

## Deployment of Open Standards in the Public Administration

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*Open Source Software is receiving an increasing attention in the public administration. The aim of the paper is to discuss the deployment of open source software for office automation and to present a synthesis of the up to date status. It is intended to sensitize provosts and policy makers regarding the value and benefits of open standards in public administration. The article explains why anyone would choose an open standard format for office documents, instead of the obsolete binary formats. The responsibility of the public sector to protect the permanently, open and free access to public documents is emphasized. Switching the IT systems to open source and open standards can solve the problems with significant financial benefits. One available open source software solution in the field, the Open Office suite, is presented as a viable and free alternative to commercial products. The article reviews next the existent competing open standards – OpenDocument and OpenXML. Finally, the measures and efforts implied to make a non invasive migration to open technologies are presented.*  
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### Introduction

A great part of the present communication is done in the form of electronic documents. Reading, writing or exchanging of computer files - containing letters, spreadsheets, presentations etc.- have a special importance in the our society.

Storing the information in the computer gives us no guaranty that that those data will also be available after long time periods, after decades or centuries.

This paper aims to draw a signal to the Romanian authorities regarding the imperative need of using the Open Standards, as a mean to assure the permanence of vital information. It also emphasizes the significant financial impact resulting from the absence of license costs for many software products which are implementing open standards.

Measures for a non invasive transition to open source software in the public sector, justice, archives, education etc., are exposed. The office productivity software, presented by this work, is just an example from a broader range of Open Source Software, which is waiting to be used in the benefit of contributors.

### Why are the present binary formats for office documents obsolete?

We are often confronted with the situation of

failing to read a previously created file, when we are changing our word processor, or even when we are upgrading to a newer version of the software. Try to read a Microsoft Office file, which you created ten years ago, and you will not always succeed.

A frequently mentioned incident, reveals the possibility of losing valuable data, which was written on magnetic tape just 25 years ago. Information collected by the Viking mission from the Mars soil in the year 1975, were requested in the year 1999 by a scientist, in order to verify some hypothesis regarding the presence of life on Mars. But the tapes containing those data could not be read, because the format used to write the information was no longer known. Finally, the desired data were found in printed form, and students were hired to introduce the data in computer. A waste of funds resulted, and data could be recovered due to the existence of a printed copy, a form that anyone can understand.

A file format is considered to be "open", when its specification is known and accessible to anyone, without any fee and without a restriction of any form. In any other situation, the format is considered to be "closed". Normally, closed formats are owned by firms.

When a file was created by using an open

format, there is no longer possible to lose information. It is always possible to write a program which is able to read old files, created by other software, if the format is known. This is important for cases when the company which wrote the software vanishes, or when it tries to ask unfair prices, or when the new version of software doesn't meet the user's requirements.

Consequently, the open formats used for the creation of the office documents – text processors, spreadsheets, presentations etc. – are important for anyone, from citizens, to businesses and public institutions.

From many documents which are currently created, there is some vital information, whose autonomy and accessibility should be guaranteed on long term, regardless the software used to be created or the format used to be written. Those are documents emitted by the government, laws, contracts etc.

### **OpenDocument = the first open standard for office formats**

Presently, the office documents like letters, presentations, draws, charts, are mostly exchanged as computer files that use the binary formats of the Microsoft company: .doc, .ppt, .xls. According to a general acceptance, the new XML-based technologies will replace, for the office documents, the obsolete binary formats.

From 1999, Stardivision and later Sun Microsystems developed the OpenDocument format ODF, within the OpenOffice.org project, as a public and free alternative to other proprietary formats, like .doc, .xls, .ppt. The format, an XML-based document markup language, is independent of any software producer, or any software product. Any interested person has unrestricted access to the specifications and may develop his/her own programs to implement the format.

For the standardization of the OpenDocument format, the Organization for the Advancement of Structural Information Standards – OASIS was created in 2002. This is a consortium of important industrial companies, like Boeing, IBM, Sun Microsystems, Microsoft etc. The great number of members

in the consortium and the prestige of the members is a guarantee for the permanence of the format and that the files written in OpenDocument will also be accessible on long term. The OpenDocument format was homologated as international format at OSI – the International Standards Organization in November 2006.

In March 2006, the Open Document Format Alliance was founded in order to promote the format, to sensitize the public and the provost in order to introduce open standards and open technologies. Starting initially with 35 founding members, the alliance had more than 280 members in July 2006.

### **Arguments in favor of the Open Standards**

The logic behind using open standards and the transparency that accompanies their creation are impossible to call in question. Open standards concur to a greater diversity and promote competitively. Anybody has access to the specifications and may create his/her own programs. There is no competition on the format, only the applications which implement the format are competing on the software market. Under such circumstances, the best product will conquer the market.

Regarding the office documents, another important argument in favor of using open formats is to protect the free access of the citizens to public information, which were obtained by spending public funds. Census information, meteorological data, statistics about public health, scientific research reports, laws etc. should remain accessible to every person. It should avoid to become captive to some proprietary formats and/or to some specific software products.

