**LIBREOFFICE MIGRATION PROTOCOL**

**Introduction**

The protocol represents a reference for migrations, based on the best practices from some of the most successful projects. We estimate that over the last eight years several million users in organizations of every size have migrated from Microsoft Office to LibreOffice.

**LibreOffice**

LibreOffice is the leading Free Software personal productivity suite for MS Windows, MacOS X and GNU/Linux, offering six feature-rich applications for all document production and data processing needs: Writer for text, Calc for spreadsheets, Impress for presentations, Draw for drawings, Base for databases, and Math for mathematical annotations. LibreOffice source code is dual licensed under LGPLv3/MPL+ copyleft licenses.

LibreOffice adopts the ISO standard Open Document Format (ODF), recognized by many governments and organizations worldwide – including NATO – and based on true open standards, as the default format for all office documents. ODF files can easily be recognized by the filename extension: .odt for texts, .ods for spreadsheets, .odp for presentations, .odg for drawings, .odb for databases and .odf for mathematical formulas.

LibreOffice reads and writes several Microsoft proprietary file formats, from the legacy DOC, XLS and PPT to the new OOXML (Office Open XML) ISO Standard [pseudo]. Since its inception, OOXML has been released in several flavors – Office 2007 (ECMA), Office 2010 (Transitional), Office 2013 (Transitional and Strict), Office 2016 (Transitional and Strict) and Office 2019 (also Transitional and Strict) - with significantly different behaviors.

In addition, LibreOffice allows to save documents in the Hybrid PDF format, a standard PDF file which embeds a fully editable ODF document. These documents can be opened by LibreOffice with File > Open as any other ODF document, and by all other applications as plain PDF files with a double click on the icon.

LibreOffice also provides shortcuts to send documents as e-mail attachments in all available formats: ODF, PDF (including hybrid) and MS Office formats, including legacy.

Eventually, LibreOffice installs only free fonts, which are designed to be compatible with every operating system and therefore able to further increase interoperability by helping to maintain the same layout even if the document is accessed on a different OS from the one used to create the original one.

Because of these characteristics, LibreOffice is very well suited for organizations of all sizes – both public administrations and private enterprises – planning to migrate from proprietary to FOSS to reduce infrastructure and interoperability costs, and to get rid of vendor lock-in.

**Migrating to LibreOffice**

The office suite is an integral component of any workflow, either personal or organizational, and as such is essential for the productivity of most personal computer users. LibreOffice is a viable replacement for Microsoft Office, and can significantly reduce the Total Cost of Ownership of enterprise PCs because it replaces the license cost with a substantially lower migration cost.

The migration to LibreOffice is a complex endeavor from several points of view. There are psychological obstacles to overcome such as the resistance to change of end users – inherent in group dynamics – and technical problems to solve at different stages of the process: the interoperability with proprietary document formats, the conversion of document templates and macros, the compatibility of VBA macros, the integration with third party applications, and the fixing of bugs and regressions. In addition, the deployment of LibreOffice at enterprise level should be based on a long term supported version provided by one of the companies sitting in TDF Advisory Board, with the availability of incremental updates to be installed over the network.

On the other hand, the migration to LibreOffice represents an excellent opportunity to rethink the organization's processes. For example, before migrating any existing Visual Basic macros, it is better to determine if the macros are still needed, in order to discard those that are no

longer used, and re-engineer the remaining ones. The same applies to document templates, and to proprietary plugins which connect the office suite to proprietary enterprise applications.

On that note, LibreOffice 4.0 significantly reduced the necessity of these plugins thanks to CMIS (Content Management Interoperability Services) support, an open standard that allows several content management systems such as MS SharePoint, IBM FileNet, Alfresco and Nuxeo to interoperate over the Internet with compatible client applications, which can browse, read and modify contents.

Looking at the entire migration process, while the resistance to change can be tackled by a sustained communications campaign, under the responsibility of the project manager with the help of a communication expert, technical problems should be approached with the support of development, migrations or training professionals certified by The Document Foundation.

