DEVOteam
FISCHER & LORENZ

Choosing an Office Suite

Decision support based on six migrations to MS Office 2003 and OpenOffice.org respectively

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Connecting Business & Technology

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Background and introduction

In October 2002, the Danish Board of Technology published the report: "Open source software – in the public administration". The term "Open Source" describes user access to source code; that is, the source code can be modified and distributed freely. In essence, Open Source Software has no "commercial owner" and can be used free of charge (except for distribution costs).

The report from the Danish Board of Technology created a useful debate, during which the following list of essential questions about open source software was raised:

- Can software products developed on an Open Source basis replace proprietary software products? Can we trust that the software is developed according to principles of good practice, and will the software be as reliable as proprietary software?
- Do you need to increase your IT staff in order to operate and maintain the Open-Source-based software?
- Can you get access to external support on Open Source Software or are you left on your own?
- If Open Source Software proves to be a trustworthy option, will it then be economically preferable to choose Open Source Software?

The answers to the above raised questions were not given in the debate – but Open Source as an issue was now brought to the public agenda.

During the summer of 2003 the Danish Ministry of Science, Technology & Innovation on behalf of the Danish Government launched a *software strategy*, in which the main objective is to foster *competition, quality of services* and *coherence* in public software solutions based on the following principles:

- Maximum value for money irrespective of the type of software
- Competition, independence and freedom of choice
- Interoperability and flexibility
- Development and innovation

As a means of implementing this strategy, a natural step was therefore to seek more knowledge about the extent to which Open Source Software could be included in the portfolio of public software solutions.

In co-operation with Local Government Denmark and Danish Regions (thereby covering all public administration in Denmark) the Danish Ministry of Science, Technology & Innovation decided to conduct an experiment using different types of

desktop-software[1] including Open-Source-based desktop solutions. The aim of the experiment was to gain more knowledge about cost structures and quality as well as the economic value of the investment in proprietary and Open-Source-based desktop software, respectively.

The target group for the results of the experiment is public authorities and institutions considering upgrading or replacing their desktop solution. This target group should be able to utilise the findings of the experiment as decision support.

The experiment has been conducted based on an *evaluation model* developed by Devoteam Fischer & Lorenz. The evaluation model is built in order to clarify which software type will provide the maximum value for money and thereby support the principles in the Danish Government's software strategy.

The model has been applied in several pilot-experiments, in which public institutions migrated their desktop. In most of these pilots, the desktop was defined as an Office-Suite (that is word processing, spread sheets and presentations). In consequence, the conclusions in this paper primarily concern the office suite.

The evaluation model is placed at the disposal of the target group as a means for preparing a qualified business case.

In the next sections, the evaluation model and the pilot-experiments performed are briefly introduced.

We then turn to the main conclusions of the experiment in terms of which options are available when choosing an office suite, when to replace or upgrade an office suite, and what the important decision parameters are.

[1] The term *desktop* is in this context defined as the set of applications to which an end-user has been granted access, for instance the office suite, personal databases, a document management system etc., including necessary basic software and hardware.

The evaluation model

Figure 1 illustrates the Desktop Evaluation Model:

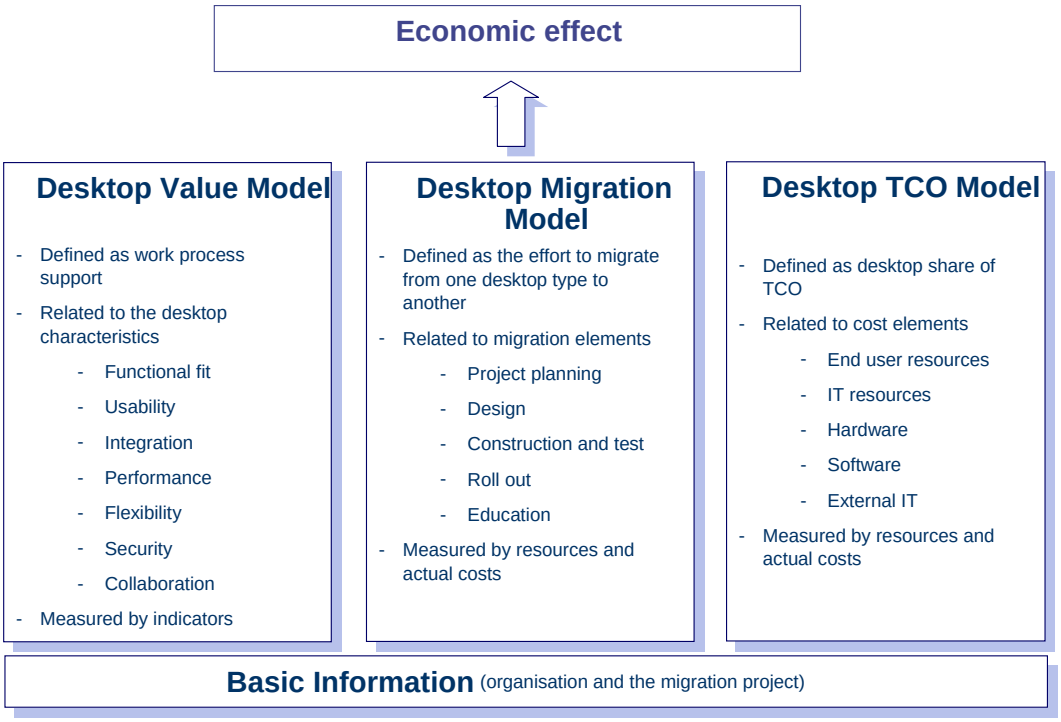

Figure 1 - Desktop Evaluation Model

The elements of the model are:

- A description of the economic effect of the desktop in work processes, expressed as productivity and resources used. This has been measured both pre- and post-migrating the desktop.
- The Desktop Value Model, which measures the functional and technical quality of the desktop. This has been measured both pre- and post-migrating the desktop.
- The Desktop Model, which measures the effort to migrate from one desktop type to another (switching costs).
- The TCO[2] Model, which measures the desktop share of TCO. This has been measured both pre- and post-migrating the desktop.
- The basic characteristics about the organisation and the migration project (*basic information),* which are needed to understand the results of the evaluation.

[2] TCO (Total Cost of Ownership) is a *de facto* standard for calculating direct as well as indirect costs related to the use of IT. Gartner originally introduced TCO.

The pilot experiments

In all, six pilot experiments have been conducted, as shown in Figure 2:

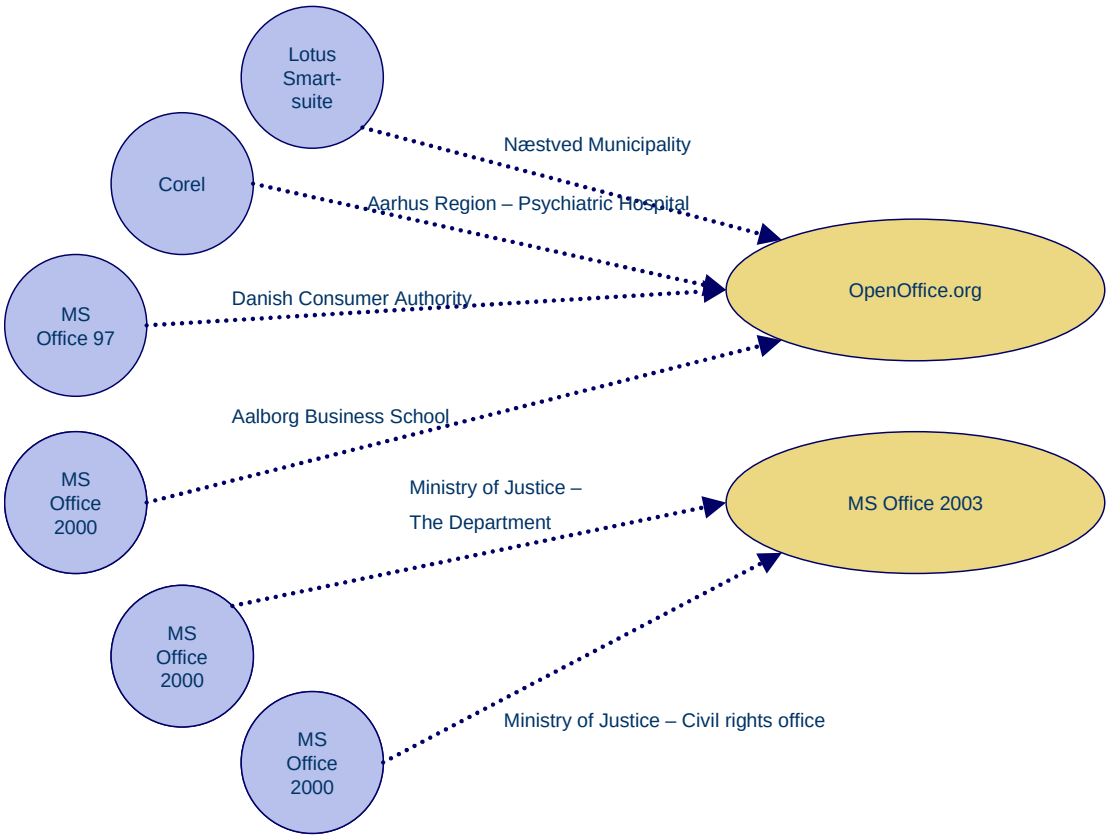

Figure 2 - The pilot experiments

Each of the pilot institutions has used the evaluation model to perform measurements pre- and post-migration. The post-migration measurements have been taken after a period of three to five months, where the users have had the opportunity to become familiar with the new product.

The Municipality of Næstved, the Psychiatric Hospital in Aarhus and the two offices in the Ministry of Justice have, after having performed the experiment, decided to use the new office suite for all users.

At the Business School in Aalborg, the manager in charge of the experiment has recommended that all users in the school administration should use OpenOffice.org. The final decision will be made in the first quarter of 2005.

The Danish Consumer Authority has decided *not* to migrate all user-desktops to OpenOffice.org. The reason for this decision is that, during the experiment, the authority was moved from the Ministry of Economics to a newly formed Ministry of

Family Affairs. This Ministry will need to define its overall IT strategy prior to deciding about office suites.

Finally, yet another experiment was planned to be performed at the *Municipality of Roskilde*. This experiment was extremely interesting, since it was planned to be performed on the basis of a *broad* desktop definition, that is including migrating operating system as well as the office suite and other systems. However, the municipality is (like the majority of Danish municipalities) using standard systems supplied by the Danish system vendor KMD. These systems serve various purposes such as HR and financial management among others. During the pre-analysis of the experiment, it became clear, that it would *not* be possible for KMD to develop versions of their system, that were able to run a Linux platform. Therefore – unfortunately – this experiment wasn't performed.

Which options are available?

The experiment has shown that OpenOffice.org 1.1 (the office suite based on Open Source Software that was the target in four of the pilot experiments) is a valid alternative to MS Office 2003 (the proprietary software that was the target in two of the pilot experiments). The findings in the pilot experiments show:

- The users (with respect to their needs) *rate the functional quality of both of the products* highly. The condition is, however, a well-planned and carefully-conducted organisational implementation project, including well-tailored and targeted training.
- The CIOs[3] (with respect to the needs of the institution) *rate the technical quality of both products highly.*
- The *only* difference in the total costs (direct as well as indirect) for the two products is that *no license fees have to be paid in choosing OpenOffice.org*. License fees for office suites typically amount to 3-4% of the total costs.
- There is *no visible economic effect* (neither influence in the use of resources nor in productivity) in the workflows, no matter which office suite has been chosen.
- *The migration project is in both cases manageable* – technically as well as economically, no matter which office suite has been chosen.

When to replace or upgrade your Office Suite?

