Conclusions

Looking to the Future

Two trends that will continue to impact libraries in the future are also likely to help facilitate the creation of open source workstations. First, funding issues, particularly in light of the current economic climate, will make it imperative that libraries find ways to spend their technology budgets more efficiently. That alone will continue to encourage interest in low-cost computing solutions that are based on open source.

In addition, we can expect to see the continued development of Web-based applications for office productivity and other common functions. Cloud computing utilities, such as those offered by Amazon, Google, Sun, and others, make it possible for application developers to utilize a software-as-a-service (SaaS) model without having to create the infrastructure and middleware necessary for such systems. The result is speedier development of scalable Web-based applications and more options for consumers. Also critical to this trend are the tool kits from some of the same vendors (Google Gears, for instance) and others, which allow developers to create Web-based applications that can be used offline. These tool kits facilitate both offline storage of documents and automatic synchronization of data once a network connection is restored. Thus, even library customers who do not have a network connection at home can utilize SaaS applications, synchronizing their data, utilizing the backup that is inherent in these services, and getting application updates when they are at the library. Once users become accustomed to using online applications, as well as the office productivity tools, games, and browsing that are typically offered at the library, the library is free to install any workstation platform that supports the library's preferred browser.

Microsoft has announced plans to move Office to a Web-based subscription model.[1] In addition, Microsoft has patented methods for tracking customer usage.[2] Under this model, users would pay for functionality as it is needed. It is unclear at this time whether any free functionality will be offered. This service will be in addition to Azure, Microsoft's cloud computing operating system, which developers may use to create their own online applications. Google Docs, Zoho, and Live Documents offer alternatives to Microsoft Office from other vendors. At the moment, the very number of alternatives may be having a discouraging effect, as it leaves librarians and users wondering which product to select and whether there may be vendor and product consolidation in the future that will force users to switch applications, migrate data, and learn new skills. Libraries that choose to encourage the use of a particular online product run the risk that they may be guiding their customers into a dead end. For that reason, the overall success and growth of Google may make Google Docs the most appealing online alternative to Microsoft Office. The equation may change when Microsoft's own online versions become available.

Each institution involved in this study expressed satisfaction with its implementation of open source software on public workstations. The personnel involved in implementation feel that their projects are a success. Each would recommend his or her approach to others. However, their approaches are different. The key to making sense of their recommendations, therefore, is an understanding of the different purposes their projects serve and how the differences between their approaches served those varying purposes. University of North Carolina in Chapel Hill (UNC) and the University of Vermont in Burlington (UVM) both need specialized workstations in public areas that would be used both by persons associated with their institutions and by the general public. The applications they offer are primarily Web-based and do not require the use of application software loaded on the workstation. UVM does, in fact, offer OpenOffice.org on its Groovix-based public-access workstations, but the express purpose

of the workstations is Internet access. Thus, for these libraries, the performance offered by LTSP (UNC) or a multi-user configuration (UVM) is adequate. Both of these institutions offer large numbers of full-service Windows-based workstations for persons associated with their institutions. These limited-access workstations offer a much larger selection of applications than the public-access workstations do.

Howard County Library (HCL) chooses to offer full-service workstations that offer video and audio playback. For HCL, running Linux on each workstation has worked very well, especially since the relatively basic hardware requirements of Linux make it possible to purchase low-cost used or refurbished PCs for this application. The libraries of the Crawford County Federated Library System (CCFLS), on the other hand, do not see multimedia playback as an essential service and can therefore offer LTSP terminals without sound support that provide acceptable performance for all other applications. Please note that if CCFLS updates its LTSP software to version 5.x or better, it will be able, where suitable hardware is available, to offer audio support. Video is also technically possible with this version, but probably not practical.

Of the institutions involved in this survey, only HCL has installed open source workstations for the majority of its staff members, although CCFLS has made considerable inroads in this area. It is an indication of the quality and the success of the efforts to promote open source use that many of the staff members at HCL have voluntarily moved from Windows to Linux-based workstations.

Open source public workstations are an excellent option for libraries looking for cost-effective alternatives to proprietary software. Any systems decision in a library is extremely important, so it is vital for decision makers to consider all angles before making a choice. Still, with growing popularity and a growing number of options available, open source workstations are an increasingly important part of the library technology world.

Notes

1. Richard MacManus, "Microsoft Office Comes to the Browser (Finally)," Oct. 28, 2008, ReadWriteWeb, www.readwriteweb.com/archives/microsoft_office_comes_to_browser.php (accessed Jan. 3, 2009).
2. Microsoft Corporation, "Method and System for Providing Centralized Web Usage Tracking," Sept. 15, 2006, FreePatentsOnline.com, www.freepatentsonline.com/7457873.html (accessed Jan. 3, 2009).