



Chap XIII Standardization

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MAGISTER OF INFORMATION SYSTEM

What are standards?

- Agreed principles of protocol. Standards are set by committees working under various trade and international organizations.
www.levitonvoicedata.com/learning/glossary.asp
- criteria set as a model or an example to strive to achieve;
2) curriculum standards are subject-matter benchmarks to measure student academic achievement.
www.crede.org/tools/glossary.html
- Enables people to communicate, cooperate, interoperate and work in a world abounding in different languages, needs, context
- Enables better quality
- Enables reliability and obviates chaos

Why are IT Standards required – role they play?

- They enable software applications to interoperate
- Software engineering
 - ◀ They speed up software development and delivery process
 - » Tools
 - » Processes
- They enable better management and visibility of IT assets
- They ensure quality of IT product and service
- Collaborative design and development
- Some examples of IT standards follows...

SOA Maturity Model (SOAMMM)



Enterprise IT Standards

- Enterprise wide thinking about business and IT
- Enterprise Architecture
- Enables enterprise wide
 - ← Scalability of IT infrastructure
 - ← Accountability of IT assets
 - ← Interoperability of multiple internal applications
 - ← Better use of IT assets
 - ← Bridges heterogeneity of platforms and technologies
 - ← Business and IT architecture connection
- Standards and bodies
 - ← TOGAF
 - ← Zachman Framework
 - ← Gartner EA
 - ← Etc.

1. Argument

1. Changes in the international standardization landscape pose **new challenges** for standards and innovation policy:
 - ← The economic importance of standards has dramatically increased.
 - ← At the same time, standards development has become more complicated and difficult to manage.
2. Standards development now is a highly contested field of corporate strategy, but increasingly also of public policy:
 - ← Standards and innovation policy
 - ← Standards and competition policy

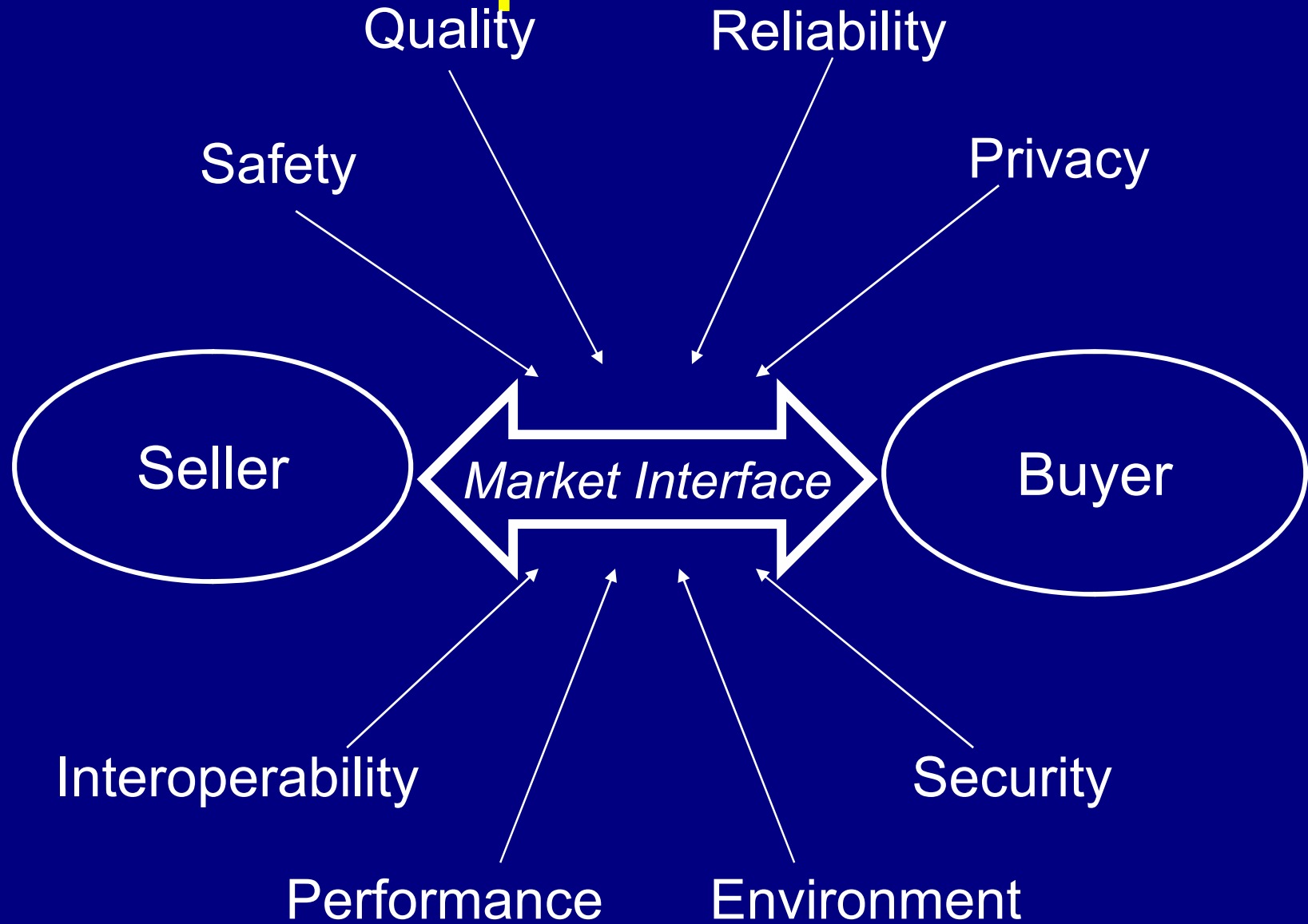
Why does this matter?