Based on the experiment, Devoteam Fischer & Lorenz have found three "driving forces" behind office suite replacement: the technology, the organisations need and market development:

- You must replace your office suite when you have a "burning platform". This is the case when your current office suite no longer is maintained and supported, or

[3] Chief Information Officer – Head of IT Department

if your current office suite is suffering from major defects complicating the business. This replacement is *technologically driven.*

- You must replace or upgrade your office suite, if you can present a solid business case for doing so. This replacement (or upgrade) is *organisationally driven*.
- You should *not necessarily* replace or upgrade your office suites automatically in line with new versions of the software being introduced by the vendors. Our pilot experiments clearly demonstrate that, in their daily work, the end-users see no need for new functionality. A replacement (or upgrade) due to a new version of the software is *market driven.*

No matter the reason for considering replacing or upgrading office suite, you should always prepare a business case that, for instance, could indicate which office suite is the most preferable for your organisation.

The recommendation in the business case must, of course, be considered in connection with the rest of the organisation's initiatives and in accordance with the overall strategy of the organisation.

Important decision parameters

The experiment has demonstrated that the most important decision parameters when choosing an office suite are related to the organisation's need for:

- Integration between the office suite and other IT systems (for instance document management systems)
- The exchange of documents between different types of office suites

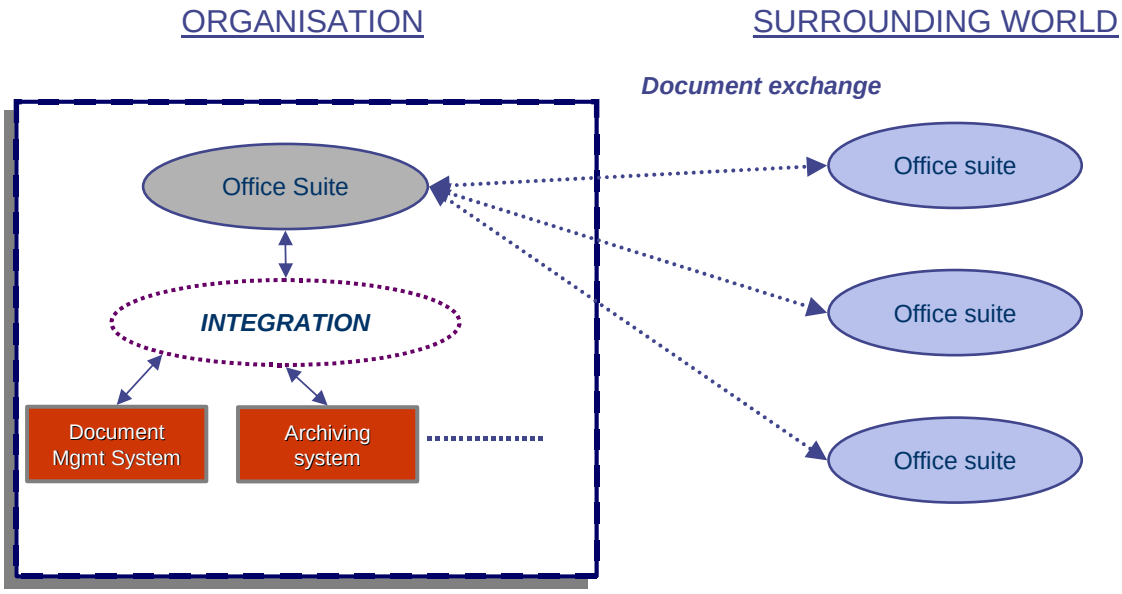

Figure 3 - Important decision parameters

The widespread use of MS Office means that many other proprietary systems on the market have established interfaces with this office suite. If the organisation has utilised this to create - from a user perspective – a transparent user interface (allowing, for instance, the user's direct access to files in the document management system through the word processor) it may *currently* be highly cost-demanding for such an organisation to re-establish these interfaces to OpenOffice.org, for example.

However, this barrier to choosing OpenOffice.org is expected to be overcome as more and more organisations asking for a choice of software according to organisational needs with no integration limitations. These requests will involve more and more vendors of proprietary software developing open interfaces.

