SchoolNetAfrica
Towards an African Learning Network

Policy on technology choice, open standards, proprietary and open source software

1. SCHOOLNET AFRICA'S VISION AND MISSION

SchoolNet Africa (SNA) endeavours to improve education access, quality and efficiency through the use of information and communication technologies (ICT) in African schools. SchoolNet Africa works mainly with learners, teachers, policymakers and practitioners through country-based SchoolNet organisations across Africa.

SchoolNet Africa's vision is for the empowerment of all of Africa's children and youth through access to quality education, information and knowledge on the basis of their effective use of ICT.

SchoolNet Africa's mission is to support national SchoolNets throughout Africa by mobilizing resources, building effective partnerships and knowledge in promoting education through sustainable use of ICT in African schools.

SchoolNet Africa supports and promotes

- the right of every African child to have access to education, information and knowledge
- affordable and sustainable ICT access for African schools using a variety of solutions
- the creation of locally developed, digitised education content
- expression through the recognition of indigenous African languages
- multi-stakeholder partnerships within a progressive, development framework
- gender equality and women's empowerment
- the achievement of the Education For All objectives and the UN Millennium Development Goals

2. CONCEPTS AND DEFINITIONS

For the purposes of this document,

Proprietary software is defined as software which:

- Provides end-users only with limited rights of use
- Does not provide source code
- Does not permit modification or the creation and distribution of derived works

Proprietary software vendors typically charge a fee for the purchase and/or continued use of such software.

> Examples of proprietary software are Microsoft Office and Macromedia's Dreamweaver.

Open Source Software is defined as software distributed under a license that meets the requirements of the Open Source Definition provided by the Open Source Initiative at www.opensource.org/docs/definition.php. Specifically, this includes the following key provisions:

- The software license permits free redistribution.
- The software is distributed with source code.
- The license permits modification and the creation of derived works.

> Examples of open source licenses are the GPL[1](which requires derived works to be licensed with the GPL), and the BSD[2] license (which permits commercial and/or restricted distribution of derived works).

> Examples of open source operating systems are Linux[1] and FreeBSD[2]. Examples of open source applications are the OpenOffice.org office suite[1] and the Apache webserver[2]. It should be noted that Open Source Software applications do not necessarily require Open Source operating systems. Many open source applications also run in proprietary environments, and some open source applications only run in proprietary environments.

Freeware is software which may be used without restrictions and distributed without charge, but which may not comply with the definition of open source software above (for example through not being distributed with source code). [Note that the term "free software" as used by the Free Software Foundation refers to open source software with GPL-style licenses rather than freeware.]

> An example of freeware is Pegasus Mail.

Open Standards permit interoperability between applications and equipment from different vendors. Open standards are:

- developed in an open manner, documented in detail and published,
- may be freely implemented,
- controlled by a vendor-neutral organization.

> Examples of open standards in use on the Internet are the IMAP and HTTP protocols, the HTML and XML specifications, and the various XML standards sets that permit sharing of data between applications running on the same or different platforms.

Platform-independent content or software is content that can be used or software that can be run on all of the most widely used operating systems.

[1] www.openoffice.org
[2] httpd.apache.org

> Examples of platform-independent content are PDF file and HTML web pages. Examples of platform-independent applications are Java applications. Apache and PHP are relatively platform-independent environments for web applications, as they support most underlying operating systems.

It should be noted however that platform independence does not necessarily guarantee backwards compatibility – for example not all web browsers in use support all of the features of the latest HTML specifications.

Open source software tends to be platform independent. However, it is possible for an **open source application** to be **platform-dependent**, requiring proprietary operating systems or software environments to run.

> Examples of platform-dependent open source applications would be an open source web application created using .ASP pages, dependent on the Microsoft IIS web server, or a database application created in Microsoft Access which can be shared and modified by other Microsoft Access users.

Total Cost of Ownership (TCO) refers to the direct and indirect costs of acquiring, operating and maintaining a technology solution, including hardware, software, initial purchase, deployment, training, support and maintenance costs. These costs have to be measured over a number of years or the lifespan of the system.

Suitability to Task (or fitness of task) refers to the extent to which an application or environment meets the requirements of its users. This can include how productive the application allows users to be, and the extent of compatibility with other content formats or applications commonly encountered by users.

