Open Education

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In this issue:

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

Happy Birthday OpenOffice!

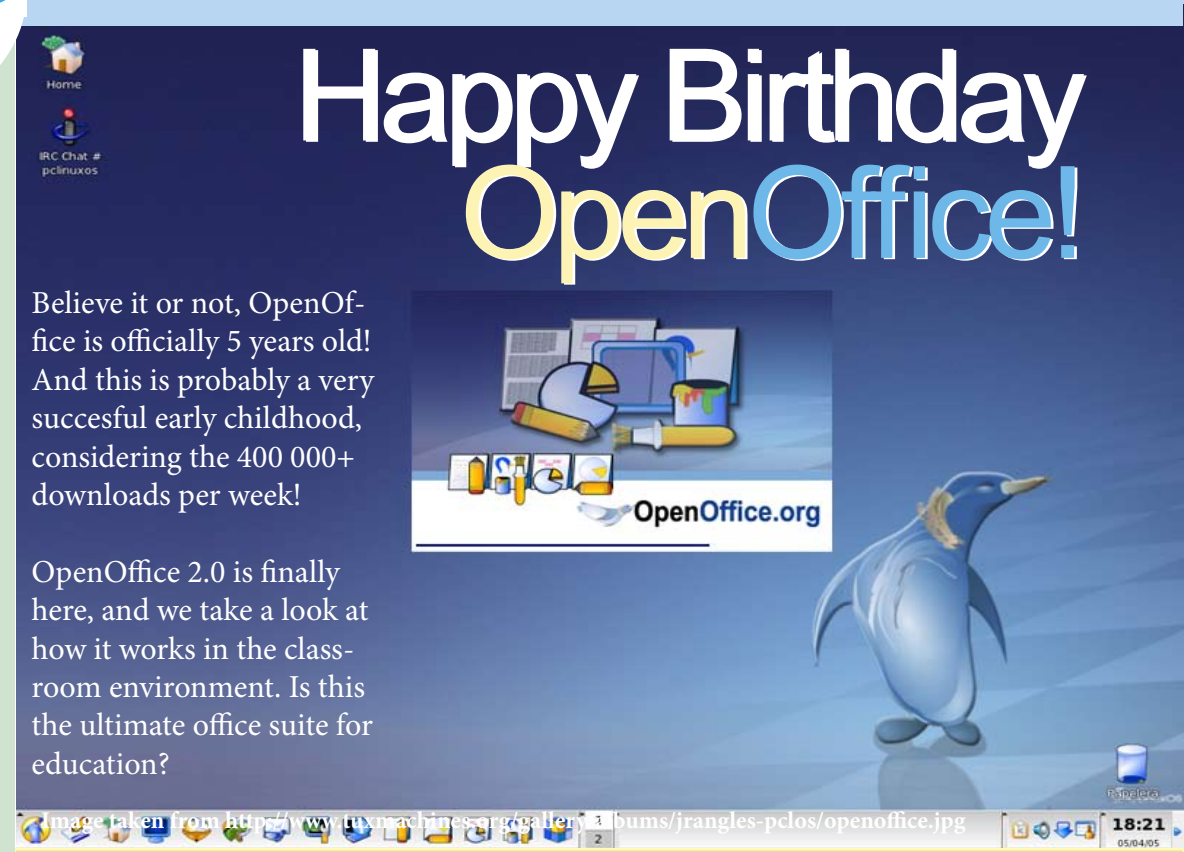


Image taken from https://www.linuxmachines.org/gallery/albums/jrangles-pclos/openoffice.jpg

Believe it or not, OpenOffice is officially 5 years old! And this is probably a very succesful early childhood, considering the 400 000+ downloads per week!

OpenOffice 2.0 is finally here, and we take a look at how it works in the classroom environment. Is this the ultimate office suite for education?

A laptop for every child!

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 14*)

Free Software (as in 'freedom)

How wise is it to grant just one vendor (Microsoft) total control of our educational system through the use of one proprietary OS and one proprietary Office suite?

(*Continued page 16*)

Thin Clients/ FOSS in Primary Eduation

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 10)*

Happy Birthday OpenOffice!

Origins...

On 13 October 2000 Sun Microsystems donated the source of StarOffice to the open-source community. Sun remains the project's chief sponsor and contributor, though the project can now boast contributions from Novell, Red Hat, Debian, Intel, and many other large and small companies, plus the very important and numberless contributions from independent developers, NGOs, and government agencies. All these have made OpenOffice.org not just a free alternative productivity suite but the best and most advanced productivity suite. And also a great community.

(Text taken from the OpenOffice web site http://www.openoffice.org)

5 Years of Success

They say that nothing in this life comes for free. And, in most cases, when we do get something for free, it isn't usually that good. Well... OpenOffice is the rule of all exceptions! It all started five years ago, when Sun Microsystems donated the source code of StarOffice to the community (see side bar 'Origins...'). At first, Sun did not expect OpenOffice to be a huge success. After all, why should anyone bother downloading an unofficial Office Suite when they could purchase (an inexpensive) official package from Sun. History proved them wrong as the OpenOffice team managed to engage the Community and downloads started soaring beyond imagination. As Louis Suarez-Potts has stated in an interview for MadPenguin web site (www.madpenguin.org), at some point downloads reached 700 000 per week! Today, according to Louis, the project manages around 100 sub-projects and supports 250 000 registered members! At the same time, OpenOffice supports more than 50 language projects with each country bringing out a localised version of the Suite. And these numbers are for the download versions from the website alone (http://www.openoffice.org). Every single Linux distribution (with a few exceptions) includes OpenOffice suite.

"...at some point OpenOffice downloads reached 700 000 per week- and that's from the main website alone!"

Open Standards

A great advantage of OpenSource Software is that they support open standards. Open standards allow a user to work with his/her documents regardless of platform (Windows/Linux/MacOS etc) or application (Word/Writer/AbiWord/Pages etc). OpenOffice, as well as several other OpenSource Suites, supports OpenDocument. This is probably one of the strongest points of FOSS (Free/OpenSource Software) that allows total freedom of choice versus the closed proprietary standards. In a few words, if you regularly work with MS Word/Excel/PowerPoint and at some point you decide to switch to another application (ie Keynote/Impress), the transition might not be that transparent. Even though all applications today support MS Office documents, this is far from an elegant solution. However, an open standard for saving documents will allow anyone to read (and write) documents regardless of the original application and the end result will always be the same.

