

## Open source software in agricultural education

P.R. KOLHE\*, P.P. KOLHE<sup>1</sup> AND M.H. THARKAR<sup>2</sup>

Department of Computer Science, College of Agricultural Engineering and Technology, Dapoli, RATNAGIRI (M.S.) INDIA

### ABSTRACT

The use of Information Technology (IT) in education has become a predominant topic for discussion in the recent years. While teacher education curricula have been up-dated to include computers in education, educational institutions have adopted the new information technology for teaching-learning and administration. With the emergence of Internet and its World Wide Web (WWW), the trend towards use of information technology in education has seen tremendous growth. The reducing cost of computer hardware also has paved the way for integration of computer in educational institutions. However, because of the heavy dependence on proprietary/commercially available high cost software and their licensing, many educational institutions are not in a position to harness the potentials of information technology. This paper discusses the alternative to high price software for educational, research and extension purposes and makes a case for using open source software in education.

**Key words :** Information Technology, Open source software, WWW

### INTRODUCTION

Programmers write software source code using programming languages. The source codes are compiled and saved in an executable file, which cannot be “read” by human who has no access to the source code. Most of the software that we purchase in the market are available in the this binary form, and are a very effective way for proprietary software producers to control their intellectual property and sell the software products under different license conditions. On the other hand, open source is “an approach to software development and intellectual property in which program code is available to all participants and can be modified by any of them” (Warger, 2002).

The open source has a long history, but it received a major boosts with the establishment of the Free Software Foundation (FSF) (<http://www.gnu.org>) in 1985 by Richard M. Stallman. The FSF has developed the General Public License (GPL) that is often call “copyleft” to allow programmers to release the software with its source code. In the year 1991, Linus Torvalds, a student in Helsinki University started a project that would spread to become the “poster child of open source”. With the release of version 0.1 of the Linux kernel as an operating system, open source as an alternative approach to software development became popular. In the mid 1990s, Netscape decided to publicize the source code of its browser, which led to the emergence of Open Source Initiative (OSI) (<http://www.opensource.org>) as an alternate institution to FSF. The OSI maintains that for any software to satisfy

as open source:

- The source code must be distributed with software or otherwise made available for no more than the cost of distribution;
- The software be allowed for re-distribution without any royalty payment to the creator; and
- The user can modify the source code and then distribute the modified software under the same terms.

Sometimes, the software released under open source is also called “Free and Open Software” (FOSS). To a certain degree, open source software is free of charge to the extent that they do not charge licensing fee for usage, However, it should nor be confused as “freeware” that are made available free of cost in their executable form without the source code. In case of the open source, the free is as in freedom, and can be seen as freedom to access the source code, freedom to use the software without paying any license fee, freedom to redistribute and freedom to modify the software and distribute.

### *Open source in agriculture education :*

One of the biggest reasons for using open source software in education is the cost. As there is no licensing cost to use open source software, the initial cost of technology deployment is reduced. The money saved from this account can be utilized to procure more hardware to provide greater access.

Apart from the cost of software, the open source softwares are highly reliable for their performance. For example, the Mozilla web browser, Apache is a favorite amongst web administrators, as its down time is the

\* Author for correspondence.

<sup>1</sup> ARIS cell, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, AKOLA (M.S.) INDIA

<sup>2</sup> Department of Computer Science, College of Agricultural Engineering and Technology, Dapoli, RATNAGIRI (M.S.) INDIA