- Claim: Market-led system of standardization is working well → no need for policy adjustments (really?)
- Crisis shows - markets work best when there is a strong regulatory framework.
- Challenges for standardization are real:
 - ← established approaches to standards development are under pressure
 - ← there are serious gaps in the governance of standards development.
- **It is time for stakeholders in standardization (both in the private and public sector) to search for new institutional arrangements and policy responses.**

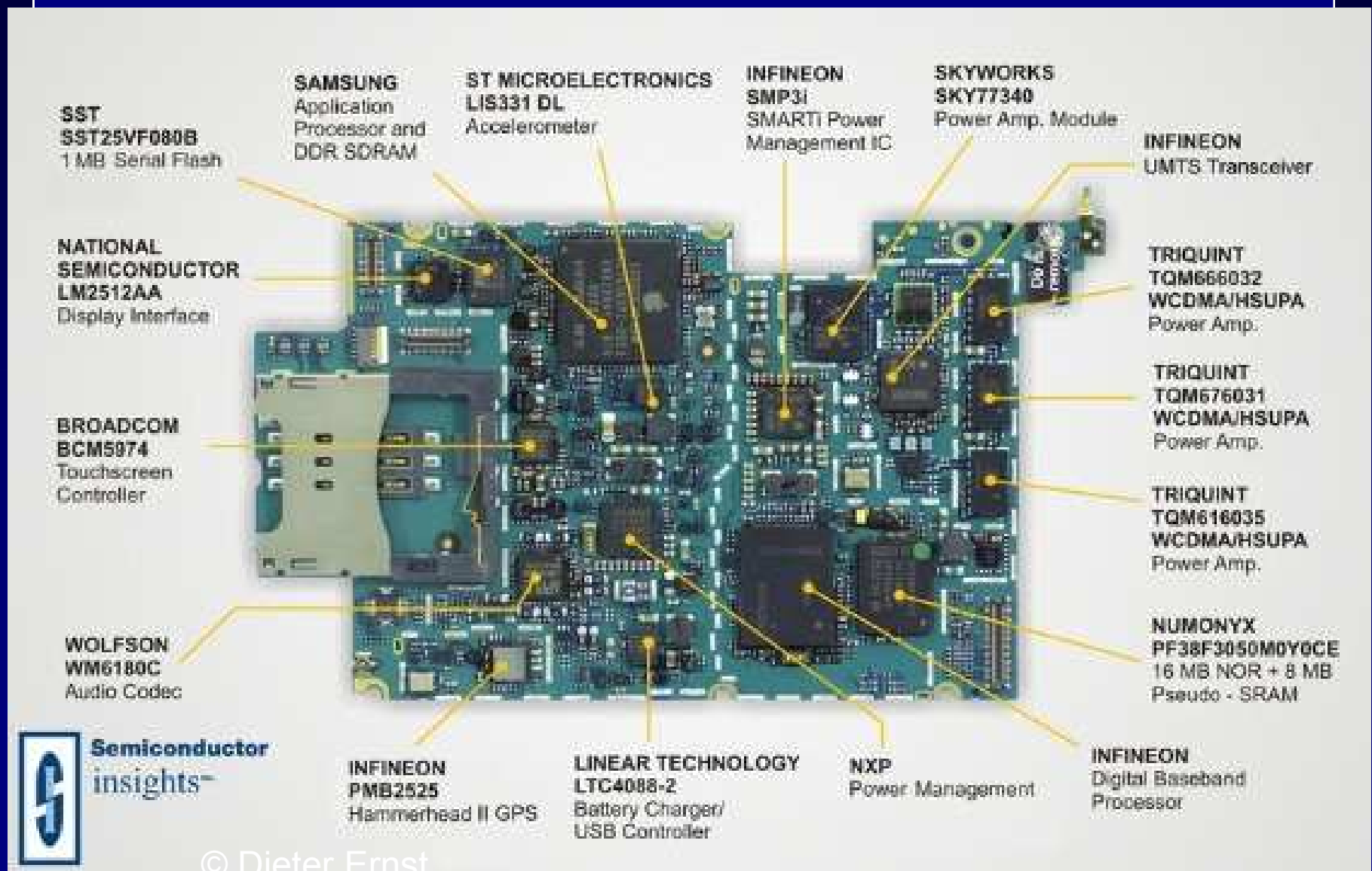
2. Explanation – Technological complexity

- multiple standards
- complex standardization process - system versus component specification
- demanding performance requirements for electronic systems
- modular design → system integration on a chip
- multiple layers of standardization
- Complexity of applications requires standardization of hardware, operating system and network

