



Open Education

<http://www.apoplous.org> | Newsletter # 5 | January 2006 |

Year of the Penguin!

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We wish you a prosperous 2006

We would like to wish everyone a Happy New Year and a prosperous 2006, with health and joy for us and everyone else.

2006 is a very significant year, since it will mark the end of the first school year in which we

implemented a thin client/Open Source solution to 4 schools. September 2006 will be even more important with the introduction of new technologies and methodologies in education.

The apoplous team.

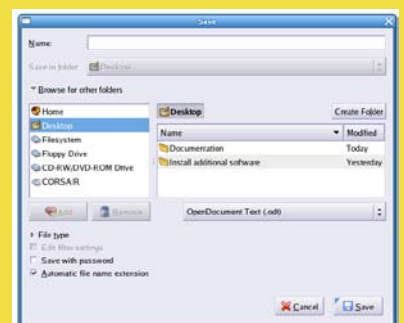
OpenOffice/StarOffice File/Open Systems

Open/StarOffice are the main competitors to Microsoft Office. They both support all platforms (Solaris, Linux, MacOS X, Windows) and they have all the main features an average user can ask for.

However, there is still a lot of work to be done with the interface. Quite strangely,

the Fedora implementation of OpenOffice is far more flexible in some areas, including the way OpenOffice saves and opens files.

We hope we see the same features across the board for both StarOffice and OpenOffice.
(Continued pages 2)



God is in the details...

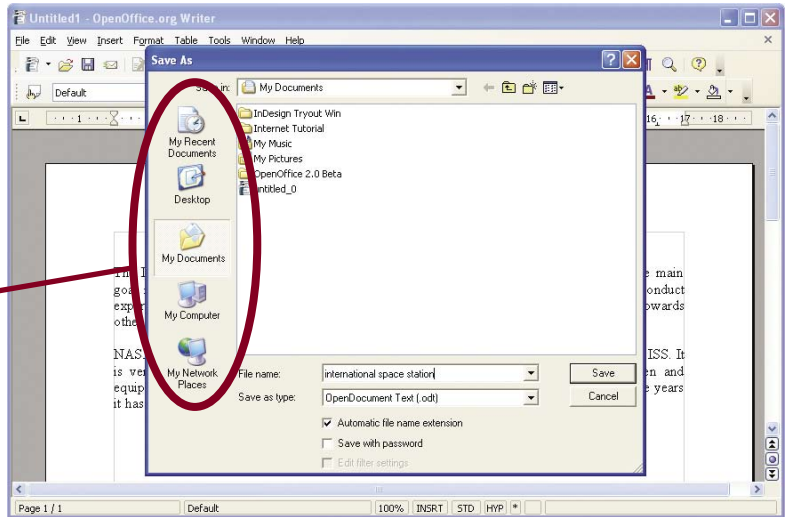
In many Forums we come across comments by Linux fanatics stating that '...if we want Windows functionality we should stick to Windows.' This is far from being correct, however. We do not want Linux to look like Windows, we just want functionality and ease of use. If we compare Windows XP and MacOS X, we can see some similarities, but at the same time we have two tremendously different GUIs (Graphic User Interfaces). Both OSs are extremely user friendly. And since we want more (ordinary) people to start using Linux as their main desktop OS, we need to make it (and its applications) as user friendly as possible.

For a Better File/Save System

OpenOffice 2.0 and StarOffice 8.0 are competing directly with MS Office. However, the way they open and save files is far from perfect!

Windows UI

Love it or loathe it, when we save a file from Windows, we know exactly where that file is going. The same applies to opening a file



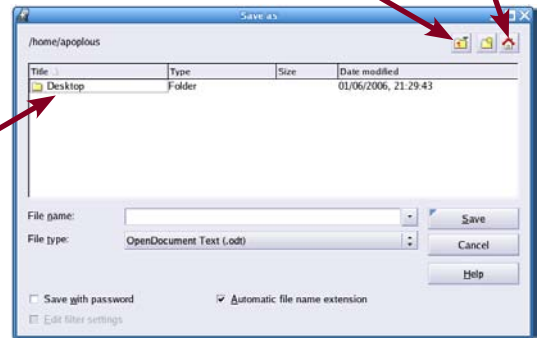
OpenOffice and StarOffice are serious competitors to MS Office. However, there are still a lot of changes to be seen before we declare total victory over the MS suite.

Saving & Opening Files

We show you, using a visual guide, how frustrating it is to save/open files using StarOffice 8.0 and OpenOffice 2.0.

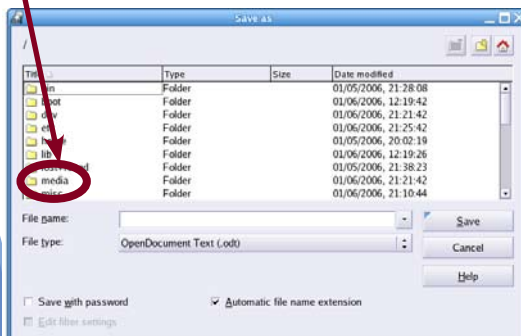
Click here to view the filesystem

Click here to view the Home directory

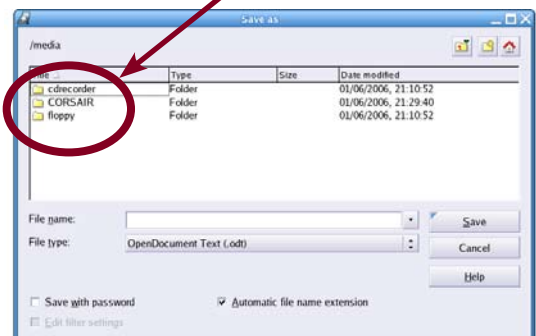


Double-click here to save the file on the Desktop

Double-click here to open the media directory



From here we can access the CD/DVD, USB Stick and Floppy.



The Fedora Implementation

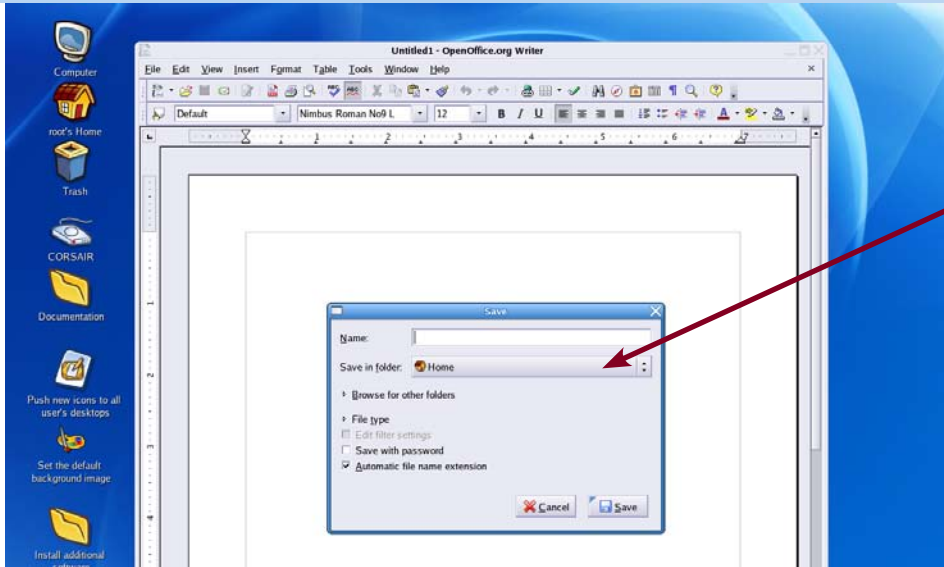
As strange as it might seem, the Fedora implementation of OpenOffice sports an intuitive and extremely friendly way to open and save files..

