Evaluation of Open Source Office Suites for the use in Public Administration of the Republic of Croatia from a Security Perspective

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Abstract. *In this paper we will present an evaluation of open source office suites for the use in public administration of the Republic of Croatia from a security oriented view. Security is an important factor in this evaluation since there is no guarantee from a software developer company that can provide the necessary backdrop for a huge organization like the public administration. Since the government of Croatia issued a policy where the use of open source software is strongly encouraged and recommended there was no public evaluation of possible office suites. By basing our reasoning on different research conducted in the European Union and worldwide we propose a number of applications that would be appropriate for office use in public administration.*

Keywords. open source, e-Croatia, office suites, security, evaluation

1 Introduction

In a session held 12^{th} July 2006 the Government of Croatia issued a policy concerning further development and usage of open source computer programs in public administration. The policy was issued to support the e-Croatia program according to guidelines from the European Union and beside definitions accents the neccesity of using open source software and open software standards in public administration [12].

Free and open source software is primarily used in the network infrastructure of the Croatian academic community as well as in some governmental departments. Free software is still not in an equal position to proprietary software even if the government could save milions of euro mostly due to freeing from licencing contracts [7].

According to this reasoning we give an evaluation of open source software for the particular part of office work that is very often in public administration from a security perpective as well as define requirements and criteriae for evaluation.

2 Requirements and Criteriae Definition

After analizying guidelines from various sources like the British Government of Commerce [2], the European Commission [1] [3] [4], the governmental Central Office for e-Croatia [6] [5] as well as documents dealing with the inner organization of public administration [8], [9], [10], [11] we were able to define the following categories of office software that are needed in Croatian public administration with referent as well as software that were evaluated.

- **desktop environment** - referent environment is *Microsoft Windows*; evaluated were *Gnome* and *KDE*
- **text processing** - referent tool is *Microsoft Word*; evaluated were *AbiWord*, *KWord* and *OpenOffice.org Writer*

- **spreadsheet calculation** - referent tool is *Microsoft Excell*; evaluated were *Gnumeric*, *KSpread* and *OpenOffice.org Calc*
- **presentation** - referent tool is *Microsoft PowerPoint*; evaluated were *KPresenter* and *OpenOffice.org Impress*
- **e-mail and organizer** - referent tool is *Microsoft Outlook*; evaluated were *Evolution* and *Kontact*
- **web browser** - referent tools are *Microsoft Internet Explorer and Mozilla Firefox*; evaluated were *Mozilla Firefox* and *Konqueror*
- **databases** - referent tool is *Microsoft Access*; evaluated were *Kexi* and *OpenOffice.org Base*
- **project management** - referent tool is *Microsoft Project*; evaluated were *Planner*, *KPlato* and *TaskJuggler*
- **desktop publishing** - referent tool is *Adobe Page Maker*; evaluated were *Scribus* and *OpenOffice.org Draw*
- **raster graphics** - referent tool is *Adobe Photoshop*; evaluated were *Gimp* and *Krita*
- **vactor graphics and diagramming software** - referent tool is *Microsoft Visio*; evaluated were *Dia*, *Kivio* and *OpenOffice.org Draw*

The defined criteriae were the following:

- **interface intuitivity** - denotes the level of similarity with regard to the referent proprietary tool
- **functionality** - denotes the level of advanced function implementattion with regard to the referent proprietary tool
- **performance** - denotes performance issues like speed, memory consumption etc.
- **stability** - denotes the stability of the tool in normal conditions
- **support options** - denotes the possibilities of outside support from professionals and consulting agencies

