απόπλους

Open Education

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The NeXT Thing

Steve Jobs did it again: he moved his entired company from a Motorola/IBM processor to Intel processors, turning his Operating System to a mainstream solution right out of the box. Is this a threat to Linux or is this actually good news for the OpenSource Community?

Image taken from http://www.spymac.com

In this issue:

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'apoplous' newsletter created on a PowerMac G5 using inDesign CS suite.

From Fat to Thin in Primary Education

At our Development Center, we are testing the way children interact with our Learning Management Systems (Lotus LMS and Moodle) as well as trying to define the perfect balance between total freedom of choice and directed learning.

We also deal with the road that lead us up to this point as well as some drawbacks of using Thin Clients.

(*Continued page 10*)

Secret Agent Europe: Videogaming Geography

Geography is far from being the favorite subject of students. Can technology, when used correctly, change that? Can a videogame help us in doing so?

(*Continued page 16*)

European Office Suite: Can it be done?

European Union members rely on Office Suites that originate mostly from the United States. Government organisations, schools, universities, even individuals rely on a day to day basis on Microsoft software.

OpenOffice, KOffice and similar suites are starting to catch up. However, there is still no awareness of their benefits and obviously Microsoft has had a serious headstart in the development of its own suite, thus having a generally more 'polished' group of applications.

Perhaps it is time the EU gives funding for the development of a European Office Suite to rival Microsoft.

(*Continued pages 20)*

Apple's NeXT Step:
Moving MacOS X to Intel!

Steven Paul Jobs

Steve Jobs is the CEO of Apple, which he co-founded in 1976, and Pixar, the Academy-Award-winning animation studios which he co-founded in 1986.

Apple ignited the personal computer revolution in the 1970s with the Apple II and reinvented the personal computer in the 1980s with the Macintosh. Today, Apple continues to lead the industry in innovation with its award-winning desktop and notebook computers, OS X operating system, and iLife and professional applications. Apple is also leading the digital music revolution with its iPod portable music players and iTunes online music store.

Pixar has created six of the most successful and beloved animated films of all time: Academy Award-winning Toy Story (1995); A Bug's Life (1998); Toy Story 2 (1999); Monsters, Inc. (2001); Academy Award-winning Finding Nemo (2003); and The Incredibles (2004). Pixar's six films have grossed more than $3 billion at the worldwide box office to date.

Steve grew up in the apricot orchards which later became known as Silicon Valley, and still lives there with his wife and three children.

(http://www.apple.com/pr/bios/jobs.html)

The X Factor

You are considering getting a new PC, either with Intel or AMD processors... Maybe you will go and get a brand PC or maybe you like adventuring and you will setup your own dream machine.

Probably you want to move away from Windows, as its full of security holes, viruses etc. At the same time, however, you want to use WINE (www.winehq.com) to run some Windows applications on your new dream machine. The obvious choice would be a Unix machine with the best possible User Interface so you make some modifications on the installer and you are running one of the most secure, feature-rich Operating Systems, backed by one of the worlds most influential companies. Are we talking about Linux? NO! We are talking about MacOS X on Intel!

Steve Jobs, CEO of Apple and Pixar Animations, founder of Apple Computers, ex CEO of NeXT, one of the fathers of the Macintosh and the man responsible for the 'iPod phenomenon' is not a person you can treat lightly.

The implications of the move from PowerPC to Intel have just started to surface and it all seems that, somehow, for the first time in its history, the Mac is about to gain some marketshare after all. In this article we intend to focus on the effects of this announcement on the Linux world.

Linus Torvalds on MacOS X

Many times in the past, Linus Torvalds commented on MacOS X, stating how inferior the FreeBSD-based operating system is, compared to Linux. The same or similar remarks have been noted by several Linux developers. However, history tends (in an ironic fashion) to repeat itself. Apple are the first to know that, since they even published ads to welcome IBM in the market when the Big Blue introduced its first Personal Computer that eventually lead to the shrinking marketshare of Apple. After all, its not that easy to ignore or downplay the ancestor of MacOS and NeXTSTEP, two of the most legendary operating systems ever developed. MacOS has contributed its unparalleled ease of use and multimedia technologies (QuickTime etc) while NeXTSTEP has contributed its UNIX foundation along with its development tools.

You can praise him, quote him, disagree with him, disbelieve him, glorify or vilify him... about the only thing you can't do is ***ignore*** *him!*
(Think Different campaign)

User Interface Standards: Still not there

The End User

Every operating system that tries to capture a significant portion of the market must be built around the End User.

The End User is a completely different beast compared to the Corporate User. Thus, any operating system or software trying to appeal to the end user must conform and be built around him/her.

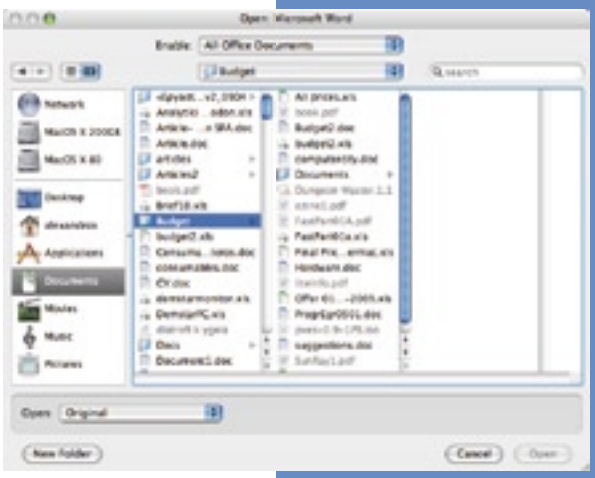
Linux GUIs (Gnome, KDE etc) have come a long way in the past few years. The installation of most distributions today is completely painless, and personally I find it far easier than Windows 98/Me/XP installations, since the OS automatically discovers and installs most (if not all) modern cards in the system. However, enter Desktop (Gnome, KDE) and the great differences start to make an appearing.

Consistency across the board

I am a teacher, and I am also an end-user. Therefore, as an end user I want to be able to perform several tasks with ease. Probably one of the most usual tasks an end user performs on a day-day basis is the Opening and Saving of files. This is probably the single most frustrating aspect of Linux/OSS I have encountered. Whereas in Windows or MacOS X, when you Save or Open files you are clearly showed the Desktop or the Documents file (or any other part of the computer), under most major OS applications you are shown a somewhate cryptic (for the average user) dialogue box.

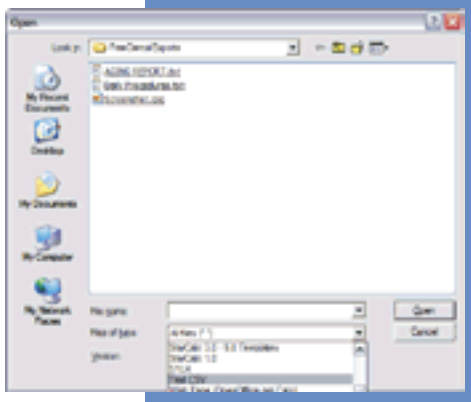
The File System under several OSS applications

Some applications tend to use a more friendly File System. The KDE Office suite offers a far friendlier way of saving and opening files that greatly reduces the confusion caused by the awkward way of handling documents in other applications.



Saving/Opening Files under MacOS X

To be fair, OSS developers can make the changes themselves (as shown by the KDE suite). There is a strong need to define some standards on interface design, at least for the most generic tasks (like saving and opening files).



Saving/Opening Files under MS Windows

It is essential that a standardised approach to saving/opening files and generally handling the File System is set. Maybe it is too late to implement such a feature in OpenOffice 2.0 or StarOffice 8 but we hope we see this in the near future.

Installation Pains

Ease of Installation

Under MacOSX and Windows, when you install software you know exactly where the application is. Under Windows, applications tend to appear under the Start menu (Applications). MacOS X applications are always (unless you choose otherwise) in the Applications folder.

Under Linux this is not always the case. Some applications can be downloaded or even installed from the internet automatically- just download a certain file and you can find the application from the main menu. However, this is not the case for most software. The installation itself requires a lot of fiddling and then you have no idea where it was installed in the first place. Sure, Linux experts can get to it right away but it still is a long way to go before the installation and use of applications becomes simple enough for all users.

