Common and Uncommon Knowledge: Open Standards and Patents

Workshop on Open ICT Ecosystems
National Institute of Standards and Technology
March 13, 2006

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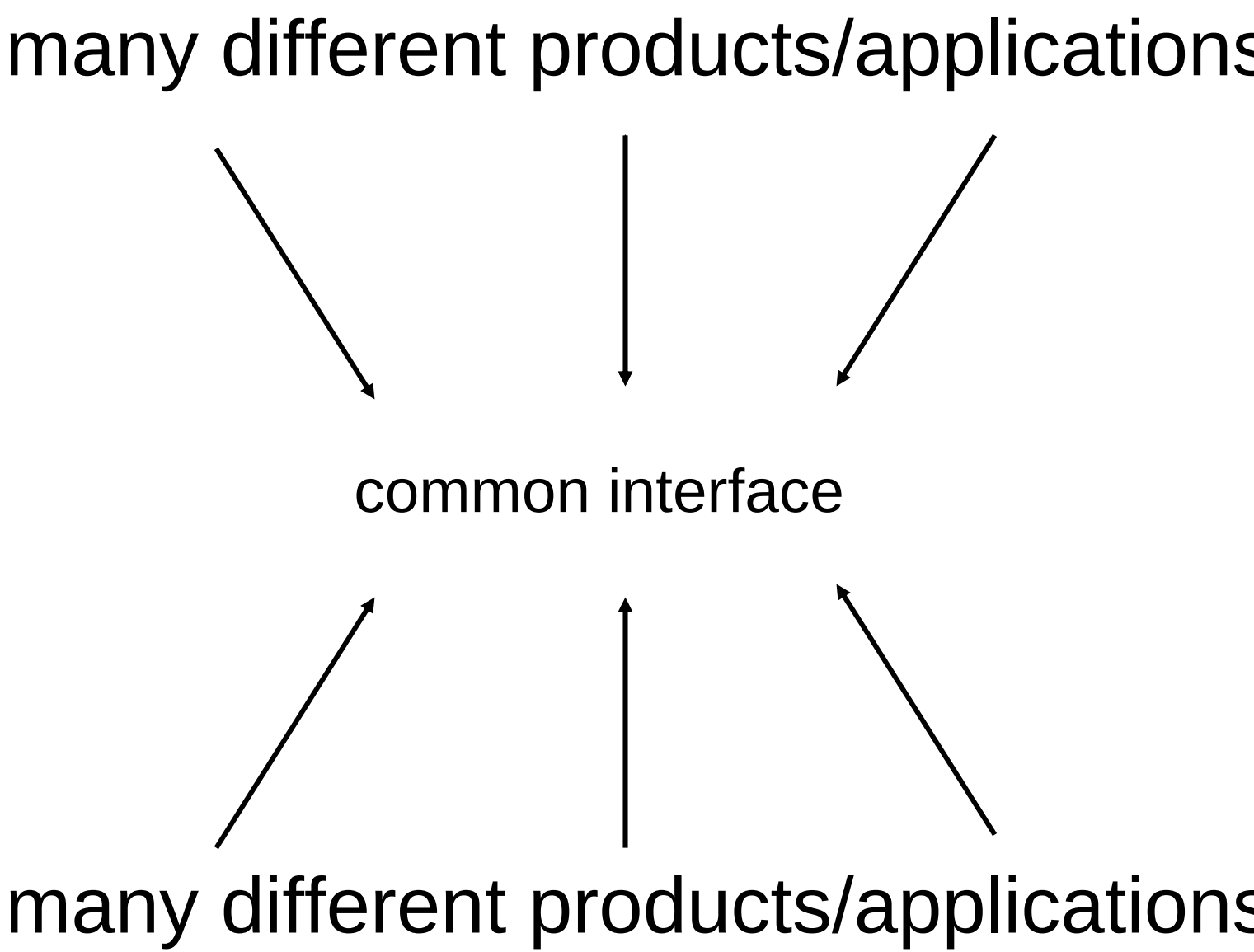
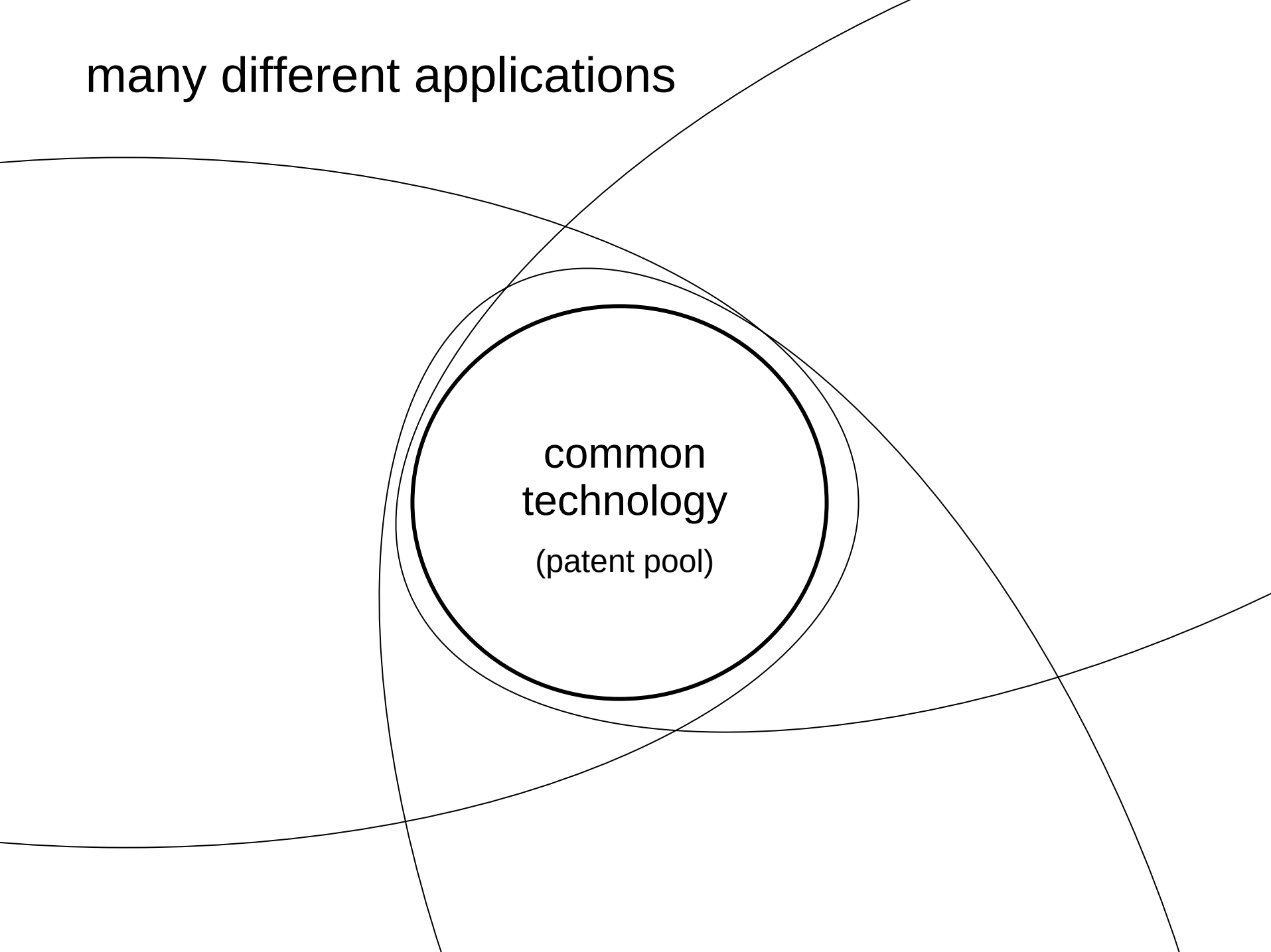
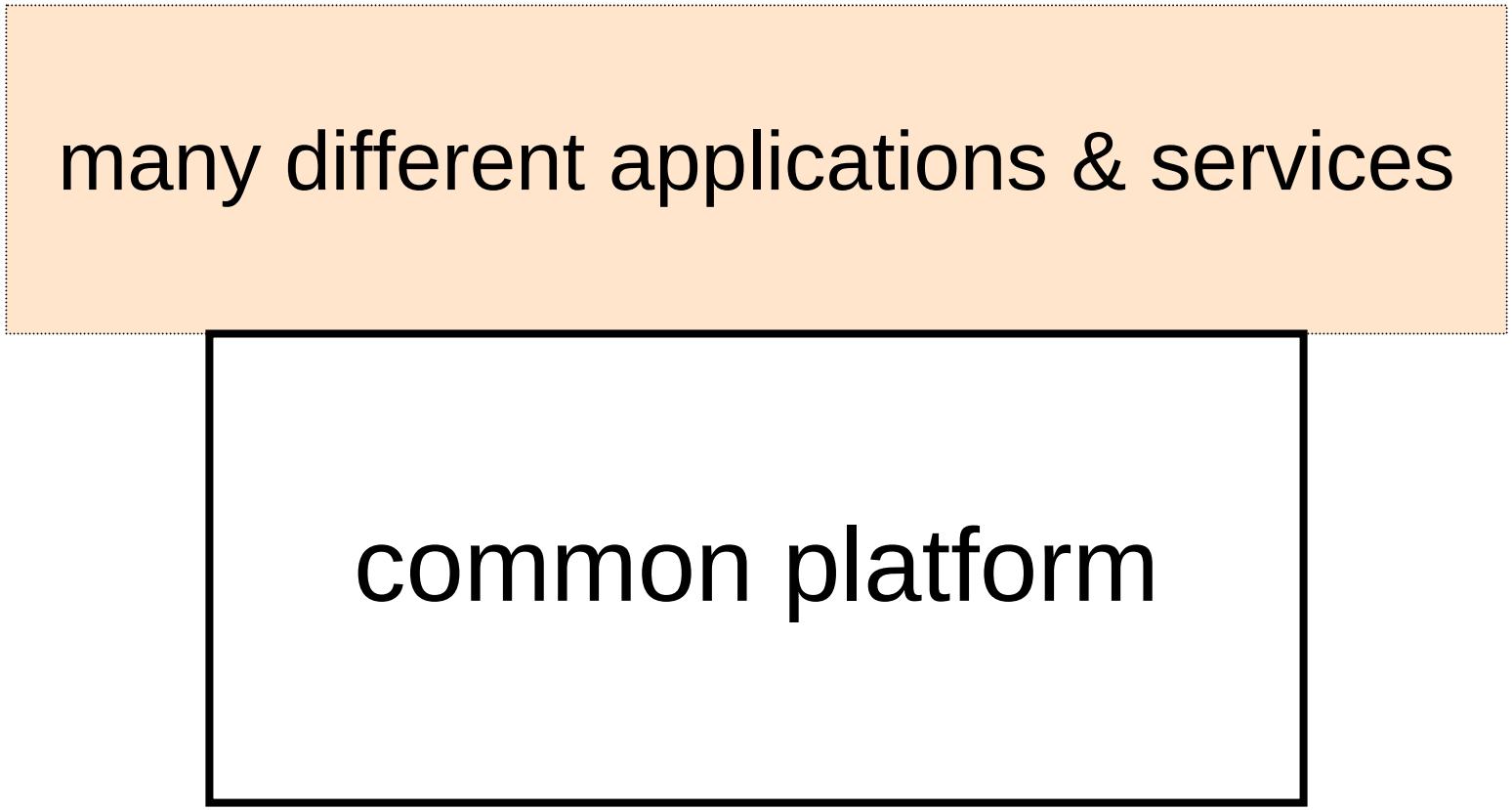

