



# Orientation To Information and Communications Technology (ICT) Standardization

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# Overview

- ICT Standardization is changing
  - > Was technology based, with “clear” rules, single organization model
  - > Run by ISO/IEC/ITU
- There are now multiple phases of standardization
- “Standardization” has multiple meanings
- There are new organization types, new structures
- Regulatory standardization is growing
- What we're standardizing may be wrong

# Phases Of Standardization

- Standardization Phases
  - A standardization body is chosen or created
  - Someone makes a proposal (usually a corporation)
  - A call is issued for participation
  - Proposal accepted (usually) and a committee started
  - Committee works and creates a standard
  - Standard is reviewed, approved, and published
- Problems:
  - No validation of need or conflicting standards
  - No conformance test or reference implementations
  - No interoperability guarantee
  - No common IPR policy

# Proprietary - Participatory

- The Theory:
  - > Standards are developed by consensus of interested parties, and the standard can be implemented by all
- The Reality:
  - > Current ISO process allows “proprietary” standards
  - > Rules focus on the *Input to the Process*, not *Outcome of the Process*
  - > Standards can have high IPR fees, single or limited implementation ability, any other limiting factors
- No guarantee that products can easily be built from these standards

# New Organizational Structures

- ◆ Five Major Types of SSOs (Process Based)
  - ◆ Trade Associations (ca. 1900)
  - ◆ National Formal Organizations (ca. 1930)
  - ◆ International Formal Organizations (ca. 1945)
  - ◆ Consortia (ca. 1985)
  - ◆ Alliances (ca. 1998)
- ◆ Consortia and Alliances Are Growth Areas
  - ◆ Nearly always U.S. based
  - ◆ Enabled by US Congress- (National Cooperative Research and Production Act of 1993 (15 U.S.C. §§4301, et seq.)

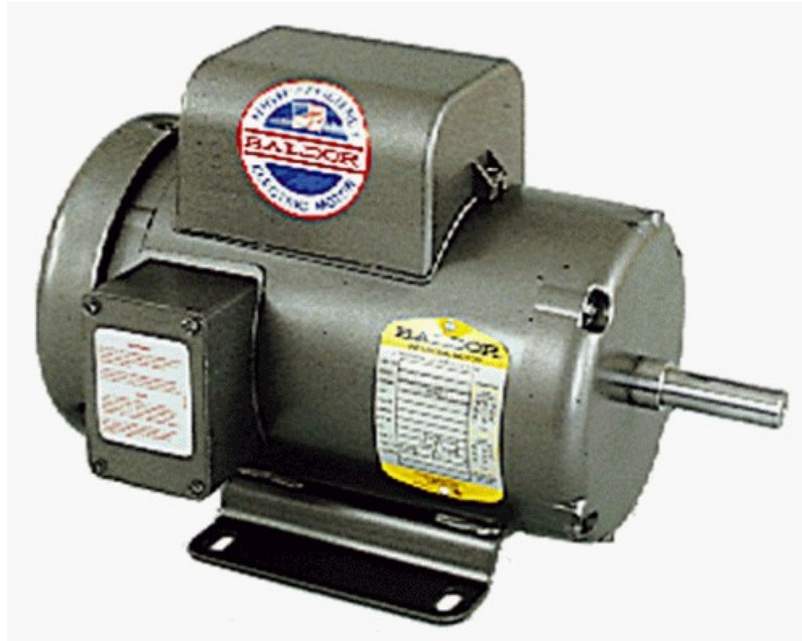
# Regulatory Standardization

- ◆ Voluntary Standards:
  - ◆ Market driven, market demanded
  - ◆ No law requiring them
- ◆ Regulatory Standards:
  - ◆ Traditionally deal with product safety, health, or environmental issues
  - ◆ Usually ISO/IEC based
- ◆ New Regulatory standards
  - ◆ Social responsibility, data protection, privacy, DRM
  - ◆ Created formally and informally
- ◆ Ambiguous governmental policies