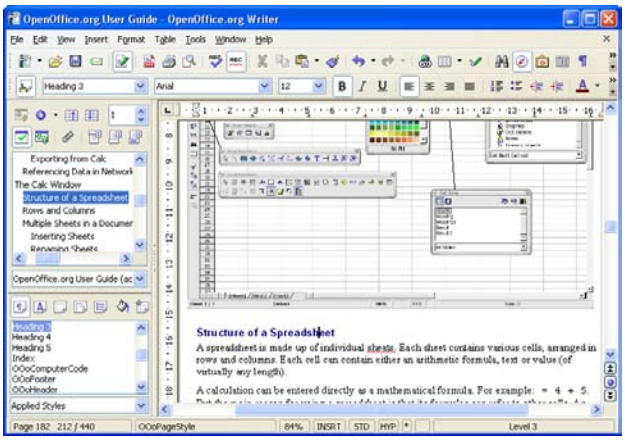
OpenOffice 2.0: Components

Taking a look at the applications that make OpenOffice, we are stunned by the level of development gone into version 2.

OpenOffice/StarOffice

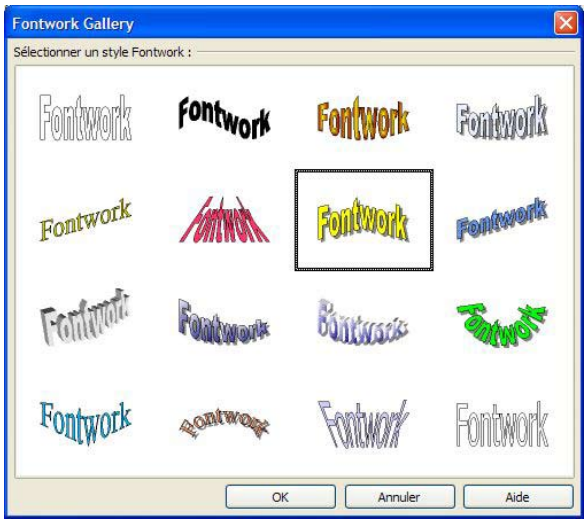
OpenOffice consists of several applications. These are (in order of appearance on the web site) Writer (a word processing application), Impress (a presentation package), Math (a component for creating equations and formulae) and unique to OpenOffice), Draw (a vector-based drawing application), Calc (a spreadsheet application) and Base, a Database Management System, the newest addition to the OpenOffice/StarOffice suite.

With the exception of Math, all other components are identical between the free downloadable version of OpenOffice and the commercial version of StarOffice 8.0. Both suites share exactly the same code. However, StarOffice 8.0 is a boxed, commercial product with support from Sun Microsystems. It also includes a number of fonts and clipart not available for OpenOffice (but you can install almost anything and bring the two packages to similar levels). It should be noted that StarOffice 8.0 is free for students and educators.



OpenOffice Writer 2.0

A critisism of OpenOffice is the way it relies, for several functions, on Sun's Java Environment. This might be true, but for most uses OpenOffice works perfectly even without the JRE installed.



The FontWork Gallery- choose your style!

OpenOffice Writer

Word processing is the most common use for a computer. Therefore, a good word processing application is a must for anyone but a fanatic games player. OpenOffice Writer 2.0 delivers a solid application with enhanced features such as a more streamlined UI (User Interface), faster loading times, OpenDocument support etc.

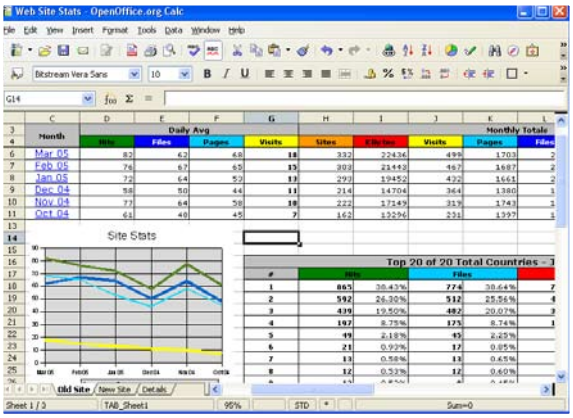
The Drawing tools have been greatly enhanced as well. The most noticeable new feature is the FontWorks. This is very similar to the WordArt function of MS Office and the results can be quite good (even though we must admit it is not as user friendly as the MS Office implementation).

OpenOffice 2.0: Components

OpenOffice is a mature collection of applications suitable for almost every need. OpenOffice 2.0 is here and it works better than ever!

Calc: Spreadsheet for all!

Nowadays, a Spreadsheet application is considered a must for most businesses, not to mention schools. Calc is a very capable Spreadsheet. Again, the User Interface has been refined and, once comfortable with one OO application, it is easy to find your way around all the rest.



For those not familiar with Calc, we should stress the ease with which you can create rows and columns of data, write formulae for processing the information, create charts and much much more (the scope of this article is not to present every single feature of the OO suite).

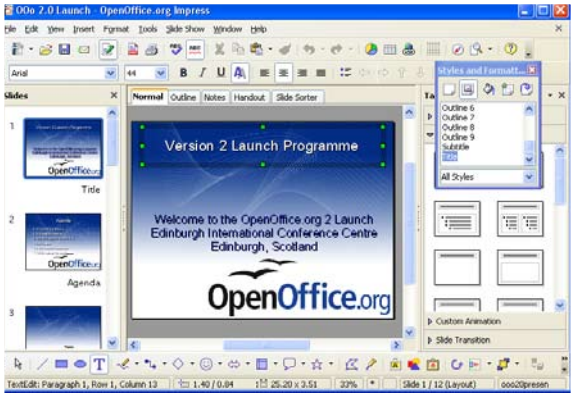
Calc can import and save documents in MS Office format. However, some Excel files with really complex formulae tend to work erratically under Calc. For most of the files, especially for educational use, Calc functions perfectly and reads Excel files flawlessly.

Impress your audience

Presentation pacakages have known increasing popularity over the past few years. It is almost unthinkable for someone not to know how to use a presentation package when speaking to an audience.

Impress is a very capable package, and version 2.0 (version 8.0 of StarOffice) shares a similar working environment to the rest of the OpenOffice suite. Users of MS PowerPoint will immediately notice the similarities between the two products in terms of layout and Slide Styles.

Impress allows the creation of 'impressive' presentations that combine text, images, photos, animation and video. Video, for the time being, is a weak part of Oo as the viewing of MPEG or other



movies is not as transparent as in similar packages from other vendors. Impress can be used effectively as a multimedia authoring tool, since it supports the creation of buttons that link to specific slides.

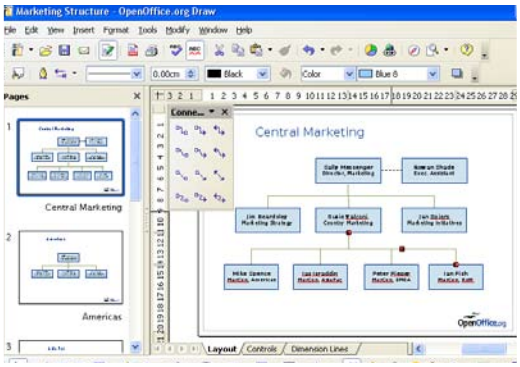
OpenOffice 2.0: Components

The OpenOffice team understands well that the power user of today needs far more than Writer, Calc and Impress

Let's Draw!