Themes in Open/StarOffice

As you can see from the screenshots, even though the button bar remains unchanged, the open/save windows use the Gartoon theme. This is extremely important, since people can associate pictures with actual objects. In this case, the picture of 'Home' or the various storage devices they see on the desktop, are the ones they also see through the save/open windows.

Furthermore, the user (or administrator) can change the way the desktop appears to make it more appealing or friendly to the target users.

After using various themes, mainly from www.gnome-look.org, children expressed their belief that Gartoon is by far the best and most functional of all, so we try to stay with it for all our distributions. We applaud the fact that Edubuntu comes standard with the Gartoon theme.

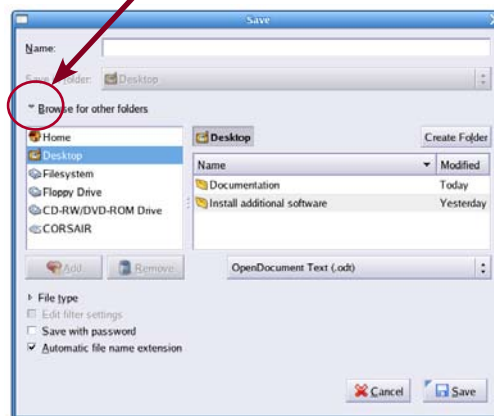


Click here to view the Home directory, the Filesystem, as well as all the removable storage devices!

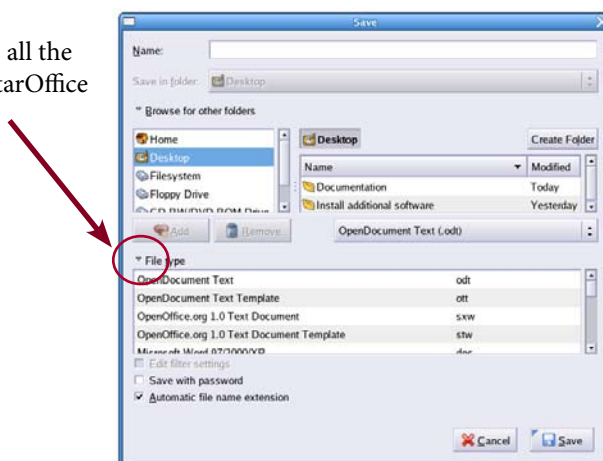
Fedora Gets it Right

For some reason, the Fedora implementation of OpenOffice 2.0 (the one that comes with Fedora Core 4) features a more advanced and extremely user-friendly open/save menu. Since this is possible with the Fedora version of OpenOffice, we believe that developers of various distributions, as well as the packages themselves, should focus on keeping these features across the board.

Clicking here gives a better view of the locations and storage devices.



Clicking here shows all the file formats Open/StarOffice supports.





Nexenta: The GNU/OpenSolaris

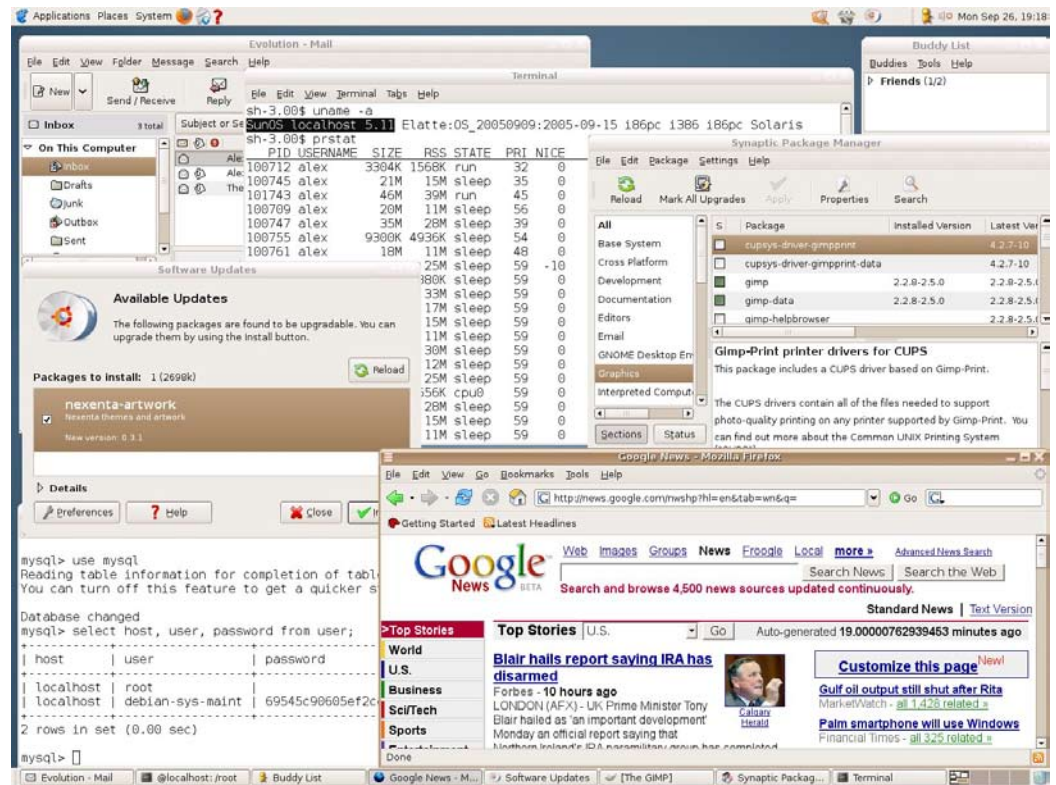
Sun Microsystems has been taking huge steps in the OpenSource direction. After releasing OpenSolaris, Sun returns with a blast: the GNU/Solaris project known as 'Nexenta'.

Live CD

Anyone eager to test Nexenta can download the Live CD version. Keep in mind that, at this point, it is still quite not as usable as other Live CD distributions. Don't expect to enjoy (at this stage) the software gallery of KNOPPIX.

There is also an installable version of Nexenta. However, until Alpha-2 is released, installation requires the use of the Command Line Interface- not something the average user will appreciate.

When Alpha-2 is released (see website for the estimated road map), it will support a Debian-based installer.



It looks like Ubuntu, it smells like Ubuntu but it's not: it has SunOS running under it!

Nexenta NOT Linux

The joy of going the Free Software Way is that, you are Free (remember: Free as in Freedom) to choose all the elements that make the 'ideal' system. As such, Free/OpenSource Software are not 'glued' to the Linux Kernel.

SunOS inside (or under!)