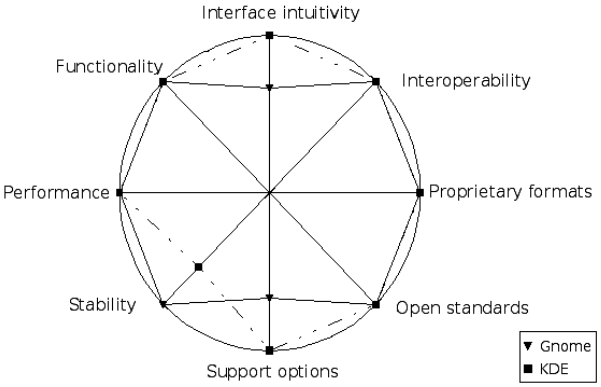

Figure 1: Radar diagram from the comparison between the KDE and the Gnome desktop environments

- **support for open standards** - in what extend are open standards supported
- **support for proprietary formats** - in what extend are proprietary formats supported
- **interoperability and connectivity** - denotes the possibilities of connecting the tool with other software

3 Evaluation

The mentioned tools were scored on a 3-level scale (low, medium, high), and compared using radar diagrams like the one shown on figure 1. The evaluation showed that maybe the most important decision is the decision about the desktop environment. Various tools are more stable, are more optimized and yield better performance when used in their natural environment. This does not hold true for tools from the OpenOffice.org suite since they perform well under both environments.

Even if the differences between the two desktop environments Gnome and KDE are minimal we give a slight preference to the letter. Nevertheless in our final proposal we give two possible options depending on the environment chosen.

The evaluation showed that tools from the OpenOffice.org suite are most mature and intuitive. Also since they are implemented in Java and are mutualy compatible they are the first choice where ever there is a tool for a defined category except for

Table 1: Final proposals summary

Software category	KDE option	Gnome option
Desktop environment	KDE	Gnome
Text processing	OpenOffice.org Writer	OpenOffice.org Writer
Spreadsheet calculator	OpenOffice.org Calc	OpenOffice.org Calc
Presentation	OpenOffice.org Impress	OpenOffice.org Impress
E-mail and organizer	Kontact	Evolution
Web browser	Konqueror	Mozilla Firefox
Database	OpenOffice.org Base	OpenOffice.org Base
Project management	TaskJuggler	TaskJuggler
Desktop publishing	Scribus / OpenOffice.org Draw	Scribus / OpenOffice.org Draw
Raster graphics	Krita	Gimp
Vector graphics	Kivio	Dia

vector graphics. The ability to perform well under any evaluated environment leaves the possibility of paralel testing of both environments open. Table 1 sumarizes the final proposals.

As one can see in both options OpenOffice.org tools were chosen where available as well as two environment independent tools Scribus and TaskJuggler. It must be mentioned that in the project management category where TaskJuggler was chosen there are no satisfying open source tools avalable thus the development of these tools should be monitored in the future. In all the other categories tools that are designed for the corresponding environment were chosen.

In the end it should be mentioned that KDE tools are more intuitive for users familiar with Microsoft technologies while Gnome tools are more stable and functional.

4 Conclusion

In this paper we presented the results from an evaluation of open source office suites for the use in public administration of the Republic of Croatia from a security point of view. The Government of Croatia issued a policy according to which it will support usage of open source software and open standard file formats and protocols. Still there was no public evaluation of open source office suites up to this date. Thus to close this gap we defined important criteriae for the migration from proprietary soultions following guidelines from the European Union.

The analysis of various documents issued by various government agencies showed that there are 11 categories of software that should be taken into consideration when talking about public administration office work. These categories are desktop environment, text processing, spreadsheet calculation, presentation, e-mail and organizer, web browser, databases, project management, desktop publishing, raster graphics as well as vactor graphics and diagramming software.

Most mature open source tools from these categories were scored with regard to 8 criteriae and compared using radar diagrams. The criteriae were interface intuitivity, functionality, performance, stability, support options, support for open standards, support for proprietary formats as well as interoperability and connectivity.

The most important decision to make is the decision about the desktop environment. Since both evaluated envoronments (Gnome and KDE) are satisfactory we propose two possible solutions with a slight preference to KDE due to greater intuitivity. From a security perspective Gnome seems to be the better choice.