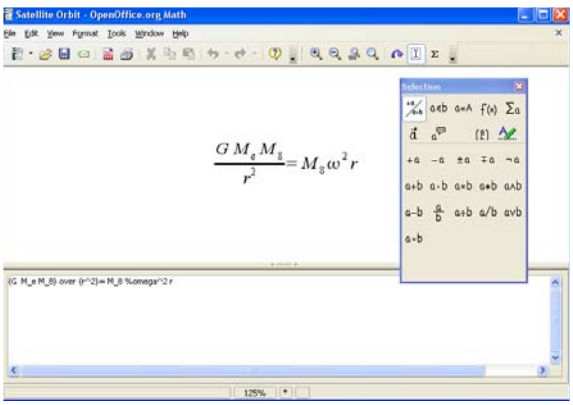
Diagrams are bread and butter in today's business world. However, diagrams can be used in education with great results when used properly. At the same time, students can benefit from the use of a drawing package for creating posters, educational material and creative thinking.

Draw features all the necessary tools to create posters, comics, diagrams, as well as presentations.



Doing Maths the Oo way

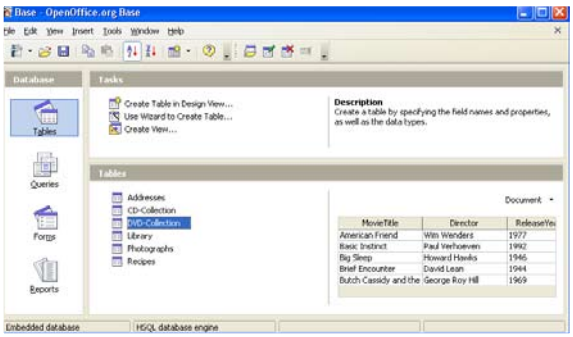
A common problem when presenting functions or formulae within a word processing or presentation package, is the inability of most applications to actually create them on screen. Math is an OpenOffice component (not included with StarOffce) that deals with this problem. Using Math is quite straightforward. You can either select from the included fucntions or create your own, to form almost any formula or equation. These equations/formulae can either be printed directly from the Match component, or imported into Writer or Impress (or any other application).



OpenOffice Base

It is little known that OpenOffice has (almost) always featured a database management system. However, this was not easy to use, at least not if you are an average user. Base is the newest addition of Open/StarOffice and it brings an easy to use front end to creating databases.

It should be noted that data can be imported from MS Access databases.



However, the structure is not maintained and has to be redesigned from scratch.

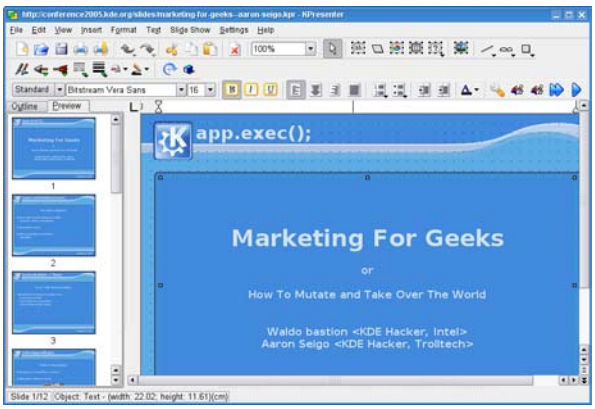
Base opens up new and interesting possibilities, since it allows the average user to create his/her databases with ease.

Alternative OpenSource Suites

OpenOffice is not the only OpenSource Office suite- and thank God for that, since choice is always good. We investigate...

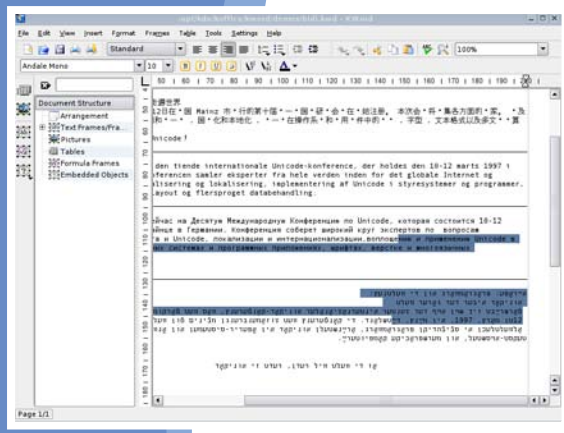
Alternative Suites

Choice is always good. And it becomes even better when you consider all the alternative office suites available both in the OpenSource and in the commercial world.



KOffice 1.4.2

KOffice is a collection of various applications (Word processor, Spreadsheet, Presentation package and Database Management System). All programs follow a different approach than OpenOffice. Instead of basing the interface (and working environment). KOffice tends to be a bit more user-friendly in some areas. One aspect that beats Open/StarOffice is in the way KOffice reads (and saves) files. The Open/Save windows are very easy to understand, as opposed to the less user-friendly dialogues of Open/StarOffice.



KPresenter

Presentation packages are a necessity in most professions. KPresenter is a very capable presentation package offering various slide styles as well as effects.

KSpread

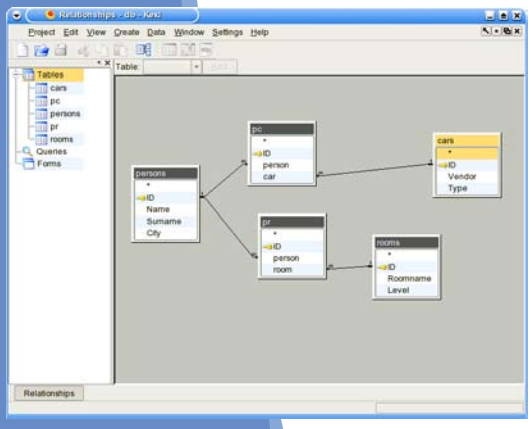
Spreadsheets are becoming very common in (almost) all businesses. In education, Spreadsheets are used across all grades and for various subjects.

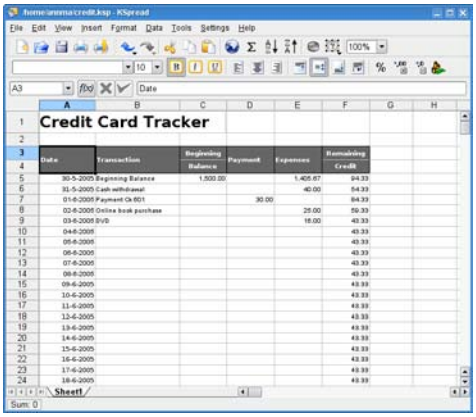
Kexi

As far as OpenSource databases are concerned, Kexi is a real jewel. The finished product claims to be MS Access compatible. Even though we are still in a development phase, Kexi is already showing its value as a cutting-edge Relational DBMS.