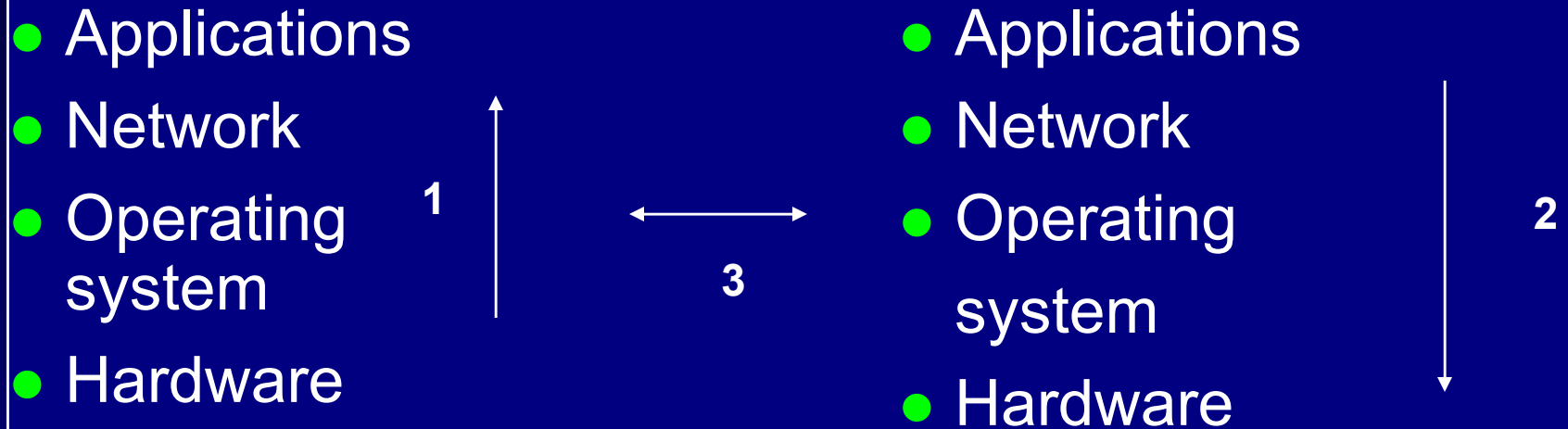
Multiple standards



Apple iPhone 3G



Layers of IT standardization

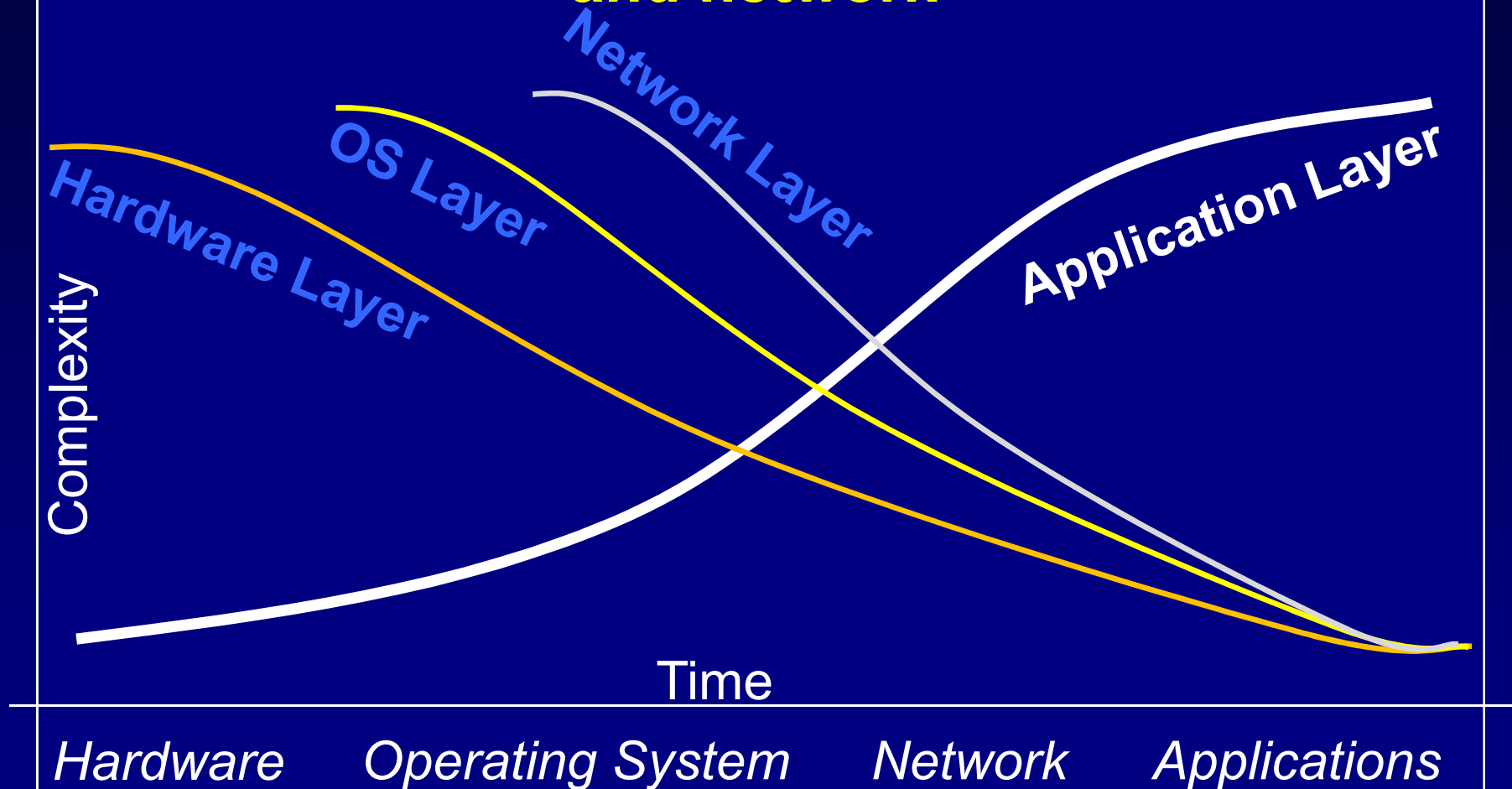


1= standardization starts with CPU, memory, storage & communication gear

2= standardization moves down from applications to hardware