Despite of all technical, economical or common sense arguments, and the transparency that accompanies the development of open standards, their large scale adoption is delayed by inertial factors, as well as by the opposition of the great software producers

In the case of the office applications, there is a powerful product, that can be freely downloaded from Internet and is ready to use: OpenOffice.org It has no intercommunication

or compatibility problems with other programs, that we are nowadays using.

### **OpenOffice.org – a free and viable alternative that uses an open standard**

OpenOffice.org 2 is a prominent office suite, similar to the Microsoft Office product, that is currently at the version 2.4. The most important components of the suite are:

Writer – a word-processor, like Microsoft Office Word

Calc – a spreadsheet program, similar to Microsoft Office Excel

Impress – presentation program like Microsoft Office Power Point

Base – a database product like Microsoft Office Access

This office software suite is available in many languages. The Romanian version is under development. The corresponding Web page <http://ro.openoffice.org> contains many useful information about the project, the translated documentation etc.

The OpenOffice suite is available for many platforms: Windows /9x/ME/NT/2000/XP, Linux, Solaris, Mac OS, Sun Solaris.

A very important feature of the package is that it uses the OpenDocument standard, which guaranties the autonomy of information and the free access to it.

OpenOffice is able to recognize the file formats created by other similar office suites. For example, it is possible to open Office files, to process their content and finally, to choose the format to the save result from Microsoft Office, PDF, Macromedia Flash SWF etc. The interoperability between OpenOffice and Microsoft Office is very good: the Office files you open, may contain formulas, charts, video files, embedded objects OLE etc. Hence, it is easy to migrate from another office product to OpenOffice.

The graphical interface of the OpenOffice components is alike to the interface of other office productivity programs. For the end user, utilizing OpenOffice is as simple as any similar office software. Transition from a commercial software to OpenOffice is not more difficult, or expensive as periodically upgrading an office product.

But in time, there is a significant money saving, from the lack of license costs.

OpenOffice.org contains everything you need in an office productivity program, for free. It is a remarkable package, that assures the simultaneous fulfillment of more objectives:

long term availability of digital documents, by storing the data in an open standard format

it offers a powerful and stable environment, with great working facilities for the user

the suite is completely free of charge for any kind of use – domestic, commercial, educational etc.

being developed as open project, you may enjoy the benefits of open-source software; that means, full access to the code and the possibilities to adjust it according to your own needs

It can be said that, almost everything that can be done in Microsoft Office, the leader software suite for office applications, can also be done in OpenOffice, for free.

There are also some minor disadvantages to mention. The tools that compose the OpenOffice suite do not have as many features as their Microsoft Office correspondents. But the most of the missing features are things that a common user does not use and may never even notice the features that are lacking.

Additionally, when you purchase a commercial software license, it also entitles you to technical assistance from the producer. The technical support for OpenOffice is restricted in comparison to a commercial program, and is limited to the information available on the Internet.

### **OpenDocument and OpenXML – two competitive standards**

Microsoft, the present office software market leader, with Microsoft Office, does not support the OpenDocument international standard.

The controversy started in August 2005 when the Commonwealth of Massachusetts – USA decided to select OpenDocument and OpenOffice.org as the mean to guarantee the long term persistence for digital office files. This

measure should be putted in practice from January, 2007. The OpenDocument format was chosen after a detailed analysis, which took over two years, of the existent file formats and after discussions with specialists and even with Microsoft representatives.

The move to switch to OpenOffice.org is implicitly done in the detriment of some commercial software products, where the dominant place is hold by Microsoft. On the other side, approximate 40% of the Microsoft's revenue is made by Microsoft Office.

The reaction of the software giant was to promote its own format, known as OpenXML, which could be better controlled by Microsoft and to accelerate the approval of OpenXML as ISO standard. At the same time, a media campaign was started in the United State against the decision to choose the OpenDocument format. The attacks were started by two organizations sponsored by Microsoft, "Citizens Against Government Waste" and "Americans for Technology Leadership". They pretend that the decision to choose the OpenDocument format is a terrible mistake, which will lead to a waste of public funds. Those arguments were criticized as having "errors and serious omissions". The whole story is related in the Linux Journal from October 2005.

The Office OpenXML (OOXML) specifications were sent for fast-track standardization to the Technical Committee of ISO in December 2006. The proposal was registered as Draft International Standard - DIS 29500. But the ISO fast-tracking of OpenXML is facing technical problems. The round of voting of ISO national body members from September 2007 has rejected the draft text. Meanwhile, the technical problems were solved and the specifications were brought closer to the requirements of an international standard. In April 2008, the ISO technical board announced that OpenXML is meeting the necessary number of votes for the standardization. It may figure out that, Office OpenXML could become an international standard at the end of 2008, as ISO/IEC 29500.

### **What will happen next?**

Since the OpenDocument format is an ISO standard, it should be included in the Microsoft Office suite by default, among other recognizable formats. Nothing from the policy of an open standard hinders such a thing. Technically, it would be simple for Microsoft to add the necessary code to the office suite in order to allow the opening and processing of OpenDocument files, like Microsoft has done for other formats RTF, PDF, WordPerfect etc.

Additionally, it is absurd in itself to have two standards for the same thing.

