

Free and Open Source Software Asia-Pacific Consultation

International Open Source Network

Asia Pacific Development Information Programme

**Kuala Lumpur, Malaysia
March 2004**



In memory of Ms. Narantsetseg Baljin. We will miss both her unforgettable personality and tremendous contributions.

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Background

Event: Free and Open Source Software Asia-Pacific Consultation
Date: 9-11 February 2004
Duration: 2.5 Days
Venue: Kuala Lumpur, Malaysia
Organizer: UNDP's Asia-Pacific Development Information Programme

Consultation Objectives

The objectives of the Free and Open Source Software Asia-Pacific Consultation (FOSSAP) were to provide guidance on policy formulations related to Free and Open Source Software (FOSS), identify ways to build the necessary FOSS capacities to ensure successful implementation of FOSS policies, and at the same time raise the awareness of policy-makers on various FOSS-related issues. Specifically, the consultation was aimed towards:

- Provide an overview of the policies which have been adopted or proposed in various countries
- Raise awareness on issues related to FOSS in localization, licensing, network infrastructure, government, education, and the related policy issues
- Identify the needs and priorities in the region for the adoption of FOSS
- Identify the immediate measures to build capacity for the adoption of FOSS in government, for network infrastructure and security, and for the localization of FOSS
- Develop recommendations for specific policies on FOSS
- Provide an opportunity for policy-makers, FOSS experts and others to network

Recommendations

1. Governments should mandate open standards in both hardware and software. Open standards would level the competitive landscape for both proprietary software and FOSS. They would also promote vendor independence, ensuring that a government department would not overly depend on a single vendor.
2. A regional center for FOSS related issues is needed. The three working groups independently came up with recommendations for a regional center focused on their priority areas:
 1. The localization working group noted the need for a central

repository of information regarding localization, including baseline studies, documents to make a political case, Frequently Asked Questions (FAQs), primers, localization roadmaps and toolkits. Additionally, more case studies on successful localization efforts are needed.

2. The government working group outlined the need for a regional center to serve as a general information site, containing relevant information for governments. It should also carry out public relations duties and awareness raising projects to convince regional governments of the benefits of FOSS.
 3. The capacity building group focused on a technical regional center, with actual implementation knowledge and technical expertise. The regional center would also serve to network experts with country needs as well as conduct training/capacity building projects.
3. Both the FOSSAP meetings and focused regional meetings such as a localization meeting should be conducted annually to allow for sharing of experiences, networking of practitioners and planning of further cooperative activities.

A more detailed list of findings and recommendations can be found in Annex I.

Agenda

The consultation had seven sessions spread over two days focused on the following topics:

1. Introduction to Free and Open Source Software
2. FOSS Policies in the Asia-Pacific Region
3. FOSS and Government
4. FOSS in Education
5. Licensing and Legal Issues
6. Localization of FOSS
7. Network Infrastructure and Security

On the third and final day, participants divided into three working groups focused on:

1. FOSS and Government
2. Localization of FOSS
3. Building FOSS Capacities

A final plenary session brought together the combined findings and recommendations of the participants.

A detailed agenda and all presentations made at FOSSAP can be found on the IOSN site at:

<http://www.iosn.net/fossap/agenda.html>

Participants

More than 50 policy-makers and open source practitioners at national level, including director generals, senior ministry officials, technical directors, heads of ICT ministries and regulatory agencies, key national interest groups and non-government organizations from 20 countries attended the FOSSAP consultation. A full listing of the different participants can be found at:

<http://www.iosn.net/fossap/participants.html>

Key Findings

Findings:

1. All participants agreed that FOSS is worth pursuing and that governments have a role to play in promoting it. FOSS is important because it provides more choices and alternatives. Equal opportunities should be given to both FOSS and proprietary software
2. There is a need for awareness raising among decision-makers in governments, especially in procurement. Lack of awareness among decision makers results in only proprietary software being considered, neglecting the many benefits that FOSS can bring.
3. Three major problems hold back FOSS adoption in the region:
 1. Lack of FOSS technical capacity, especially in localization of FOSS. When governments have been convinced to implement FOSS projects, the lack of technical capacity in the local economy hampers implementation. Localization skills are particularly rare, with very little awareness of the effort and specifics involved in localizing any software, including FOSS.
 2. Equipment manufacturers are not supportive of FOSS, resulting in FOSS being difficult to use on the latest hardware. Manufacturers are reluctant to share technical details or create software drivers to allow FOSS to function properly on their equipment. This represents an obstacle that hinders FOSS adoption.
 3. A lack of robust change management plans impedes transitioning from proprietary systems to FOSS systems. Most governments already have extensive proprietary ICT systems and transitioning even a small section of these systems is a substantial task. More information and guidelines on the process would be extremely valuable.

