



NIST Workshop on Open Standards - Manufacturing Engineering and Health Care Informatics

Legal/IPR Panel
March 13, 2006



Outline

- Government role and interests in standards
 - Legal and policy framework
 - Standardization and innovation
 - Standards, open standards and interoperability
 - Aspects of “openness” in standards
 - Conclusions
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Government Role in Standards

- A major participant in private sector-led system
 - A major user of standards
 - Provider of technical underpinning for key standards
 - Advocate for the national interest
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Key Premises

Standards should:

- Support fair trade and fair competition
- Increase user, consumer, and government confidence
- Facilitate interoperability
- Stimulate innovation

(Global Standards Collaboration Resolution 10/04)



Government has an Interest

- In promoting fair trade and competition
 - In having confidence
 - In performance and competently conducted activities
 - In assuring interoperability – applicable to systems and components purchased
 - IT systems
 - Emergency communications systems
 - E-government
 - In facilitating innovation
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For the Government...

- Use of nongovernment standards:
 - Eliminates the cost of developing government standards
 - Decreases cost of goods purchased and burden on regulated communities
 - Provides incentives to develop standards that meet national needs
 - Promotes efficiency and economic competition
 - Furthers the policy of reliance on the private sector to supply government needs for goods and services
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Legal and Policy Framework

- For government agencies, using standards and participating in their development
 - National Technology Transfer and Advancement Act of 1995 (NTTAA)
 - OMB Circular A-119 (1998)
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NTTAA

- Section 12(d) :
 - Directs federal agencies to use “technical standards developed or adopted by voluntary consensus standards bodies” as a means to carry out policy objectives or activities determined by the agencies or departments
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OMB Circular A-119

- Encourages federal agencies to benefit from the expertise of the private sector
 - Promotes agency participation in standards development bodies to ensure the creation of standards that are usable by federal agencies
 - Seeks to reduce reliance on government unique standards
 - States no preference among types of private sector standards agencies may consider
 - Explicitly permits agencies to use off the shelf products regardless of the source of the underlying standard
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What is Important

- That the federal government makes maximum use of private sector standards, where appropriate
 - In regulation
 - In procurement and policy activities
 - That agencies retain authority to choose the standard that best meets their needs
 - The voluntary consensus process is called out specifically as offering benefits
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Standardization and Innovation

- Standards provide an important source of **information** about state of the art technology
 - Standards ensure **compatibility** between different elements in a network of technological ideas by defining interfaces between technologies
 - Standards are the outcome of cooperative processes among participants; help create common technological **understanding**
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Enabling Innovation

- By providing a stable platform:
 - on which to build vertical applications
 - for the expansion of existing markets and creation of new markets
 - for propagating innovation across industries
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Government Contributions to Innovation and Competitiveness

- Federal investment in cutting-edge basic research
- Federal investment in the tools of science—facilities and instruments that enable discovery and development
- Translation of fundamental discoveries into the production of useful and marketable technologies, processes, and techniques;
- An efficient system that protects the intellectual property resulting from public and private sector investments in research

(American Competitiveness Initiative, February 2006)



1988: "giant magnetoresistive effect" (GMR) is discovered, creating the field of spintronics

Basic research foundation: DOE funding for thin-film metallic multilayers

1990: development of the lithium-ion battery.

Basic research foundation: DOE funding for Electrochemistry

1988: Thin film transistor LCD displays emerge.

Basic research foundation: NIH, NSF, DoD fund liquid crystal research

1960-70s: Very Large Scale Integration (VLSI) system and circuit design pioneered.

Basic research foundation: IBM, DARPA funding

1965: The "Fast Fourier transform" revolutionizes the field of signal processing.

Basic research foundation: Army Research Office funding



What about IPR?

“In the United States, intellectual property-intensive industries—the biotechnology and information technology sectors, for example—account for over half of all U.S. exports, represent 40 percent of our economic growth, and employ 18 million Americans whose wages are 40-percent higher than the U.S. average. A recent study valued U.S. intellectual property at approximately \$5 trillion—or about half of U.S. GDP”

(American Competitiveness Initiative, February 2, 2006)



The ICT Standards Landscape

- The market is fragmented
 - No more monolithic interoperable end-to-end standards
 - Many options
 - It is usage/applications driven
 - “shopping for standards” and engineering interoperability ex-post
 - And increasingly software intensive
 - Software component interoperability dependencies
 - Open source is a real factor
 - Government and administrations are interested
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Open Standards and Interoperability

- While it is accepted that “open standards” support interoperability, there are different definitions of what constitutes an “open standard”
 - Each of the following influences which definition is preferred in a specific context:
 - Policy considerations
 - Legal implications
 - Business strategies
 - ICT market dynamics
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Aspects of Openness

- In development and maintenance of a standard
- In access to the standard
- In implementation – IPR terms

Could also be defined as “open” to modification by others – usable in other standards



An “Open” Process

- For development and maintenance:
 - Collaborative and consensus-based
 - Transparent
 - Materially affected and interested parties are not excluded
 - IPR in the standard is available on a reasonable and nondiscriminatory basis
 - The standard is published and made available to the general public under reasonable terms
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“Open” Access

- ❑ The law is silent on access
 - ❑ The Circular speaks only to copyright: “If a voluntary standard is used and published in an agency document, your agency must observe and protect the rights of the copyright holder and any other similar obligations.” (section 6j)
 - ❑ Agencies use all kinds of standards, both copyright-protected and not, typically incorporating by reference
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“Open” Implementation

- Agencies must consider costs and benefits of using a private sector standard
 - To the agency
 - To a regulated community
 - To communities who sell products and services to the government
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Conclusions

- ❑ “Open standards” are critical for interoperability
 - ❑ “Open standards” have multiple dimensions and there is not common agreement on what an “open standard” is
 - ❑ Practical definition may be different for different applications
 - ❑ Government interests in both interoperability and innovation are key drivers for agency participation in standards development and positions taken
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