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N. Drakos, A. Di Maio, W. Arevolo

**Research Note**
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# Public Sector Needs Balanced Open-Source Software Policy

**Governments are introducing legislative and policy changes to accommodate the use of open-source software in the public sector. But discriminating against or even excluding commercial products may distort markets.**

**Core Topic**
Government: Public Policy

**Key Issue**
What policies and laws will be required to complement process and technology changes in government?

Policymakers in public sector bodies around the world are already aware of the potential benefits of open-source software. It is less obvious and, in many cases, more controversial, what course of action is most appropriate.

Governments are taking steps to exploit opportunities created by open-source software and several policies have been proposed. Attitudes range from common-sense policies that level the playing field between commercial and open-source software, to much riskier "preferential" policies.

## Inclusion

Governments in countries such as the United Kingdom are at one end of the spectrum. The U.K. government has already modified its evaluation processes to encourage including open-source software where available. Final choices should specifically consider the benefits of open-source software, such as openness, flexibility and source code availability, as well as the challenges, such as ease of use, and skills and support availability. These changes in software procurement policies are intended to remove any preferential treatment that commercial software implicitly enjoyed.

In November 2002, a report from Australia's National Office for the Information Economy noted the use of open-source software in several departments. Australia's strategy for e-government service delivery now includes explicit provisions for "determining the cost, benefits and risks of using open-source or proprietary software […] within the framework of fitness-for-purpose and value-for-money."

Explicit and implicit barriers that may prevent government agencies or other public bodies from using open-source software

should be removed. In particular, procurement guidelines should explicitly authorize the inclusion of open-source software. This removes ambiguities that may be causing a de facto prohibition of open-source software. Evaluation criteria should be re-examined to ensure that the full range of costs and benefits of open-source (and commercial software) is taken into account.

Open-source products are not automatically better. Evaluation criteria should include product maturity, viability and alignment with existing IT investments. Follow best practices in adopting open-source products to minimize support and manageability risks, and factor the cost of these into total cost of ownership calculations (see "A Linux/Open-Source Best-Practices Guide: Applications," DF-19-4415).

**Preference and Compulsion**

At the other end of the spectrum, some federal, central and local governments favor open source. A highly publicized case is that of Peru, where proposed legislation mandates the use of open-source software in all publicly funded IT projects where open-source alternatives are available (see "Peru's Open-Source Initiative Needs the Private Sector, Too," COM-19-5571).

Four Brazilian cities have already passed legislation giving preference to or requiring the use of open-source software. Other municipalities, states and the national government in Brazil are considering similar legislation, as are government organizations in Argentina and local governments in some European countries.

This approach has some risks. This legislation, especially in developed economies, is proposed because people expect preferential treatment of open-source software to deliver more open, flexible, secure systems for less money.

But although the motives are understandable, blanket policies that express preference or, worse, force the choice will distort market mechanisms. In some cases, these laws may clash with existing competition laws. In Europe, it may prevent the correct functioning of the internal market.

Possible consequences range from the adoption of immature, unsuitable or unsupported technology to harming the local, commercial IT ecosystem. Even if the expected benefits can be realized, governments should establish this during an open and fair evaluation process on a case-by-case basis. The primary role of policymakers in this context is to ensure that a fair and inclusive regulatory framework and procurement process exists to allow open-source software to compete on an equal basis,

taking into account the strengths and weaknesses of different options.

Where market distortions already exist or where a strong focus on local industry development is justified by difficult economic or social conditions, it may be acceptable to adopt a more preferential attitude. For example, some administrations are faced with corruption problems. Policies that strongly favor open-source software might provide some short-term relief in situations where bribery is common in software procurement. But these policies still distort the market and are imprecise in their effects. They are no substitute for ethical business practices and the enforcement of anti-corruption legislation.

A preferential attitude may be easier to justify when disseminating and exploiting publicly funded research and development. For example, the European Union's framework projects often use open-source licensing to publish their research.

In August 2001, the French Prime Minister set up Communication Technologies in the Administration (known as ATICA). Promoting open-source software is one of its objectives. A December 2002 ATICA report recommends using open-source licenses (see "Questions and Answers on Open-Source Licensing," QA-17-8438) for at least some of the software development carried out by, or on behalf of, the administration.