**Lessons learned from successful migrations**

LibreOffice's feature set is more than adequate for the everyday needs of the majority – i.e. more than 90% – of users inside organizations of any size. In general, the few technical obstacles are related to spreadsheets using advanced features or to MS Office macros, which are often difficult to migrate for a number of reasons.

Users should be able to produce documents using LibreOffice right after the training: therefore, it is crucial to complete the setup and the test of the workstations before training begins, as any delay in the installation of LibreOffice will diminish the effect of the training itself. It is also extremely important to offer a reference point for any problem connected to the migration, starting from "technology leaders" up to trained support personnel.

In fact, the production of the first few documents will create a lasting perception about the quality of LibreOffice in the mind of the users: a smooth process will motivate them to continue and try new more advanced features, while stumbling into a problem – even a trivial one – will discourage them and leave a negative feeling.

The biggest problem, then, is the resistance to change, which is a side effect of the introduction

of a new technology in any large organization. This it often seen as a burden in addition to everyday work, and has to be tackled with a carefully crafted communication strategy. Users have to be persuaded that the new tools, after some training, can provide a better and more rewarding user experience.
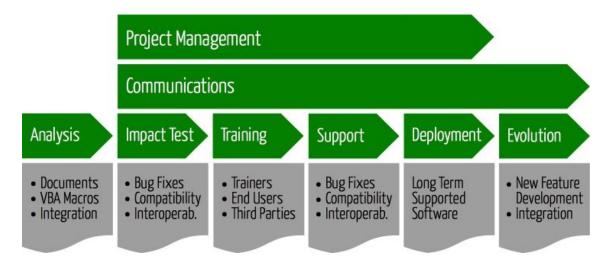
Typical reasons for resistance to change are:

- The fear of the unknown, which triggers the fear of not being good enough to deal with the new technology;

- The perception that the change is being imposed by the top management, which is not using the new tool to the same extent of middle managers and employees;

- A poor communication strategy: when it comes to a change management process there's no such thing as too much communication;

- A change of the routine, which translated into a change - or perceived reduction - of the user's comfort zone;

- A low trust in the organization's, management's or personal capability to competently manage the change;

- A misunderstanding about the need for a change, especially from those who strongly believe that the current way of doing things works well... and has done for twenty years!

- A change in the status quo, which triggers the perception that at the end of the process one's situation will be worse than before (because the change favours another group, such as younger people in the case of old loyal employees).

Of course, the "brute force" method – which consists in installing LibreOffice and eradicating MS Office without any previous warning – is the worst of all choices, as it creates a rejection effect which kills any hope of success.

**Reference Document**

**Migration, Step by Step**



*Communicating the change*

In order to reduce the impact of resistance to change, it is important to start the migration project with a communication activity targeted at the entire organization (and not only to future users of LibreOffice). In fact, migrating to LibreOffice is a strategic move for the organization, and should be communicated with the same emphasis as any other strategic decision.

When the migration process starts, all managers and employees should be familiar with the rationale behind the decision to migrate to LibreOffice (lower TCO and independence from vendor lock-in), and with LibreOffice (history of the project, software features, potential interoperability issues, and so on). It should be clear for everyone that LibreOffice is a viable replacement for Microsoft Office, which has already been implemented on million of desktops worldwide.

*Analysing the Situation*

The aim of a migration project to LibreOffice is to replace Microsoft Office with the free office suite whenever it makes sense. It is therefore very important to assess the potential impact of the migration on every user, by analysing the characteristics of the documents with their templates, the VBA macros and the other automation tools, and the integration with third party

applications.

In addition, the migration represents an opportunity to rethink all internal document related process, in term of templates, versioning, storage, and other characteristics such as the workflow process.

Certified professionals can provide the necessary assessment skills, not only to analyse documents, VBA macros and interoperability issues, but also to suggest solutions (which include costs and timings).