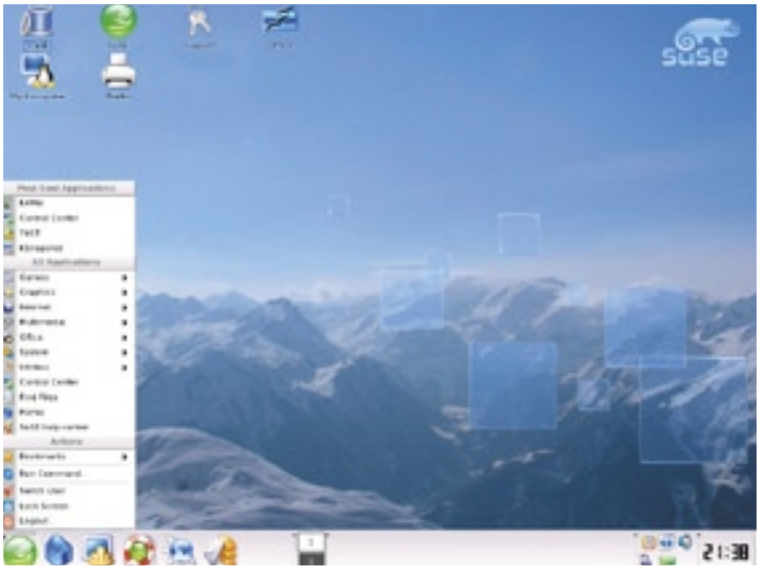
One can argue about the pros and cons of this approach. However, since the OSS community is interested in putting Linux on every personal computer, the installation (an uninstallation) of software is a serious issue that must be dealt with.

Perhaps GNOME, KDE and the other User Interfaces could standardised on some software categories (ie Applications, Multimedia) and the software can decide or give the end user a choice of either using these categories or creating his own. This is something that can be done today by everyone with a basic knowledge of Unix. But, the end user does not and must not have to learn Unix to get to work with his computer.

One of the greatest joys of MacOS X is that it gives the user as much control as he likes. It makes everything transparent for the complete novice but at the same time it has all the tools there for the expert (or power) user to tweak the system in his/her own liking. In this respect, Linux is far from being there as developers haven't yet standardised on a common way of installing applications. This is something that definitely has to change in order to make Linux a mainstream desktop OS.

Installation Pains
I am not considered an amateur computer user. However, I become frustrated when I have to install (several) new packages on my various Linux machines. I always know where I placed the files, but it's still not the same as when installing applications under Windows or MacOS.

Apps like OpenOffice, StarOffice, RealPlayer etc always know where to 'go'- that is, they appear under the 'Launch' menu. The same must apply to every single application so that anyone can download, install and use Linux apps with the same ease as he does on Windows.



On the left: SUSE Linux has a very intuitive desktop. Still, installation of most applications can be a real pain. Above: Installation under MacOSX is a point-and-click affair.

Licencing MacOS X

MacOS X Clones, Windows compatibility

Steve Jobs claimed that you will be able to install Windows XP (or any other Intel-based OS) on the Intel Macs. However, he stressed out that MacOS won't run on other PCs except those built by Apple.

Anyone knows of course that tweaking the MacOS X to run on other PCs won't be much of a problem; the question is, however, will Apple stick to this decision? Steve is against licencing the OS to other manufacturers- after all he was the one to stop the Mac clones business by buying and discontinuing Power Computing. Will that change? None can say for sure.

Fact is, even Michael Dell announced that he is interested in licencing MacOS X. With companies like Dell interested in the OS, perhaps Apple will change its point of view and licence MacOS X. Steve followed that road years ago with the release of NeXTSTEP on Intel. Unfortunately he did that too late, but this is a different Steve and this is a different OS.

For an end-user, running MacOS X on intel, is a huge opportunity: get the legendary ease of use of the Mac, while at the same time run Windows at full speed. WINE developers announced that they will support MacOS X, giving Apple's OS a Windows compatibility layer. This will lure many people to Apple and eventually might lead to a rise in market share.

This rise, however, will most possibly be against Desktop Linux market share.

DELL for MacOS X
Shortly after Steve Jobs announced his move to Intel, Michael Dell announced his interest in licencing the system. Apple is negative on the prospect of Mac clones, but Apple can change its mind when the right time comes.

Codeweavers to support MacOS X on Intel

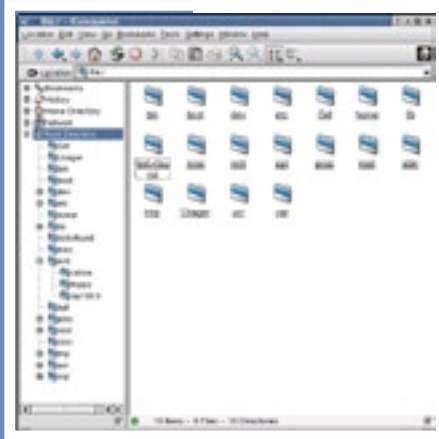
Late June, according to an articled published on the web by MacWorld (http://www.macworld.com/news/2005/06/22/crossover/index.php), Codeweavers announced their plans to support MacOS X for Intel chips. Codeweavers are the developers of Crossover Office and the more popular and free WINE that allows users to run Windows applications under Linux. Having Codeweavers releasing such a product for MacOS X would indeed help boost Apple's OS, as it would enable Macs to run Windows applications under their favorite operating system. As a matter of fact, a lot of OpenSource developers are already supporting MacOS X with products such as OpenOffice, AbiWord, FireFox etc.

The rootless Unix

Terminally Mac
The Terminal Window is hidden inside the Applications folder. Most end users will never in their life time need to use it. Apple made sure only the necessary features were left for the end users.

Hey Dude, where's my root ?

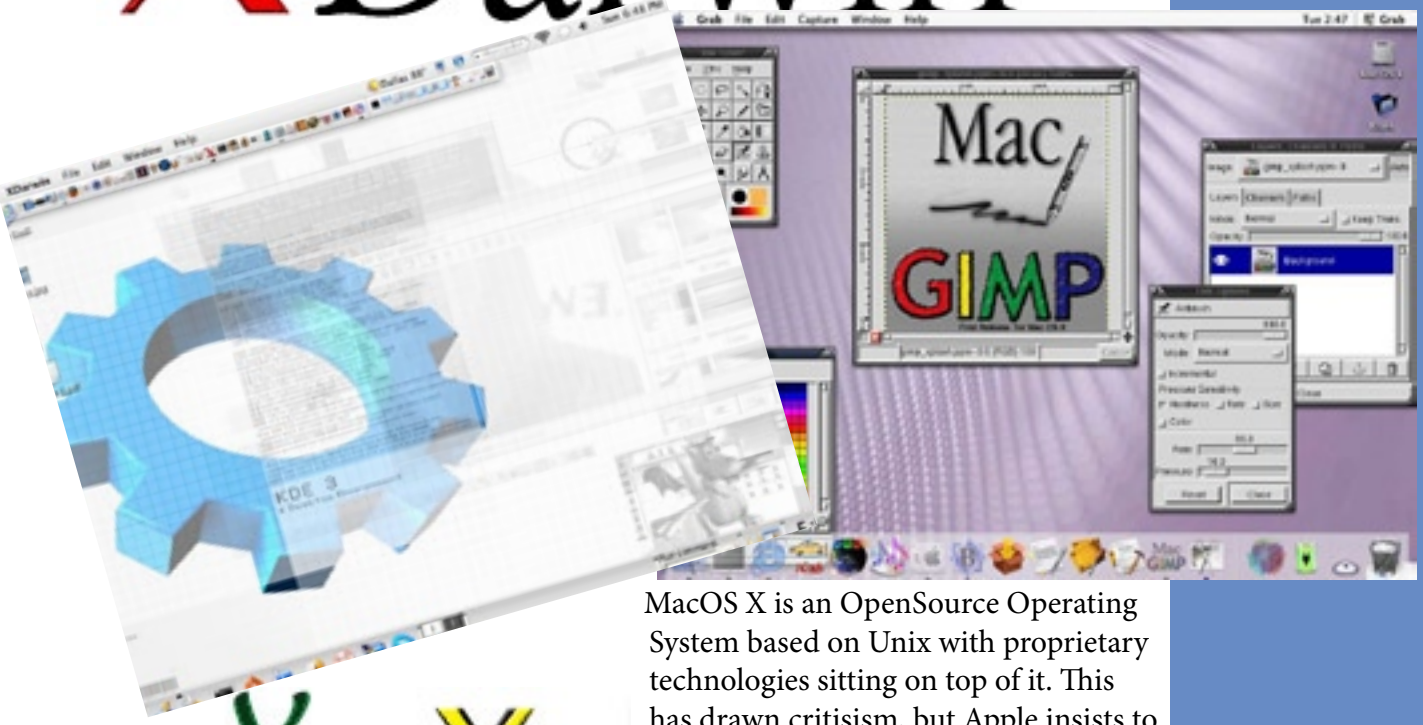
MacOS X, however simplistic it might seem, is still a powerful Unix System. What Apple did they did it good. They managed to blend the best parts of NeXTSTEP and MacOS and create an Operating System that manages to offer the best of both worlds. However, fire up the Terminal (hidden inside the Applications folder) and the power of Unix is revealed to those who want to harness it. For the rest of us, the System is clever enough to hide the unneeded complexity by showing us only a basic selection of directories (folders). From the screenshot below, we can clearly see the System Folder and the Library Folder. Thse two are primarily used by the system itself and the applications. The Application folder is the place all applications go. Users is obviously a clear path towards all the user accounts we have in our system.



