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*UNU-IIST experts are available for advance interviews Mon.-Weds. Mar. 13-15. Please use contacts above to schedule a time. They will also present their work at a UNU workshop, "Open Software and E-Governance: How They are Changing Developing Countries," Mar. 16, 3 – 6 p.m., Conf. Rm. 6, UN Headquarters, New York.*

## ***Free Software in Developing Countries Vital to Future Prosperity and Good Governance: UNU Technology Experts***

*Open Source Software Capability Key to "Technological Self-Determination"*

The growth of free, open-source software presents developing countries with an opportunity to escape from technological dependence on developed countries, but also a challenge to build up local expertise, United Nations University experts say.

Open source software, which includes the freely-shared Linux operating system, represent a phenomenon changing the information technologies world in fundamental ways. And developing countries can't afford to be left behind in these fast-moving global trends, says Mike Reed, Director of the UNU International Institute for Software Technology (UNU-IIST), based in Macao, China.

Today, 50 to 75% of Internet activity uses open source software; eight of the world's 10 fastest supercomputers are powered by Linux; open source software is embedded in everything from mobile phones to video recorders; and Linux is managing functions critical to industries from banking to telecommunications.

MEDIA ADVISORY

UNU experts and others widely believe that Linux and open source solutions will find their biggest markets in developing countries, particularly China, East Asia, India and South America. While the use of open source software continues to grow in developing countries, there remains a problem of very few open source programmers in these same developing countries. "Should this situation persist, developing nations will simply remain consumers of open source products rather than participants in the larger open source market," says Dr. Reed.

"Being a 'passive consumer' rather than an 'active participant' is not in the best interests of a developing nation's government or business sectors. Technological self-determination in developing countries is key to their future prosperity and is contingent on harnessing the power of this high-tech phenomenon," says Dr. Reed.

Of immediate interest are the new businesses growing out of the open source high-tech movement, he adds. Because the underlying technology is freely available, entrepreneurs can build value-added products on top of open source software, giving startups quicker time to market while lowering development costs.

Forecasters expect packaged software to be the fastest growing segment within the Linux market in terms of revenue, with 44% annual growth foreseen for the next four years. With overall worldwide software market expected to continue at a historically sluggish single digit growth rate, open source based technologies have become one of the brightest stars of the industry.

The freely-available Linux operating system, the fastest-growing in the world since year 2000, is gaining global IT industry popularity for its reliability, efficiency, customizability and interoperability.

A recent IDC study forecasts that revenues for computer hardware and proprietary software on Linux are expected to reach \$35.7 billion USD by 2008. Europe, Japan and the United States have taken the lead in the creation of open source software.

In addition to the private sector, open source software is of great interest to governments in implementing their Electronic Governance initiatives. Apart from reducing costs, the benefits include: localization of solutions and content, government-wide standardization and sharing of development results, and transparency in the government's use of technology.

Open source adoption is also driving innovation. Interestingly, the most innovative applications of government's use of technology are coming from developing countries. Some examples are: Online Delivery of Land Titles in India, Citizen Service Centers in Brazil, Philippine Customs Reform or ICT-based Electoral Reform in South Africa. Innovative solutions based on open-source technologies enable faster diffusion of ICT.

However, the adoption of open-source software by governments comes with a number of challenges. For instance: shortage of the requisite human capacity and lack of policy

frameworks for effective technology adoption. In general, the inherent complexity of the government domain requires that diverse technological options, involving both open-source and proprietary software, be accommodated within a framework of open standards.

### **Global Desktop Project**

The United Nations University International Institute for Software Technology, a nonprofit research and education organization based in Macao, helps developing countries strengthen their education and research in computer science and their ability to produce computer software.

UNU-IIST fulfils its mission in part through the Global Desktop Project, an effort to grow the number of open source software programmers in East Asia.

While the goal is to increase the numbers of open source software programmers, the technical focus of the Global Desktop Project is on improving the open source desktop. By focusing on the computer desktop, an interface that every computer user interacts with and understands, the Global Desktop Project is generating a huge amount of interest from parties involved in everything from application development to localization. This in turn will help further a developing nation's human infrastructure and accessibility to information technology.

Many key players in the worldwide open source software community, including major open source projects and Linux distribution vendors, are supporting the Global Desktop Project, its goals, and its commitment to greater collaboration. As an international effort, the Project seeks to grow the open source programmer base beyond the traditional arena of western institutes of higher learning, IT vendors and other western organizations.