3= enhance interoperability between systems at various layers

Complexity of applications requires standardization of hardware, operating system and network



Source: Lord, 2007

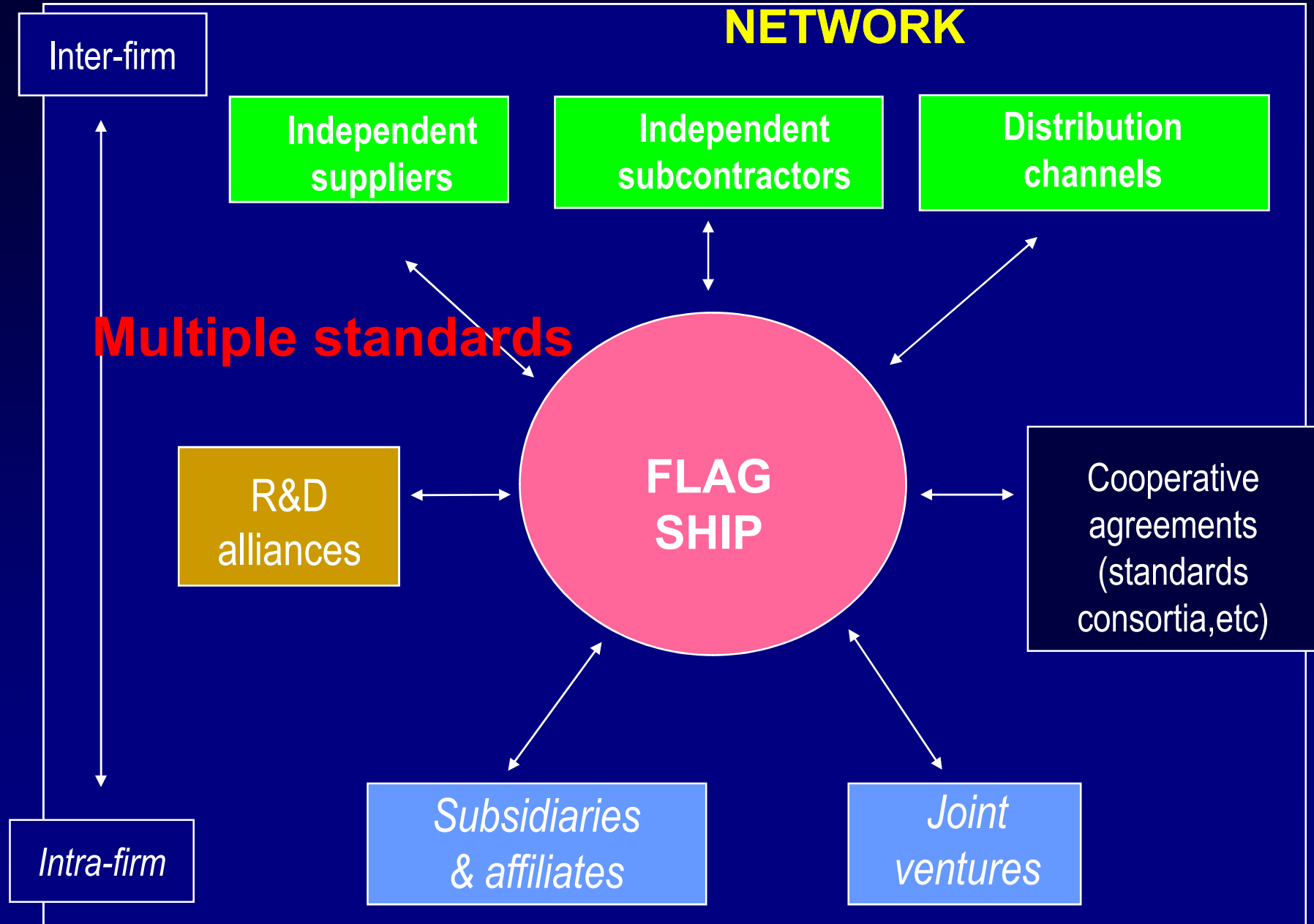
Interoperability standards in the ICT industry