The widespread use of MS Office has also resulted in the fact that many organisations – nationally as well as internationally – have used MS Office to develop complex models, typically Excel-spreadsheets. Such spreadsheets can of course be exchanged between two organisations both using MS Office with no problems, but the experiment shows that, for example, a highly complex spreadsheet model, originally developed in MS Office, is not imported and made available for further development in OpenOffice.org without problems. In the short term, the solution for an organisation wishing to start using OpenOffice.org, but at the same time having the exchange barrier described above, is to have *two* suites available for the affected employees.

However, when the integration barrier has been overcome (thereby stimulating the spread of alternative office suites), an increased demand for the definition of recognised document exchange formats for all relevant types of documents will arise. When these standards are respected and adopted by the market, the latter barrier will be overcome.

Preparing the business case

Besides the above-mentioned two important decision parameters derived from the experiment, there are of course other issues of a strategic nature for the organisation to consider:

- Alignment with the business and IT strategy of the organisation
- Relevant market–development considerations, including future supply, exit costs, etc.

Should these initial considerations lead to the conclusion that replacing or upgrading the desktop is a possibility, one or more business cases should be prepared in order to help the organisation choose the most advantageous office suite.

In order to prepare the business case(s) the evaluation model used in this experiment can be applied.

Organisational implementation

The experiment clearly points out that – no matter whether you upgrade the office suite or the office suite is replaced – the organisational implementation *must not be underestimated*.

The end-users must be offered appropriate, targeted training, aimed at ensuring that their perception of quality as a minimum is kept at the same level, as was the case for the former office suite.

Furthermore the experiment illustrates, that the so-called end-user resources (time spent by the users solving office-suite problems themselves or helping their colleagues) decrease after participation in targeted training. Reasonably heavy resources are thereby released, which can be carried out with the appropriate leadership, thus obtaining an increase in productivity and/or cost savings.

The foundation for the conclusions in this paper

As mentioned previously, the experiment has been performed on the basis of an evaluation model. The data in this model was captured from:

- Files from accounting and book-keeping in the pilot institutions
- Files (or estimates) documenting the time spent in the IT department performing tasks related to the operation of the desktop
- Workshops with end-users about selected work processes, aimed at measuring productivity and the use of resources
- Systematic evaluation of the technical quality performed by the CIOs in the pilot institution
- Questionnaires to be filled out by the end-users

The end-user questionnaires are used to collect the end-users' views of the functional quality of the desktop and the end-user resources used in relation to the desktop. Example of end-user resources include time spent on solving desktop-problems, helping colleagues etc.

The use of questionnaires – especially when it comes to end-user resources – demands that a sufficient number of questionnaires are filled in and that the employees filling in the questionnaires are selected representatively for the total group of users having their desktop replaced or upgraded.

In the opinion of Devoteam Fischer & Lorenz, in all of the pilot experiments, the respondents have been chosen representatively. However, the number of questionnaires filled in, in some pilot experiments, has not been high enough to eliminate statistical uncertainty. The consequence of this is that, when it comes to end-user resources, it is not possible draw conclusions on the exact numbers. In our opinion, however, the data are sufficiently solid to make a conclusion as to *trends.* This is true whether you choose to compare trends across the performed pilot experiments or you choose to compare the pre- and post-measurements in the individual pilot experiment.

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More information about the experiment is available at www.oio.dk/software.

Appendix: Key Figures from the performed experiments

In this appendix we present key figures from the experiments.