# What are we Standardizing?

- ◆ Interfaces (API's, Protocols, Schema)
  - ◆ The *contract* supported by the Implementation
  - ◆ An abstraction of implementations
  - ◆ Proprietary vs. Open Specifications
- ◆ Implementations (Code)
  - ◆ The *implementation* of a function
  - ◆ Does the work
  - ◆ Proprietary vs. Open Source
- ◆ There are (typically) many possible implementations that support the same interface

# Implementations vs. Interfaces



# Benefits of Interface Standardization

- ◆ Interfaces make independently designed, heterogeneous systems work together
- ◆ Lower substitution costs
- ◆ Lower market entry and exit costs
- ◆ Spur innovation at more useful levels (e.g. Where interoperability isn't threatened)
- ◆ Standardized and testable interfaces make verification possible

## Key Philosophical Issue

**If you control an interface,  
you can exclude  
*ALL* possible implementations!**

# Would you rather own a patent on...?

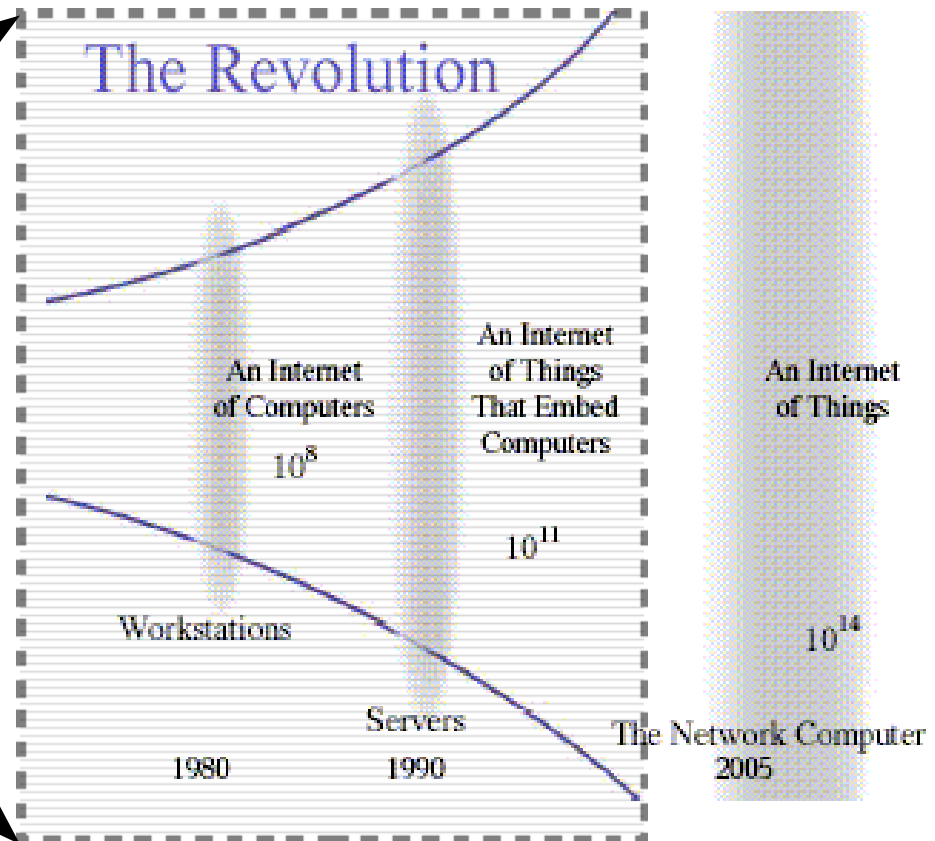


# Concluding Points

- Standardization, as it is practiced now, is fundamentally flawed
  - Controlled by major ICT multinationals (US, Europe, or Japanese based)
  - Is used to make/create/drive “informal” governmental policies
  - Controls access to and participation in ICT market
- Is no longer a technical activity
  - Driven in “silos”, not horizontally
  - Will collapse of its own weight in 10 years

# And Where we're all going...

**Between 100  
and 10,000  
new or used  
standards will be  
needed here in  
the next 5 years**



# Thank You

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