- *Wireless interface standards* - ensure non-interfering use of radio spectrum;
- *Interoperability within a system*
 - ← ensure that various parts of the computer, radio and network systems function together
 - ← ensure compatibility of equipment produced by various vendors;
- *Portability* - permits software to work with heterogeneous systems
- *Data exchange* among different systems

3. Standards for global corporate networks

- Reliable and secure communication of sensitive information within and across networks
- Interfaces (middleware) among proprietary information systems
- Data formats to enable transmission and interpretation of data
- Efficient methods for updating standards to accommodate new technologies

THE NODES OF A GLOBAL PRODUCTION NETWORK



4. China's Rise – can US adjust to interdependence?

- Global Knowledge Economy → eroding US leadership in manufacturing, trade, finance, technology and research.
- The US may have less influence than in the past to determine international standards development.
- New players:
 - ← standards are important instruments for industrial and economic development.
 - ← move from being *standards-takers* to *standards-co-shapers* and ultimately to *standards-setters*.

Countries differ in standardization policies

Innovators (with high IP producers)

- Laws and trade policies protect IP owners
- “openness” subordinated to IP protection

Manufacturers (primarily IP users)

- Focus on social good (“development”) and sharing of IP
- “openness” subordinated to national development

US and Chinese standardization systems differ

US	China
Distributed, driven by private sector	Centralized, driven by the State (industrial policy; security)
Pragmatic, flexible, bottom-up	Systematic, bureaucratic, top-down
Reactive, responding to specific needs	Anticipatory and strategic
International standards often only guides	Tension between national & international standards
Intense rivalry among SDOs & consortia	Intense intra-agency rivalry
Foreign participation welcome	Limited foreign participation

5. Implications for public governance

Is it appropriate to conclude that

- **the old-style top down government intervention won't do the trick any longer on its own?**
- **new forms of public governance are necessary to cope with the new standardization challenges?**

ICT Standarisasi

- Teknik manajemen yang digunakan untuk mengurangi resiko
- Berkembang dari secara teknik menjadi perangkat marketing
- Meresponi perubahan bisnis dan lingkungannya

Definisi ICT Standard

A standard is a technical specification that codifies a set of interfaces which describe the necessary methodology to achieve interoperation between disparate programs. The standard does not say how the interfaces are to be met,

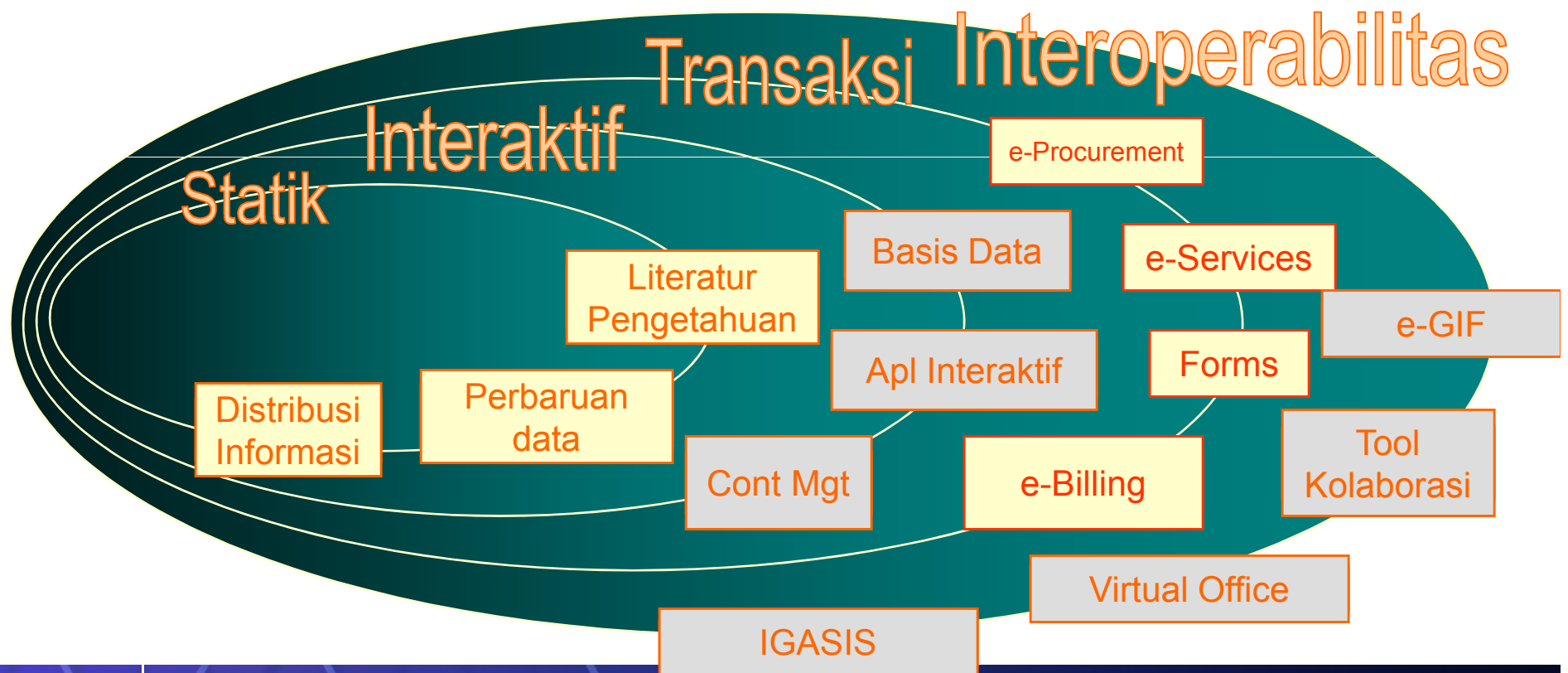
only that the interfaces must be open (that is, not proprietary), accessible, and fall within the realm of reality. It would also be nice if the interface recognizes that there are global requirements. This specification is the result of action by an SSO.

