



Moving to Openness and Innovation: Seven Actions Governments Should Consider

IBM is an industry leader helping governments move toward greater openness and innovation. With respect to software interoperability, IBM announced that future patent contributions to OASIS, the largest standards group for electronic commerce on the Web, would be royalty free.

Moving toward openness, IBM has recognized that related government policies may require adjustment. Intellectual property related policies may require reforms to patent and related law procedures. Procurement policies may require interoperability framework guidance and corresponding preferences for open standards.

IBM is committed to partnering with governments to take pragmatic actions in these moves. As governments build innovative societies, they should consider the following seven actions.

1. Advance open standards pragmatically

Procurement policies that insist that products be open standard make eminent sense. Yet, governments need to be pragmatic. When crafting procurement policies, governments should express preference for technology solutions that meet the *characteristics* of open standards and ensure that the goal of “openness” is taken into account. Limiting procurement decisions to only adopted open standards may limit a government’s ability to exploit new and useful technologies in a timely manner.

Procurement language should advance open standards by:

- Mandating interoperability by preferring open standards, when they exist and apply, and by adhering to the characteristics and goal of openness. This allows solutions, built on a variety of such systems, to interact with each other in a uniform and universal manner.
- Ensuring solutions are “plug and play” and can be easily replaced with equivalent or superior solutions from multiple vendors.
- Giving citizens a choice from a variety of technologies to access, provide and use government information and services.
- Focusing on services, not technology; needs should be defined independent of hardware platform, operating system, programming language, etc., and rather focus on the intended out-come, application-functionalities, integration with existing systems, and services the solution should provide to its users.

2. Adopt an “open vision” that ensures interoperability

As part of an innovative agenda, strategic visioning and planning documents (such as government vision statements, information society papers, interoperability frameworks, etc.) are critical to lay the foundation of an interoperable enterprise-wide IT architecture. Recently, an Electronic Interoperability Framework proposal was disseminated by the European Commission. Such statements are useful in making the public aware of the proposed strategy and in helping ensure that interested parties submit comments.

Governments should develop technology policy frameworks that:

- Set a vision for “openness” - a highly flexible, non-vendor dependent, interoperable IT architecture that meets the needs of the government and its citizens.
- Focus on services, not technologies to address the services that governments and their users need rather than concentrating on stove pipe systems and technology specific solutions.
- Define a clear usage policy explaining how the framework should be followed by government, vendors, and the larger marketplace. This makes the framework more accessible to interested parties.
- Address procurement guidance and policies to ensure purchases align with the framework’s vision and goals.
- Are published and include common open standards used by the government, enabling technology suppliers to build applications that best fit requirements.

3. Assess intellectual property regimes

Today’s innovative society requires governments to re-examine previous notions of proprietary intellectual property. While many inventions in the past were created by individuals and sole corporations, the scale and expense of solving some monumental problems frequently requires collaborative efforts. This collaborative innovation does not replace proprietary innovation; they both are effective and important innovation models and will co-exist.

Laws and policies relating to intellectual property and the regulation thereof require careful management to encourage collaborative and incremental innovation, while preventing over-protection that would work against the public interest. Governments should evaluate policies to ensure:

- Enablement and facilitation of cross-border, cross-disciplinary innovation in the marketplace and among individuals. As many enterprises are worldwide, the technologies developed in one geography should be available globally– this will

promote collaborative innovative efforts. Global standards are generally cost-effective and enable worldwide solutions.

- Sufficient protection of the collaborative, open innovator as well as the proprietary innovator.
- Encouragement of open standards with balanced protection of intellectual property. In recent government hearings, the problem of patent holders (whose only business may be exploiting patents) and thickets of patents that can stymie standards (and technology) development were raised. Visionary governments should consider how these problems may be addressed in a way that respects patent rights while, at the same time, realizing the importance of effectively standardizing in key areas.

4. Add your voice and promote “open participation”

Standard setting organizations such as W3C, IETF, and OASIS are open, inclusive bodies that welcome participation from interested parties. To contribute to these and other organizations that feature open, inclusive participation, governments should:

- Contribute user requirements to help ensure robust standards specifications.
- Promote and adopt market-based solutions that implement the specifications of such organizations. The specifications should, when possible, be developed in a voluntary industry-driven process rather than being government-mandated.
- Encourage major vendors to participate in technical committees of and make appropriate contributions to such organizations.
- Educate local companies on the value of participating in these organizations to be more globally competitive.

5. Assure balanced open source policies

Both open source and proprietary software are important parts of the contemporary IT marketplace. Government policies -- including IP policy -- should not discriminate against either software development model.

To ensure vendor-neutrality and maximum value on procurements, governments should:

- Evaluate, based on desired criteria, open source solutions (such as Linux) with commercial software solutions in public sector procurements.
- Base procurement decisions on objective and measurable criteria such as degree of interoperability, functionality, security, innovation, and support for open standards

and adaptability to future technologies. Decisions should be made on solid business rationale and cost-effectiveness (metrics for measuring cost should include not just initial acquisition costs but full value analysis which considers the freedom offered through open source software, the affect on local economies, the adoption of open file formats, etc.)

- Avoid mandates or preferences for any IT products based on their method of development. Mandates and preferences for a certain method of development can get in the way of rational business decision-making, forcing the adoption of suboptimal technologies that reduce flexibility and interoperability and whose total cost of ownership is more than commercial alternatives.
- Get educated about the value proposition of open source and its specific implementations, such as Linux.
- Evaluate Linux as part of national information technology, research and development and economic development strategies and understand how it can increase reliability and security, improve service to citizens, and create economic opportunities.
- Ensure active training in open source software and the general development of the source code.

6. Address patent quality to enhance “openness”

Openness can be impacted by patents, especially patents of parties outside the community of participants. Standard organizations may need to design around unlicensed patent claims that are needed to implement the specification, may have to assume risk, or may be forced to terminate if blocking patents are identified. Ensuring that patents are granted only for inventions that embody genuine scientific progress and technological innovation is a key part of a government’s transition toward a more open environment that is not unduly limited by patents.

A forward-looking government will consider measures to improve its patent system and patent quality. The patent system should:

- Support the development and use of software databases as prior technology against which new inventions can be gauged.
- Apply an appropriate test of nonobviousness or invention, especially to business method inventions (in regions where business methods can be patented).
- Include a “technicity” requirement, that an invention must have a technical step (or advance) to be patentable, as countries like Europe, China, and others currently have.

- Require sufficient description of the invention to the patent office to allow someone in the field to understand what the software does. In some cases, this will require substantially more disclosure than currently is provided in many patent applications.
- Establish an efficient means to challenge questionable patents after they have been issued. Although patent offices seek to produce quality patents, some patents may be improperly granted. To create an effective patent regime, where such provisions do not exist, they should be enacted.

7. Augment research and support for “open efforts”

Open source software, based on a collaborative, peer-reviewed approach, is a popular tool for the research community. Its use is exploding within the university community, which is often the incubator for cutting-edge research and, subsequently, wealth-creating innovations. Governments should add their support by:

- Finding and funding partnerships with technology companies to extract maximum value from Linux. Many technology vendors have deep skills and considerable experience in deploying solutions in which Linux and open source software alone or in conjunction with commercial software are advanced.
- Supporting research and development programs that employ the open source model, just as programs that employ other models are supported. Ensure that research and development terms, including license terms, promote commercialization.
- Developing university programs to help direct graduates toward a growing field and to expand the breadth of technology that will become available to the government and others in the future.