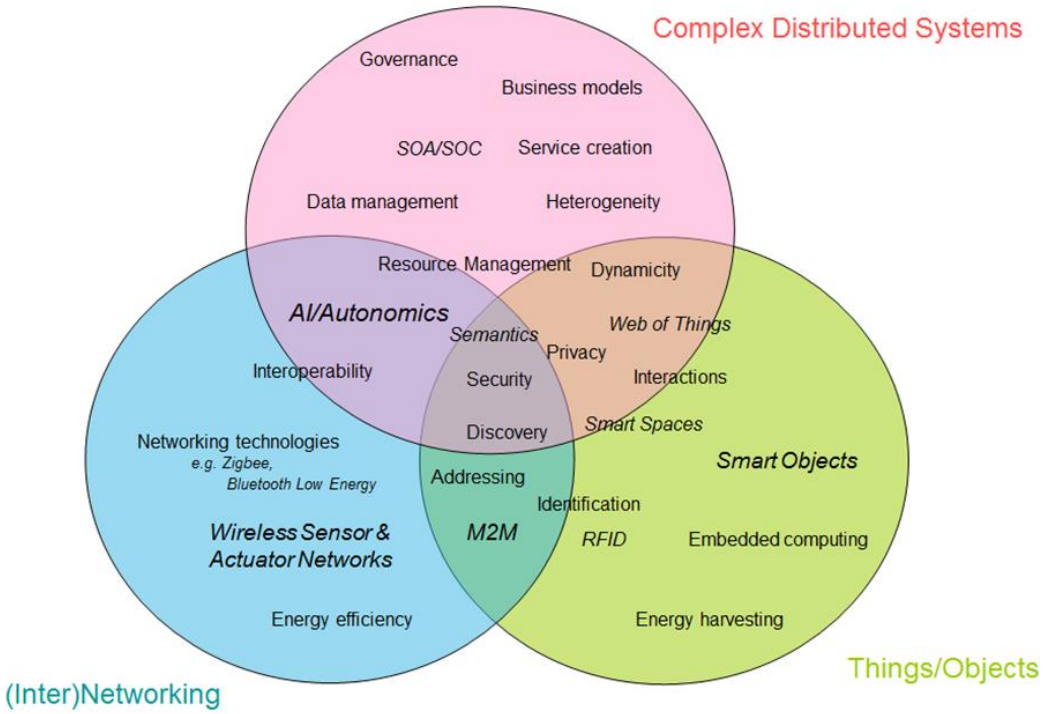
Trust based media services (Y.trustworthy-media)



Trust Index (Y.trust-index)