The Project includes three components:

- 1) Research and Engineering Program, focused on creation of fundamental infrastructure and internationalization components of the open source desktop. It will work closely with the open source community to ensure that the standards and features it creates will be adopted by every major IT and Linux distribution vendor in the world. The goal is a more unified, user-oriented organizational structure for the open source desktop.
- 2) Institute of Higher Learning Partner Program, working to incorporate Linux, open source software programming, and distributed methodologies into IT, computer science and engineering curricula. This will help to both "normalize" the use and teaching of open source while growing the number of open source software programmers, thereby increasing the scope of a country's ability to be technologically self-sufficient.
- 3) Community Outreach Program, a point of collaboration and peer review for IT vendors, IT organizations in government and the private sector, NGOs, western institutes of higher learning and the open source community. Among other things, the program will give western higher learning institutes and IT vendors a venue to

review and support a developing nation counterpart involved in the Global Desktop Project.

### **UNeGov.net - Community of Practice for Electronic Governance**

UNeGov.net is an initiative of UNU-IIST. Its aim is to build a global Community of Practice on Electronic Governance, particularly to address the challenges faced by developing and transition economies. Such challenges include how to build stable IT solutions for the public sector, how to carry out necessary reform to accompany such solutions and how to build the necessary capacity within the public workforce.

To address such challenges, UNeGov.net provides a forum for practitioners and experts from different disciplines to exchange experiences, share technical know-how, transfer skills and reach consensus on the best practices in the field. Members of the Community include: public officers, Information Technology professionals, managers of government technology programmes, government decision-makers and Chief Information Officers.

To realize its aim, UNeGov.net will engage in the following activities:

- 1) Organizing network-building workshops around the world,
- 2) Organizing capacity-building schools for public information officers,
- 3) Maintaining a portal of e-Government-related resources,
- 4) Initiating and championing specific research and development projects,
- 5) Coordinating the development of country-specific and thematic reports on the state of Electronic Governance in specific countries and areas,
- 6) Facilitating the establishment of a global meta-survey on e-Governance, with distributed data-collection and existing surveys taken into account,
- 7) Developing and promoting a Curriculum for Chief Information Officers in Public Administration, taking into account existing curricula,
- 8) Organizing annually the International Conference on the Theory and Practice of Electronic Governance (ICEGOV), and
- 9) Supporting the daily practice of public information officers through the portal and cooperative problem solving supported by it.

A number of network-building workshops have already been organized as part of the initiative. In particular, five workshops were organized in 2005: Tunis, Tunisia; Bethlehem, Palestine; San Luis, Argentina; Bahia Blanca, Argentina; and Kathmandu, Nepal. A portal ([www.unegov.net](http://www.unegov.net)) is currently under construction to include a repository of e-Government-related resources, with meta-data index. One project is ongoing – eMacao ([www.emacao.gov.mo](http://www.emacao.gov.mo)). eMacao aims to build a foundation for Electronic Government in Macao through a number of research, development, training and dissemination tasks, with special focus on the development of electronic services and supporting infrastructure. The project is almost completed.

Plans for 2006 include the organization of three workshops in: New Delhi, India; Abuja, Nigeria; and Yaounde, Cameroon, co-organized with respective national-level government agencies. Each workshop will be followed by a school for government managers and CIOs on Foundation for Electronic Governance. The first ICEGOV conference is planned for early 2007.

UNeGov.net is also actively promoting the use of open source software for e-Governance through its schools and courses by teaching open source technologies and tools. It will also provide a rich collection of open source frameworks and tools for building e-Governance applications through its portal.

### **About UNU**

Established by the U.N. General Assembly in 1973, United Nations University is an international community of scholars engaged in research, advanced training and the dissemination of knowledge related to pressing global problems. Activities focus mainly on peace and conflict resolution, sustainable development and the use of science and technology to advance human welfare. The University operates a worldwide network of research and post-graduate training centres, with headquarters in Tokyo.

### **UNU-IIST**

Located in Macao, UNU-IIST is a Research and Training Centre of the United Nations University. Its mission is to help developing countries strengthen their education and research in computer science and their ability to produce computer software.

UNU-IIST works with universities to improve and develop curricula in computer science and software engineering, train staff to teach advanced software development techniques, conduct research projects with staff and postgraduate students, and develop software, including tools for the RAISE Specification Language.

UNU-IIST collaborates with research institutes on research projects, and helps them develop international research community contacts. And it helps companies and other public and private institutions design and develop high quality software using advanced software development techniques.

Currently UNU-IIST is working on major initiatives to support electronic governance (e-Macao and UNeGov.net ) and open-source software. In addition, it offers a range of courses, and organises or co-organises events, including internal seminars, training schools, workshops and conferences.

For more information visit **[www.iist.unu.edu](http://www.iist.unu.edu)**