Sun Microsystems first unleashed OpenSolaris to the unsuspecting public. But OpenSolaris has a hard competition from the Linux world. Nexenta is a bold step forward. It marries the SunOS kernel with the GNU technologies and specifications. Furthermore,

Even if you are a Linux lover, you can't deny the benefits of GNU/OpenSolaris- Free as in 'Freedom of Choice'!

Even though we tend to regard the entire Operating System (i.e. Fedora, Mandriva etc) as 'Linux', in truth Linux is just a small part of it- known as the 'kernel'. Fortunately, the kernel can be replaced with something else and the end-user wouldn't know the difference (in most cases).

Debian, possibly one of the best collection of OpenSource technologies, is used to glue all the parts together. What we might get in the end is (possibly) the best of both worlds. As you can see from the screenshot on this page, Nexenta works and feels like Ubuntu, a very user-friendly and Debian based OS.

The Road Ahead

Nexenta is still in Alpha-1 stage. However, the core team of its developers already use it for their web site: <http://www.nexenta.org>

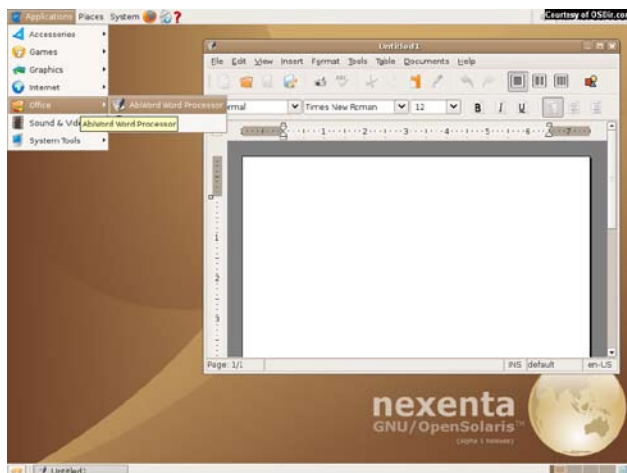
User Interface

We, the educators, are end users. We usually don't quite care what our kernel is- as long as the user experience is there. The early versions of Nexenta (both pre-alpha and Alpha-1) make use of Gnome 2.12.x. This is the latest version of the Gnome Desktop with all the changes on the interface. Anyone using Ubuntu 5.10 will notice the similarities, even down to the colors used.



The Control Panel- Gnome 2.12 in all its glory!

We expect some things to change by the time the 'official' version is out, and probably we will see a 'Nexenta' icon



It might be SunOS-based but AbiWord is the 'word'

theme and color scheme. For the time being the interface looks exactly right, with simplified menus and -undoubtedly at this early point- a few and quite basic applications.

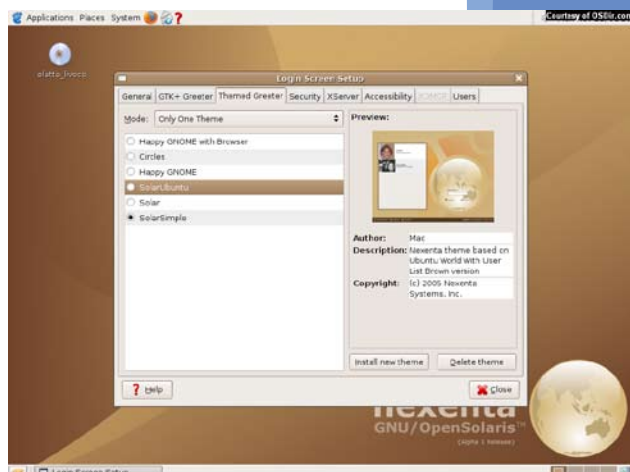
RPM to Debian

Even though OpenOffice installs perfectly under any Debian-based OS, the same cannot be said for StarOffice. Again, the end user has to get his/her hands dirty by changing (using the 'alien' command) all the RPM files into

debian. We expect, however, that Sun will change its tunes once Nexenta starts earning ground, and make StarOffice more 'Debian-friendly'.

SunRay- Friendly?

What we would love to see included with the official version of Nexenta is the inclusion of SunRay Server Software. Ubuntu and K12OS work with thin client support. Just install it, boot it up and connect the clients. We do hope that Nexenta offers built-in SRSS support.



Ubuntu is even mentioned in the Login Screen Panel!

MIT Laptop: (R)evolution begins!

The Laptop has finally been officially unveiled by none other than mr Annan himself! What are the prospects for the little green laptop?

The Fathers

A strong team of people claims parenthood to both the concept and the actual concept behind it. Two of (the most) prominent members of the 'One Laptop for every child' Foundation are Seymour Papert and Nicolas Negreponete.

Both are extremely famous for their academic work and research in M.I.T. and their contribution to science and education is tremendous.

Seymour Papert was a student of Piaget during his early studies. However, he built a strong reputation of his own through his revolutionary work with technology and education. One of his many books, 'Mindstorms', is considered to be an eye-opener on how computers can be used effectively by students to enhance learning.

Nicolas Negreponete is the founder of MIT Medialab and responsible for a vast number of revolutionary developments. The \$100 laptop is just one of his many projects.



Presentation Time!

For the past few months, we have been searching the internet for any and all information regarding this revolutionary project. The \$100 laptop has finally been officially unveiled to a gathering of reporters by none other than UN's Secretary General himself. Mr. Annan praised the concept and the role that it can play in educating children in developing countries across the world.

them self-efficient. Also, many countries in the world are developing in an extremely slow pace. Such a device would be ideal for them, since it would allow children in those countries to be educated both in using computers as well as in traditional ways, using a device that is far less expensive than a set of actual books (the laptop versus books for the first 6-12 years of education).

"A lot of criticism suggests that many countries need food, not PCs. However, with proper education, many countries can be made self-efficient."

Food not PCs?

A great misconception (and even ignorance) leads many to think that many countries would rather have food instead of PCs. Even though this is true, in the short term, there are many countries that need to be educated in order to make



Jack of All Trades ?

Is it a laptop? Is it an eBook reader? What about a Writing Pad? Or even a Media Center? Is this a Jack of All Trades and Master of None?

OS X for the Laptop?

Apparently, Steve Jobs of Apple Computer offered a variant of MacOS X to Seymour Papert. Jobs' intention was to use MacOS X as the primary OS for the Laptop. However, his offer was rejected in favor of OpenSource Software and Linux



books in Cyprus still refer to EU as a 15-member union, even though Cyprus has been a member for quite some time now).

A Media Center?

Turn the keyboard backwards and put the laptop down- it has just been turned into a Media Center device. Hardly ideal for your home cinema, yet capable of showing video either streamed through the network or stored in the flash memory area of the Laptop. The educational uses of digital video are starting to surface and the Laptop, as a linux device, supports all the available formats (with the exception of proprietary standards such as QuickTime).

An eBook Reader?

The people behind the Laptop are aware that it has to be used (in many cases) as a replacement for books. This is not to say that books have to be eliminated entirely. In this respect, the Laptop has to be able to perform significantly well under many roles.

Just flip it to the side, and it becomes an eBook reader. The brightness is expected to be high enough (with a special resolution for sunlight) to be used even outside the classroom. The size and weight are quite ideal even for younger children to hold.