Standard Setting Organisation (SSO)

- Asosiasi Dagang : WTO, IEEE, ASTM, ANSI
- Organisasi Pengembang Standard (SDO) :ISO, IEC
- Konsorsium : World Wide Web Consortium (W3C)
- Aliansi : IETF
- Pergerakan Open Source: GNU General Public License (GPL)
IGOS

Tujuan Standarisasi

- Kerjasama antara stakeholder
 - Komunitas : mendukung minat , memberikan jaminan kualitas
 - Pemegang kebijakan publik: legislatif policy
 - Industri : kompetitif, inovasi dan interoperabilitas



Development of the environment

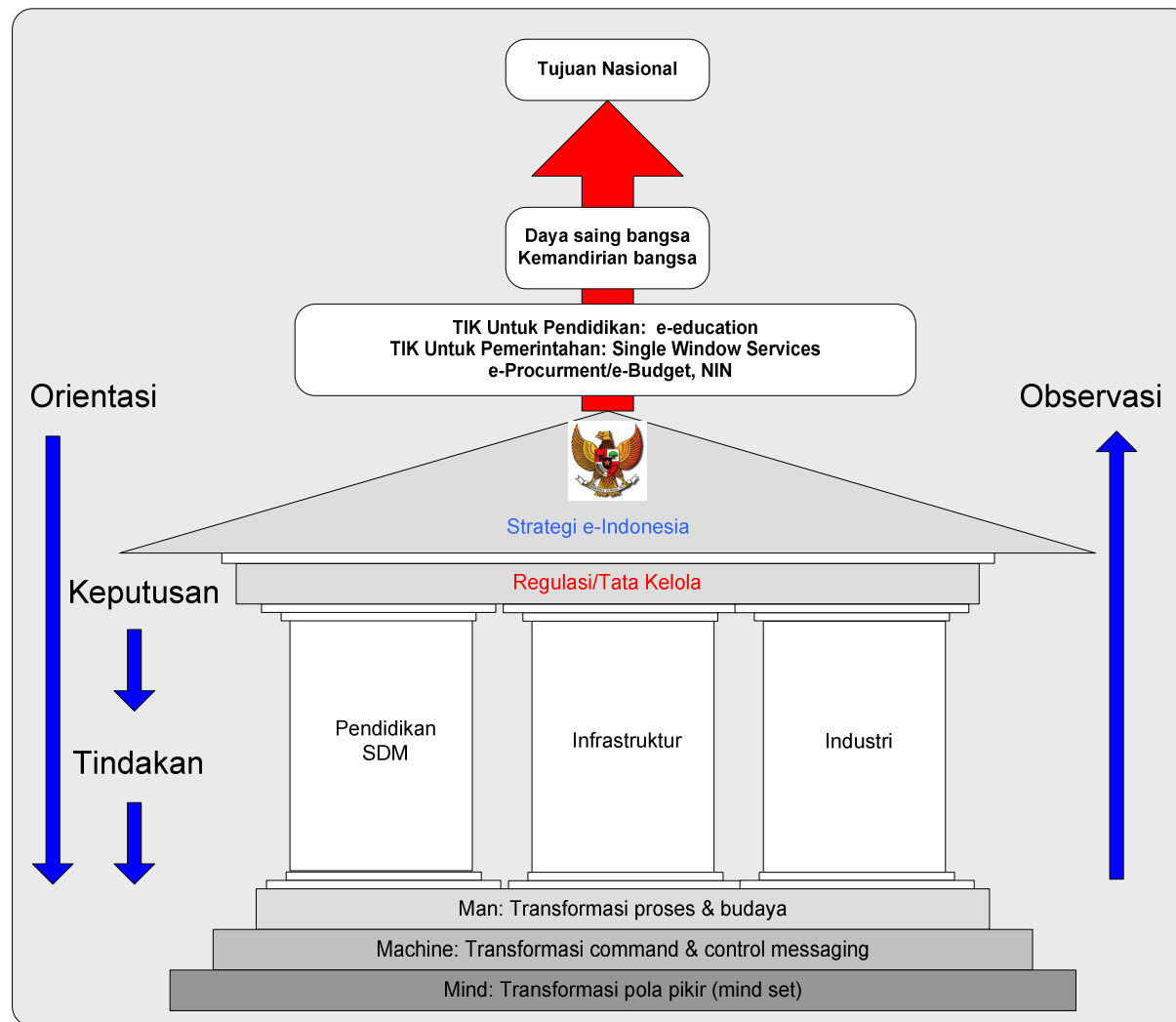
- Users care about:
 - Availability
 - Reliability
 - Ease of use
 - Interoperability
 - Speed
 - Mobility
 - Cost
- ...not technology
- Industry needs to make technology choices to provide customer requirements
- Standards are rarely “technology neutral”
- Standardisation process is technology neutral