KWord

KWord (the word processing application) uses a frame-based approach for text editing and display of information. KWord, like the rest of the KOffice suite, supports Open Document format. This makes it ideal for exchanging information with other programs that support the same format.





The Gnome connection

The Gnome team could not be left behind in the struggle to bring Office suites to the masses. Meet Gnome Office!

Gnome Office

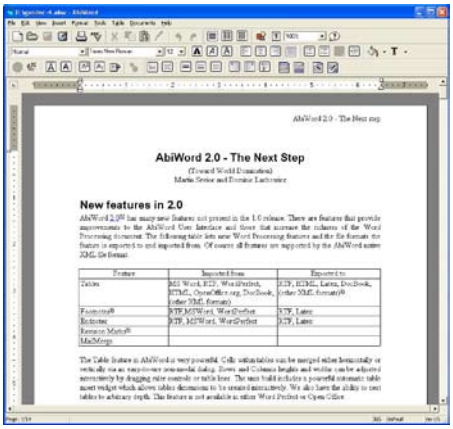
Gnome Office is a collection of various OpenSource applications that cover the daily needs of users. Strange enough, even though a Database application is included, Gnome Office does not include a Presentations package.

Gnome Office can be downloaded from http://www.gnome.org/gnome-office/gnome/

AbiWord for all flavors

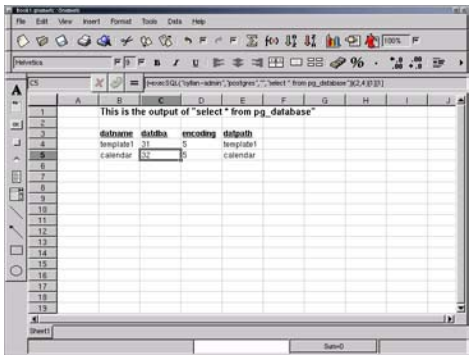
AbiWord is probably one of the most 'compatible' word processing applications in existense. It runs natively (according to the download choice you make) on almost every single available platform- be it MacOS X, Unix/Linux or MS Windows. It is a multi-lingual application, offerning language support for many european and other languages.

The interface is quite intuitive and easy to learn, following all the standard conventions of a modern word processing application. AbiWord can read and write many formats, as well as MS Word .doc files.



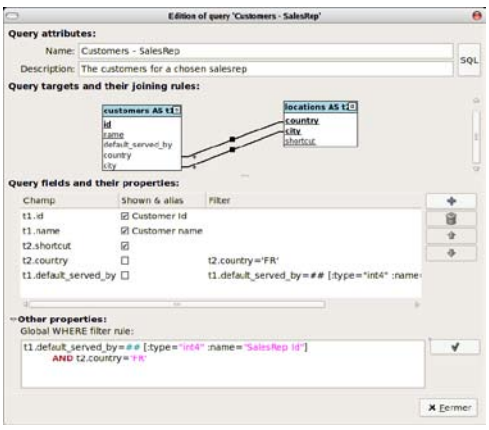
Gnumeric

Gnumeric is the spreadsheet application of Gnome Office. It is available -at the time of writing- for Linux and MS Office. As a general-purpose spreadsheet application, gnumeric offers all the basic functions we can expect to find with the ease of use and simple yet functional user interface that characterises most OpenSource Office Suites nowadays.



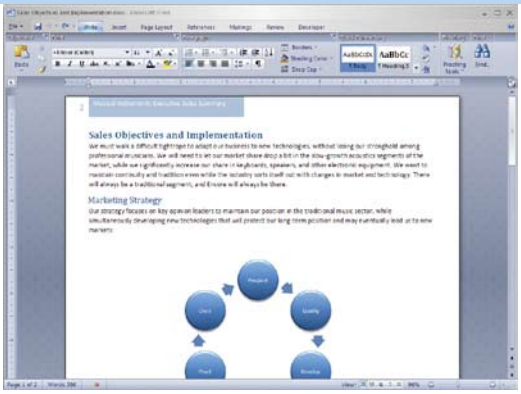
Gnome-DB

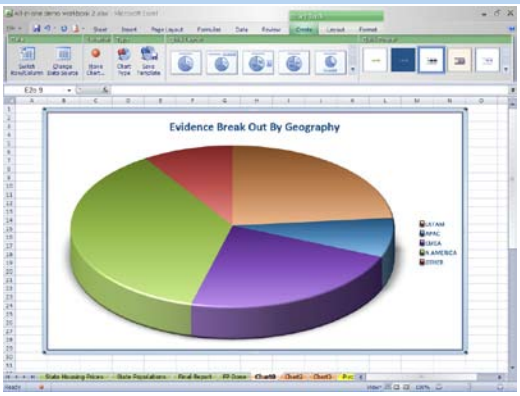
No Office suite is complete without a Database Management System. Gnome-DB brings database integration to the Gnome Office suite of applications through a rather complex interface. Currently, Gnome-DB is only available for the Linux platform.



The other side: MS Office 12

Microsoft has unveiled its plans for the next version of MS Office. Version 12 is totally redesigned in a move to sustain its market share and sell some more copies!





On the left: MS Word 12. On the right: MS Excel 12. The changes in the User Interface are tremendous.

The bigger you are...

MS Office has been around, in one form or another, for quite some time now. Through the years, MS Office has become the de facto standard Office suite, not only for the Windows platform but for the MacOS platform as well. However, when you implement more and more features in every new version, things start getting heavier and more complex...

Market saturation

For most people, MS Office 2000 is good enough, not to mention upgrading to Office XP or MS Office 2003. It seems that Microsoft has provided so many features to its Office suite that people feel they dont need anything more or anything else. That is, of course, bad for Microsoft, since it relies on people upgrading to newer versions of MS Office to keep the cash flowing.

Bloatware for the masses

Another disadvantage of being in the market and just adding features for years, is the actual size of the application and the complexity of the interface. Even though the average user only needs a tiny percentage of the available tools, everything else gets in the way. Microsoft, in an attempt to simplify the working process, has made drastic changes to the User Interface (UI).

As it becomes obvious from the screenshots, the entire Office Suite has been redesigned from scratch. Microsoft officials claim that this is the most significant Office release since Windows 95 (and their Office version) came to market more a decade ago. Now the Interface seems to be mroe functional, with clear, large and identifiable buttons for most common tasks. Menus are also 'intelligent' and they will attempt to guess what we need to do next.

"Open/StarOffice have come too close. Is MS Office 12 a move away from the competition?"

Moving towards a new Office suite with even more features and an improved -but still similar- interface, seems like too little or unimportant for most people, especially considering the premium Microsoft charges for its Office suite.

Microsoft has gone a long way towards making MS Office 12 easier to use.

Backfire...