This is something we would definitely like to see under Linux. Apple did it, so there's no reason we cant have similar features under Linux.

OpenSource under the hood

XDarwin



MacOS X is an OpenSource Operating System based on Unix with proprietary technologies sitting on top of it. This has drawn critisism, but Apple insists to keep Aqua sealed and to allow access to the underlying technologies. XDarwin, the OpenSource Operating System hiding under Aqua, has grown on its own and developers have even ported more than a few apps to it.

The XDarwin project has its own website (www.xdarwin.org) and offers replacement X Windows Environments for Mac Users.

Even though at present it seems highly unlikely, we wouldn't be surprised if in a few years time Apple opens the entire system to the OpenSource community in a similar way that Sun did with Solaris 10. If that happens then probalby KDE and GNOME would have a serious run for their money.

iApps: Apple's 'free' advantage

iDVD in action: footage taken from the classroom turns to DVD

Linux distributions (almost) always come loaded with outstanding applications that range from simple games to professional 3D graphics packages. However, consumer Macs also come preloaded with 'free' software. The term 'free' here does not refer to the actual code being offered to other developers by Apple. Rather, this is software that comes preloaded on selected (usually consumer) machines but allows the user to perform some amazing tasks. Almost any consumer Mac comes with AppleWorks, a capable package that gives the user a Word Processor, Spreadsheet, Drawing, Presentation and Database. The Database module is incredibly easy to use and allows some simple yet useful databases for day to day tasks.

The rest of the famous iApps consist of iTunes (you can download for free from Apple), iMovie for video editing with HD capabilities(!), iDVD for creating amazing DVD movies, and GarageBand, the music creation studio. The iApps are a strong ace in Apple's hand since they offer remarkable simplicity yet are powerful enough to perform almost anything but the most demanding task. And they are free- if you just bought a Mac, or come at a very low price if you are a first time user.

> With the iApps -iTunes, iDVD,iMovie, GarageBand, iWork, and a possible SpreadSheet in the wings, Apple has managed to put the word 'quality' in 'free'

Obviously the iApps can hold their own against most of the competing packages in the market. Furthermore, the fact that they are based on QuickTime, the most sophisticated set of video codecs today, makes the applications much more flexible and powerful.

We strongly believe that the OpenSource community could learn a lot by studying these iApps and perhaps deliver similar packages with ease of use in mind.

The Linux Challenge: Counting to 2006

Consumer MacTel

The first Intel-based Macs will arrive mid-2006. By then Apple will begin moving its entire range to Intel, with 2007 the target for releasing the pro models. However, users who need a machine for day to day work will start purchasing (according to Apple) these first consumer Macs and won't wait for the pro models. Quite ironically, all the benefits of Linux over Windows, as far as the end user is concerned, fit perfectly to MacOS X. Longhorn will still be way off, and users interested in purchasing a more stable, friendlier, safer and easier to use system will have a choice- a MacOS X based computer. And considering the low price of some of today's Macs (just take a look at Mac mini prices), we can't see a single reason why an end user would prefer Linux over MacOS X, unless of course they want to setup their own PC.

Officially, Apple stated that they do not intend to release MacOS X to other vendors. However, everyone knows that writing a hack to allow MacOS X to run on normal PCs will be quite an easy thing for an experienced programmer. Such a hack will allow everyone and his dog to preload MacOS X on ANY PC- and we won't be surprised if Apple licences the OS!

The Linux Move

Linux enthousiasts wanting to see their favorite OS conquering the desktop, will have to take notice of MacOS X entering their realm. On the same platform it would be hard to fight both Windows and MacOS X, especially MacOS X. So, what needs to be done is learn from the best features of MacOS X and implement them, with great improvements, in Linux.

First of all, hide all unnecessary complexity. Forget the root structure. Just give the average user the basic directory he/she needs and hide the rest for the power user. Create a common way of installing applications in the system instead of the chaotic command-line procedures we have to follow today for most applications. Give as an easier and friendlier way of handling files from within applications. KOffice is a step towards the right direction, Open/StarOffice and most Linux applications still have a long way to go.

But, most importantly, for Linux to conquer the desktop and actually replace Windows and MacOS X, Linux developers need to start thinking of the end-user as a complete novice that hates and has nothing to do with a command line. The command line, as far as end users are concerned, died a horrible death on January the 24th, 1984, when a little machine came out of a bag and introduced itself to its audience.

Alternatively, the Linux community can listen to mr Torvalds saying how superior Linux is to MacOS and rest on its laurels. Right now, nothing has the legendary ease of use of MacOS X. In conclusion, I will quote a phrase from the film 'Pirates of Silicon Valley":

- ***Steve Jobs:*** *"Our system (MacOS) is better than yours (Windows)"!*

- ***Bill Gates:*** *"It doesn't matter!"*

(...and we all know which of the two won the OS war).

Thin Clients/OSS in Elementary Education

Evaluation of the first 3 years of using OpenSource Software in the classroom.

Star/OpenOffice: the first years

The first time we used StarOffice was in 2002. During that school year we needed an Office Suite to support our 'apoplous' research- create a classroom/computer lab with an analogy of 4 students per client. Our PCs were running Windows 98 and the primary office suite was MS Office. However, we put StarOffice to good use throughout that first year. A big minus of StarOffice back then was not so much its features as its interface. Microsoft Office XP was far more attractive and children loved some extra features like WordArt.

For the second year of our research (2003-2004) we started moving towards opensource software. Because we changed the analogy to 1 PC per desk, we had to use more software but we could not afford the licences. Therefore, we started working with OpenOffice as well as StarOffice 6.0. Hellenic Technical Enterprises (Sun Microsystems Cyprus) gave us the necessary licences to use the product and we also downloaded OpenOffice (both greek and english versions). The children could adapt to the new suites quite easily and the productivity remained the same throughout the year.

Greek vs English versions

The Ministry of Education insists on using english versions of all software (Operating System and Office Suites). Unfortunately this creates a chaos in the classroom as children, especially Fourth grade downwards, are not accustomed to a second language. Using words like 'copy', 'paste', 'cut', 'restart', 'logout' was quite confusing for some of the children. One of the biggest problems was their inability to identify these commands on the menus. Rather, they learned to identify the commands not by reading them (some of the students couldn't read english) but by identifying the letters or the image.

It was clear that, when using the greek version of OpenOffice, it was far easier to work in the classroom and perform several tasks since we just pointed out the name of specific menus and the command and children had to just click their way through.

FOSS Inside, Microsoft Outside!

From year two with Linux to year 3 with Thin Clients

From Windows 98 to Linux

Probably the single most valiant step we took was to replace Windows as the main Operating System and use Linux instead. Our main anxiety was the way children would react to the new system. Fortunately, after just a brief demonstration, children started working on the machines almost instantly. We tried several distributions but eventually we gave more emphasis on Fedora Core 2, Mandrake 10 and Sun Java Desktop Release 1. We also tried SuSE Linux 9. KDE and Gnome were both used and the children showed a slight preference to KDE, especially under Mandrake 10 that had a kids theme they liked using.

We also tried loging into the systems using Greek as the main system language. Again, children who used Greek as the main language found it far easier to work on the computer since they could follow instructions more easily and also identify commands from the menus themselves. In an environment with limited time and no dedicated periods for learning computers, it is essential that we do not lose time in trying to explain commands that are in a different language. Greek was, is and must be a necessary prerequisite in any OS or Software used in the classroom. The same should be true for any other country; the local language should be used for basic computer use so that resources and time is saved and productivity increases.

From Fat to Thin in one year!

One thing we learned during our first two years was the hard work involved in maintaining, upgrading and ensuring the normal operation of every single computer in the classroom. Some of our clients could not cope with the newer versions of Linux (we used several PIIs) and we also experienced hard drive crashes and other hardware (and software) related problems.

The above forced us to evaluate other possible solutions, since we cannot spend our time fixing computers and obviously we cannot afford an IT expert in every school. The only ideal solution for our third year was obviously a move away from 'Fat' clients and the deployment of a Thin Client lab.

'Fat' vs 'Thin' client

'Fat' client is considered any computer that has a hard drive, a floppy drive (usually) and a removable device such as a CD-ROM. The Operating System and all software are installed on the hard drive of this computer.

'Thin' clients usually don't have any kind of storage device. Rather, they usually work through a network and rely on the server for all their software.

Both approaches have pros and cons and their use should come after examining all options.