First, we have studied the average distribution of desktop-costs across the TCO-cost-categories. The result is shown in the figure below:

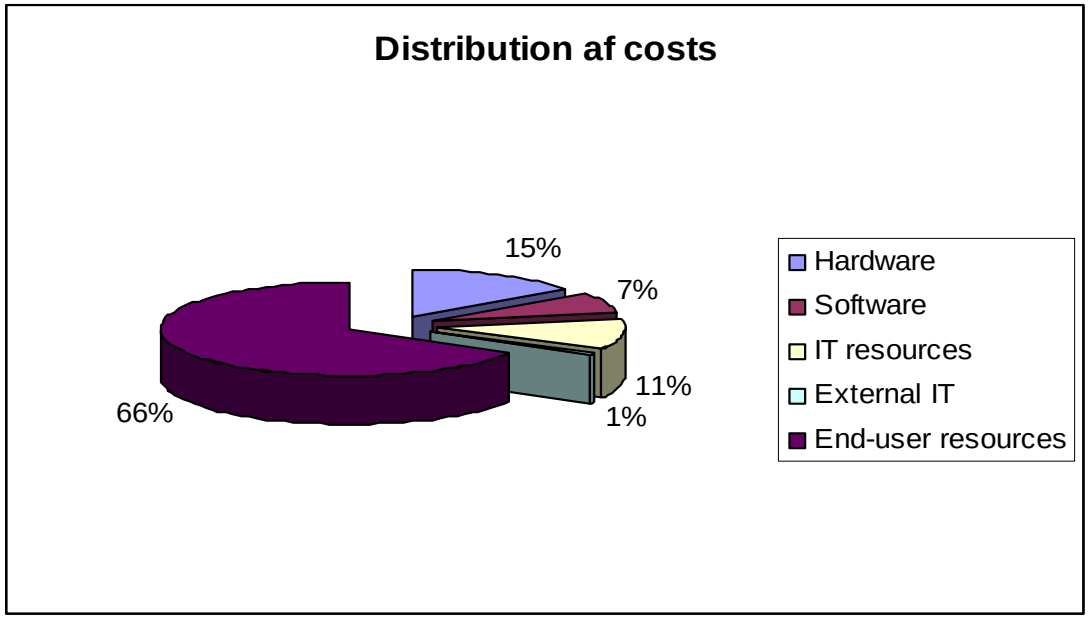

Figure 4 - Distribution of costs

The potential savings – as stated in this paper – when migrating to OpenOffice.org – concern software and end-user resources.

However, software is only 7% of the total costs and this percentage include licenses for not only the office suite, but also for the operating system and other desktop related software packages. The percentage for licenses for the office suite itself is 3-4 %.

End-user resources are much more interesting from a cost saving point-of-view. Our experiments indicate, that given a proper education, these can be reduced by at least 10% by changing office suite (independent of the target product). This saving will clearly outperform savings in licence fees.

On the next page we show key figures from the performed experiments.

Model element	Model element attribute		Næstved Municipality	Aarhus Psychiatric Hospital	Danish Consumer Authority	Aalborg Business School	Ministry af Jusitice - Departement	Ministry of Justice - Civil Rights
Basic information	Employees		1.500	2.200	120	80	190	78
	Employees migrated		100	1.100	65	10	190	78
	Office suite	Pre	Lotus Smartsuite	Corel	MS Office 97	MS Office 97	MS Office 97	MS Office 97
		Post	OpenOffice.org	OpenOffice.org	OpenOffice.org	OpenOffice.org	MS Office 2003	MS Office 2003
	Use of desktop		20%	30%	25%	20%	30%	30%
Value Model	Functional quality	Pre	High	High	High	High	High	High
		Post	High	High	Medium	Medium	High	High
	Technical quality	Pre	Medium	Medium	Medium	High	High	High
		Post	High	High	Medium	High	High	High
Cost model	TCO per user	Pre	€ 3.500	€ 3.600	€ 4.800	€ 4.200	€ 4.800	€ 6.200
		Post	€ 1.700	€ 3.000	€ 3.700	€ 3.800	€ 3.700	€ 5.400
Migration model	Migration costs		€ 63.600	€ 150.000	€ 43.400	€ 20.000	€ 185.000	€ 123.500

Notes:

- The row ‘Use of desktop’ indicates the relative use of the desktop in comparison to the users total use of IT systems.
- The major decrease in TCO for Næstved Municipality is caused by a major decrease in end-user resource costs. However, this finding is based on a very small population of users and is therefore statistically uncertain.