All these changes, however, do come at a price: since MS Office 12 is a totally redesigned set of applications, new users will need to learn all over again how to perform several tasks. Quite ironically, given todays' OpenOffice 2.0 and Staroffice 8.0, users will find it easier migrating to a competing product than to MS Office 12. What will eventually happem remains to be seen...

iWork, therefore iAm

Can an Office suite tailored-made for Mac and costing the same as StarOffice 8.0 challenge Microsofts' dominance in the Mac market?

iApps for all

Apple and the the letter 'i' are doing quite well, especially when we consider the success of iTunes/iPod.

After releasing the iApps (iTunes, iPhoto, iMovie, iDVD), Apple (wisely) decided to develop its own Office Suite. The first application to be released as a suitable alternative for MS Office apps was Keynote, a presentation package. Steve Jobs himself uses keynote for his own presentations.

Version 2.0 found Keynote as part of iWork, a suite of 2 applications. Keynote 2.0 still remains an extremely flexible and easy to use Presentation package. At the same time, Pages is a versatile and very intuitive Word Processing and Page Layout package.

Keynote themes: upon launching the application we can select the Theme to use. These themes come (usually) at two sizes, 800x600 and 1024x768, adequate for most presentations. We can install more themes or create our own.

Going for 'i'

Both Keynote and Pages need some getting used to. However, both are quite simple to use yet they provide the user with the tools to deliver either a stunning presentation or a document with a solid layout in a very short time. With the rumored inclusion of a Spreadsheet application (probably called 'Numbers'), iWork will be made even better. And considering the fact that Apple already owns FileMaker, a great relational Database Management System, we believe that an iBase application is not that far in the future.

Pages: Create documents easily, with stunning results and minimum effort!

Compatibility...

It goes without saying that, at least for now, iWork does not support OpenDocument. However, since pdf is the standard file format for MacOS X, iWork can easily export anything to pdf, even better than OpenOffice in most cases. Also, both Pages and Keynote can read and write MS Office documents (Word, PowerPoint) with minimum changes or loss during importing or exporting.

One of the greatest disadvantages of iWork is the actual availability of the product- it is only available for the Mac platform. With the exception of iTunes, all the 'i' apps are Mac-only. Maybe this is a wise move to give the Mac platform an advantage over Windows, however it denies the suite the opportunity to grow beyond the modest market share the Mac has.

Object Libraries

A major drawback of any IT implementation is the availability of the actual content. Also, the ability to reuse the same content in a different environment is a major issue, since very rarely, if ever, two classes need the same level of attention.

Object libraries are collections of raw data (images, sounds, videos, texts, animations etc) that, on their own, have little if any meaning. However, used in a specific context with given learning goals/ expectations, these Object Libraries can be used effectively to support learning without becoming obsolete.

Lakatamia Primary School: Recycling with Tux

The Ministry of Educations' modern PCs feature Celeron CPUs and 17 inch CRT monitors. With a K12OS 4.4.1 Server, we created a 12-client lab for under £1000!

It all started with a question: is it possible to increase the number of clients in the classroom and, at the same time, bring to costs down to a minumum? Lakatamia Primary School is a fine example of how technology can be used effectively and with the minimum cost.

The Peopleware

The most important aspect of any organisation is, without a doubt, the people involved in it. Fortunately for us, we found in mr Yiannakis Vasileiadis a very energetic and ambitious teacher, with extensive knowledge both of his subject and a proper balance on using IT in the classroom.

Mr. Vasileiadis uses the computers in his classrooms when and where they will have the most impact. There is little point, for example, to use a computer to teach how an apple looks, smells or tastes like. However, for a field trip to Athens, or for a view of our solar system, the computer is probably the most suitable tool we can use.

The Software

The clients are running -through the server- Fedora Core 4/LTSP. As the main office suite we use StarOffice 8.0. It should be noted that, both mr Vasileiadis as well as the other teachers participating in the research, have received a CD-ROM containing the Linux/OpenOffice 2.0 manual as well as OpenOffice 2.0 for Windows.

The Content

Obviously, we have gathered raw material, as well as structured material to use. The most important material is the one we create along the year, since every classroom needs to be dealt in a different way. Mr. Vasileiadis creates most of the material he uses, taking advantage of our 'data repositories' or 'object libraries' (see sidebar).

The Hardware

All clients run on an Intel Celeron 2.4GHz server, with 1GB RAM and an 80GB Hard drive. Hardly cutting edge, however it allows us to run 12 clients (Pentium II to Pentium III) as if they were new PCs. The real value of the entire setup is well under £1000!

Special thanks go to Hellenic Technical Enterprises for donating computer desks for all 3 schools (32 in total). Also, special thanks to Logicom for donating hardware, including 10 digital microscopes, for our research.

Troulloi Primary School

The school where it all begun! During the 'apoplous' research (2002- 2004), we introduced the concept of one PC for every desk, as wel as Linux/OpenOffice. Tux is back with Thin Clients!

When we started our research, 4 years ago, Troulloi Primary School was our working ground. The Community, as well as the teachers, all collaborated to what was the first for Cyprus: a classroom with a ratio of 1 computer for every desk.

Linux then...

During the final stage of the 'apoplous' research (2003-2004), we replaced Windows 98 with Linux and Open/StarOffice. We tested various distributions, including Sun Java Desktop, SUSE, Mandrake, Fedora and we run both Gnome and KDE environments. The interoperability offered by OpenOffice and StarOffice allowed us to use documents created using MS Office applications (Word, Excel, PowerPoint). One important aspect of the research was the ease with which children take to using computers- be it Windows, MacOS X or Linux. However, the cost of a normal computer lab running fat clients, as well as the total time (and cost) associated with maintaining it, lead us to a new research.

New class, Thin(ner) Clients

School year 2005-2006 has found Troulloi Primary School with renovated classrooms. Also, it was the first school to receive Intel-based PCs running as Thin Clients with 17" TFT monitors. The server, this time, is based on an Intel 3.2GHz server architecture with DVD-RW, 120GB SATA drive and 2GB ECC RAM. We use K12OS (Fedora Core 4/LTSP) as the main OS, with StarOffice 8.0 as our leading Office suite.

The teachers

It should be noted that the teachers received training courses on using Linux. These courses will continue during the school year. Our training deals with basic use of the system, as well as methodologies and practices of using IT in primary education.

All teachers participating in the research are highly- skilled educators, often praised by the Ministry for their exceptional work.

Dasoupolis Primary School

Well into the year, more than 120 children have experienced the Linux way. We already have individual accounts for all classes, and children have mastered the basic

The Software
K12OS is hardly the only choice regarding Linux and Thin Clients. Even though we use K12OS (http://www.k12os.org) others might find alternatives like Edubuntu more appealing (http://www.edubuntu.org)
The beauty of OSS is that you can customise it the way it is meant to work. LTSP can be installed on (almost) all major Linux distributions. (http://www.ltsp.org)

The SunRay 170s are proving to be quite popular among the student population of Dasoupolis Primary School. Teachers are about to get trained on how to best use the system for enhancing the learning process.