The present situation shows that the OpenDocument format is well-supported by many powerful software products – OpenOffice.org, KOffice, Google Docs, IBM Lotus Symphony - and is available cross-platform on Windows, Linux, Mac OS, Solaris. Unlike OpenDocument, the Microsoft's format is only supported by proprietary software from one vendor. Because OpenXML has been designed by taking into account of the Microsoft Office's features and its whole history, the specifications of Office OpenXML is over 6000 pages long. That makes it difficult for other software producer to implement the OpenXML format.

Microsoft is going to impose a case where everybody must accept both standards. The advent of a second international standard will complicate the situation, by increasing the costs and the complexity of the software, due to the necessity to operate with multiple standards. The conversion of documents, from one standard to another, may also lead to problems, as the standards are not entirely congruent and may offer different features. The real war has just begun and the situations are rapid evolving.

### **Who is using OpenDocument ?**

The decision of the Commonwealth of Massachusetts from August 2005 triggered a series of similar measures. Many central or local governments, ministries, departments etc. chosen to use the OpenDocument standard and the OpenOffice suite. Here are some significant examples:

Finland – the Ministry of Justice is using from January 2007 the OpenOffice.org

Germany – the Federal Foreign Office has migrated to OpenOffice.org with all 250 foreign offices outside the country

Russia – Russian Ministry for Information Technologies and Communications will adopt OpenDocument format for government documents

definite decisions for using open standards and open technologies, which are underlying different stages of implementation, can be found in: Argentina, Belgium, Norway, United Kingdom, Denmark, France, Lithuania, the Netherlands, South Africa, India, Japan, Australia, New Zealand, Malaysia etc.

### What does the European Union Say?

The European Union showed a constant concern regarding the responsibility of the European public sector to ensure the unrestricted access to its information. Since 2004, the Pan-European eGovernment Services Committee - PEGSCO, through its technical group, required Microsoft to consider the advantages of using XML-based formats and emphasized the need of the existence of a single standard for electronic documents. The Web page

<http://ec.europa.eu/idabc/en/document/3439>

reveals the efforts made in this direction.

In an updated report from 2007, the PEGSCO committee places emphasis on fact that the public sector must avoid to impose upon its communication partners – citizens, businesses etc. - the use of specific software products, leaving them the freedom of choice.

The report also reviews the strategies adopted by EU member states regarding the usage of open standards and open technologies.

### Bucharest, eLiberatica 2008

The open standard topic is well known in Romania, especially by Linux and open-source software users. The Ministry for Communications and Information Technology mentions in a report from 2005 the requirement of adopting open standards in the

public administration and the need to assure the independence from some technology suppliers. What seems yet to lack are more decided decisive measures in that direction.

Surely, the topic will be again re-launched by eLiberatica 2008, the annual Free and Open Source Software conference, which will take place on 30-31<sup>st</sup> May 2008 in Bucharest, under the motto "The Benefits of Open & Free Technologies". (see [www.eliberatica.ro](http://www.eliberatica.ro))

### Which is the best long-term decision?

The need of using open standard formats instead of proprietary formats is presently unanimous accepted. The old binary formats, used by office software, are leading frequently to information losses and do not benefit of the advantages of XML technologies (flexibility, extensibility, easy recovery etc.)

The existence of two international standardized formats until the end of this year, OpenDocument și OpenXML, is almost sure. This will make necessary to operate with multiple formats, leading to unwanted effects regarding the software complexity and increased costs. Some recent efforts are intended to facilitate the interoperability between software suites that use different standards.

It is unlikely that the Office OpenXML format will dominate the future office document formats in a manner in which the old formats did. On the other side, the large scale usage of the OpenDocument format, not only by office software products, entitle us to believe that this format will continue to exist and to extend itself.

Should we wait the end of the format war before we can take a decision? I think, we shouldn't. Many actions taken by governments all over the world toward using open-source technologies entitle us to follow a similar way in the Romanian public sector.

There is now a viable free alternative to Microsoft Office, namely OpenOffice, which should be made known to provost, policy-makers and to all that didn't hear about it.

### What measures can be taken in the public

**sector?**

Some recommendations can be made in order to promote the use of open standards and open technologies in the public sector, schools and everywhere where public funds are spent. The measures to be taken are essentially managerial and require minimal efforts, but it can lead to the reach of a critical mass, from where the usage of open standards would face no problems:

anyone can install on the computer the OpenOffice suite (it's free) and can begin to use it

public institutions should accept the use of OpenDocument format in the communication with its partners – citizens, businesses, etc.

it should be avoided the exclusive usage of one specific office software product archives to be maintained should rely on open standard format files

every public institution should provide its information using several formats, including an open format

standard usage of the open format (for the time being OpenDocument) in order to read, write and exchange of digital documents inside the institution

elaboration of detailed migration plans to the use of open standards and open technologies in the case of large departments

**Disclaimer**

The present work does not represent a rejection

of commercial software, like Microsoft Office. Commercial products will continue to hold a significant part of the software market, in order to satisfy specific client needs

Some information presented by this work may be incomplete. It corresponds to the state existing in April 2008. However, I appreciate that the presented ideas are entirely correct.

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