A year with Thin Clients/ FOSS

School year 2004 - 2005 was a defining period. We used 14 PCs configured as thin clients running off a P4 Server. Our OS was Fedora Core 3 and we used Star/OpenOffice

"Our classroom had two doors, desks, computers, students (obviously) but no Windows"

We did it. We survived an entire school year withour launching a single Microsoft app- be it MS Office or MS Windows or even Internet Explorer.

Our 14 clients were running Fedora Core 3 (K12OS) and we used OpenOffice 2.0 Beta and StarOffice 8.0 exclusively. Throughout the year, more than 120 students passed through the classroom and every one of them had the chance to use our clients in a productive way that transformed the learning experience.

Students with computers at home used MS applications for their assignments. Alternative paper assignments were always given to children with no computers at home so as not to feel left out. Also, extra computer time was given to children with no access to a PC at home.

All the assignments were brought either on Floppy, USB memory stick or CD. We never, ever had a single problem opening from or saving to Microsoft Word/PowerPoint/Excel files.

The LTSP server was running perfectly and never failed even for a milisecond throughout the entire year. Hardware problems we had with some of the clients were quickly resolved either by replacing faulty mice/keyboards or by replacing the entire client on the spot (we had 2 'junk' machines used effectively as thin clients).

Once we replaced a unit, the only thing we needed was to turn it on and after a couple of minutes it presented the login screen.

This experience lead to a proposal early in the year for a further research funded by the Research Promotion Foundation. We received the funding mid-year, however the full deployment of the new units will begin the first working day of next school year (September 2005).

Tremendous potential

The end of year 3 marked the beginning of the next stage in our research. This time, we not only move to new hardware and dedicated thin clients, but we are also engaging the services of IBM and Inteliscape for providing us with one of the very best eLearning platforms in the market- Lotus LMS. Work has already begun in developing content coverings such areas as Science, Maths, Geography and Social Studies.

Teacher training is another major concern, as we are introducing new concepts and new tools. The same eLearning platforms (both Lotus LMS and Moodle) can be used for delivering content to in-service teachers in need of training.

The need for teacher training leads to further funding as, at this point, there are no available resources to develop the proper material. We are confident that we are on the right track to receiving such funding in the near future.

Image from http://www.dylan.org.uk/nowindows.html

K12OS

There are many solutions for a Thin Client Linux based environment out there. You can actually install almost any distribution and add on top the LTSP (http://www.ltsp.org).

Nothing beats K12OS when it comes to simplicity in installation and management. You can download the latest version from the official website (http://www.k12os.org). There is a new version coming out, based on Fedora Core 4 so visit the web site on a regular basis.

The Thin Client Challenge: Making IT work

The Thin Client is obviously the best possible solution for education since the costs are driven down and increasing the number of units per classroom becomes feasible. However, not all are perfect as we have discovered.

Video editing and other multimedia heavy-duty work is not a bread and butter affair for Thin Clients

Multimedia Slowdowns

Any kind of server (at least any kind a school can afford) is not capable of sustaining the throughput necessary for heavy-duty multimedia work.

It can be argued that children, especially in Primary Education, will have little to no problems with that since they probably will not edit digital video or create their own 3D graphics. This can apply for 90% of the use of a computer. However, with the cost of digital cameras falling down to acceptable levels and the need to take children out of the classroom, digital video becomes as essential as a scanner or a digital camera for photographs. We need to take children out of the classroom and out of the school as often as possible in order (for them) to gain real life experiences of their actual surroundings. One of the most captivating ways of presenting information is through the use of digital video.

Even though its true that we can't afford to have (at this point at least) one digital camera for every student, we still need a way for the children to edit (even in simple terms) the actual footage they capture. Thin Clients are just not fit for it.

The Slovakian Solution

We would love to see a way to counter this problem (or limit if you wish) with our Thin Clients. Even though there are many solutions available for doing just that, nothing unfortunately is as elegant as we would like.

Fortunately, a solution came from mr Christopher Saul, Engagement Architect, Desktop & Mobility, of Sun Microsystems SEE. He initiated a conference call with a fellow IT teacher in Slovakia, mr Ondrej Kovac. Mr Kovac is an IT Techer and Administrator in the British International School (Bratislava) and they have a very effective setup of Thin Clients. Upon discussing the issues of using Thin Clients, he pointed out that the only real solution for real multimedia authoring was having a dedicated computer in the classroom for doing just that- Multimedia Authoring.

What we will do (starting next year) is make sure we have a 'fat' client dedicated for multimedia authoring to support heavy-duty work. Then we can transfer the edited material to our Thin Clients for implementation in our projects/ presentations.

How much control do we give?

Implementing a cutting-edge solution inside the classroom will not transform education by itself. We have to define the balance between total freedom of use and constructive learning.

Students working on projects in our Development Center.

Background Noise

When left on their own, it is amazing what children can do. And we are not talking about school projects here. When faced with options of playing a game, chatting on the Instant Messenger or whatever else they wanted, 4 out of 6 children in the group worked on downloading and changing the background of their computer. They even asked for help, as to organise their files they started downloaded from the web.

Psychology on Education

There is always a thin line between total freedom and total chaos. The same applies to the learning environment. We just can't give children total access to technology and expect them to perform or learn anything- usually they will get lost. We would argue about the pros and cons of having children working on their own. Sure they learn to be more self-efficient, but the cost is just too great. On the other hand, we cannot (and will not) limit creativity in any way by giving exact instructions on what to do at any given time. What we want to do is define the thin line that gives children enough control and enough directions as not to limit their creativity and imagination.

The idea and philosophy behind a restrictive environment organised around structured and clearly defined instructions stems from Skinner's theories about learning. According to him, strict behavioral principles could be used to improve education dramatically (Skinner, 1968).

In his theory, and those of general Behavioral Psychology, the student is mostly a passive learner. Cognitive Psychology discussed for the first time the learning processes that happen without us realising it. Cognitive Psychology for the first time also tried to explain what happens in our brain (the thought process) and how we can enhance learning. Thus, the emphasis of Cognitive Psychology is not on a passive role but rather on an active role (by the student).

Students today do need to participate more in the learning process. What they don't have, most of the times, is the right motive. Malone (1981) tried to identify several factors of Motivation (Challenge, Curiosity, Fantasy). He later added another factor, Learner Control (Malone & Lepper, 1987). Keller gavve more attention to other factors of Motivation creating his ARCS Theory (Keller & Suzuki, 1988). ARCS stands for Attention, Relevance, Confidence and Satisfaction. Going over each factor is not within the scopes of this article. However, motivational theories define critical steps we have to take into consideration when designing learning content.

In contrast, Constructivist Psychology tends to replace Cognitive Psychology. Costructivism tends to be as much a philosophy as a theory. According to this theory, knowledge does not come from outside but is constructed in our minds. There are many schools of constructivistic theory but they all maintain at the core the way we internally construct our knowledge and our understanding of the world through our own perception and interaction. Seymour Papert created Logo to help learners understand mathematical concepts (Papert, 1980).

Locus of Control

Every learning theory has its pros and cons. We do need to define the best parts of all theories and establish our methods for creating content

Total Freedom of Exploration & Expression is welcome- when needed!

When we create multimedia content for use in the classroom or in after-school learning activities, it is essential to balance the control we give to the learner. Locus of Control deals with the question: who has the control of the content, the methodology, the sequence of events- the author, the program (the author again) or the learner? (Alessi & Trollip, 2001). It can be argued that the learner must have full control over the content. However, research has shown that the effect of total control on learning processes are far more complex than we think (Hannafin & Sullivan, 1995, Lawless & Brown, 1997).

According to Alessi & Trollip (2001), some learners and especially the higher achieving ones, benefit from greater control. Others, especially lower achievers, benefit from less control.

It is evident that, by following the bibliography, the computer itself is not a solution on its own. This is something we have been experiencing in the past 3 years. Students tend to get lost when we give them too much freedom; most of them tend to come back to us and ask for assistance, being totally lost and suffering from an information overload. this was more evident in Social Studies and especially Geography. When researching for specific countries on the internet, children had no idea what exactly they had to do. Giving them too much information resulted to the delivery of a poor project. Eventually we decided on giving some basic requirements and allowing the children as much flexibility as they wanted for any further additional material they chose to include (as long as they could give enough reasons why they included the specific information).

Similar practices were observed when creating multimedia-rich modules. In a linear environment, children had to follow strict procedures and rules to reach the outcome that was predefined by the teacher. Initially, the new material and the new way of presenting it posed quite an intriguing challenge for the children. Half the year, though, (2004- 2005) children started getting bored of this approach.

It is evident that we cannot have the perfect solution for all students for all lessons. We have to define several rules and several methods. These need to change all the time to better suit the needs and the interests of children. What the computer can do is engage more interactively some students while giving the teacher more time to work with lower-achieving students.