Even though we tend to consider books invaluable, let's take a moment and consider the benefits. First of all, in many countries we tend to dispose huge amounts of text books every year. Just a fraction of that goes into recycling. Also, due to the economies involved, books are not updated every year and become either outdated or contain obsolete information (ie the Geography

A Writing Pad?

Fortunately for those not used to typing, the Laptop will be able to be used as a Writing Pad for inputting information into the system. It remains to be seen how flexible or even precise this method will be, however all laptops today, in one way or another, support this feature. Apple has built-in hand writing recognition into its MacOS X system and Microsoft is doing the same with Windows and many applications (ie MSN Messenger to name a few).



The Snowball Effect

Even if the Laptop, as many other revolutionary concepts, fails to reach its goals, we expect many companies to follow with their products

Consumer version

Nicolas Negreponte expects to sell a \$200 version of the Laptop to consumers. This will allow ordinary people to purchase the laptop from normal stores (probably), since the Laptop is intended only for educational use (in its \$100 version).



In an era of extreme storage space (try 200GB+ for hard drives), the GB of storage space offered by the Laptop might look very thin. It is Linux based, however, and most Linux users have experienced both the power and efficiency of 'small' distros running either from Live CDs (on PCs with just 128 MB of RAM) or even from USB memory sticks.

More to follow

Nobody can be certain of the success of this device. However, as with any other technology, very soon we will see announcements from other companies, offering similar products with (maybe) even more capabilities. These products might be a bit more expensive (in the region of \$200+), but it will allow the developed countries such as the EU members, to introduce the concept of

Accessory or Laptop?

Intel has quickly dismissed the Laptop as an 'accessory'. What they failed to notice, however, is that once a computer becomes an accessory, the digital convergence has occurred!

"The very moment a computer becomes an appliance, the same moment the digital convergence has occurred!"

Think of it this way: your home VCR or DVD player, or even your games console (PS2, XBOX, Nintendo) just work with the pressing of one or two buttons. The same, however, hardly applies for computers today. MIT has managed to oversimplify most of the design and just include the essential parts needed to do the job. No hard drive and the use of flash memory ensures that the Laptop can sustain even heavy use with no crashes. And flash memory, thanks to the modern music players, is a proven technology (with improvements occurring every day).

one laptop per child to their educational systems. This snowball effect will start making an impact as early as 2007, once the Laptop is officially released both in the \$100 version for education as well as its \$200 version for consumer use.



The Apple eMate 300 was a promising product, with hand-writing recognition, low cost and robust material.

Laptops for Education

The Laptop is bringing a revolution to the educational world. The concept, however, is not new. It is becoming feasible though!



Children in St/ Paul's Convent School using HP/Compaq Tablet PCs.

The Digital Schools

Laptops have been used (with mixed feelings and results) in various schools across the States. One example is the State of Maine (U.S. of A.), with the use of several thousand Apple iBooks for their students. Another example is the Arizona Empire High School and St. James Academy in Kansas City, both of which replaced text books with computers (the school library remains intact, thank God!).

St. Paul's Convent School has also gone paperless using HP Compaq Tablet PCs. The technology is definitely there, what is missing is the Total Cost of Ownership (TCO) as well as the actual content.

Preparing Students

Research has shown that children, however good they are in using domestic digital appliances (ie games consoles) do not necessarily transfer these skills or knowledge to computer use. Thus, they have to be educated in the proper use of a computer. Especially in digital-ori-

ented classrooms, children need to learn how to best use technology as a means of learning.

It is necessary to distinguish between teaching (about) computers and teaching through the computer. Especially in primary education, the computer is just a medium- thus it is not important what kind of specifications a computer has, or what type of OS or software we use, as long as we get the job done the right way.

The way technology is going, it will not be long before we get a tighter integration between computers and the actual curriculum learning in the classroom.



One Client for Every Student

With less than a year from the release of MIT's \$100 laptop, we intend to investigate the actual use of one client per student in a real primary school classroom



One client for every child will allow us to be more productive and better integrate IT in education

In a few months, the Laptop will be available to the public. By then we expect more and more companies to start mass producing inexpensive laptops or tablet PCs. This, in effect, will bring the cost of computers down to a new level, allowing countries to move forwards with the digital classroom.

Blended learning

It goes without saying that, we don't necessarily replace traditional methods with computers. For example, when we want to teach about apples and oranges, we can use actual apples and oranges. That way we can not only learn about their shape and substances, but also about their

“Unless all children have access to the internet from home, the digital classroom remains utopian”.

Infrastructure not there

Our research calls for one computer for every desk, that is one computer for every two students. Even though this analogy gives us great flexibility in using the computer as a learning tool, it is still far from the optimum of one client for every child.

Furthermore, the fact that not all children have access to computers or the internet at home, makes things all the more difficult for turning our educational system into a fully-digital one.

true color, feel, smell and taste. Learning is a multisensory experience and it should always be treated as such. However, when we can replace traditional tools (ie textbooks, tests etc) with digital alternatives, we can be sure we will use them to their full potential.

We intend to keep all the trusted traditional methods and apply digital tools whenever and wherever they will make the most impact.

WHEN, not IF!

The total cost of computing is coming down significantly. It is not a matter of 'if' it will happen but rather when it will happen. Therefore, we can either sit and wait or be prepared to take advantage of it.

Inexpensive computing is knocking at the door. Like so many other innovations, especially in Cyprus, we can either sit down and wait for the revolution to happen or we can join the bandwagon now and experience it first hand.

Moving forwards

By understanding where technology is leading the world, we can make predictions as to what kind of tools will be needed to cope with the new possibilities that are opening in front of us.

Traditionally, in small countries like Cyprus we wait until a technology or a methodology has matured and then we adopt it. This might appear as a safety measure, however it is also a factor that keeps small countries or even developing countries from actually moving forwards.

Within the next few months we intend to make drastic changes to our research and introduce the concept of one client for every child, at least in one of the 4 schools that are participating in our thin client research. At the same time, we shall make sure that children have access to a personal computer at home, even though homework will still be text-book based. For various reasons, at this point it is still quite difficult to move to a totally digital classroom. What we intend to do, is to examine the changes that occur in the learning process when children have immediate access to a computer that they don't have to share with another child.

Of course, team work will still be possible (and necessary), by offering specific tasks and by asking children to form teams and collaborate with each other.

A total face-lift of the classroom will be necessary, and the replacement of all furniture in the classroom, including (and especially) chairs will take place within the following months.

Setting our Aims

It is necessary to set the proper aims for such a bold move. We intend to examine the actual impact that immediate access to a computer has on the learning process. By giving tests through the computer and by encouraging the creative



During the July 2005 sessions, we managed to examine the way children work and learn through technology

use of the machines, we expect to raise the awareness of children on how to best use technology effectively, and to promote self-learning as much as possible.

Developing content

Content is by far the most essential part in any project based on computers. In this regard, we are spending a lot of time evaluating alternative solutions and available content, as well as laying the foundations for the development of structured material to be used in the classroom.

Our intentions are to face the next school year with sufficient material to (digitally) cover such topics as History, Geography and Maths, with focus on 5th grade.



By the end of 2006- 2007 school year, we intend to have gathered as much information as we need to start preparing our schools for the changes that are coming.