Badan-badan International Penetap Standard

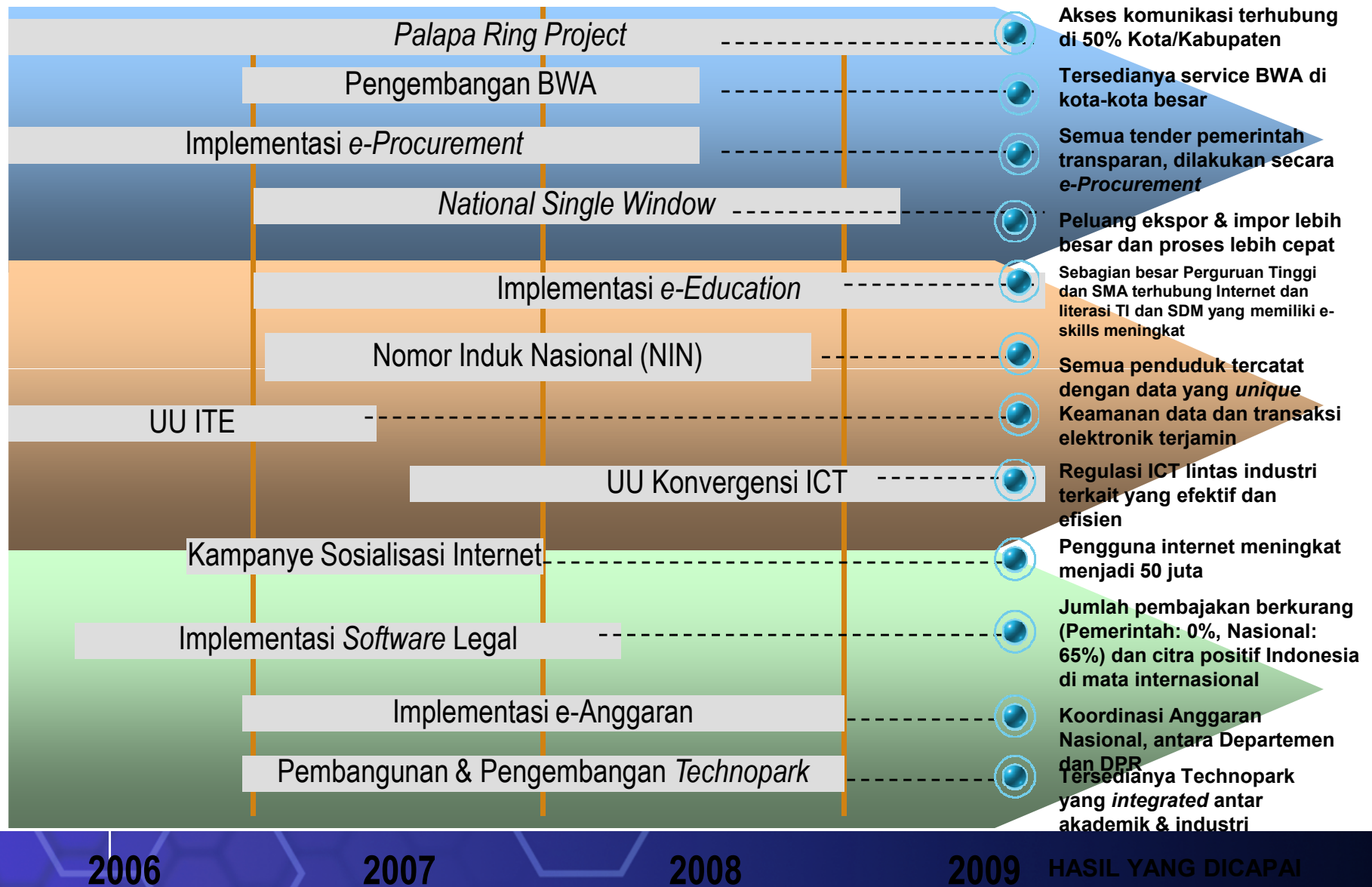
- ITU – International Telecommunication Union
- IEC – International Electrotechnical Commission
- ISO – International Organization for standardization c

