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| Overview  Country or Region: North America  Industry: Public Sector—Education  Customer Profile  Orange Country Public Schools, in central Florida, is the 11th largest school district in the United States, serving nearly 180,000 students. IT staff at the district support 50,000 workstations.  Business Situation  In response to budget contractions, OCPS directors sought to reduce IT related costs. OCPS IT staff worked with Value Prism Consulting to analyze the total cost of ownership (TCO) of competing productivity software alternatives.  Solution  The study showed that while OCPS could save a large amount of money in upfront software costs by using open source software alternatives, Microsoft Office 2007 proved to deliver lower TCO over a  3-year life cycle.  Benefits   * Better quality of education * Lower deployment costs * Lower training costs * Lower support costs * Lower file conversion costs |  |  | “If we don’t teach our students to use the software that colleges, universities, trade schools, and the business community uses, we’re putting them at a disadvantage.”  Harold Border, Principal, Freedom High School, OCPS |
|  |  | In response to deepening budget challenges, Orange County Public Schools (OCPS) sought to reduce IT related expenses. OCPS conducted a study to compare the total cost of ownership (TCO) of different productivity suite software alternatives, in particular the 2007 Microsoft® Office system and open source software (OSS) alternatives such as StarOffice 9 and OpenOffice 3.1. The study found that while OCPS could save a great deal in upfront software license costs by migrating to OSS software instead of Office 2007, the initial savings were offset by vendor support costs and other IT labor costs associated with deploying, supporting, and maintaining the OSS software. According to the study, these additional costs would contribute to a nearly 30% increase in direct costs for an OSS software alternative over Microsoft Office. When educator and administrator downtime and productivity costs are considered, the gap between the 2007 Office system and OSS alternatives widens further. |
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| http://valueprism.com/images/logo.jpg |  |  |  |
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Situation

Orange County Public Schools (OCPS), headquartered in Orlando, Florida, is the 11th largest school district in the United States, with a 2009 enrollment of nearly 180,000 students. IT staff at the district support close to 25,000 workstations for staff and educators, and an additional 25,000 student workstations scattered across 172 schools.

As a result of the economic downturn and slipping county tax revenue, OCPS faced a growing budget crisis in 2009 that has forced the school board and OCPS management to face tough spending decisions head-on. Of the array of cost cutting measures proposed, the OCPS board carefully considered the choice of which business productivity software suite to provide to administrators, educators, and students. Due to the level of interaction and file sharing between these user groups, OCPS management and IT directors decided to only support a single productivity suite across its offices and schools.

While OCPS had been using Microsoft® Office for decades, OCPS management decided to investigate whether open source software (OSS) alternatives, such as StarOffice or OpenOffice, could provide a viable alternative in terms of cost and value to the organization. OSS solutions may be free to download, or they may require license fees or mandatory vendor support fees.

Solution

Reliance on software license costs alone as the determining factor in the purchasing decision when considering an OSS solution will often lead to poor decisions from a total cost of ownership (TCO) perspective. Other costs, such as vendor software support, and IT labor costs for deployment, support, and end-user productivity costs must be taken into account.

Using a Gartner TCO Chart of Accounts approach, OCPS worked with a management consulting firm to holistically study the expected costs of migrating all 50,000 OCPS computers to an OSS productivity suite, versus upgrading 80% of the OCPS computers from early versions of Microsoft Office to Microsoft Office 2007. The study considered costs across a number of categories, shown in the table below:

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| **Cost Catagory** | **Type** |
| **Software Costs** |  |
| Software License Costs | Direct |
| Annual Vendor Support Costs | Direct |
| **Deployment Costs** |  |
| Deployment Planning Costs | Direct |
| Desktop Migration Costs | Direct |
| Application Migration Costs | Direct |
| Initial Training and Support Costs | Direct |
| File Migration Costs | Indirect |
| **Ongoing Costs** | Direct |
| IT Support and Maintenance Costs | Direct |
| Lost Productivity Costs | Indirect |

Direct costs include any budgeted cost components. Indirect costs include non-budgeted cost components.

The study also reviewed non-TCO impacts of the decision between Microsoft Office and an OSS alternative, including the impact on quality of education at OCPS.