4. Lack of localized ICT tools hold back ICT benefits. A significant proportion of the population in the Asia-Pacific region does not speak English or a language to which ICT tools have been localized. This poses an additional hurdle to reaping the benefits of ICT – the requirement to learn a foreign language.

Moving Forward

Based on findings and recommendations, the key areas for the IOSN to move forward on have been identified and several short and long term steps have been identified:

Short term:

- 1) Serve as central clearinghouse for information on FOSS. While there is information on the IOSN website, significant additional information is needed. Participants are requested to review the website and suggest improvements. Participants are also invited to submit information, especially country specific information, and even take the lead in maintaining certain areas of the website.
- 2) Focus on using email lists for improved communication. The discussion forums currently on the IOSN website are deemed to be too inconvenient to use. A FOSSAP mailing list will be established first with other mailing lists to follow, possibly focused on more niche areas such as localization.

Long term:

- 1) Establish capacity building projects, including creation of training curriculum and training centers/workshops.
- 2) Increased focus on FOSS localization. Besides production of localization toolkits, roadmaps and information, IOSN will also look into localization projects that benefit the region, as opposed to country-specific efforts.
- 3) Continue production of FOSS primers. With the completion of the first introductory primer, efforts will be concentrated on primers focusing on areas such as localization, government and education.

Annex I: Summary of Findings

Recommendations/needs are in bold

Introduction to FOSS

- Savings appear to be amazing but for LDC's, it is about capacity. e.g. Samoa does not have capacity to use, develop and innovate. What change management plans are there?
- Governments need to invest in education and training
- **Roadmap needed for developing FOSS capacities. Change management plan for those with existing proprietary software infrastructure.**
- Cost savings of FOSS do not apply when piracy levels high. FOSS does not compete well with \$3 CDs.
- FOSS compensation models currently give software away free, charge for services. Analogy: a chef gives away his recipes, ingredient list and methods. However, he charges for actually cooking a meal.
- FOSS development community stays together via peer review and granting of project privileges and rights based on merit and contribution
- FOSS software, especially on the server, is more efficient on older hardware. However, proprietary software is fast catching up on stability and efficiency. Newer FOSS distributions are not as efficient.
- Security on FOSS systems is better as a whole. The open nature of code allows malicious crackers to find and exploit security holes, but also allows developers to find and fix security holes.

FOSS Policies

- Using the analogy of private homes linked by public transportation infrastructure, it is not possible to have software either all public or all private. However, public funds should not be used to build private infrastructure
- Regional FOSS activities are impressive and encouraging. Sadly, most regional efforts appear to target Asia, rather than the Pacific. **There needs to be more focus on Pacific countries.** Pacific countries may be able to watch and learn from the experience of early adopter countries, but will never catch up in development if this trend continues
- While FOSS is preferable, Open Standards is easier to implement. **Standards and formats should be published, free of excessive licensing fees and restrictive patents.**

FOSS & Governments

- Indonesia recognizes FOSS as a means of bridging the digital divide. However, existing systems already use proprietary systems and

