

Moving Forward with Open Source, a Network Manager's Perspective

I work as a network manager at a mid-sized private school in Alton, Hampshire. My job involves dealing with anything IT-related around the whole school (we have a nursery department, prep school, senior school and sixth form, the senior school and sixth form are girls only), from setting up and maintaining workstations to configuring server-based resources such as appropriately filtered Internet access, file storage and web-based applications. I have had previous experience of a similar job in a state school, so here I plan to summarise some of the aspects of the job that relate to the use of open source software within schools, both in the state and private sectors.

The first, most obvious, reason to use open source software is “because it is free”. Especially in a private school, value for money is an important consideration (despite what you might think, private schools aren't rolling in money – they are businesses that have to justify any expenditure). However, simple capital cost alone is an increasingly minor part of the total cost of ownership of any large, organisation-wide computer system. Any piece of software has to be installed, maintained and kept up-to-date, users have to know how to use it (they might need training, or simply some spare time to figure it out for themselves), and the software might be required to exchange data with other applications or organisations.

The ultimate aim of a good network manager should be to make their job redundant – there are more useful things human beings could be doing with their time than servicing machines. In a decade's time the role of the IT expert in schools really should have moved on from basic workstation maintenance to that of resource creator / collator. As such, any school network has to be understandable and manageable by the majority of (reasonably bright) people with the job title of “network manager”. A modern school IT system cannot be completely idiosyncratic, run entirely by a collection of custom Prolog scripts or something – should your current network manager win the lottery and simply not report in for work one morning you need to be able to have someone else step in and take over with a minimum of fuss. Your IT system needs to adhere to some set of standards that work in practice – network managers work at the practical end of computing, documents produced by standards bodies are nice to have but ultimately what actually works in practice is what winds up as the standard.

The above considerations currently point towards the use of an Active Directory, Windows Server based system. Most software intended for the educational market is written (badly) for the Windows platform, which implies at least some Windows workstations on your network – you'll find there's always at least one department that just has to have some bit of Windows software to meet some must-have requirement. Open Source has not yet provided a reasonable replacement for the Active Directory domain controller. Samba is always in development, but cannot, by its very nature, do anything except react to new features in Active Directory, and in the meantime we have real users expecting real results right now.

We, as network managers, have no right to dictate what software is required by the academic staff. If a teacher wants Word because that's what they want to train their pupils to use then that's what we need to work to provide. Making teachers less dumb is a problem that needs fixing somewhere elsewhere – we can, of course, point out open source alternatives that they may wish to consider, but being uncooperative isn't going to help anyone. It should be pointed out that the average teacher is completely clueless as regards to the licensing of software, resources, music or video and can be genuinely baffled and upset by being told that we cannot simply pirate some item for them. This is the root of many complaints by teachers about

network managers - “the network manager refused to install X for me”, and one of the main reasons why school machines tend to be heavily restricted in terms of what end users can do with them – if they weren't, staff and pupils would simply fill them with pirated software and resources.

If a school network pretty much has to have an Active Directory server at its heart, what about the use of open source workstation and server-based applications on that network? This brings us back to the point made at the start of this document, that the initial capital cost of a workstation or server should be considered a minor part of its total cost of ownership. Joining a Linux workstation to an Active Directory server, or having a server authenticate users against AD, implies a Windows device Client Access License for each computer on your network, whether running Windows or not, but this is a relatively small cost (around £5 per CAL at education prices). Other than Active Directory, every other function that needs to be done server-side can be handled very well by open source systems. Samba works very well as a file server (in several ways it is more flexible than Windows), server virtualisation, backup and failover can be handled entirely by free, open source software, and web-based services such as VLEs, management information systems and email systems can all be had for free.

However, while saving tens of thousands of pounds on your software costs is nice, it is not perhaps the main advantage to a school of using open source software. A state school might not even have to really consider the actual capital / ongoing cost of a piece of software if they are provided it by a centralised purchasing agreement, or they might simply be forced to surrender part of their budget to their local education authority which will then spend it for them. The real advantage of open source software is the open standards that come along with the software and the flexibility in support options. A school itself may not have the expertise to modify applications or to write plugins to carry out some necessary task, but those skills are easily hireable by the hour in many cases. Open source software is simply flexible in a way that software should be but that commercial software often isn't.

So, as a network manager, how do I use open source software? The same way as I use any software - to get stuff done in the quickest / simplest / cheapest way possible. If a problem needs to be solved right now and there is money to throw at it then commercial software might be the answer, but often some piece of open source software is going to be the better choice, simply because its initial cost is lower, or because its ongoing costs are lower, or because I can get it to work with another system with a minimum of fuss and cost, or because I know that I have multiple third-party support options to choose from (as opposed to one company that might go bust), or simply because everyone else thinks it's the best solution and that's what they are using.

In summary, network managers don't, and shouldn't, make any special effort to use open source software, they simply use the best solution, on balance, that they know of to solve their problem within the applicable timeframe, budget, and other limitations. If you want to get more open source software in to schools, ensure that it is the best option available to solve a given set of real-world problems that people are really having, and make sure that people know about it.