Technology Convergence

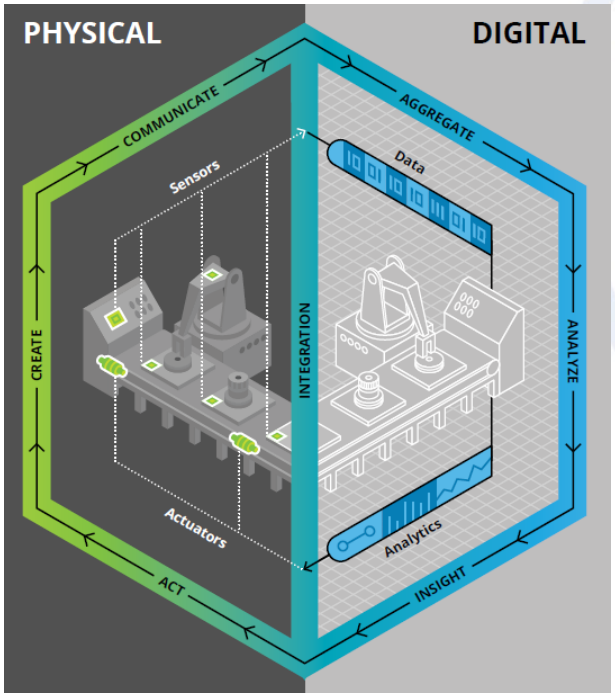


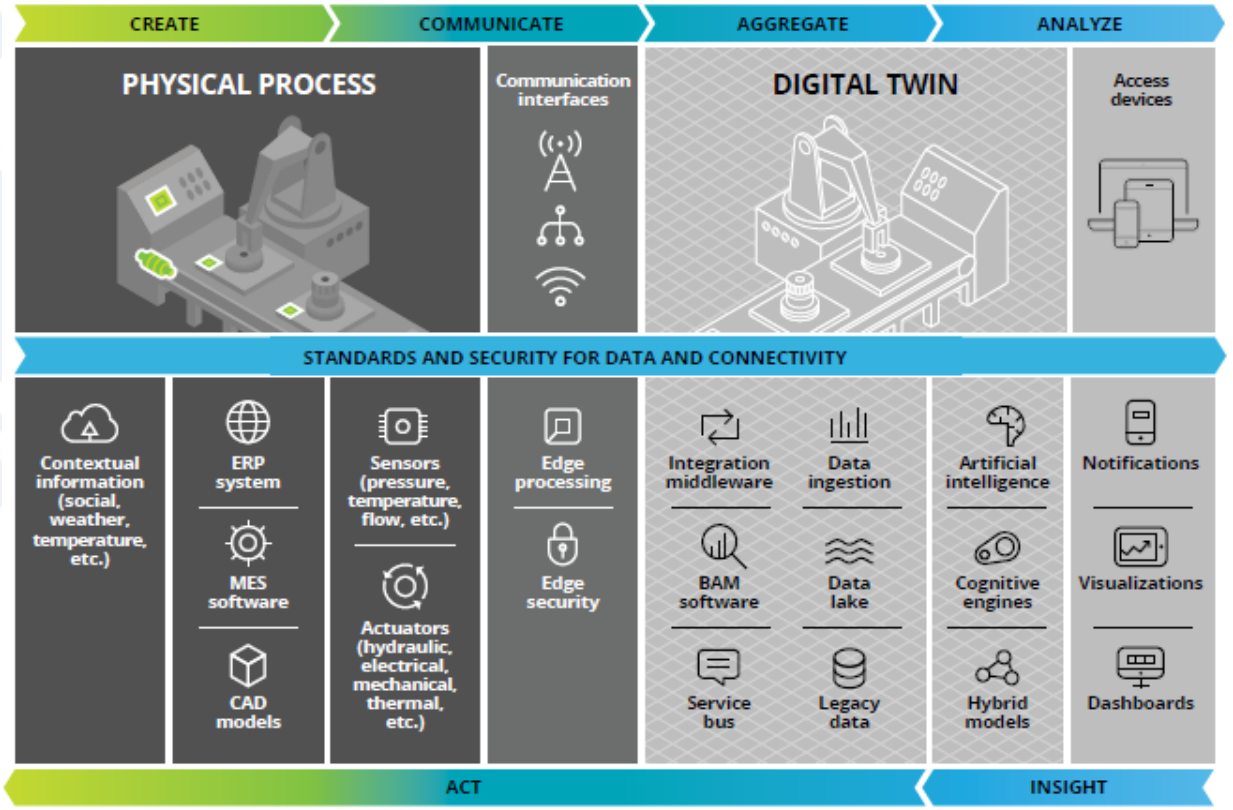
- Key technical aspects
  - Networking
  - Computing
  - Big Data
  - AI
  - Trust

Emerging Technology: Digital Twin

Digital Twin Model

Digital Twin Model

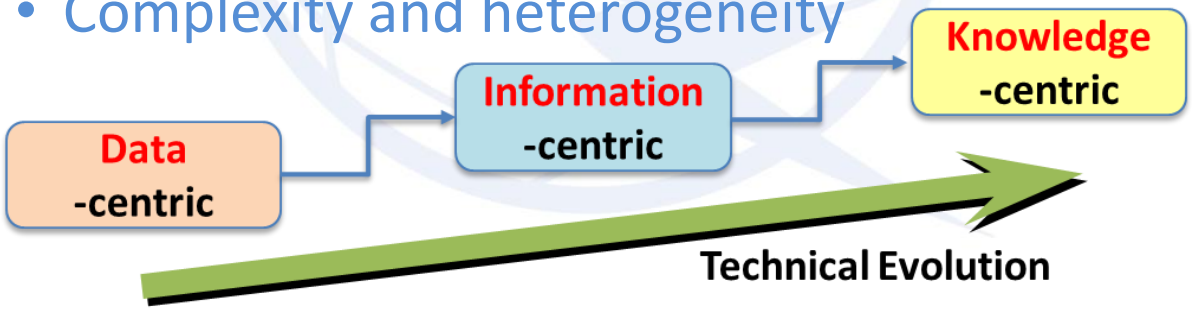




Source: Deloitte University Press

Towards T-SCPI

- Build up Trustworthy Social-Cyber-Physical Infrastructure (T-SCPI)
  - Trust-enabled infrastructure
  - Knowledge centric networking and services
    - Complexity and heterogeneity