Fire from (the) Sun

For the first two months (September & October 2005), our systems run through a SunFire V20Z server. However, the specific machine was intended for other tasks and not quite for the classroom. Even though the dual Opterons provided us with ample processing power for the most extreme tasks, our more modest needs allowed us to replace the server with a Pentium 4 custom-built machine. The result: an (almost) totally silent working environment!

>5 seconds to Login

Our server is always on. A UPS device ensures that the server won't be affected by power shortage, and it gives us the time to shut down the system in an unfortunate event. From the moment the server is ready, it only takes less than 5 seconds (from the time we turn the power on) to have the SunRay 170s ready for login. This is extremely important to us, since power failures occur very often in Primary Schools and any machines running at the time can be seriously affected. This way, we can keep the machines switched off during certain periods, and have them back online in almost no time when needed.

We're Cool!

Since our classrooms are usually rather warm during the Summer (and in Cyprus we enjoy warm weather 9 months a year), and since air conditioning is still just a dream for the average school, heat dissipation can be a real problem when you build a lab inside a classroom with many clients. Fortunately, our clients only consume (at most) 63w and at the same time emit (almost) no heat.

Virus-free zone!

Since our Operating System is based on GNU/Linux, no Windows viruses can cause us nightmares! And since we avoid installing software that we don't need, Spyware is kept out of the way as well.

Changes in the System

Sun Java Desktop release 3 is based on Gnome desktop. This system is primarily intended for bussinesses. As such, we needed to make changes here and there to make the system more appealing (and more usable) for children. By using the Gartoon icon theme (http://zeus.qballcow.nl/) we created a more 'friendlier' environment. Children were asked to choose the theme they prefered. Everyone agreed that they liked working on the SunRays with Gartoon installed.

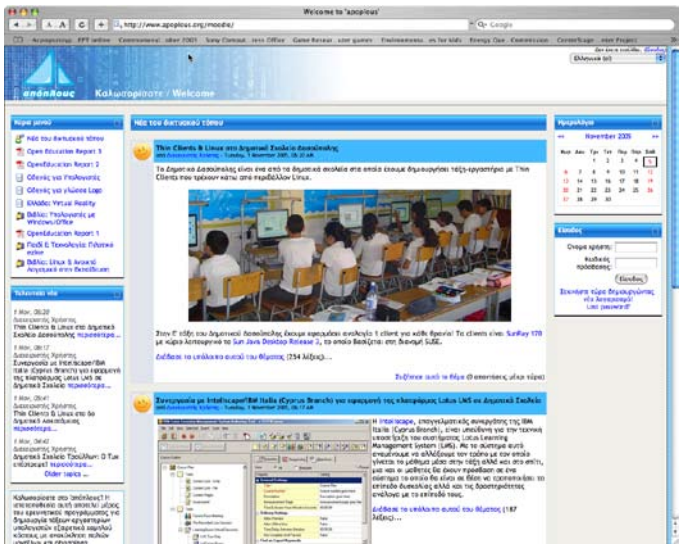
WINE is an important part of our setup. By installing WINE, we manage to run such important applications as QuickTime, MSW Logo, Inspiration, Sketchpad, as well as many other custom-built apps using Macromedia Director.

Our main office suite remains StarOffice 8.0, now in its final release.

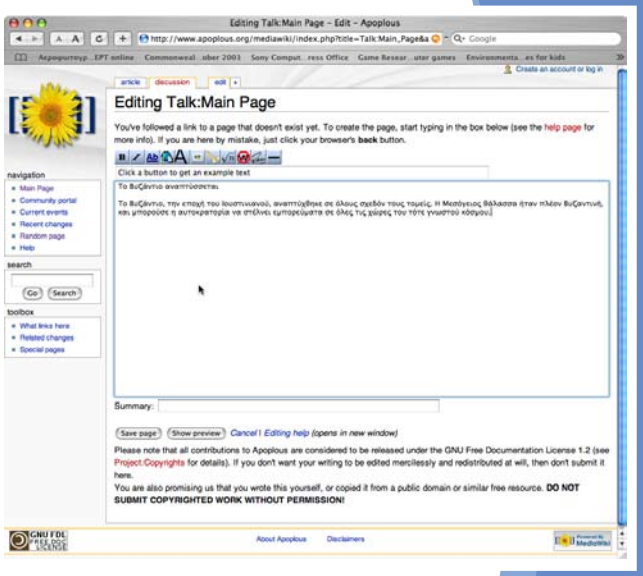
Special Thanks go to the parent (who asked to remain anonymous) that donated a Canon Pixma 3000 printer for our classroom.

Broadband for Collaborative Learning

Our schools will soon have broadband access to the Internet. This will allow our 3 schools (Dasoupolis, Lakatamia, Troulloi) to be even more productive and bring collaboration to a new level



The 'apoplous' web site serves for much more than just information. Our transition to Moodle will allow us, beginning January 2006, to deliver lessons through the internet



MediaWiki is an important addition to the 'apoplous' web site. It will allow children to express their knowledge and better collaborate with other students, either in the same or a different school.

What is the best way to breach the boundaries between schools? How can we get children from different schools, even students from different countries, to work together on projects that promote collaborative work and at the same time build bridges between communities?

MediaWiki: the prospects

The creation of content on the web, called 'wikis' is extremely easy (not to mention fun) using MediaWiki. We have implemented MediaWiki as part of the 'apoplous' web site (www.apoplous.org/mediawiki/). Even though it is still far from being fully functional, we have tested the ease with which children (grafe 5, primary school) can create their own wikis and collaborate to improve or add similar subjects to a collection.

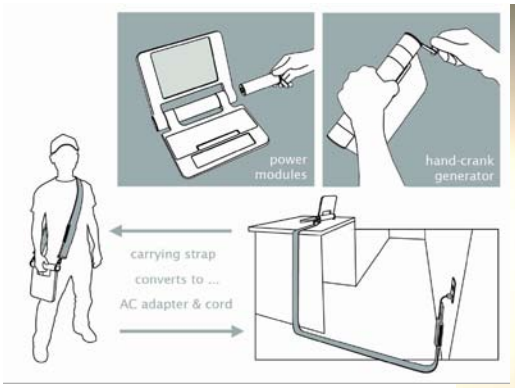
As of January 2006, we intend to initiate a project between at least 2 schools, in developing content for various topics covering Geography, History, as well as other topics of personal interest (ie music, video games etc).

Moodle for all

Moodle can be used both to deliver content and administer the work of children, as well as create a common working ground for groups of children. Using Moodle Forums, we can initiate discussions that lead to the development of collaborative problem-solving skills. Children can be presented with specific problems, and they will have to option to go online, post their questions or their initial hypothesis, and discuss it with other children from different schools to reach a final solution. We expect to be fully functional by the first working week of January, 2006.

