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OPEN SOURCE SOFTWARE

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- *Open source software – software that can be used, copied, modified and redistributed by anyone – is a major part of the world's IT infrastructure.*
- *Governments should choose software based on an analysis of short and long-term costs and benefits – not ideology. Access to source code and the ability to modify it are benefits.*
- *While copyright law supports the ability of open source developers to determine the form of licensing that works best for them, patents are a high-overhead form of intellectual property that fit poorly with open source models of development and distribution.*

***Background*:** Businesses and government agencies rely on open source software for essential operations. Many companies have built business models around open source software or use it as part of a marketing strategy. Models are based on complements, such as hardware, support services, systems integration, or commercial versions ("dual licensing," possible only if the company holds copyright in the code).

There are many different open source licenses, but they generally break down into two categories. The "copyleft" model used in the General Public License (GPL) requires that any modifications be available to others under the same terms if the software is redistributed. The "permissive" model, associated with BSD Unix and Apache, allows for direct commercialization through distribution of proprietary modifications. Sometimes it is erroneously assumed that "open source" means only "copyleft" type of licensing.

Some open source projects are controlled by private companies but with variations on how ownership is held and how the project is managed. Some projects, like Linux itself, are community-driven by volunteers, although private firms are often a major source of volunteers. In such cases, there is often a charismatic and/or trusted leader, such as Linus Torvalds. Other projects are owned by companies but in a weak sense that allows forking if the community is dissatisfied with the company, the project leadership, or the software itself. The Mozilla Foundation, a nonprofit organization, owns Firefox. For community-driven projects that use the GPL, ownership is often assigned to the Free Software Foundation in order to effectively enforce the terms of the license.

Copyright and Patent Issues: Copyright plays a positive, supportive role in open source development inasmuch as ownership of the copyright assures that the terms of the open source

license can be enforced. This is especially critical for copyleft licenses, where distribution of code under the license has a "viral" effect on modifications, which can cause proprietary code to fall under the terms of the copyleft license. The Free Software Foundation has successfully enforced the GPL license using copyright.

As is true for proprietary software, open source software can be contaminated by the unauthorized insertion of proprietary code. This appears to be a rare occurrence, but it featured prominently in the SCO litigation against IBM and others.

Whereas copyright law supports and is often essential to the integrity of open source software, patents present a danger to open source software because of low standards of patentability, the potential for inadvertent infringement, and very high costs of the patent system. Copying is not an element of patent infringement, and strict liability for patent infringement is uniquely problematic for software because software creation is so inexpensive and widely dispersed. In other words, the very characteristics that enable open source in the first place are also a major threat. Patents are also a threat to proprietary software, but the inner workings of proprietary software are not exposed to the world.

Actual litigation against open source software has been rare, in part because attacks on open source may well elicit patent-defeating prior art from the large and knowledgeable open source community. Nonetheless, there have been some lawsuits (Trend Micro v. Barracuda Networks; Jacobsen v. Katzer). In early 2009 Microsoft sued TomTom for infringement of patents related to the Linux operating system, but this high-profile matter settled quickly. Recently, IBM accused TurboHercules (which offers an open source mainframe emulator) of infringing 173 patents, including two that IBM had promised not to assert against open source software.

CCIA's Position: CCIA's support for open source software follows from our historical commitment to open standards and open competition. CCIA established the Open Source and Industry Alliance (OSAIA) in 2003 to provide focus and engagement for policies important to open source software, such as:

- The development, distribution, and use of open source software should be encouraged on the merits, especially where there is a need to motivate users inside and outside the government.

- Procurement policies should not discriminate against open source software. Open source software should be adopted on the basis of real benefits and costs, including the terms of availability and use. It may be especially appropriate where there is need to modify software, or where a community outside the government is willing and able to help evolve the software.

- Software standards should be available royalty-free so as not to discriminate against open source implementations (as well as to encourage broad and rapid implementation).

- Patents should meet high thresholds of invention and tangibility – and should be granted only as needed to encourage innovation, not as a tool to discourage market entry.

- Non-specific assertions of patents to generate fear, uncertainty, and doubt are inherently anti-competitive.

***Key Players and Politics*:** Open source software may threaten the traditional business models of some software developers. However, most of the IT and services sector embraces open source software as an essential part of the IT ecosystem. For many of the most sophisticated users, the ability to access and modify source code is a high priority or necessity.

Current Status: Substantial patent reform would be of benefit to open source, as it would be for the IT sector in general. However, the reform legislation has been watered down in the Senate, so that it is no longer of net benefit. The Federal Circuit's 2008 decision in *In re Bilski* was a major step in resolving the problem of abstract patents; *the Supreme Court has since reviewed Bilski*, and a decision is expected shortly.