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| The study found that while OCPS could potentially save 100% of upfront software license costs, over a three year span, other costs such as vendor software support costs, desktop deployment, IT support, and end-user productivity costs more than offset any initial savings. |

The study found that OCPS could potentially save 100% of upfront software license costs[[1]](#footnote-1), but over a three year span, other costs such as annual vendor support costs[[2]](#footnote-2), desktop deployment, IT support, and lost productivity costs more than offset any initial savings.

In terms of direct costs alone (neglecting file migration costs and lost productivity costs), the decision to upgrade to Microsoft Office 2007 over migrating to an OSS alternative is estimated to lower OCPS direct costs by 22% over three years.

Benefits

By continuing on the Microsoft Office upgrade roadmap, rather than migrating to an OSS alternative, OCPS can provide better quality of education to students while dramatically reducing its expected IT costs from deployment, maintenance, and support.

Improving Quality of Education

In addition to the directly calculable costs associated with the decision to use OSS alternatives over Microsoft Office, a number of other considerations must first be made, including the impact the decision has on the quality of education at OCPS.

“I used to spend 60% of my class time just showing my kids stuff.

While labor savings are important, the salient impact of increased educator productivity is on additional classroom time. “I used to answer a bunch of individual questions from students with earlier versions of Microsoft Office. I used to spend 60% of my class time just showing my kids stuff,” says Nugent. As Microsoft improved its online training resources, Nugent began showing those resources to her students—empowering them to teach themselves. “Now, 90% of my time is spent on core education, and 10% is demonstrating how to use the software.”

Now, 90% of my time is spent on core education, and 10% is demonstrating how to use the software.”

Tisome Nugent, Educator, OCPS

Microsoft Office is also the preferred productivity software suite for home PCs[[3]](#footnote-3). The relationship between students, educators, and parents works better when everyone uses the same software to exchange documents. Parents and teachers are able to help students learn to use a common software package, providing a seamless educational experience that reduces learning time.

Most colleges and businesses[[4]](#footnote-4) use Microsoft Office. Training OCPS students to use Microsoft Office better prepares them for college and their careers. “If we don’t teach our students to use the software that colleges, universities, trade schools, and the business community uses, we’re putting them at a disadvantage,” says Harold Border, Principal at Freedom High School.

Freedom High School is proud of its “Model Office”, an actual mock office environment. “The Model Office program at Freedom High School allows students to apply Microsoft Office skills in an actual work environment and solve real-world problems,” says Su Homer, Technology Support Educator at Freedom High School in Orlando.

With other novel technology programs, such as Computing for College and Careers, which offers courses that offer college credit for computer software skills, OCPS is at the forefront of a Microsoft Office centric computer education program that educators and administrators believe offers the best quality of education to their students.

Reducing Software Costs

Although OCPS could save 100% of upfront licensing costs, annual vendor support costs for OSS alternatives like StarOffice are typically higher than comparable Microsoft support costs. In the case of OCPS, annual vendor support costs were estimated to be over 80% less over three years.

Reducing Deployment Costs

Deployment costs represent a sizeable up-front component in the TCO of a software package. Deployment costs include:

* **Deployment Planning Costs:** Expected to be similar for both Microsoft Office and OSS alternatives

**Comparison of Annual Direct Costs**   
Over Three Years

* **Desktop Migration Costs:** The direct IT labor costs associated with installing new software on workstations and servers
* **Application Migration Costs:** The direct IT labor costs associated with recreating or remediating custom applications that were created for the previous software package
* **Initial Training and Support Costs:** The direct IT labor costs associated with developing and delivering training workshops to end-users

**File Migration Costs:** The indirect end-user cost of converting files to a new format and correcting conversion errors

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| **Comparison of Direct Costs of Ownership** | **Microsoft Office** | **OSS Alternative** | **Cost Reduction** |
| Total Direct Software Costs | 2,201 | 1,038 | -112% |
| Total Direct Ongoing Costs | 848 | 2,182 | 61% |
| Total Direct Deployment Costs | 132 | 839 | 84% |
| **Total Direct Cost of Ownership** | **3,181** | **4,059** | **22%** |

Desktop Migration Costs

**Comparison of Total Annual Costs (Direct and Indirect Costs)**   
Over Three Years

Desktop migration costs are determined by the degree of difficulty in installing software on distributed workstations and servers.