**Direct Investment**

Some administrations invest directly in open-source software — either promoting or actually developing and distributing it. For example, it has been reported that Taiwan is preparing a "national open-source plan" to reduce Taiwan's dependency on software imports. The plan will encourage native software and services efforts by training 120,000 users and around 9,600 open-source developers.

On a smaller scale, the local government in the Extremadura region of Spain has created a local software bundle consisting of operating system, desktop software and other applications, which it distributes through magazines, newspapers and even advertises on local TV stations (www.linex.org).

In these examples, preferring and promoting open-source software is a component of a regional development policy. As IT is recognized as a growth sector, countries or regions that have been lagging behind need a way to catch up. Instead of importing most software products and depending on foreign enterprises for

most IT services, they may use open-source software as a way to stimulate or revamp a local IT product and service industry.

The attraction of the open-source model is that if open-source intellectual property can help solve a specific problem or bring a new service or product to market, there are few entry obstacles. The open-source model provides access to code, documentation, and infrastructure to support the development, as well as a pre-established set of rights and responsibilities that regulates relationships among developers. Of course, success is not guaranteed and financial returns can be affected by the obligation to share modifications with others.

In well-functioning market economies, it is much more difficult to justify such direct interventions. If there is interest in and demand for open-source services and products, local entrepreneurs will rise to the challenge and exploit the new market opportunities. Local IT commercial interest in open-source software is more likely to develop because of a favorable business climate — less red tape, tax breaks and small business incentives — than through direct investment.

Direct public investments in organizations that either develop or service open-source solutions are likely to provide these organizations with an unfair advantage over local private initiatives. In some European countries — in particular France and Germany — a flourishing cottage industry for open-source services has sprung up without direct government funding, but with access to government projects and contracts.

**Resource Pooling**

Direct investment is less likely to distort markets when open-source development and dissemination principles are adopted for applications developed by or for a public body, primarily for internal use by that public body. The benefits and risks of releasing internally developed applications as open-source software have been discussed in previous reports ("Opportunities in Open-Source User Innovation Networks," SPA-18-2358 and "Risks in Open-Source User Innovation Networks," SPA-16-7993). It is expected that exposing code to external developers and contributors will result in faster innovation and lower support and maintenance costs. But setting up and supporting the community infrastructure can be expensive. Projects must be carefully selected to attract the interest of external developers.

For example, the Australian Bureau of Meteorology is participating in a global development program led by the University of Wisconsin. The bureau, as a research-oriented organization, has been developing and applying open-source

solutions to meet "core" enterprise application requirements (for example, VisAD — weather monitoring and forecasting applications based on Java and Linux). This case demonstrates the benefits of global collaboration efforts.

Public sector IT systems are characterized by unique requirements, longevity, ongoing customization and the need to interoperate with existing IT systems. This means that a lot of public sector software must be highly customized or written specifically for the purpose. It may be worth releasing or developing such custom applications as open-source software. In particular, local governments can benefit because they perform similar services and follow similar mandates. Local governments face the most challenges from e-government transformation and tend to have the tightest budgets.

In 2000, a high-profile U.S. advisory committee reported on developing open-source software to advance high end computing. It recommended the creation of an open-source "software clearinghouse," similar to CollabNet (www.collab.net).

In Europe, a level of inter-governmental cooperation already exists. Knowledge and best practices are exchanged through a European Commission initiative — Interchange of Data between Administrations (IDA). A detailed report commissioned by IDA ("Pooling Open Source Software," June 2002) argues that open-source best practices and licensing can help to optimize public software investments. ATICA's recommendations to the French administration in December 2002 were even more in favor of this approach. By 2005, there will be at least one substantial and visible public sector application development pooling effort (0.7 probability).

Success in systematically planning, developing and maintaining open-source software in areas such as tax management, license management and payments will create new threats and opportunities for commercial providers of software and services to the public sector. These options are likely to be explored more aggressively in emergent economies.

**Bottom Line:** No matter how well-intentioned they are, changes to policy and legislation can have far-reaching and unintended consequences. Inclusive procurement policies, which allow open-source software to be considered alongside commercial options, carry little risk and can benefit governments by widening choice. Policymakers should consider public sector resource pooling frameworks using open-source licenses and best practices. Preferential treatment of open-source software by excluding commercial software or by publicly funding open-source products

risks distorting markets and is much more difficult to justify, especially in well-functioning market economies.