Tools from the OpenOffice.org suite turned out to be the most mature ones and were chosen regardless to desktop environment. For the category project management there is no satisfactory tool yet but TaskJuggler seems promising.

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References

[1] Commission of the European Communities: eEurope 2005: An information society for all, An Action Plan to be presented in view of the Sevilla European Council, Brussels, 28.5.2002, available at http://europa.eu/information_society/eeurope/2002/news_library/documents/eeurope2005/eeurope2005_en.pdf, Acessed: 1^{st} September 2007.

[2] Office of Government Commerce: Open Source Software Trials in Government, Final Report, avaiable at http://www.arb.ca.gov/oss/articles/report-v8d.pdf, Accessed: 7^{th} September 2007.

[3] Europe's Information Society: i2010 - A European Information Society for growth and employment, avaiable at http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm, Accessed: 2^{nd} September 2007.

[4] European Commission: eGovernment in Croatia, eGovernment Factsheets, July 2007, Version 7.0, avaiable at http://www.epractice.eu/files/media/media714.pdf, Accessed: 30^{th} August 2007.

[5] Ministarstvo znanosti i tehnologije: Od e-Governmenta do e-Hrvatske, Izvješće Hrvatska u 21. stoljeću, Nacionalno izvješće o provedbi strategije Informacijska i komunikacijska tehnologija Hrvatska u 21. Stoljeću Od 2002. Do 2003. Godine, Zagreb, November 2003., available at http://www.trend.hr/clanak.aspx?BrojID=28&KatID=10&ClanakID=333&Stranica=2, Accessed: 16^{th} August 2007.

[6] Središnji državni ured za e-Hrvatsku: Operativni plan provedbe Programa e-Hrvatska 2007. s pregledom aktivnosti u 2007. godini, available at http://www.e-hrvatska.hr/sdu/hr/e-hrv/contentParagraph/011111111111113/document1/Operativni_plan_eHrvatska_za_2007.pdf, Accessed: 30^{th} August 2007.

[7] Šimić D, Dragičević D, Košturjak V, Dejanović R, Rikalo Ž, Rašeta I, Zimmer K, Velimirović I: Tribina Hakerska Hrvatska u KIC-u - Press Release, HULK, avaliable at http://www.linux.hr/modules/news/print.php?storyid=1553, Accessed: 18^{th} August 2007.

[8] Vlada Republike Hrvatske: Uredba o nečelima za unutarnje ustrojstvo tijela državne uprave, avaliable at http://www.nn.hr/clanci/sluzbeno/2001/0714.htm, Accessed: 6^{th} September 2007.

[9] Vlada Republike Hrvatske: Uredba o unutarnjem ustrojstvu i načinu rada Hrvatske informacijsko-dokumentacijske referalne agencije, avaliable at http://www.nn.hr/clanci/sluzbeno/2005/1244.htm, Accessed: 6^{th} September 2007.

[10] Vlada Republike Hrvatske: Uredba o unutarnjem ustrojstvu Središnjeg državnog ureda za e-Hrvatsku, avaliable at http://www.nn.hr/clanci/sluzbeno/2005/1532.htm, Accessed: 6^{th} September 2007.

[11] Vlada Republike Hrvatske: Uredba o unutarnjem ustrojstvu središnjeg državnog ureda za upravu, avaliable at http://www.nn.hr/clanci/sluzbeno/2004/0319.htm, Accessed: 4^{th} September 2007.

[12] Vlada Republike Hrvatske: Odrednice razvitka i uporabe računalnih programa s otvorenim kodom u tijelima državne uprave (Politika otvorenog programskog koda), 12^{th} July 2006, available at http://www.e-hrvatska.hr/repozitorij/dokumenti/downloads/OSSpolicy_Odrednice.pdf, Accessed: 18^{th} August 2007.