The field of research still has a long way to go, especially in environments that raise the analogy of students per computer.

One Theory To Rule Them All...

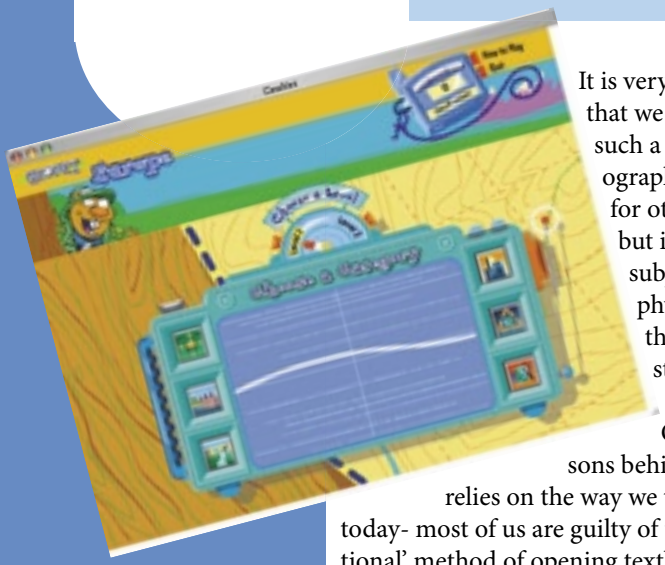
It is a common belief that behaviorism is long dead. However, even in the academic communities, you see supporters of more recent theories using behavioristic methods in teaching their audience. This is not to say that they are doing something wrong. We rather believe that it's not necessary to assume that a theory is dead and we no longer use any of its methods.

For some areas, using strict instructions is the best way to achieve a goal (ie setup instructions for a Do-It-Yourself furniture). In other areas, constructivistic methods could yield better results.

There is no ultimate solution or panacea; we must clearly define which parts of which theories we use in specific topics and with specific students. Not everything works with everyone. And no research has been undisputed in proving the opposite.

Videogaming Geography

It is common knowledge among teachers in Cyprus that Geography is far from one of our students' favorite subjects. Can we use video gamses to make the lesson more interesting?



It is very sad to admit that we are not doing such a good job in Geography. I cannot speak for other countries, but in Cyprus the subject of Geography is not one of the favorite among students.

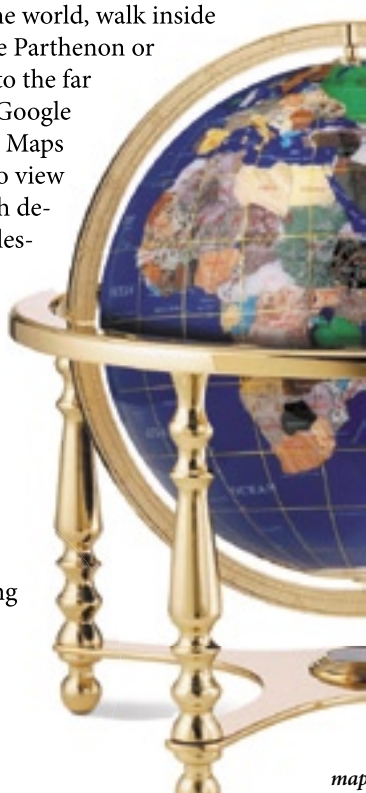
One of the reasons behind this probably relies on the way we teach geography today- most of us are guilty of using a 'traditional' method of opening textbooks and trying to 'learn' how people in other countries work and live and how the climate in this countries is.

> *Geography is mostly understanding, not the consumption of information. In an ideal situation, we would love to take our students to the actual countries or place we are examining. This is not possible in most cases. We can use the technology, however, to bring students from various places of the same country or other countries together. Through this interaction we expect them to better undestand the ways of life in other places and bridge the geographic boundaries through the use of IT.*

This is far from being an ideal situation and definitely it doesn't bare any fruits.

What we probably need is to redefine the way we teach, or rather, interact with Geography. Geography is purely understanding and not just knowing. We need to understand why countries in the mediterranean have similar ways of life and why, when you move closer to the equator, the temperature rises. Once we understand the 'whys' for one country, we can then transfer that knowledge to other countries sharing similar characteristics (ie we expect countries with the same latitude to have similar climatic conditions).
Many websites host games that allow us to learn about places in the world, walk inside monuments such as the Parthenon or the Louvre or even fly to the far reaches of space. New Google features such as Global Maps or 3D Globe allow us to view the planet with as much detail as possible. The Celestia program, included with most Linux distributions, allow us to fly around the Solar System and even study the asteroids or the Sun itself from the comfort of our chair.

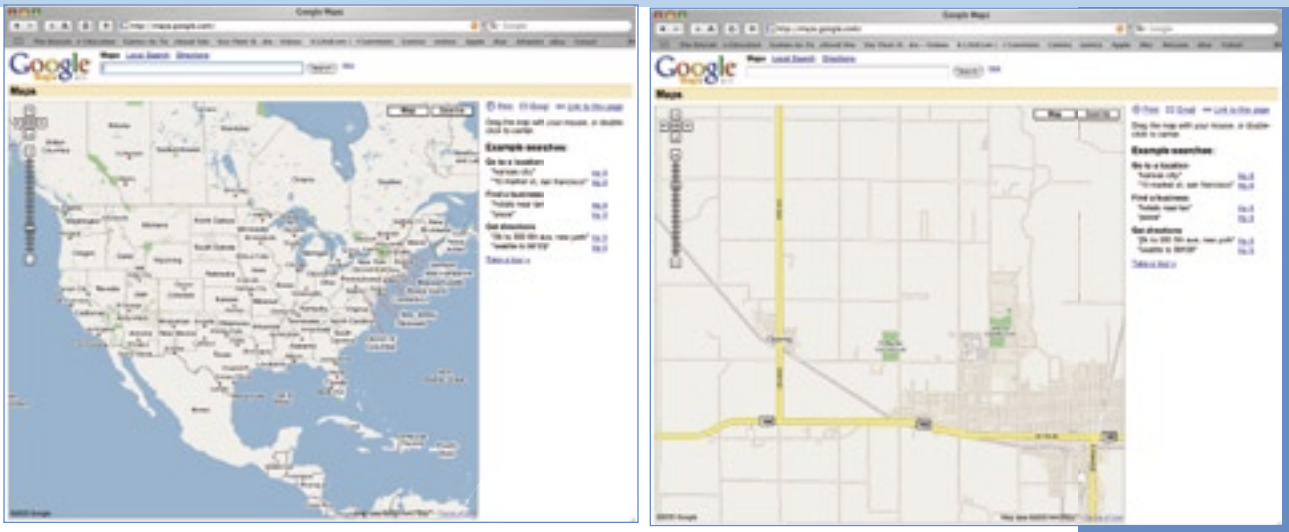
The possibilities are endless- if we start using them properly.



map

Googling Geography

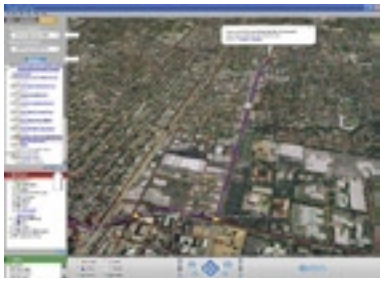
Google is not just one of the best available search engines. It has become the portal for many extraordinary tools that -when properly used- add great value to our efforts.



The Beta version of Google maps offers a detailed view of the U.S.A. We hope in the near future we will also have other countries available.

Google Maps (Beta)

Google has started offering some tremendous services through its website. Not only it has become the search engine of choice for many, but it has also managed to become the center for many services. Google Maps is one very important (albeit in Beta) service that, when expanded to cover more countries, can greatly help students in their study of the world.



For example, we use Maps in the third grade to teach orientation. Children at third grade already have an understanding of their surroundings and at least a basic knowledge of what lies opposite or next to their home road. By using such a map they can easily identify their home street and learn to define it using geographical terms (ie "my home street is on the north of Larnacos stree, which is southeast of Lakatamia avenue").

Image from: http://www.maps2anywhere.com

Google Earth (Beta)

This is probably one of the very latest and most important (to educators) offers from Google. An application that shows 3D representations of actual continents with many degrees of magnification to an unbelievable level. What is more important is that, the basic application is free to download! Of course, a lot of features that go in the commercial applications are not there but still, this is a tool worth working with.

Europe in all its 3D glory!