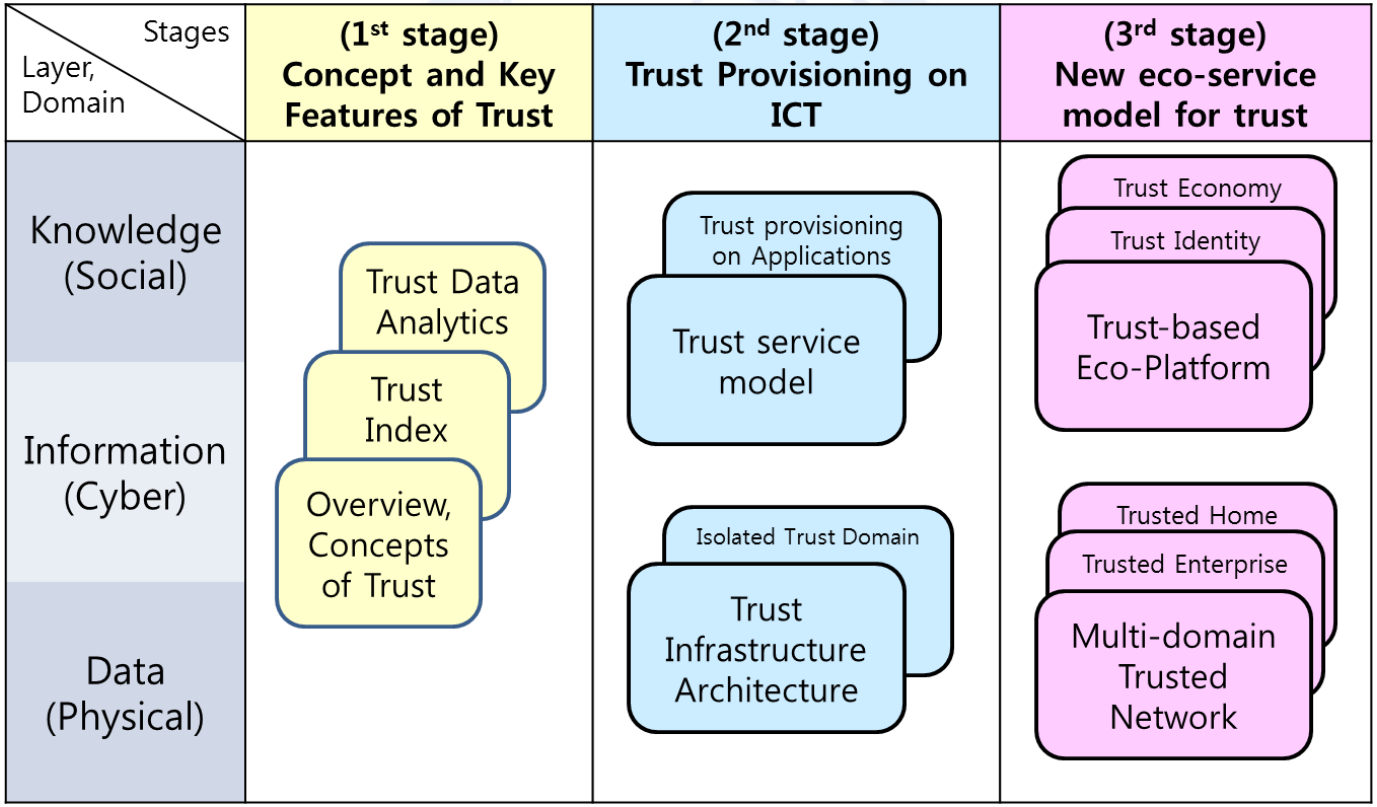
Challenges for Trust in SCPI

- Highly interconnected SCPI
  - A new kind of **complex system**
- Assuring continuous trustworthiness
  - Trust is **situation-specific** and trust **changes over time**
- Data transparency
  - **Promote transparency** about what data is collected and how it will be processed and handled
- Trust, security and privacy become tightly coupled
  - **A unified approach** towards trust, security and privacy co-analysis, design, implementation and verification
- The integration of the physical, cyber, and social worlds
  - **Social-cyber-physical trust** relationships

