Open-Source Software

Introduction

When the personal computer was first released, it did not serve any practical need. Early computers were difficult to program and required great attention to detail. However, many personal-computer enthusiasts immediately banded together to build applications and solve problems. These computer enthusiasts were happy to share any programs they built and solutions to problems they found; this collaboration enabled them to more quickly innovate and fix problems.

As software began to become a business, however, this idea of sharing everything fell out of favor, at least with some. When a software program takes hundreds of man-hours to develop, it is understandable that the programmers do not want to just give it away. This led to a new business model of restrictive software licensing, which required payment for software, a model that is still dominant today. This model is sometimes referred to as **closed-source**, as the source code is not made available to others.

There are many, however, who feel that software should not be restricted. Just as with those early hobbyists in the 1970s, they feel that innovation and progress can be made much more rapidly if we share what we learn. In the 1990s, with Internet access connecting more and more people together, the **open-source** movement gained steam.

Open-source software is software that makes the source code available for anyone to copy and use. For most of us, having access to the source code of a program does us little good, as we are not programmers and won't be able to do much with it. The good news is that open-source software is also available in a compiled format that we can simply download and install. The open-source movement has led to the development of some of the most-used software in the world, including the Firefox browser, the Linux operating system, and the Apache web server. Many also think open-source software is superior to closed-source software. Because the source code is freely available, many programmers have contributed to opensource software projects, adding features and fixing bugs.

Today there are thousands of open-source software applications available for download. You can get the productivity suite from Open Office. One good place to search for open-source software is sourceforge.net, where thousands of software applications are available for free download.

Main Case: Tallinn City Council makes the move to Linux

Tallinn City Council has over 14,000 computers and 16,000 staff. The project will be one of the largest ever moves from Windows to Linux. At the same time, Tallinn will move from Microsoft's Office suite of applications to an open-source alternative such as OpenOffice.

Tallinn City Council's decision to move to open-source was taken at the highest political level; according to a statement issued by the council, reasons include greater vendor independence, and a desire to promote greater competition in the software market. This, the council believes, will lead to cost savings in the long run. But a more pressing concern, according to Meelis Neeme, Linux project manager in Tallinn City Council's IT department, is that Microsoft has ended support and production of Windows NT, the council's current desktop operating system. 'The problem isn't that we don't have a helpline from Microsoft, but that hardware and software vendors no longer support NT. We can't buy NT on new PCs. We change our PCs every five years and the situation is becoming more severe with time', he says.

Newer technologies, such as wireless networking and especially USB support, for printers, are also causing problems, says Mr. Meelis Neeme. Moving to Microsoft's Windows XP operating system and Office XP would have solved the problem. That was what Microsoft – including chief information officer, Steve Ballmer who visited Tallinn – was lobbying for. However, with 14,000 computers and more than 16,000 staff, this would have been both complex and expensive. As a result, Tallinn City Council decided to commission an independent survey from TrilogSoft, Estonian IT consultants.

TrilogSoft looked at three options: moving to XP and Office XP; moving to XP but with an open-source office suite, and moving to an open-source operating system and office suite. The

consultants also examined two intermediate, 'migration' platforms, using either emulation software or terminal server software and the Linux operating system to extend the life of existing Windows applications. Analysis by TrilogSoft suggests that moving to XP and Office XP would be the cheapest option for Tallinn City Council in the short term, at a cost of around €34m.

Moving to Linux and an open-source office environment will be a little more, at around €36m, including Linux, an open-source office suite and Windows emulation. However, Tallinn City Council believes that the short-term costs are outweighed by the potential for greater flexibility and cost savings in the longer term. As yet, Tallinn City Council has not signed contracts with any open-source suppliers, although both IBM and Dell are helping the Council on a not-for-profit basis. Mr. Meelis Neeme has no precise costs for switching to open source. Software licensing costs will be lower with open-source software, but the TrilogSoft Consultants' study assumed the same hardware criteria – a processor of at least 500 Mhz and at least 256 MB RAM, for PCs running either XP or Linux.

Training costs will be higher with Linux, although not dramatically higher than a move to XP. But much of the final cost, according to the City council's IT department, will depend on how quickly Tallinn City Council's departments can make the switch. 'We want whole organisational units to make the switch to Linux, not one PC in 10 from a group of co-workers', he says. 'That would be impossible to administer.'

Questions

1. Come up with your own definition of software. Explain the key terms in your definition.
2. What is open-source software? How does it differ from closed-source software? Give an example of each.
3. What are three examples of programming languages? What makes each of these languages useful to programmers?

4. Compare and contrast the key features and functionalities of the EBS OIS via https://ois.ebs.ee/ and canvas.instructure.com via https://canvas.instructure.com/login/canvas. (login required for both platforms) Summarise your key findings.
5. If you were running a small business with limited funds for information technology, would you consider using cloud computing? Find some web-based resources that support your decision.
6. Download and install Open Office via http://www.openoffice.org/ . Use it to create a document or spreadsheet. How does it compare to Microsoft Office? Does the fact that you got it for free make it feel less valuable or more valuable and why? Summarise your findings.
7. Go to https://sourceforge.net/ and review their most downloaded software applications. Report back on the variety of trending applications you find. Then pick one that interests you and report back on what it does, the kind of technical support offered, and the user reviews.
8. Review this article (http://www.zdnet.com/article/six-open-source-security-myths-debunked-and-eight-real-challenges-to-consider/) on the security risks of open-source software. Write a short analysis using the Tallinn City Council case above, giving your opinion on the different risks discussed. Advise the Tallinn City Council on what do based on the options available or some new options you may generate. Summarise your findings.