many different products/applications
common interface
many different products/applications


many different applications
common
technology
(patent pool)


many different applications & services
common platform

standards:
focused knowledge about technology

- collective knowledge and insight
- consistent across suppliers and users
- functional
- consensual
- implemented
- validated
- certified
- widely used
  - by innovators
  - by end users

ICT standards….

- manage complexity & enable interoperation
- promote innovation & innovation-based competition
- encourage market development
- democratize technology

growing importance scope of standards

- complexity of ICTs
  - interoperability and interconnection
  - modularity and architecture
- ubiquity of ICTs
  - scale economies
  - dependencies and externalities
- globalization of ICT
  - breakdown of de facto/ de jure
- growing diversity of ICT
- importance of ICT across the economy

“open standards”

- well-defined
- valued for ubiquity
- validated by experience and consensus
- preferred by users
- aligned with public sector principles: transparency, accountability, and participation

dimensions of “open”

- development process
  - past (traditional focus)
  - future (uniquely important to ICT)
- terms and conditions of use*
- “openness” in fact
  - implementations
  - conformance testing
  - multiplicity of vendors/implementors
  - extensibility
  - vulnerability to IPR

variations from “open” to “controlled”

- complete exclusion
- available for sale (assignment)
- nonexclusive licensing
- RAND licensing
- RF licensing
- trademark control
- tariffed terms and conditions
- copyleft (GPL)
- noncopyleft open source
- public domain

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open standards

- competing definitions
- many (micro-)ecologies
  - different traditions
  - different economics
  - different trajectories
  - different IP environments
- incomplete knowledge
  - asymmetries
  - strategic behavior
  - arbitrage

From an intellectual property perspective, open and proprietary IP models should not be seen as mutually exclusive; rather the IP framework must enable both approaches. Because collaborative innovation is relatively new, however, the structure and processes to accommodate ownership, openness and access are evolving. New creative models are emerging across sectors. A mature, balanced understanding of the purpose and practice of standards, including the important role of open standards and global harmonization, is essential to further interoperability, spur technological innovation and expand market applications.

-- National Innovation Initiative, Final Report, December 2004

- standards
  - “common” knowledge
  - defined by engineers
  - must work in practice
  - value in ubiquity
  - enabling

- patents
  - “uncommon” knowledge
  - defined by lawyers
  - no practical test
  - value in exclusivity
  - disabling (exclusive)

ICT standards and ICT patents

- both about knowledge and investment
- both characterized by increased importance, scope, and diverse practice
- both can promote innovation -- or inhibit it

but

- patents trump standards
- lack of institutional/political presence for open IT standards

growing scope of patents

- lowered threshold (nonobviousness)
- increased potency
  - automatic injunctive relief
  - enhanced presumption of validity
- unlimited subject matter
- opacity of patent practice
  - patent thicket(s)
  - incentives for surprise and arbitrage

knowledge failure in patents

- prepublication blindsiding and speed of innovation
- triviality/number of patents
- liability for willful infringement
- deficiencies of patent information
  - prior art, blocking patents, poorly defined boundaries
- incentives to take advantage of asymmetries

TI has something like 8000 patents in the United States that are active patents, and for us to know what's in that portfolio, we think, is just a mind-boggling, budget-busting exercise to try to figure that out with any degree of accuracy at all.

Frederick J. Telecky, Jr., Senior Vice President and General Patent Counsel, Texas Instruments, FTC/DOJ hearings Feb 2002

three problems

- uncertainty of RAND commitment and potential for abuse
- private ambush by participants
  - FTC-Dell settlement
  - “no obligation of good faith dealing” unless agreed by contract (Rambus)
- ambush by nonparticipants (trolls)
  - JPEG (Forgent)
  - MPEG 4 (AT&T)

clearing products/standards against patents

- cost of initial search $2000 to $15000 per function
- nothing found?
  - could be unfiled or unpublished applications
- something found?
  - possibility of invalidity (esp. in software)
  - abandon investment or face willful infringement?

patentees can "free-ride" on standard

- if known, patents can usually be designed around
- value comes from adoption of standard (inadvertently) infringing patent
- value grows over time as standard is embedded in products
- patent applications can be amended, continuations filed
  - open processes are most vulnerable!
- automatic injunctions provide enormous leverage against embedded standards/sunk investments

solutions?

- RAND problem
  - infuse standards development with market principles
    - technology, cost, terms and conditions
    - FTC Chair approves “ex ante” licensing
- participant disclosure
  - require “good faith” in standards by contract
- nonparticipant ambush
  - put patent holder on notice of standards
  - standards must qualify
  - follow principle of laches

<u>general solution</u>: increase transparency, reduce incentives for surprise and leverage

- *raise inventiveness threshold*

proliferation of standards is disciplined by market

proliferation of patents is compelled by self-interest: professional, institutional, and market forces (“portfolio racing”)

as a result…

high standards for standards
(which remain uncommon)

while patents become common