*Starting the migration process*

Once the analysis of the existing situation has been completed, it is possible to start the process by implementing an impact test, which is supposed to help find all of the problems that could affect the migration, and ensure that the document workflow works as intended. Although LibreOffice is, to a large extent, fully compatible with MS Office, it is a different application with specific strengths and drawbacks, and might trigger specific workflow issues. The impact test will also allow to estimate the costs of the migration process.

The Impact Test is carried out by installing LibreOffice on a small number of PCs, which represent the average user. In general, they are the tech savvy users, who will also be involved in the project in other ways. They will be, for instance, trained to train their colleagues to use LibreOffice.

The impact test has a couple of key objectives:

- Identifying critical documents, templates and macros: a good deal of existing documents, templates and macros might not be in use, or will have outlived their usefulness after your move to LibreOffice. Documents and templates that are still in use should be converted to the ODF format, while macros should be re-created using the appropriate technology.

- Creating an inventory of tools and MS Office dependent applications, which are quite frequent in CRM and ERP environments. These applications need to be identified and checked for compatibility with LibreOffice, as the new features might offer an alternative

solution (such as CMIS connectivity). Questionnaires given to team leads or group managers can be used to get a better insight into how the business solutions interact with MS Office.

To minimize support calls and maximize productivity from the start, it is highly advisable to prepare a "welcome" package for users, with supplementary information about LibreOffice, highlighting the basic functionality of the software and the few specific functional differences with MS Office.

### *Switching to open document standards*

It is also important to switch immediately to the standard ODF format for all documents, and resort to legacy or current MS Office document formats only to exchange files with users of the proprietary office suite. File sharing is a crucial issue, because it is essential to be able to develop and exchange information effectively. Using ODF as the default document format helps organizations to establish a repository for all information assets, guaranteed against obsolescence and vendor lock-in.

In addition, MS Office is able to read and write ODF format since version 2007, although with several important exceptions, especially in the case of spreadsheets, up to version 2013 (which supports the reference implementation of ODF 1.2). Also, if the other party does not have LibreOffice and only needs to read or print the document, this can be exchanged in PDF format (in this case, using the Hybrid PDF format gives LibreOffice an edge over any other office suite, as the document retains the formatting).

Of course, choosing the interoperability format for each document might result in an overload and be considered an unnecessary nuisance for the average user, but is a key factor for liberating both the user him/herself and the organization from the constraints of proprietary formats developed by software vendors to perpetuate lock-in. Users and organizations should always remember that closed document formats are limiting not only their freedom but also the ownership of their information assets.

**Reference Document**

*Identifying "tecnology leaders" within the organization*

Once the impact test and the migration to ODF are in place, it is the right time to identify "technology leaders" within the organization: they are the individuals who are recognized by their peers for their tech competence. For instance, they are the ones who are asked about the latest and greatest smartphone or PC to buy, and about the sexiest applications to use.

"Technology leaders" will have a key role in the migration process, as they will become the LibreOffice evangelists and act as the first contact point for providing simple support to users. The role and efforts of the "technology leaders" should be recognized, supported and encouraged through appropriate incentives by the organization's management.

Once the "technology leaders" have been identified, it will be necessary to organize a small number of LibreOffice briefing sessions targeted mainly at senior and middle management, the IT Support team and the "technology leaders". The briefings are intended to achieve the required buy-in of LibreOffice and motivate the decision makers and the opinion leaders about the migration process.

Once the key stakeholders are convinced, they will be able to inform their staff about the migration process and to encourage them to adopt LibreOffice as early as possible after training and installation.

The first group of "technology leaders" should include – if possible – a mix of middle managers and employees in order to penetrate into the different layers of the organization. The group will meet regularly during all the stages of the migration process, to share the different experiences and identify solutions to common issues.

*Training users*

A comprehensive training on LibreOffice – characteristics, advantages, features, peculiarities, and main differences with MS Office – is a fundamental step for any migration project. Training, at different levels, should be provided to IT personnel, trainers, "technology leaders", middle and upper management, and all end users.