For Microsoft Office 2007 installations, IT staff can take advantage of a variety of automated imaging and network installation tools developed by Microsoft, or developed by third-party vendors for Microsoft products. IT staff can also use Microsoft Software Assurance benefits like Desktop Deployment Planning Services (DDPS) and Business Value Planning Services (BVPS) to receive free third-party consulting on how best to plan for and deploy Microsoft products.

“The tools that we use that work with Windows and Office let us easily install Microsoft products over our network and immediately apply all of our usage policies and add-ons,” says Homer. “I don’t know what I’d do without those tools. If I had to walk around campus putting CDs into computers, that’s all I would do all day.”

Use of automated imaging, installation, and diagnostic tools created for Microsoft products were projected to lower IT labor costs associated with upgrading to new versions of Office by 60%, versus migrating to an OSS alternative.

Application Migration Costs

Application migration costs represent another significant deployment cost component. Each school within the OCPS school district has created a number of custom applications based on the Microsoft Office system to fill unique needs. These applications range from simple plug-ins built into Microsoft Office clients to complex database-driven applications built using Microsoft® Office Access®.

“The applications that we developed internally here at Ocoee High School (OHS) using Access helped us save a considerable amount of money over commercially available solutions,” says Bob Shrader, Technology Support Representative Sr. at OHS. “These applications include a visitor sign-in application that automatically logs visitors in and out of the OHS campus, an application that tracks student disciplinary issues for each of OHS’s 3,000 students, and an application that handles calendaring and resource scheduling for the entire high school.”

John Lien, Senior Administrator for Professional Development Services at OCPS, echoes Shrader’s view regarding application migration to OpenOffice. “We use a number of Access applications at our central IT office. Each one took our Access specialist days to create. We would have to invest a considerable amount of resources in recreating Access applications if we switched to an Open Source platform.”

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| “We would have to invest a considerable amount of resources in recreating Access applications if we switched to an Open Source platform.”  John Lien, Senior Administrator Professional Development Services, OCPS |

The TCO comparison study estimated that OCPS would lower application migration costs by nearly 100%, or $400,000, by upgrading to Office 2007 rather than migrating to an OSS alternative, since applications developed for previous version of Office are readily transferable to the 2007 Office system.

Initial Training and Support Costs

During every software transition, employee training costs add up quickly. In order to maximize the benefit of new software, IT staff must plan and execute a training program to shorten the time it takes for end-users to become comfortable and productive with the software. IT staff at OCPS routinely offer training programs to support new software investments.

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| "I consider myself a power user of Microsoft Office, but I spent several hours each week for a month looking through online forums and blogs to get proficient with OpenOffice."  Ria Xenja, Educator, OCPS |

“When we transitioned to a new classroom management software system, we offered weekly training workshops that usually lasted two hours,” says Homer. “This was a difficult transition for many of our educators—probably a level of difficulty I would expect with a transition away from Microsoft Office.”

The reality of the budget situation at OCPS would most likely mean that educators would be on their own during a transition to an OSS productivity suite. Reliance on self-help may work in the long run, but even the most tech-savvy educator will require time to become productive with a new software environment. “I consider myself a power user of Microsoft Office, but I spent several hours each week for a month looking through online forums and blogs to get proficient with OpenOffice,” says Ria Xenja, an educator at Freedom High School who used OpenOffice on her personal computer.

At Ocoee High School, Shrader anticipates a large volume of support calls if the district transitioned to an OSS productivity suite alternative. “Whenever we upgrade to a new Office version, there are always a few questions from educators. I usually refer them to the online help, which has gotten better with each new Office release.”

It is estimated that upgrading to Microsoft Office 2007 rather than migrating to an OSS alternative would lower initial support costs by nearly 90%, due to reduced help desk call volume. Additionally, training costs following an upgrade to Microsoft Office 2007 are expected to be over 40% less than training costs for a migration to an OSS alternative, since IT staff and end-users could rely on the comprehensive help provided within the Microsoft software and the online help available via the Microsoft Office website.

File Migration Costs

File migration costs represent an indirect cost of migrating to a new software environment. For OCPS, file migration costs would include all end-user time spend converting existing Microsoft Office documents to a new file format, and IT support costs to remedy conversion problems.