A laptop for every child

Is the latest MIT initiative the ultimate step towards bridging the gap between traditional and digital learning?



An artist rendering of the product

When we started our research, 4 years ago, Troulloi Primary School was our working ground. The Community, as well as the teachers, all collaborated to what was the first for Cyprus: a classroom with a ratio of 1 computer for every desk.

The $100 laptop project

MIT is well know for its innovative research programmes. Many of the technologies we take for granted today are based on one or another technology innovation that came out of one of MIT's labs.

Nicholas Negreponte, along with Seymour Papert (creator of Logo and one of the most influential people in Psychology today) have teamed together to provide a solution to the digital age problem: the availability of hardware for every single school child in every country.

Their proposal is not only quite inexpensive but it also solves many other problems. For example, the use of durable material allows the machine to take as much damage as possible. Considering how many times students tend to drop their school bags, books, or anything else they carry on a daily basis, the choice of a 'child-proof' design is one very well made.

Ask any educator with more than a couple machines in his/her classroom and you will hear horror stories of cables everywhere (even when we use techniques to conceal them). The Laptop is completely wireless as far as networking is concerned. Also, as far as power is concerned, it can happily run on its battery for several hours. If needed, the carrying belt can be used as a power cord. An intuitive handle can allow a person to charge (manually) the Laptop for several minuts. This is an ideal situation, especially when working outside the classroom.

The Software/Hardware

The Laptop is based on AMD technology, offering wireless access to the internet and Flash-based memory unit. No hard drive will be included.

The Operating System will be GNU/Linux based to minimize costs and maximise efficiency.

The drawback...

First of all, the machine is not yet available and it won't be for almost another year. And then, in order to get our hands on the Laptop, our government will need to order several thousand units. Some governments have already expressed their interest (Argentina has ordered half a million units) while others are inclined towards branded portable computers.

The future is portable...

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

Image above: The iBook has proven very popular in US States wishing to implement the 'one laptop for every student' initiative. The 'books' have been tested under real conditions with mixed results.

Images Right and Below: The Metabook. A quite intriguing concept, presented during the CBLIS 2003 conference. However, things have become quite stale ever since.

Thin Clients are good. Thin Clients can be extremely good, considering their low total cost of ownership. However, they do have some major constraints: you need to keep them plugged in all the time, and you just can't take them home with you (unless you carry the server!).

The future is portable

Less than a century ago, children used to walk to school carrying a writing slate, and chalk to write with. Later on, we decided to use paper for writing, and actual books for every single student.

The student of the (near) future will go back to his/her roots: forget all the paper-based books and exercise books and welcome, once again, the slate. Only this time, its gone digital!

One major issue with portable computers today, is their ability to work for long hours without needing a recharge. This is a problem faced today by the industry, however a set of new standards and technologies can ensure the continuous use of a portable computer for more than 3-4 hours without a recharge. Some vendors (ie Apple), have even developed special storage carts that not only secure the portables during after school hours, but serve as charging stations as well.

The future is wireless

Being able to work with portable computers can solve major headaches. No more wires across the walls (or even the floor!), no more restrictions on where to place the computer or where to sit the students. Everyone can sit wherever he/she wants, and the portable can fit even on the tiniest of desks. Wireless connectivity to the internet ensures that we are online without a single cable hanging from the machine. This becomes even more important when we start thinking of working outside the classroom (ie field trips, or just working in the school yard for a change!).

The future is... not here (yet)!

Portable computers pose a solution to various restrictions. However, they are still far more expensive than Thin Client machines. Once we get the cost down, then we can start thinking of how to really create the digital classroom!

Free Software , as in 'Freedom'

The Ministry of Education , Cyprus, is against monopolies. However, 100% of the Operating Systems and Office suites we use come from the same source: Microsoft.

Education is very essential for every country. When we implement technology in our schools, we invest for the future. The problem is: how much control over your educational system do you allow a third party, from another country, to have over you?

The MS Monopoly

Every day we go to school, we are faced with at least one computer in every classroom running MS Software: Windows and Office. Furthermore, the new web server the Ministry is preparing, will rely solely on MS proprietary 'standards'.

There was a time that a (kinda) good explanation existed: that the only alternative was the Mac platform, and it was hardly supported in Cyprus (at least for educational purposes).

Times change, however, and Linux has become more user friendly, with more software and of course some rock-solid Office suites (see previous pages).

Software freedom

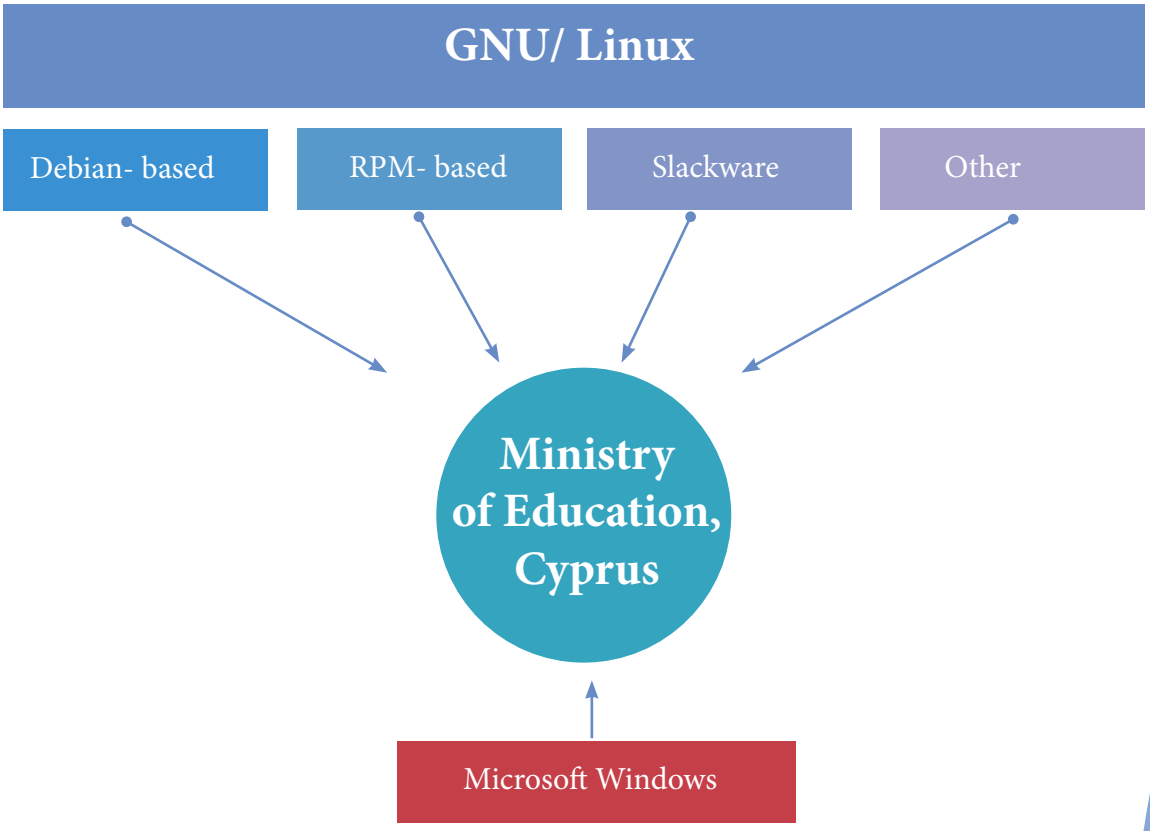
By locking an entire educational system to a single vendor, you allow (indirect) control over your policy. It also has a domino effect, since most people would rather use at home what they use at school.