- integration/migration are major issues. There are also questions concerning long-term developer motivations and business models
- Singapore does not have a national policy. Current thinking focuses on fit for purpose, value. However, FOSS adds to the number of choices and options in the market and should not be ignored. Current procurement strategy is decided at the departmental level.
 - ICT Agency of Sri Lanka set up recently. Tasked with setting up infrastructure, building ICT capacity, building opportunities for investment. Government currently does not have official policy but has recently signed an MOU with Microsoft to set up technology training and localization efforts.
 - Vietnam is building ICT industries but has highest rate of software piracy in the world. FOSS is well recognized. Vietnam needs a clear policy and roadmap for FOSS.
 - Suggested that the costs of licensing proprietary software for operating system and desktop alone for all of India's estimated 1-2 billion PCs would consume 1/3 of India's software exports. If all systems were legal, India's imports may exceed its famous export industry.
 - Key factors identified for countries that have strong FOSS policies are:
 - Compelling incentive (reducing imports, piracy) that forces detailed scrutiny of FOSS benefits
 - Top level support and backing for FOSS policy
 - Proprietary software companies (eg eg. Microsoft have philanthropic programmes and FOSS companies need to make similar efforts
 - It is easy to accidentally "lock-in" countries by making the wrong choice in the beginning.
 - Problem of many donor agencies give proprietary software or even mandate proprietary software in their development assistance.
 - Students believe jobs in proprietary software pay more. Hard to get jobs with FOSS skills.
 - **There is a need for more examples, successful case studies and other information about FOSS**
 - Lack of local capacity in FOSS deters governments from implementing FOSS projects
 - However, we cannot wait till all problems are solved. Governments must press ahead even if there are obvious difficulties, otherwise opportunities will be lost.

FOSS & Education (Day 2)

- Mongolia's experience – in education, there is a lack of capacity among teachers. Mongolia has project which distributes computers with localized Linux pre-loaded to 20% of Mongolia's schools, at the secondary level.
 - Lessons learned: there is no significant difference between Linux and Windows. Linux is high quality enough to use in education.
 - Use of Linux is critical to decrease student to computer ratio. Money saved on licensing costs buys additional hardware
 - Universities use Linux and find Linux more stable

- Indonesia – Create FOSS to fit people's needs, do not allow donor dollars to artificially distort choices and decisions. Users will use FOSS only when it suits their needs.
- Malaysia – Employers look for students with transferable skills, not technology specific skills
- From 1977 – 2001 Indian owned patents were 900. US patents was 500,000. Nation of 1 billion people (India) cannot compete or catch up under this situation. Situation keeps Indians as operators, not scientists. When cheaper outsourcing location is found, all work outsourced to India will move to cheaper location.
- In certain cases among participants, students new to FOSS learned to use it within 1 week.

Licensing and Legal Issues

- Lack of knowledge among legal profession of FOSS licensing and issues
- Questions asked regarding specific circumstances:
 - If using embedded Linux in mobile phones, PDAs, etc, manufacturers must make available source code to embedded Linux. However programs that run on top of Linux do not need source released unless they incorporate GPL code themselves. e.g. Java games on Linux phones do not have to release source code
 - License does not define exactly how source code is to be distributed. Placed on website is considered acceptable. Distribution is ONLY to those who have the binary. Those who do not have binary have no right to demand source code
- Software produced using development funds should be usable by all, including proprietary software companies. Case in point – display methods and algorithms for local language.
- Developing nations can often benefit greatly from the disclosure of intellectual property. One example is making available HIV/AIDS medicine recipes. FOSS is a more technical example of the same.

Localization of FOSS

- Bhutan – localization of FOSS attractive and viable
- Technical work of localization can sometimes be very limited. Khmer language was significantly localized to Linux by 1 programmer working in spare time for 1 month
- Sometimes localization can be critical. Cambodia has no database that is able to sort data, so all data comes out disorganized
- Much localization work is technology neutral. Both FOSS and proprietary systems will benefit.
- **Regional forum to discuss localization needed**
- **Needs to be roadmap/guidelines for policy makers on localization**
- **There is a large gap between technologists and policy makers. There needs to be a bridge between them.**
- Minimal localization can be done fairly easily yet allows users to use the

system comfortably. For standard user navigation, translation can be as few as 1,000 words. Complex banking system may require around 10,000 words.

- Full localization takes much longer. 5-10 year effort, large budget

FOSS Infrastructure and Security

- China experience – Linux desktop is not quite as capable as proprietary equivalents for now. Not just GUI but OpenOffice.org/StarOffice.
 - Compatibility also a problem.
- Problem exists with hardware manufacturers not releasing FOSS drivers.
Should there be a regional initiative that requires hardware manufacturers to release drivers?
- Limited tools exist to combat Denial of Service Attacks. No foolproof countermeasures.
- FOSS systems have yet to be attacked by a virus. Speculation that this may be because of limited popularity of system.
- Any computer on the Internet is attacked constantly. Over 2,000-3,000 attacks over 24 over period on average, mostly by automated robots or viruses.
- FOSS systems are frequently targeted as well. Choice of systems not a guarantee. Secure computing concepts must be employed.