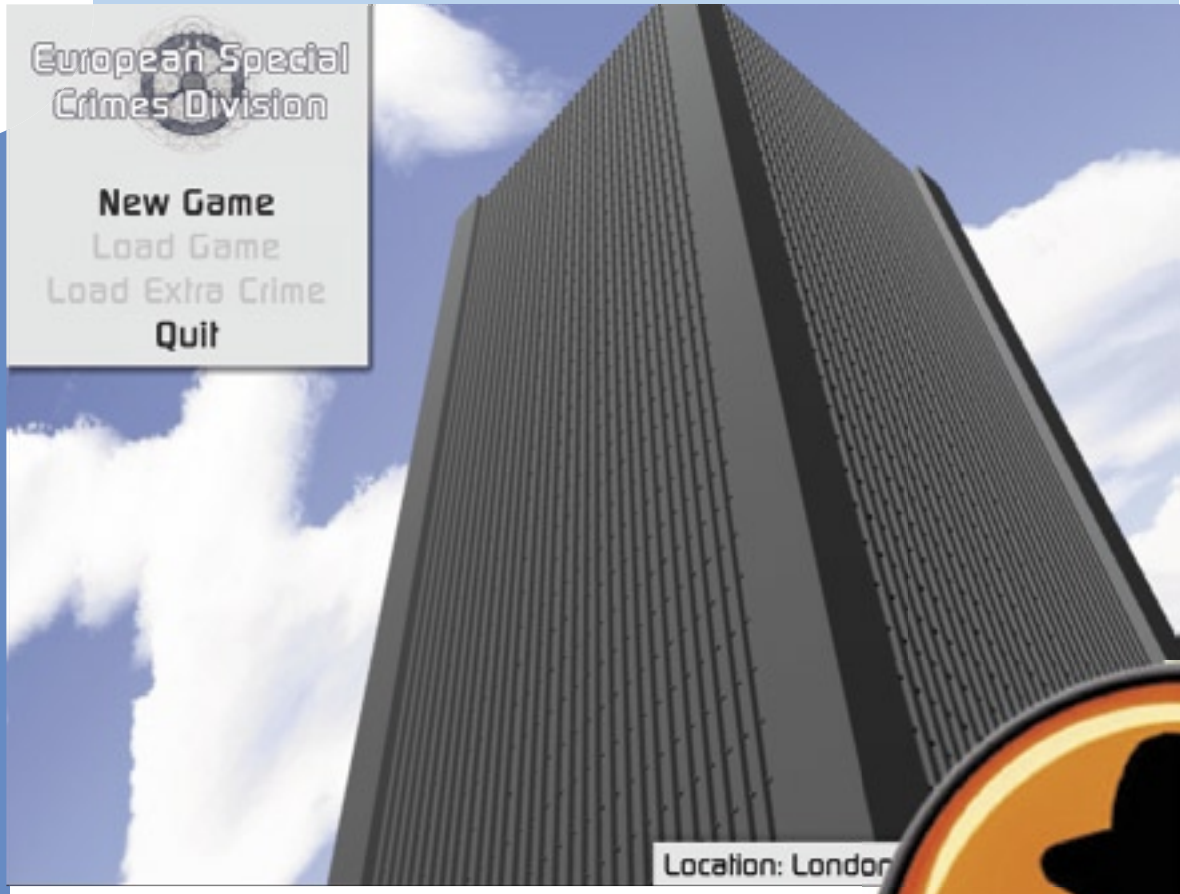
Linux users will be sad to learn that this tool is not available for their OS of choice. A MacOS version is coming soon but there are no plans for a Linux version. WINE doesnt seem to like Google Earth that much, but I hope this will get fixed pretty soon (anyone knows a way?).

Rome, the eternal 3D City

The ability to study any country with such a detail only opens the road for better analysis of other countries. An example: by studying the structure of a large city we can talk about possible problems that arise like pollution from cars, traffic problems etc.

Secret Agent Europe

Can a video game really help children in Cyprus learn about European Countries? We investigate!



1|2|0 Digital

To be quite honest, this was the first time I ever heard about this company. I was reading the news on Maccentral (www.maccentral.com) when I came across the release of an inexpensive yet promising game title.

If you have read the May Report then probably you must have guessed how I felt about it. It just felt right! I downloaded the demo and played a bit and to be honest I fell inlove with its simplicity.

Sure, it is a good game but not designed specifically for teaching Geography. However, we can build on this game and make sure the next version, or a derivative version, will be best suited for Geography classes.

The URL is *http://www.120digital.com*

Sometimes, out of the blue, you come across a product that has huge untapped potential. Secret Agent Europe is probably one of them.

At this early on, we have used the demo version of the game. The actual game is not even released yet, at least not on the PC platform (we tested it under MacOS X).

In this game you assume the role of a Special Agent. A crime has been commited and you have to race around the world, investigating leads and asking witnesses in order to find the suspect. The main area of the game is covered by a screen with either a map of europe (see opposing page) or images and videos from the actual locations (there are also videos that show actions ie sending evidence, flying by plane etc).

Evidence you gather and information you receive from fellow agents or from witnesses, give you clues as to where the suspect has gone. In order to move to another country, you must first find out to which country he flew. On the left of the screen we have available information on various European Countries. By evaluating the clues and reading the information from that area, we can understand where the suspect has gone. For example, in one case we are told that the suspect went to the second largest country in Europe. By reading through the country information, we find out that which country that is (am not giving away spoilers!).

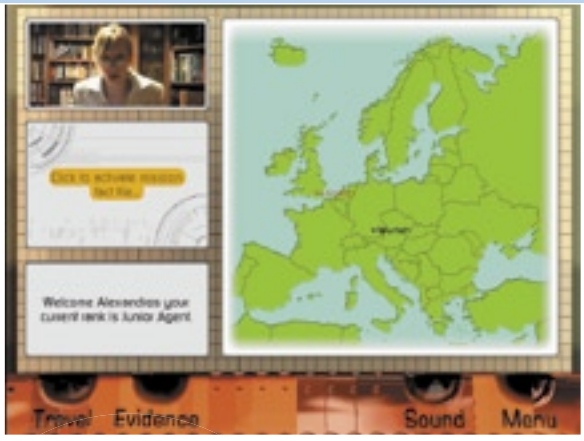
Functionality-wise, the game is very easy to understand and it has a simple yet intuitive interface. We tried it with our 6-children group and, with little help from me in the english department, they managed to unravel the mystery and arrest the suspect.

I have contacted the developers of the software (see sidebar), and I am expecting to receive the complete game within the next few days.

Image from: www.globusz.com/ebooks/

Secret Agent Europe: The Prospects

Secret Agent Europe is a product we would love to use in our projet. We hope to be able, by the end of the next school year, to have all the necessary information that will lead us an enhanced version.



The first thing I did after playing the demo of Secret Agent Europe (SAE for short), was get in touch with the developers. Thanks to the email (and thank God a Spam Filter didn't stop my mail) I manged to contact Ian Waters, one of the developers. Upon explaining what I want to do with it, and a need to translate the program in Greek, he replied in an equally enthousiastic way.

They are primarily developing for the Mac, however they also have a Windows Beta version running. Fortunately for everyone, their development platform is Macromedia Director and -if you take some things under consideration- Director movies can run quite well under WINE on Linux!

Ian is working hard on sending me a translation and I expect to have the product translated in Greek well before September. 1|2|0 Digital were kind enought to allow us to use the product on all 14 clients we intend to use in Dasoupolis Elementary School for the next school year (2005-2006).

Needless to say, we are going to use SAE as part of our Geography lessons, additionally to everything else we are planning to use. By using a videogame such as this we expect to experience a rising interest for Geography in the school.

The Prospects

The use of this specific version is just the stepping stone for something much greater. This is a golden opportunity both to us and to the developers of the product. We expect the use of the game, throughout the year, to allow us to define every single (well, almost) feature change or addition needed to make it blend more perfectly with the school curriculum of European Geography.

We will evaluate the way children interact with the game and their interest throughout the year. At this point, what we are mostly interested is to see how this game helps keep the children interested and motivated in learning Geography. We will also measure the impact of this game on subjects they are not taught (ie several european countries that are not included in the curriculum).

What we haven't managed to do so far, and perhaps with SAE we will be able to do, is investigate the continuous interest of children on this game throughout the year. It is possible, as we see it with any game on any platform, that after a while children tend to lose their interest.

If, by the end of the next school year (June 2006), we have results that indicate the gain of using SAE in Education, we will move to examine funding either from local authorities (ie Research Promotion Foundation) or European Union Research Funding, in order to build a derivative product with every single feature we would like to have in such an edutainment title.

For the moment, am anxiously awaiting the full title to arrive via snail mail!