While OSS productivity suites often tout easy conversion to and from Microsoft Office document formats, in reality, conversions are rarely smooth. “Every time I converted a Microsoft Word document to OpenOffice, I had to spend 15 minutes fixing something,” says Xenja. “It messed up fonts, formatting, page breaks—it was unmanageable.”

Perhaps the most difficult Microsoft Office document format to convert to OSS alternatives is Microsoft PowerPoint®

documents, which often require significant modifications. “I use PowerPoint for everything,” says Michael Moles, head football coach and educator at Ocoee High School. “I even use PowerPoint to animate football plays—they’re very effective for training the players. If I had to convert my PowerPoint files and recreate animations, I’d waste a lot of time—hours each week.”

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| |  | | --- | | “I’ve had students who have turned in files that they’ve converted from OpenOffice with formatting problems—that affects their grade.”  Tisome Nugent, Educator, OCPS | |

While there are always some issues in converting between document formats of different Microsoft Office versions, the issues are largely mitigated by using the Microsoft Office Compatibility Pack. “We used to have a lot of Office 2003 to Office 2007 conversion issues,” says Robert Barrington, an Area Learning Community Technology Support Representative Sr. OCPS. “Ever since we installed that conversion pack, we haven’t had any complaints.” Upgrading to Microsoft Office 2007 would virtually eliminate the estimated $6.5 million in indirect end-user file conversion costs as a result of a migrating to a new OSS productivity suite platform.

Reducing Ongoing Costs

Ongoing costs are all direct and indirect costs incurred over a three year analysis period. These costs include IT labor costs to support software users and maintain the software by installing patches or new version, and indirect costs from potential productivity losses.

IT Support and Maintenance Costs

Once a software solution is deployed, IT staff must support and maintain that software over its useful life—a direct cost. The costs incurred for operating a help desk to manage end-user issues, installing patches and installing software updates and upgrades mirror the costs for initial deployment.

“In terms of ongoing support costs, I would expect to spend a lot more time walking people through things since that online help component is gone,” says Shrader. “We’ll also have file conversion problems with students who use Microsoft Office at home, but would be expected to turn in files that are compatible with OpenOffice or StarOffice.”

“I have a few students who use OpenOffice at home,” says Tisome Nugent, an educator at Ocoee High School. “I’ve had students who have turned in files that they’ve converted from OpenOffice with formatting problems—that affects their grade. They go straight to the technology support person, who probably has better things to do than help students convert files.”

Software maintenance is another issue accompanying a transition to an OSS alternative, since OSS software providers usually publish fundamentally new releases of software, rather than publishing incremental patches or updates. According to Shrader, “Microsoft provides automatic updates for their software that automatically installs patches and performs other maintenance. If OpenOffice just publishes a completely new release and expects IT staff to install it manually, it would be like a full deployment all over again—each year.”

With an upgrade to Microsoft Office 2007 instead of a migration to an OSS alternative, annual IT support costs and maintenance costs would each be over 60% lower.

Improving Productivity

Individual productivity losses are trivial on a daily scale, but quickly add up across a large employee base. An extra few minutes to convert a file and correct problems, or find help on a particular topic, can translate into millions of dollars worth of indirect costs. The TCO comparison study estimated that a switch to an OSS alternative would increase annual lost productivity costs by 3.5 times over an upgrade to Microsoft Office 2007.

Microsoft Office System

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| Software and Services   * Products   -- 2007 Microsoft Office Suites |  | |

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1. Sun Microsystems is currently shifting their strategy to begin charging for educational licenses of StarOffice 9: <http://www.sun.com/software/staroffice/faqs.jsp#g> [↑](#footnote-ref-1)
2. From a report from Sun Microsystems, “Costs Comparison of StarOffice 9, OpenOffice.org 3.x and Microsoft Office 2007” (January, 2009), annual vendor support costs for StarOffice are estimated to be $13.84 per workstation. [↑](#footnote-ref-2)
3. IDC, “Worldwide Packaged Applications 2008-2012 Forecast and Vendor Shares” December, 2008. [↑](#footnote-ref-3)
4. Ibid [↑](#footnote-ref-4)