The Digital Content

Content, and methodologies to support it, are the bread and butter of any real-life implementation of computer systems in education. We are moving into the new year with the tools to support content.

Learning Objects

It is not possible, at least not without more funding and more people-power, to develop all the necessary content within the next few months. Furthermore, we need to ensure that the content we are creating will manage to withstand the tests of time.

Instead of creating complex programs that contain the content, we are more focused on small, light-weight modules that can be easily manipulated, changed, adopted and be re-used across a number of different topics and across different cultures.

Most of our work will be based on small modules of information, called Learning Objects.



5th grade students working on an environmental poster using OpenOffice 2.0

Content, as well as methodologies, are the most important ingredients of a successful implementation of IT in education. We are not only developing our own content, but at the same time evaluating and putting to good use content we receive (under kind permission) from other sources.

Availability of Content

There is a huge amount of content available out there, especially through the Internet. The vast majority of it, however, is unsuitable for educational use in the classroom. Some of the available content can be used as raw data- download the proper amount and quality of satellite images of UK, for example, and you can put together an outstanding geography lesson on how agriculture is affecting the life in specific areas of that country.

The same can be applied with many other bits and pieces of information available through the internet. We are trying to gather all the necessary 'raw data' information we can get, and through giving the proper guidelines, give meaning to it so teachers can use it in their classroom.

Content Reusability

Information changes daily. What is regarded as facts today, becomes history tomorrow. This is more obvious when we look at the way things are happening in the world today. Therefore, we have to get away from a centralised way of organising information and move to a more flexible organisational model where information is broken into tiny bits. These bits can be used not only through a certain context but through a number of different ones. Take, for example, the mathematician Euclides. A module regarding the life of Euclides could be used in Maths, History, as well as Geography (with respect to great figures that lived in certain countries).

The same modules can be adopted by other countries. They can get just the modules they want, translate the text, and they can be up and running with these modules in almost no time.

Because the (lack) of content is a global phenomenon, using small reusable modules of learning can be a practical way for countries to share information and adopt it to their own needs.

Children and Digital Content

Either by tradition or merely by interest, children tend to focus less on computer-based learning and more on normal text book studying. Our research has shown some interesting -and mixed- results.



Children working on History projects (5th Grade, Troulloi Primary School, 2003)

How do children react when faced with digital content? Are they engaged, and if so, are they learning? Can we measure the results quantitatively or are we looking in the wrong direction?

Looking for the right results

Teachers expect the computers to lead to better grades. Even though the improvement in grades is a needed result, it cannot be held as the judging factor for the success (or not) of IT in education.

Results can be both qualitative and quantitative. How do you measure, for example, the ability of a child to form his/her ideas into a structured presentation and then stand up and show his/her ideas to the rest of the classroom? How do you measure the ability of a child to find suitable (for a specific subject) information through a web search engine, then organise that information so that it has a specific meaning? And last but not least, how do you measure the engagement that children show when faced with digital content instead of (boring) text books? After all, in countries like Cyprus, with a totally centralised educational system and few (and unsuitable) textbooks, children need an alternative medium of information.

Creating Content

We cannot just rely on the internet to find content. And we cannot just turn our (already unsuitable) textbooks into digital ones. We have to recreate the content from scratch, and even educate the educators on how to create their own assignments, quizzes and other much needed material. We shall cover some of the tools that can be used just for this task in the following pages.



Unsuitable books

The textbooks we use in Cyprus have not passed any reading test. We performed several tests (Fog Index, Flesh Formula, Kearsley Formula) on several 5th grade books (Religion, History, Geography, Modern Greek). The books were found to be unsuitable for this specific age with most texts being suitable for university students!

It is extremely important that we move away from these books and create new ones that are far more suitable for the specific age groups.

The digital content can be used effectively, since the teacher can have a choice of the actual content to be used and also he/she can make any changes/additions to the material before it is submitted to the children.

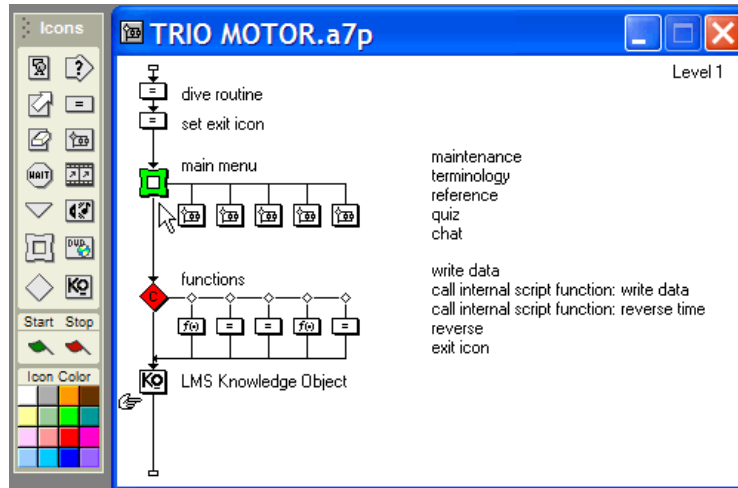
The Tools for the Job

lot of tools exist today to assist us in developing content. Some are commercial products with a huge learning curve (ie Macromedia Authorware), others are freeware or shareware (ie Hot Potato, JClick)

Build for All

In our development efforts we try to build for all platforms (MacOS X, Windows, Linux). Therefore, our most important tools are both Macromedia Flash and REAL-BASIC.

Even though we tend to use Director a lot, we test our projectors so that they work with Linux



Macromedia Authorware

(Windows 2000/XP only) is one of the most advanced authoring tools for education. Note that the Authoring Tool used by Lotus LMS offers integration with Authorware, as well as a similar, flow-chart based system.

The price of this tool, even in educational version, along with its learning curve, make it unsuitable for the average educator wanting to develop (or edit) content for his daily line of work.

What are the tools needed to create digital content? The answer is not simple, since anyone can use the tools he/she considers to be the most effective. In some cases, cost might be a limiting factor. Some of the more expensive tools (Macromedia Authorware/Director) have an almost huge learning curve and cost a lot, but the rewards are there!

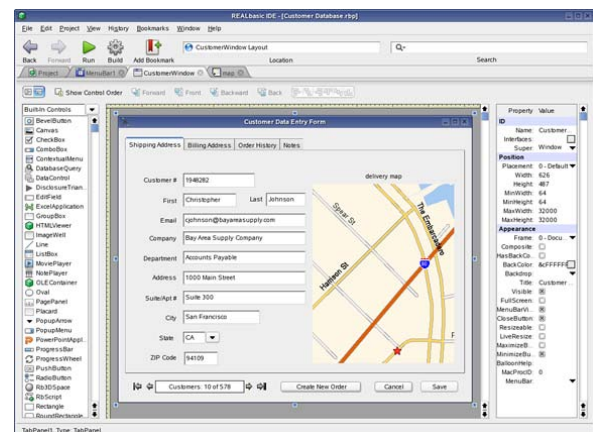
Commercial solutions

One of the leading companies to develop tools for multimedia and content authoring is definitely Macromedia (Adobe). Macromedia Flash has become the standard for multimedia content on the internet. Shockwave, another Macromedia technology, is also quite evident in many web pages. Macromedia is now owned by Adobe after a company acquisition earlier the previous year.