Kid's Kitchen

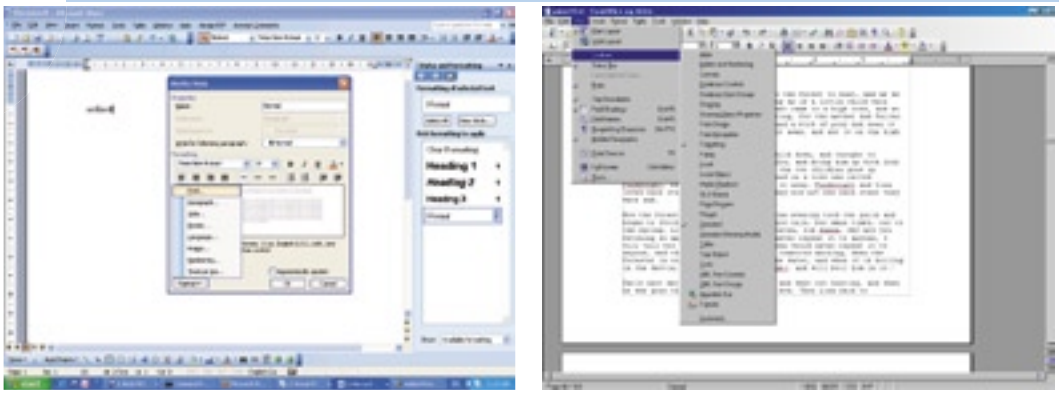
Back in 2003, I attended the CBLIS conference in Cyprus and I found myself in several presentations. One that especially caught my eyer was a software for teaching Nutrition and healthy food habits by -if I am correct- from a group of Russian scientists. That was the first time I realised the computer could be used in far more lessons that I thought possible.

The Ministry of Education has developed such a CD-ROM, with less interaction but, nevertheless, with an equally impressive impact. Children of our school managed to work with it using our thin client setup and (of course) WINE under Linux.

1|2|0 Digital has a similar product called Kid's Kitchen. You can download the demo from their web site (see sidebar on the previous page) .

European Office Suite: Can it be done?

Every year billions of Euros migrate from Europe to the United States of America. The reason? Our (almost) complete dependance on Microsoft Software.



On the Left: MS Word 2003. On the Right: OpenOffice Writer 2.0 Beta

Almost every country in Europe relies solely on Microsoft Software for its desktop operating systems as well as the office suites.

Most consumers tend to use Microsoft Office in its various forms, and Microsoft has established itself as a monopoly in both areas.

At this point, it seems quite difficult for Linux to throw Windows out of the, well, window, but the same cannot be said about MS Office.

Euros for Dollars

It is true that EU members pay billions to MS every year. This money of course leaves the shores of Europe forever, as the software giant that Microsoft is has a near monopoly in the market.

It doesn't make sense for Europe to spend that much money on US software, since there are solutions that are equally, and in some areas better, than the US offerings. OpenOffice is a good example of such a product. Even though Sun Microsystems, hardly a European company, still has a saying in the code, it can be the perfect example for a european initiative to create a more professional-looking Office suite.

OpenOffice suite is already amazing. Version 2.0 is going to be even better. However, imagine what those guys could do if they had official funding from the European Union in the development of an office suite from the ground up, or OpenOffice 3.0 suite. After all, Microsoft is spending millions in R&D for its own (heavily bloated) suite.

Compatibility: Check!

The first thing any suite would need in order to compete with MS Office is compatibility with it. After all, what is the point of using an alternative suite if you won't be able to exchange files with the rest of the world? OpenOffice and many other OpenSource projects already give the much needed compatibility, at least in most parts.

We have been using OpenOffice in the classroom for some years now and we are overly impressed with the way we open and save files to MS Office. However, for more complex tasks such as formulas or specific types of graphs and especially macros, OpenOffice has still way to go.

Interface facelift: Check!

I like the interface of OpenOffice 2.0. I also like the interface of KOffice, AbiWord and several other applications from the OpenSource world. When you compare them with MS solutions, however, you will notice that Microsoft has a more 'polished' interface. Clunky, yes, bloated, of course, but still more polished. The standard buttons are quite nice, but there are some Openoffice themes out there with a much better look on them. However, the average user just can't get to use them that easily. We would like to see a themeable interface in the same way we have with FireFox or various Linux GUIs.

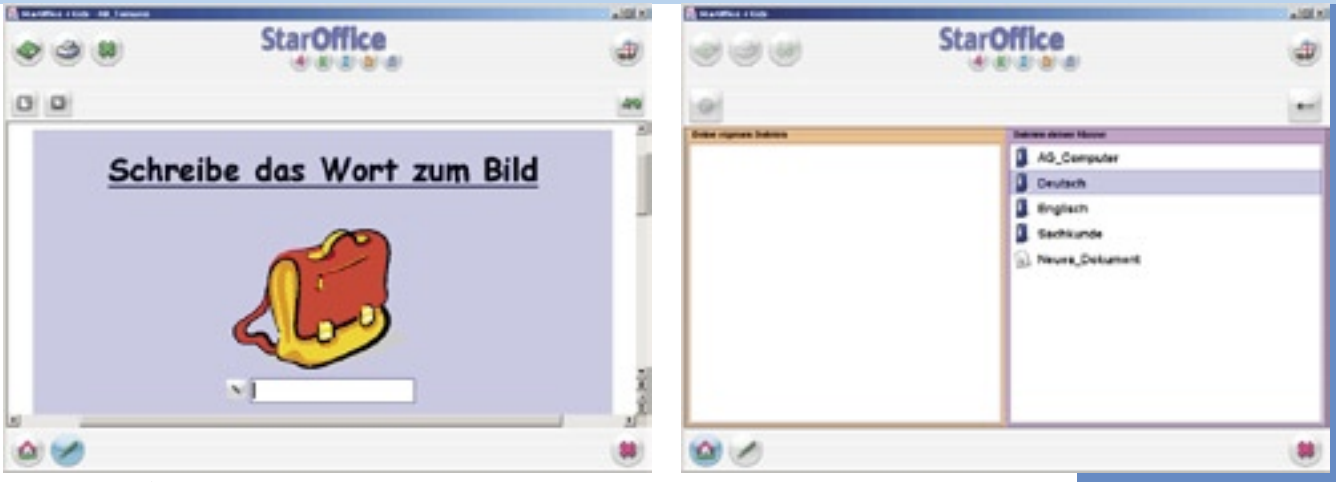
When a package becomes standard...

It is not easy to dethrone MS Office from the average users' PC. However, incentives can be given to users from selecting one package over the other.

One of the greatest problems facing the software industry today is piracy. By embracing OpenSource software, EU can effectively fight piracy while at the same time save billions in software imports.

Component Office Suite

Years ago, during the Michael Spindler's days as the CEO of Apple, the company had a vision: to develop modular applications instead of bloated software. The project was called 'OpenDoc' but it was discontinued soon.



On the Left: The assignment window. Notice the simplicity of the interface. On the Right: Document selection list.

OpenDoc was a promising project. Eventually it got discontinued.

OpenDoc was a failed project. Very ambitious and quite interesting but it hardly went beyond some very basic applications and a web browser known as CyberDog. According to Wikipedia (http://en.wikipedia.org/wiki/OpenDoc): "*The basic idea of OpenDoc was to create small single-purpose reusable components responsible for a specific task, such as text editing, bitmap editing or browsing an FTP server...*"

The Modular Approach

Applications today, and especially Office Suites, tend to be loaded with much more features than we possibly use. The document-centric approach of OpenDoc was an essential step towards the right direction- creating a document and adding just the components you need when you need them. This way, you can have a basic application launching with a minimum or RAM and, of course, requiring much less processing power. It is common understanding that today's applications are resource-hungry and the need for faster computers is the result of our ever-hungry applications.

OpenDoc in action: select just the components you need. Unfortunately it never made it to success.

StarOffice4Kids: a move in the right direction

StarOffice4Kids is an add-on (actually an add-on-top) of StarOffice 7. That means you must already have StarOffice 7 installed to make it work. Once you do that (StarOffice is free for educational use), installing StarOffice4Kids is just a simple task of downloading it (it's free) and running it.

Teacher Window

The teacher has full control over the interface the student will use. By choosing only the right components, we simplify the interface of the actual document we expect the child to work with, removing all unnecessary tools and options. We would love to see this expand to a full Office suite instead of the Word processing module.

What it essentially does, is replace the Writer part of the Office suite (unfortunately no other apps are supported) with an alternative interface. The real joy comes when you fire-up the Teacher (or Administrator) tool. There, you are presented with a normal StarOffice Writer document with the additional buttons of StarOffice4Kids. You are then free to select which of the buttons you want your students to use in the specific document you want them to create.

For example, if all you want to do is teach them how to change fonts and how to change the style of the fonts (Bold, Italic etc) you just select only those options- no need to litter the interface with another set of 30+ buttons that are useless for specific tasks. It really is an intriguing concept, and we would love to see a complete suite built from the ground-up using this approach!