Localization of FOSS (Working Group)

- Localization is difficult due to the different skills required:
 - Motivation
 - Language/translation skills
 - IT skills
 - Knowledge of FOSS
- It is not essential to have a professional translator. A person with a good grasp of both languages is sufficient.
- A prospective translator can be taught basic IT skills
- Translator must learn how to use FOSS specific translator tools
- All work done should be integrated with the community
- Need to create a checklist of tasks that a localizer must go through
- Localization should be incremental, starting with easy deliverables. Preferably a small program that can be easily achieved and provide a valuable learning experience for later programs.

Final Plenary Session

FOSS & Governments

- What is role of government with FOSS? What should its stance be?
 - Very difficult to get consensus. Focus instead on specific issues such as standardization, procurement, compatibility and training
- Recommendations
 - All countries agree that FOSS is a good thing to pursue and that

governments have a role to play in promoting it. Ensure a level playing field. FOSS is small in all countries. Giving choice to people is important

- Raise awareness among govt, especially in procurement. Equal opportunities should be given to both FOSS & proprietary software. There are many in govt that are not aware of FOSS. Not aware of choices
- Emphasize that FOSS is not free. In the long term, there must be a strong investment.
- FOSS considerations must be in all policies, including poverty reduction, rural development, etc. Not in isolation.
- Case studies needed for sharing. Emphasis on case studies for the Asia-Pacific region. Pacific has special conditions which we need to be mindful on
- Governments should mandate open standards in hardware and software
- Resource center. Intergovernmental cooperation resources. Governments have tough time finding information on FOSS. They want central information, software repository for e-govt applications.
 - Should have guidelines and ways to achieve this
- Potential problems and drawbacks:
 - Lack of capacity in region
 - Manufacturers to support FOSS is another challenge
- NGOs could play role in awareness raising but not discussed

FOSS & Localization

- Regional Needs
 - Baseline study (e-primer)
 - Technical How-to guides
 - lack of capacity among countries. e.g. Bhutan has maybe 4 computer scientists total
 - Better information sharing
 - Documents to argue the political case
 - Hard to localize independently of government. Need support from all, including finance secretaries, etc.
 - Funding for localization (translators, developers, linguists, font development)
 - via projects or individual fellowships
 - All this points to a need for a regional secretariat
 - Plays political PR role (convincing govts)
 - Technical role (actual implementation knowledge, help countries network with technical expertise)
 - Training role (capacity building)
- Short term action plan
 - Virtual support network
 - FAQs, primers, guides, roadmaps, etc. whole bunch of details
 - Physical secretariat for this support network.
- FOSS is developed through large communities. We must plug into resource, not work separately or disrupt it.

- Two levels of support.
 - For most basic countries, IOSN supplies files that needs to be translated and country translates. IOSN takes care of rest.
 - In-depth support involves technical training, capacity building and software development

FOSS Capacities

- Capacity defined as ability to use, to build, to disseminate
- Three target beneficiaries
 - Zero knowledge
 - Users
 - Engineers
- What is happening, what problems do you encounter?
- Establish a regional group for building capacity and regional cooperation
- Recommendations

Recommendations #1: Zero Knowledge

- More consultations of this nature to kick start efforts
- Demonstrate working CD-based distribution to increase awareness and education .

Recommendations #2: Users

- Encourage FOSS in education curriculum
- Creation of projects for students
- Encourage use of FOSS to build instructional tools
- Anti-piracy promotions and policy
- Cheaper/economical localized textbooks and literature
- Localized FOSS
- IOSN to engage governments to assist in policy
- Publish success/challenge stories

Recommendation #3: Builder/Engineers

- More awareness/contests
- Encourage university R&D using FOSS as tools
- Government incentives for training/certification
- FOSS to be a national strategic direction and linked to MDGs
- IOSN to host all knowledge contributed by country. Also hosts 2-way interaction and mailing lists. Mailing lists make more sense as compared to web-based forum.