Macromedia Authorware is by far one of the most important products in content development. With interoperability between various file formats (including Flash/Shockwave), educators can easily create entire lesson modules within a (relatively) short time frame.

Both Flash and Director offer versatile and powerful development packages for people inexperienced with more 'serious' programming tools (ie C++ or other programming languages/packages).

Solutions such as VisualBasic (Windows only) or REAL BASIC, offer a different, but equally powerful, environment for content creation.



REAL BASIC

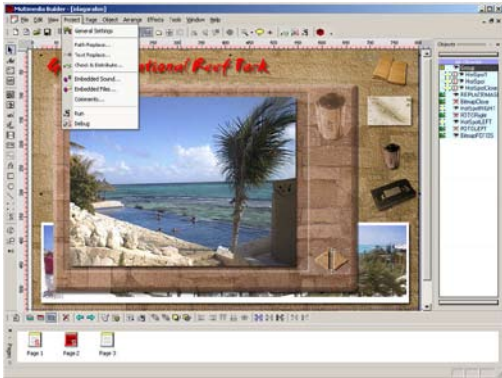
REAL has released the latest version of its Rapid Application Development package, REALBASIC. It is available for all leading platforms (MacOS X, Windows, Linux) with both Standard and Professional versions available. It features compatibility with Visual Basic, as well as cross platform compatibility of the end-project.

The (Standard) Linux version comes as a free download (<http://www.realbasic.com>)



Power Tools for Power Teachers

Even when commercial tools become available under academic or other licence, their learning curve renders them unsuitable for teachers. Fortunately, the OpenSource/Shareware world has great alternatives!



Multimedia Builder

This Shareware application (Windows only) allows the easy and fast development of digital content through the use of menus and icons. Buttons, icons and transitions are built-in.

You can download the shareware version (fully-functional) from <http://www.mediachance.com/>

It is amazing how many outstanding authoring/development packages exist in the OpenSource and Shareware world. We take a look at just SOME of these tools. We are working on a version of this report that will only feature such tools, to be released around March.

Shareware Tools

Shareware libraries have been available for (almost) as long as computers have been in the market. The software that fits in this category is -in many cases- even better than commercial equivalents. Usually shareware tools tend to offer solutions not met by commercial software. Even though, in many cases, we can download and use a shareware program, the developer asks for a (modest) payment. Otherwise, it is more proper to stop using the tool and move to another category, the freeware (not to be confused with Free Software).

Free/OpenSource Software

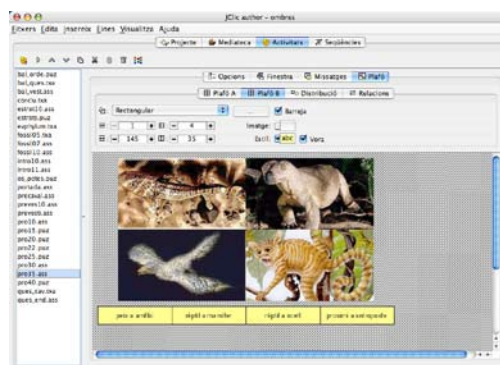
Free/OpenSource Software is (usually) free. The internet is full with quality Free/OpenSource Software that can cover (almost) all our needs. It must be noted that for the past two years, we have not spent a single cent for software used in the school, even though in some cases we do use proprietary (albeit, free) software such as Acrobat Reader or QuickTime/QuickTime player. Many of the tools available can outperform their commercial and proprietary cousins and this becomes more obvious when we start using them. Furthermore, in most cases the learning curve is far more smooth than similar commercial products.



Hot Potatoes

This is an OpenSource tool that can run on all platforms. We can quickly and easily create Quizzes, Crosswords and even Cloze tests!

It can be downloaded from <http://hotpot.uvic.ca/>



JCLic

This is an amazing set of tools that allow rapid development of multimedia-rich content. Thanks to Manuel Jaffrin of Sun Microsystems Europe for forwarding the link.

It can be downloaded from <http://clitc.xtec.net/en/index.htm>

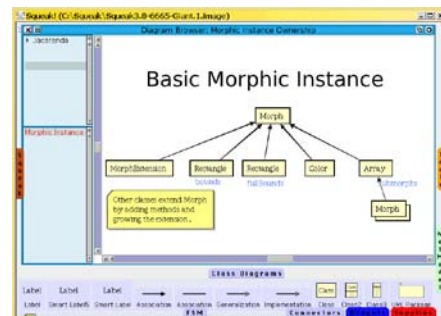
Multimedia Development for Kids

The most amazing thing happens when we teach -not educators- children how to use multimedia authoring tools. With their imagination unleashed, the sky is NOT the limit!

Bill Atkinson

Bill Atkinson, now a nature photographer, is the person responsible for such technologies as Apple's QuickDraw, Lisagraf, MacPaint as well as HyperCard (to name a few). Many of the technologies used in our days are based on concepts Bill Atkinson developed or proposed more than 20 years ago.

His creation, HyperCard, was intended as a free (not OpenSource) product to enable ordinary people to create hypermedia programs.



Squeak is a unique and extremely versatile development environment. It still is not as easy to use as HyperStudio, yet it allows the (relatively) easy development of multimedia projects by children. It can be downloaded from <http://www.squeak.org>.

If you buy into Constructivism (and Seymour Papert, father of the \$100 laptop is one of the main champions) then you take for granted that children learn best when they construct their own knowledge. Squeak is probably one of the best (OpenSource) tools available for the job!

Tools for learning

After the introduction of the Macintosh in the mid 80s, Bill Atkinson, one of the leading software engineers of our time, developed an extremely easy to use multimedia authoring tool. He named it 'HyperCard' and his intentions were to give the tool away with every Mac sold. Apple kept its promise, at least until version 2.0 was released.

Even though HyperCard is not available today, it created an entire new market with tools such as Hyperstudio, SuperCard and a host of other products.

Hyperstudio is a leading application used in schools around the world (even in Cyprus). However, it is only available for Mac and PC and it does not run on Linux (unless we use WINE).

Squeak has taken an altogether different ap-

proach. It might not have the same ease of use with Hyperstudio, however it is a much more flexible tool that can be used to create almost anything.

We have just started implementing Squeak into our research with mixed -for the time being- feelings. We are confident that we will start receiving more feedback from children once they get used to the UI (User Interface). After that, their creativity will be set free.

OoImpress for Authoring

OpenOffice Impress can be used as an authoring tool. It has been effectively used for this purpose for the past two years with great results. The creation of buttons is an extremely easy procedure and the 5th grade students have so far created some good interactive applications for various subjects (Modern Greek, History, Science, Geography).

Development by the students might be time-consuming, however the children are engaged in what they are doing, they tend to work as a team to gather and organise information, and the end-results bring more satisfaction to them than ordinary paper-based assignments (based on their own comments and remarks).

Developing the Developers

Give man a fish and they eat for a day; teach them how to fish and they eat for a lifetime. Our intentions are to turn, at least a percentage of teachers, into developers and sharers of content.



It is very important to train the educators in using tools for creating content. Even if the tools are going to be used by children creatively, the educator still has to have an understanding of how to develop an application or a module.