Another objective of the training process is to make users aware of the rationale and objectives of the migration project, so that it is not perceived as a mere solution to budget-related issues. In fact, migrating to LibreOffice offers the opportunity of adopting a truly open and standard format, intended to protect the freedom of each individual's creative work and contribute to the growth of a Free Software project which is beneficial to the user community at large (beyond any kind of border).

Users, including middle and upper managers, should be segmented for technical skills, training needs and organizational units. These groups form the basis for planning the implementation phase of the migration, so that the transition takes place in homogeneous steps (to avoid fragmentation).

Trainings will also be instrumental for the development of a technical support team, which is another crucial element for the success of the migration project. In fact, when the "technology leaders" – who provide first-hand support to colleagues – are not able to provide an answer to issues arising within their department, the problem should always be escalated to first level support and if necessary to second level support (which might be internal or external, according to needs).

*Deploying LibreOffice*

The deployment of LibreOffice on every personal computer, including those of users who have been authorized – for specific technical reasons – to keep on using MS Office, needs to be planned in advance and should be coordinated with the training schedule, in order to ensure that users will be able to use the software as soon as possible (ideally, after the first training session).

The community version of LibreOffice is not optimized for deployments in large organizations, as it is a rather large binary blob which has not been designed to be installed over a network (although the task can be executed, it is slow and tedious).

In contrast, LTS versions of LibreOffice are the enterprise-ready build of the free office suite, as companies add deployment and administration utilities on top of the community version,

together with contracted support services to allow LibreOffice to be used in business critical environments. These versions have a release cycle similar to the community version, but are supported for three years - with security, maintenance and bug fixes - from the date of release. Also, they provide MSP patch files to allow incremental updates for Windows installations, and to makes it easier to deploy and maintain LibreOffice in large enterprise networks by reducing the required effort from weeks to days and from days to hours, according to the number of desktops.

Deploying LibreOffice, though, does not mean eradicating MS Office from each and every PC. The goal is to maximize the number of PCs using LibreOffice, and to foster the interoperability with MS Office by identifying areas where the latter – for obvious reasons – tries to perpetuate lock-in. For instance, it will be necessary to educate MS Office users – who, at the end of the migration, should not exceed 20% of all users (as this is the highest potential percentage of people using MS Office-specific features in corporate environments) – to replace proprietary fonts with free fonts (such as those backed by the SIL Open Font License).

*User support*

Support is a critical factor for the success of a migration project, as with it the users do not feel abandoned in front of the new productivity tool. In fact, although the features are identical or extremely similar to Microsoft Office, they are often organized in a different way (and this is usually more than enough to get a negative reaction from users).

Enterprise support of LibreOffice is usually organized internally, with a mix of IT people and tech savvy users who can provide Level 1 and Level 2 support to end users. Level 3 support, on the contrary, is based on development related skills and should therefore be managed by an external structure with certified developers capable of solving bugs.

In fact, bugs are intrinsic of any software development (even the most expensive proprietary software). So, the availability of contracted support to address potential software code issues is vital for the deployment of LibreOffice in a corporate environment, also because all relevant patches are usually merged upstream with the community version of LibreOffice.

# Reference Document

In order to assist enterprise users, the entire support team will also work at a list of Frequently Asked Questions (FAQ) as a quick reference for future needs. This FAQ, together will all the documents used during the migration process – especially presentations and manuals – should be published online onto the organization website, for easy access and retrieval by users.

**LibreOffice Maintenance**

Once LibreOffice has been deployed on every user desktop the migration project is over, and the organization switches to maintenance mode. Needs evolve from the simple interoperability level to the development of new features or the integration with third party applications.

Companies providing enterprise versions of LibreOffice can provide code level consultancy and development work for any implementation of the software, which could include (but is not limited to): specific application features, read & write support for an unusual file format, document format conversion, specific computational needs that only become possible with better performance, integration and interfacing with a back-office system, and interoperability solution with third party software packages.