Download it!

Get StarOffice4Kids from http://so4.kippdata.com

eLearning for in-service Educators

More than half of today's 4000 educators (Primary Education) need to participate in IT courses. Even those who are familiar with Windows/Office still need training on new methods.

On the Left: Gnome 2.10 (LiveCD). On the Right: The Windows XP Desktop (Pro Version)

MS Office 2003
Love it or hate it, MS Office is THE standard office suite used today. Most Mac users, fanatic as they are, use it for day-day work. I have to admit that I use Word and Entourage on a daily basis, but fortunately am eligible for the Teacher/ Student package. For Presentations, nothing beats Apple Keynote at the moment.

The problem with MS Office, as with most Offiice Suites, is not the cost but the complex interfaces and the many unnecessary features that eat away resources. What most people probably need is NOT an application that can do everything but coffe,e but rather, an application that is document-centric and works perfectly well even on an underpowered machine.

Teacher trainings are very costly. Each teacher gets paid 300 Cyprus pounds for attending a series of seminars. The cost of the instructor comes extra to that, along with the costs for the necessary computers and computer room.

Costs aside, a series of seminars is a one-time situation. What happens if you want to re-examine some of the things you learned? Or what happens when a new version of a software comes out that is essentially different than the one you are using. Just think of the transition from Windows 3.1 to Windows 95. People had to learn how to use this entirely new OS. The same (according to Microsoft) applies for the transition from Windows XP to Longhorn.

eLearning for all

Considering the rising need for constant education on new technologies as well as new methodologies, it is obvious that traditional classes cannot satisfy the vast majority of people eager to adapt to new ways. Real classrooms with real trainees might seem like a much better solution compared to a behind-the-screen online learning environment. The costs associated with the former solution, as well as the lack of resources, manpower and of course flexibility of time schedules, leads to an alternative method of training that can be taken by anyone with internet access, at any time, with significantly lower cost.

The Ministry of Education, working with the Pedagogical Institute, can define the main areas of teacher trainings. By evaluating the gains as opposed to costs, the Ministry could follow an eLearning Solution that is open to all in-service educators.

Lotus LMS for eLearning

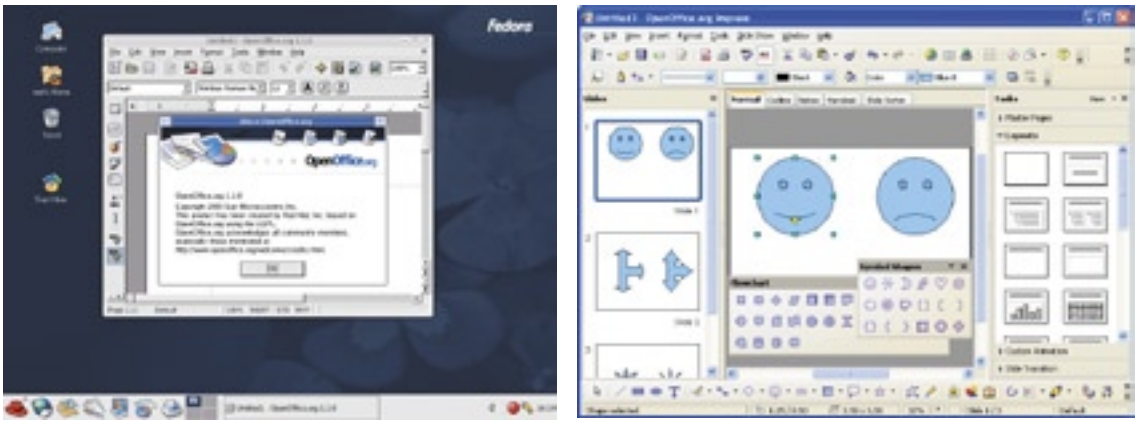
There are many solutions available for delivering elearning content. Lotus LMS is the one we are using in our Thin Clients in Primary Education research. The same platform can be used for creating and delivering courses to in-service teachers.

Teachers can enroll in a class and follow the necessary assignments while at the same time receive assessment from the system. Questions can be answered either through email or chat rooms. Chat rooms are very convenient as many teachers can express the same or similar questions regarding a specific topic, and through this exchange ideas on how to better use technology.

One of the goals Inteliscape (responsible for Lotus LMS here in Cyprus) is setting, is to file proposals for research funding, in collaboration with the Ministry of Education, in order to create such content.

eLearning for the rest of us...

People with little or no knowledge of computer use are considered to be illiterate. Unfortunately, most of these people just can't, for various reasons, attend classes. However, an eLearning environment based on Moodle can work for them as well.



On the Left: OpenOffice under Linux (Fedora). On the Right: OpenOffice under Windows XP.

In-service educators are not the only ones in need of an environment to help them adapt to new technologies. Almost anyone would be helped by such a system.

Lotus LMS might be extremely flexible and powerfull, however it all comes down to cost. We can achieve similar results for an open audience that is not interested so much in strict rules and procedures (set byt the Ministry of Education for teachers) but would rather receive basic training at their own pace in their own time.

Moodling along

Moodle is probably one of the most sophisticated Open-Source packages that exist today. Already in version 1.5, it is highly regarded as probably the best Learning Management System of the OpenSource world. Through Moodle we could create classes covering various topics such as 'Introduction to Computers', 'Introduction to Microsoft Windows', 'Using Linux', 'Using OpenOffice' etc.

Especially for consumers, tutorials on using OpenOffice or other similar OpenSource office suites would be of great value, as they would have extra incentives to move to an inexpensive (or free) OpenSource suite instead of having to make a 'heavy' purchase or resort to piracy (as research by BSA has shown that 50% of all MS product users do not have legitimate licences).

What is not known by many people, and especially those that react negatively towards OpenSource software, is that the foundation of the Internet and a large part of it is based on OpenSource solutions. Apache, MySQL, several browsers (including Firefox, Apple's Safari etc) are OpenSource software.

What would essentially be included in any online lesson regarding computers, is a chapter on OpenSource so that people learn to understand and respect its value.

Allowing the average consumer to take on lessons brings democracy of learning to the massess.

OpenOffice for all!
For the average consumer, its not just essential to have access to the actual program but also to training on it. Through online courses we can give more incentives to people to adapt to such software as OpenOffice, KOffice etc.

Moodling around
Chats are a very good way of sharing opinions between users, or setting questions that need answering. Usually users tend to give support to other users and this is evident by looking around in various forums.

Editor's Notes

A goal (almost) reached

Back in 2003, a small group of dedicated teachers decided to publish a magazine focused on kids and technology. We managed to get out a pilot issue, but the actual magazine never made it to market.

This report, now 3 months old, tends to (kinda) fill that hole. Every issue sees an increase in pages, with the July issue covering various topics in all its 24-pages glory.

The goal is still set: to create a much-needed magazine focused on children today and technology, providing both students and parents (and educators of course) with clear information on what's out there, how it can be used and what we should avoid doing or playing.

Is the iPod worth a human life?

The release of this report was overshadowed by too tragic events: the bombings in London and the murder of a child in USA by a group of kids who wanted to steal his iPod.

Technology (usually) tends to make our life easier. Sometimes we get carried away by technology and we confuse the limits between real life and 'icons'. The iPod is a machine. Not having one is not the end of the world, nor it means that one is superior (or inferior) to the other.

The child's father, in an article posted on the Macworld web site (www.macworld.com) stated:
"We're failing these kids. We're not loving them like we're supposed to."

As educators, we sadly see what he means every single day of our working life. We see people spending less and less time with their children, trying at the same time to compensate their absense with material goods. iPods, MP3 players, game consoles, mobile phones... I've seen students of mine bringing to school all kinds of gadgets. I was astonished when -in May- one of our students came to the school with a Sony PSP! I have no idea where he bought it, but it was definitely not available in Europe yet, and it was definitely very expensive.

We also witnessed the broken heart of a fifth-grader when his GameBoy was stolen from his bag. We try to warn parents not to send their children to school carrying these gadgets, as they get stolen, broken, or become objects of jealousy and quarrel. But still, most parents fail to understand that there must be a limit to what they give to their children. No GameBoy or Playstation, not even an entire armada of iPods can substitute the love shared in a family. Some (if not most) parents are 'failing these kids'. Some parents are not loving them as they are supposed to. And we see children turning towards educators to receive love and affection that is missing from their homes, but at the same time educators are reluctant -especially in this time and age- to show affection to children.

Times are getting harder, and I just hope there's a rainbow somewhere out there.

- Alexandros Kofteros
  B.A. Education
  Post-Graduate student, Univercity of Cyprus,
  Curriculum Content Development

For all your comments please feel free to email me alexandros@apoplous.org

If you found this newsletter interesting please forward it to other people. Thanks!