Arguably, moving to another Office suite (not to mention an entire platform change) will lead more options and of course allow educators (and students) to choose the solution that suits them best. Building on top of a monopoly is definitely the wrong thing to do, since you make it harder (in the future) to switch, if the worst comes to worst (ie increase the licence costs, change the licencing policy etc).

How wise is the decision to lock the entire Educational System on just one proprietary vendor and its Operating System and Office suite? Is the time right to switch platforms?

Supporting Open Standards

The Ministry of Education (Cyprus), with its 'Evagoras I' and 'Evagoras II' initiatives, puts IT in the classroom. However, we face the possibility of allowing Microsoft too much control.



FOSS means 'light'

Quite remarkably, 'FOSS' means 'Light' in Greek. Of course, FOSS stands for Free/Open-Source Software. The diagram above shows the flexibility offered to the Ministry of Education (Cyprus) by a Linux solution as the main (or at least as a supplementary) Operating System. With MS Windows, we only have one product coming from one vendor. With Linux, we have multiple distributions coming from various sources. For example, Sun Java Desktop and OpenSolaris/Solaris 10 come from one company, Mandriva Linux comes from another company, etc...

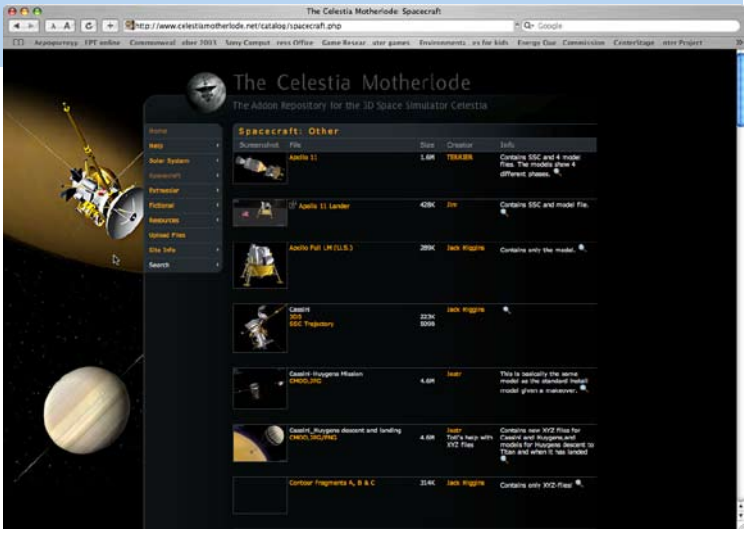
If the policy, pricing or services of one company are not up to a standard defined by the Ministry itself, then another Linux distribution can be chosen overnight with little -if any- disruption of operations. The same cannot be applied with proprietary operating systems. Who is to say that Microsoft will continue offering its OS and applications at a competitive price? Nobody guarantees that Microsoft will not change that policy and start charging considerably more for every licence. And it might do that when we get used to working with a specific operating system and/or applications for so long, that moving to another platform will be catastrophic.

Choices...

In today's world, it is essential to be as productive as possible with the minimum loss. Being able to choose between different operating systems, or vendor distributions, is essential for the growth of any system. Therefore, it makes sense to look to the Open Source community for the right choices. Do we want to rely on a single company (Microsoft) to fix all our problems with their software, or do we evaluate alternatives and start implementing them? We believe it makes a lot of sense to have our choices open, and to be able to move flexibly across vendors in order to maintain a competitive and productive working environment.

Choice is good, and there is more choice when the Open Source solutions are seriously considered and implemented!

Editor's Notes



Looking at applications such as Celestia, along with all the add-ons, make us marvel at what the OpenSource community can offer to the rest of the world- without even asking for a penny!

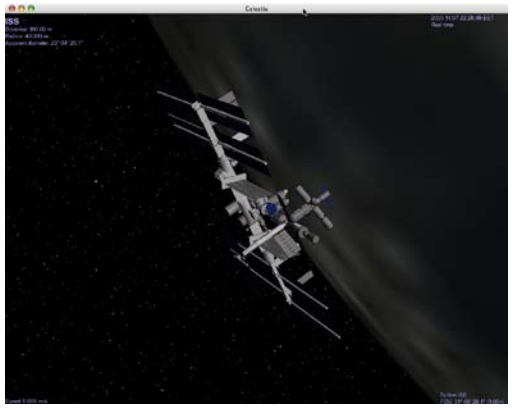
Voyage to the Stas

Everyone who has tried K12OS or other distributions that include 'Celestia' already knows what we are talking about. But it's not until you download the MacOS X or the Windows version that you really start to appreciate the beauty of this amazing application. And not because the Linux version isn't good- its stunning! But what strikes us the most is the true multi-platform support that the team responsible for Celestia has taken.

To begin with, Celestia, on its own, is a rather small package: just download a >15MB file, run the simple installation procedure and you are up and running in no time (http://www.shatters.net/celestia/).

The first thing you (might not) notice is the size of it. It is enormous! Hit the 'Enter' key and just try typing a name- Celestia will attempt to match it with its database of objects, be it planets, stars, moons, comets, or even space probes. Click the 'Go' key (G) and you will find yourself traveling at light speed towards your destination! More than 100,000 stars are included in the program itself and we can always add more content!

The beauty of Celestia becomes apparent once we visit the Celestia Motherlode site (http://www.celestiamotherlode.net/). From here we can download almost anything: from complex hi-res textures of the planets, to new models (ie space ships, more planets/asteroids etc).



The Sci-Fi fans can even include imaginary objects like the Starship Enterprise or even StarWars crafts!

When (properly) used in the classroom, Celestia can be an invaluable tool. We can easily allow children to explore the different planets, see how they orbit the Sun, view hi-res textures that show details of how their surface is, compare the moons of every planet in our solar system, and make a note of how many space probes we have send out there and what is their specific funtion.

Possibilities are endless!

- Alexandros Kofteros
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  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!