Sinergi Strategi e-Indonesia

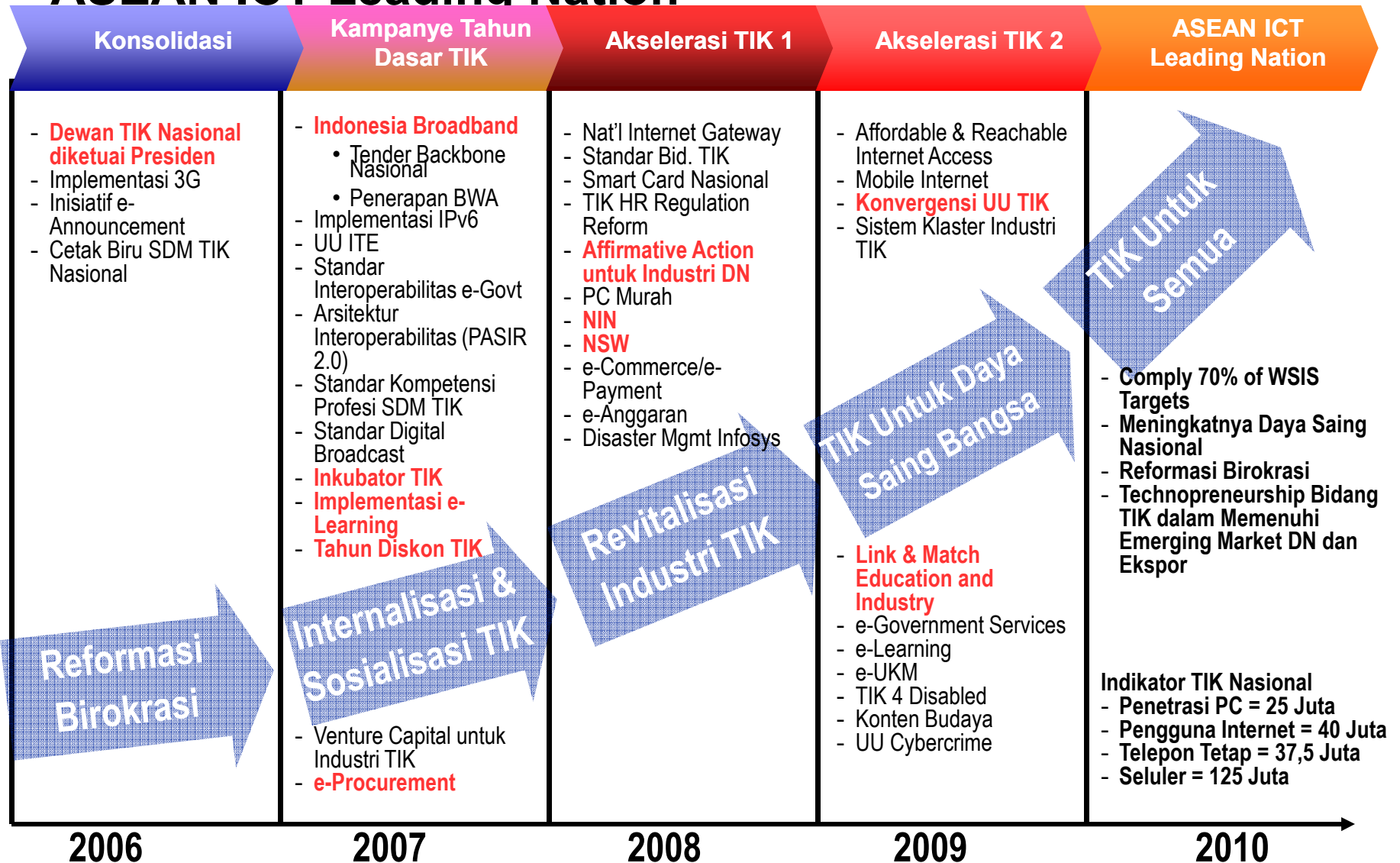
Forum ICT 4 PT



Beberapa Kegiatan Lintas Instansi dalam Roadmap ICT Indonesia



Roadmap Indonesia Menjadi “ASEAN ICT Leading Nation”



Indikator TIK Nasional

- Penetrasi PC = 25 Juta
- Pengguna Internet = 40 Juta
- Telepon Tetap = 37,5 Juta
- Seluler = 125 Juta

Program Kerja Pemerintah dalam standarisasi

Program

Kegiatan

Standarisasi & Audit Aplikasi

- Pemetaan dan Formulasi Kebijakan Standar dan Audit Konten
- Pemetaan, identifikasi dan Formulasi Standar dan Audit SISFO
- Mapping, Identifikasi dan Formulasi Kebijakan Standar dan Audit Keamanan
- Inventarisasi dan Pemetaan Standarisasi dan Audit Perangkat Lunak
- Identifikasi dan Formulasi Standar dan Audit Aplikasi
- Sosialisasi dan Pengembangan Rumusan Standar Interoperabilitas e-Gov
- Sosialisasi dan Pengembangan Rumusan Standar Keamanan
- Sosialisasi Pengembangan Rumusan Standar Bio ID Mendukung Penerapan Teknologi Smart Card
- Standar dan Audit sebagai Pilar Indonesia Bangkit menuju Pasar bebas
- Perumusan Standar Teknologi Smart Card Mendukung NIN dan NPWP
- E-Procurement Menuju Standar dan Audit
- Perumusan Standar Akreditasi dan Kelembagaan Aptel
- Penyediaan SOP Good Government Practises
- Penyediaan Standar dan Audit Konten
- Pengembangan Standar Interoperability e-Gov
- Verifikasi dan Audit Implementasi UU HaKI Lingkup Aplikasi Telematika
- Pengembangan dan Sosialisasi Kebijakan Standarisasi dan Audit Dalam Rangka PNB