Technical Issues

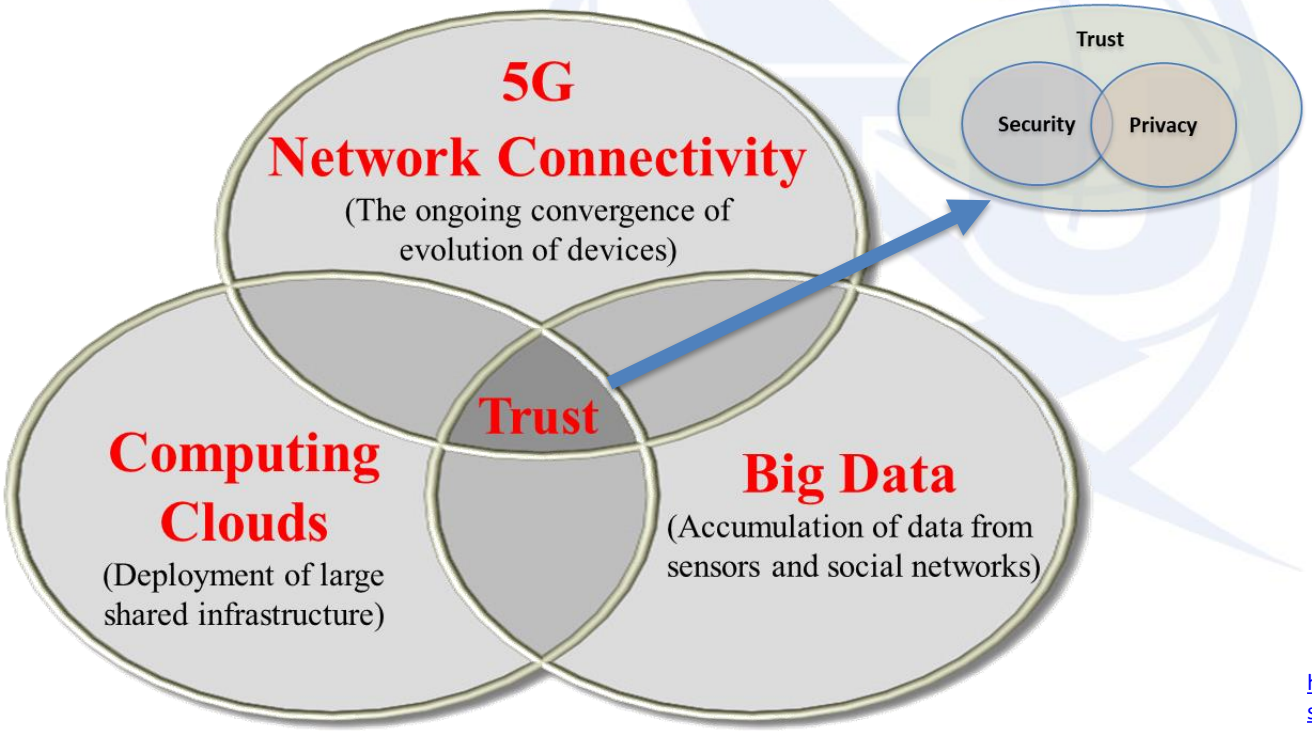
- Identification of entities
- Trustworthy data collection and aggregation
- Trustworthy data process and analysis
- Trust modelling and measuring
- Trust computation and trust evaluation/validation
- Dissemination of trust information
- Trust establishment and provisioning
- Trustworthy system lifecycle management

Roadmap for Trust Standardization

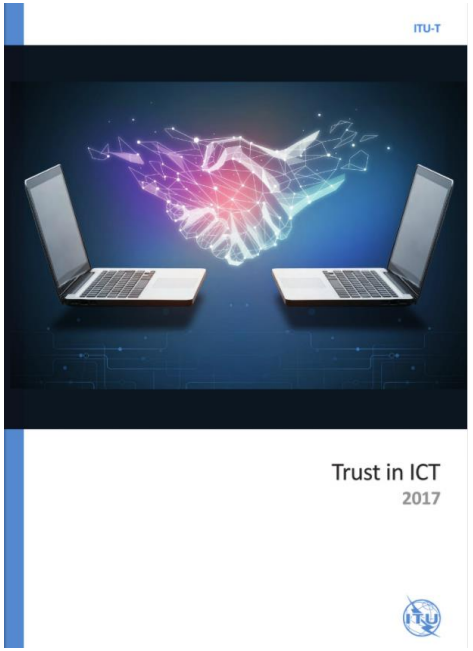


Conclusion

Trust considerations as an important item for standardization



ITU Publications - Flipbook



https://www.itu.int/en/publications/Documents/tsb/2017-Trust-in-ICT-2017/mobile/index.html#p=1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