Learning the Tools

All teachers with a university diploma have at least basic knowledge of computers. However, this does not necessarily indicate their ability to use computers to create content other than text-based quizzes or other assignments. As such, a thorough study must be made to determine both the needs as well as the inclination of teachers to be educated in using multimedia authoring tools.

The Ministry of Education in Cyprus is moving towards establishing at least 3 computers in every classroom, with the intention of building computer labs in almost every single school. This will allow for the (more) proper use of computers by students, since (at least in schools with labs) children will have greater access to computers.

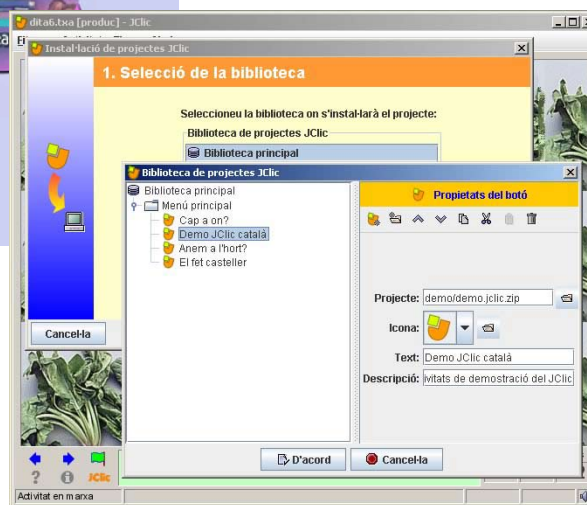
In the following few months, we will create and send to every single primary school in Cyprus, a questionnaire, seeking to determine both the beliefs of the teachers regarding the use of IT, as well as their needs in terms of further training.

Cyprus Pedagogical Institute

In-service educators in Cyprus are (officially) trained by the Cyprus Pedagogical Institute.

Tools for Free

So far we have distributed more than 200 CDs with information and applications such as OpenOffice, JClíc, Hot Potatoes, Squeak just to name a few. Anyone interested in these tools can also download them from the internet. All schools in Cyprus have internet connection and the Ministry of Education is moving towards broadband connections for every single classroom.



Computer training is just one of the main subjects the P.I. deals with. There are a number of different training courses for primary teachers, with a duration of 60-70 periods each. Educators participating in the trainings are also funded with £350 each.

Even though demand is high, the availability of training classes cannot meet the demand. Also, many teachers are left out since they cannot (for various reasons) participate in the classes. Furthermore, educators participating in a seminar cannot participate again, even after a few years time. Retraining is also of great importance, to make sure educators are constantly up to date with new releases and interface changes.

e-Learning initiatives

Within the next few months we will be working hard to deliver the first e-Learning courses for in-service educators. e-Learning can be cost-effective and suitable for teachers needing to keep themselves up to date or even learn something from scratch, when participation to actual classes is limited or non-existent.

Lotus Learning Management System

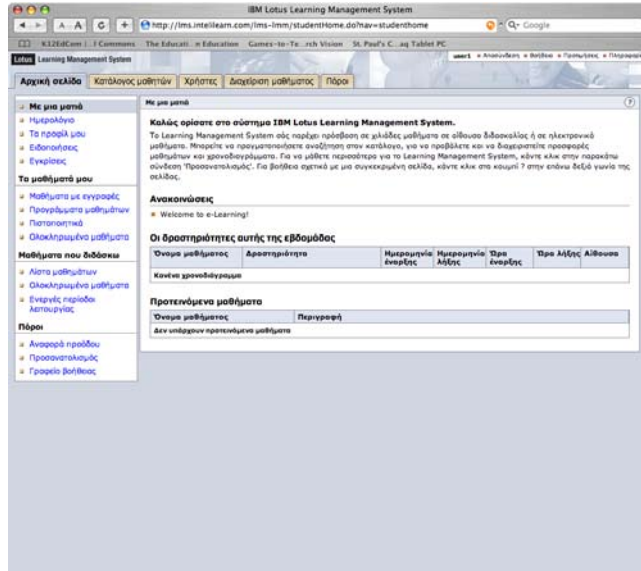
Our research on Thin Clients/OpenSource Software in education takes bold steps in implementing Learning Management Systems.

One of our obvious choices was Lotus LMS by IBM.

IBM & Inteliscape

One of the largest and probably most significant computer companies in the world is IBM. Right from the beginning, IBM has offered its support for the research on Open-Source Software and Thin Clients.

Their business partner, Inteliscape, is responsible for the deployment and support of the Lotus LMS and its use in primary education. Our intentions are to use the same platform to train in-service educators.



Inteliscape, business partner of IBM (Cyprus), is responsible for the implementation of Lotus LMS for the research on Thin Clients in Primary Education. We not only work with the hardware (and the OpenSource Software) but also we test the impact of an LMS in the classroom.

<http://www.inteliscap.com>

So far we have been working with independent modules, designed by us or other educators. Independent modules, however, tend to give us little knowledge of the actual performance of the class. At the same time, monitoring the classroom and giving proper feedback relies on more traditional -and not entirely effective- means.

Learning Management Systems

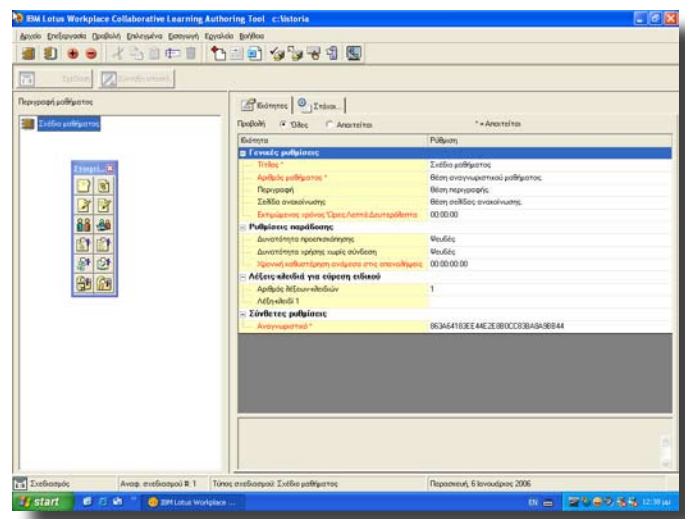
Every day teachers have to process a lot of information regarding the way their children learn or behave during the lesson. Most of this information is lost, as the teacher cannot (constantly) observe his/her students and at the same time be engaged in the lesson. Quite often children get carried away and might lose important information or have misconceptions that can surface much later during the day or even the week. Since time is always a crucial factor, we need a better way to monitor, not the actions of the child, but the way he/she is reacting to knowledge.

A Learning Management System can keep track of how a child works during a specific assignment or work. Needless to say, we cannot (and must not) use an LMS for all activities- after all, when you are teaching about apples and oranges, you don't quite need a computer.