3. TECHNOLOGY PRINCIPLES

Noting SchoolNet Africa's vision and mission above, SNA has two primary concerns relating to ICT in education:

- The purpose of ICT in an educational context is to promote access to the widest possible range of information and educational opportunities, and to facilitate the acquisition of skills and competencies required for the development of knowledge societies.

- ICT should be as widely available and as widely used as possible by SNA's constituency – children in African schools, teachers in African schools, governments and organisations developing and supporting education in Africa.

Arising from the above, SchoolNet Africa believes:

- The two criteria for selecting appropriate technologies in educational contexts should be educational suitability, and total cost of ownership.

- The long-term interests of end-users are best served by adopting standards-based solutions that have high interoperability, and wherever possible, application software and content that is platform independent.

- ICT skills taught at school level should be vendor-neutral, with the emphasis being on developing generic transferable skills that apply to a class of applications and/or technologies.

4. TECHNOLOGY RECOMMENDATIONS

While SchoolNet Africa is not primarily involved in the selection or acquisition of technologies for use in schools, it may from time to time adopt advocacy positions, make recommendations, influence decision-making processes in which it is involved, or support the broader dissemination or use of particular technologies.

SchoolNet Africa will do so:

- on the basis of its understanding of best-practice in the area of educational technology in schools in Africa, informed by suitability for purpose and total cost of ownership;
- on the basis of independent research which is not vendor-aligned or funded;
- on a non-exclusive basis.

5. OPEN STANDARDS POLICY

SchoolNet Africa supports the use and promotion of open standards wherever possible. Open standards are a key enabler of interoperability, increase the ability of technology users to choose and switch vendors and increase the extent to which information and content can be easily and widely shared.

- In the area of online content, SchoolNet Africa will favour open file formats that are platform-independent.

- In the e-learning area, SchoolNet Africa will favour content which complies with industry standards that enable content portability between learning management systems.

- In the area of network-based services and applications, SchoolNet Africa will favour standards-based services, and client and server applications that support open standards.

6. SOFTWARE POLICY

6.1 Social and Economic Value

SchoolNet Africa notes the increasing maturity and industry acceptance of open source software solutions for both server and desktop applications and operating systems. Open source software is also said to have indirect advantages for social and economic development in Africa:

- Open source software can lower barriers to entry for end-users, schools, NGOs, and SMMEs by eliminating software licensing costs, and in some cases requiring lower hardware expenditure.
- Open source software can promote innovation and entrepreneurship, as sophisticated software toolsets are freely available as building blocks.
- Open source software can promote localisation and customization, for example in implementing local language translations, especially where proprietary software vendors may not see a business case for doing so.

- Open source software can contribute to keeping more ICT expenditure within Africa, improving Africa's balance-of-trade.
- Where software is created with non-profit objectives such as in the development sector, developing such software in open source and platform-independent environments provides a greater return on investment as the potential base of users who can adopt or adapt the software is wider.

6.2 Level Playing Field

As outlined above, software for use in educational contexts should be primarily selected on the basis of educational suitability, and total cost of ownership, with open source and proprietary software compared on a level playing field.

Where the value proposition for open source or proprietary software is similar in a given situation, open source software should be preferred given the indirect advantages that it has for broader socio-economic development.

6.3 Internal Software Use and Development

In its internal operations, SchoolNet Africa will consider both proprietary and open source software platforms and solutions.

Where SchoolNet Africa is involved in software development or customization activities, SchoolNet Africa will use open source tools and environments whenever the cost of doing so is equal to or lower than using proprietary environments. It will also consider maximising the potential usefulness to other educational entities of software or systems that it produces.

Where SchoolNet Africa develops a source code that may be of wider use, it will Endeavour to publish such source code in due course using an open source license.

Where SchoolNet Africa is undertaking customisation or development of open source software, it will seek to collaborate with and contribute to open source projects where possible.

6.4 Research and Collaboration

Recognising that open source software is a dynamic and emerging field, SchoolNet Africa will continue to explore the value and impact of open source projects in education, through research and collaboration with other organisations with similar interests.

6.5 Vendor Relationships

SchoolNet Africa works with a wide range of private-sector companies which share a mutual interest in developing access to and use of ICT in Africa. Such partnerships may involve collaboration, the provision of resources of one form or another, or funding.

SchoolNet Africa enters into such working relationships on a non-exclusive basis, in order to advance the objectives of SNA's programs and the interests of its constituents.