In cases where an LMS can be used,

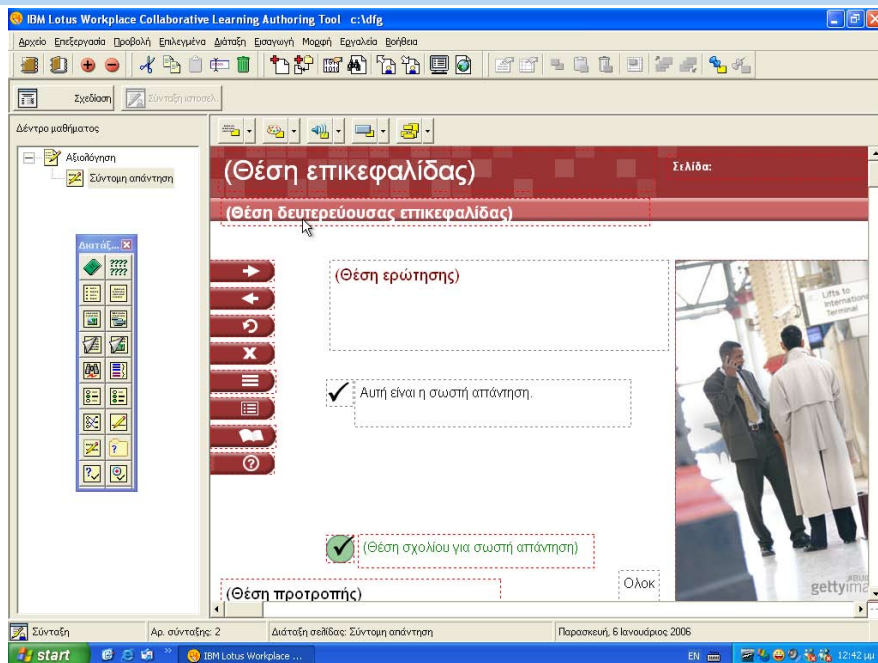
the benefits can be quite obvious. First of all, the teacher can have a better understanding on how his/her students are doing. The System itself can work with more capable students, allowing the teacher to focus his/her attention on students requiring more help. Some trivial assignments can be automatically corrected (ie calculous, numerical solutions to problems, multiple choice questions etc) saving valuable time to both the teacher and the students.

Needless to say, for an LMS to work correctly, we require many workstations (the ideal is one for every child), as well as the proper methodologies to implement it and of course the right content. During the school year 2006-2007 we will put Lotus LMS to good test and report back on the results.



Why Lotus LMS?

Choosing the right tool or platform is not always easy. There is never a single answer to which one is better than another. At the end of the day it always comes down to personal preferences and priorities.



The Authoring Tool

One of the greatest advantages of using Lotus LMS is the Authoring Tool (AT). This standalone application allows the rapid development of complex content in just a fraction of the time required using other packages (ie Authorware).

This is not a limiting factor, however, since Lotus LMS can support all major file formats (PowerPoint, Flash etc).

IBM has ensured that Lotus LMS supports all the major standards for content reusability.

Choosing the Tool

The choice of the right tool is not always easy or without problems. When evaluating and looking into solutions for our proposed implementation, we needed both a flexible and (relatively) easy to use system and at the same time the official support of a company.

These were the prerequisites, since this research aims to offer suggestions to the Ministry of Education.

IBM has an official branch in Cyprus, and Lotus LMS is handled by Inteliscap. June 2005 we setup a server to host Lotus LMS. For the time being, both the Lotus LMS as well as the Moodle server (see side bar) are used for testing purposes. Starting January 2006, however, both platforms will start to get populated with content and material.

Authoring the Content

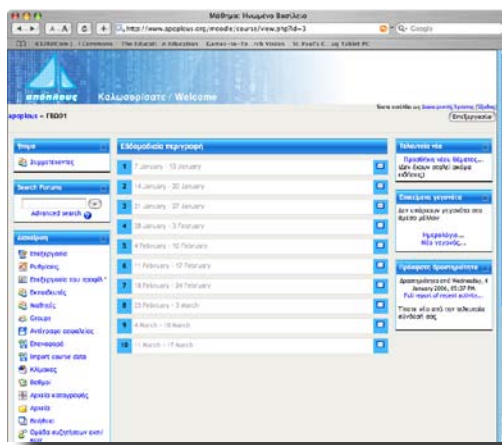
The Authoring Tool is a stand-alone application for the development of content. It is an extremely flexible application that can create both online and offline content. For offline content, a viewer application is needed. Fortunately it can run under Linux using WINE. The most significant use of modules created using the AT is through the web, as part of the Learning Management System. That way, administrators can

keep track of the progress of specific lessons.

The Authoring Tool is (at present) a Windows-only application, so (officially) it does not support Linux or MacOS X. The online content is platform-independent (as it should be) and works on any platform (Solaris, MacOS X, Linux, Windows).

OpenSource Alternatives

There are many alternative learning management systems in the OpenSource world. We are also using Moodle, and our website (www.apoplous.org) is based on it. Our intention is to assess Moodle as well as Lotus LMS, for different applications.



The power of Moodle

Moodle is a very important part of our strategy. It is an OpenSource project and therefore can be implemented by anyone. There are no licencing costs, making it cost-effective even for small organisations. We intend to turn a Moodle-based website into an important portal for educators, children and parents who are in need to keep in touch with training material.

Editor's Notes

*Computers are changing our lives. How much do we depend on them?
Is this dependence a form of slavery? Are we giving away too much?*

Our personal data are no longer safe. Even the EU has agreed in keeping records of all our digital and analogue forms of communication. Furthermore, the falling costs of computers and cellular phones allows more and more people to purchase and use these devices. Are we becoming addicted -and eventually slaves- to our technology?

Freedom...

“Freedom belongs only to those without computer screens”
Queensryche, Rage for Order

‘Rage for Order’ might not be the greatest selling album Queensryche ever released, but one can only listen to the lyrics and think of the real meaning behind them. Of course, when Queensryche released that album (early 80s) little did they know about the technological revolutions brought by the internet and mobile phones.

Each day we send and receive sms messages and emails to friends, relatives and business associates. Some of these are just greetings, others can contain valuable (personal) data. We have come to rely greatly on our computers for even the basic tasks such as when and where we shall have dinner or how to reach a specific location. What used to be an exercise in note-taking or direction-learning, is now a ‘digital inscription’ that we no longer have to keep in our heads.

The more we rely on our machines, the less we rely on our own abilities. I remember how I was up to a few years ago. I resented the purchase of a cellular phone, until I was given one as a gift. After using it for a while, I became hooked. And I remember my agony when I had to travel to another town and my mobile had run out of battery! Once you become used to a technology, it is obvious you can't think of living without it (well, in most cases anyway).

The \$100 laptop is going to bring its own revolution. At best, it will lead to a new market of ultra-low cost portable computers. More and more people will be able to purchase computers and more and more people will start totally

relying on them even for basic things.

And not to mention the most dreaded of all situations: the very fact that the more we rely on digital means of communication, the more we are susceptible to giving too much personal information away.

It is no secret that, at present, members of the police or other law enforcement agencies can learn (quite easily) a lot of our personal information (ie address, phone number- even if it is not in the phone book, car registration etc). Imagine having people with full access (never mind the court order) to every single personal information you have sent or received through your computer or mobile phone! It might seem far-fetched but the more we rely on our technology, the less freedom we have and the more access we allow to other people.

I just hope I am over reacting and the Orwellian world will never come to exist!

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

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