The Document Foundation
and LibreOffice

*a story from corporate control to Freedom*

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“Stand at the crossroads and look; ask for the ancient paths, ask where the good way is, and walk in it, and you will find rest for your souls...” - Jeremiah 6:16
Rough overview ...

- I am not speaking for the Document Foundation
  - These views are mine, but you're welcome to borrow them.

- History
  - The somewhat sad beginning …
  - The extremely nerve wracking middle
  - The pleasant present

- Latest features / fun
- Questions.
A brief (comedic) sketch of the very sad beginning ...

[ finally using some old pictures I took to try to improve things ]
Heavy duty / run-away Process ...

MAKE SPECS NOT 🔒 SOFTWARE!
Heavy duty / run-away Process ... #2

If you can't stop them, join their iTTEAM™

HELD TOGETHER WITH RED TAPE
Lots of things not getting fixed ...
Release cycle & Route to market ...
On Contributor License Agreements ...

Why barriers to entry can be very costly to erect:

**Question:**
When do you think Fedora dropped their CLA requirement?

Thanks to Olav Vitters
Single Vendor Dominance

No one can control more than 30% of the votes in any statutory body of TDF.
Cumulative Frustration & Missed Opportunities ...
And yet – some wonderful individuals ...

Many heroic StarDivision individuals went beyond the call of duty to work with, mentor, and try to ease the internal process pain for 'external' developers.

Many StarDivision guys were friendly, helpful, respectful, understanding, encouraging and pleasant.

However, there were overall significant issues of corporate / divisional culture.
Preparing a rupture ...
10th community anniversary

Happy Birthday!

- ten years after the promise of a foundation …
  - “a foundation is a great idea … the time is not yet ripe … perhaps in another three years” etc. etc.
  - Patience – a virtue, but not an inexhaustible resource.
- some truly fantastic 'opportunities' for improvement
  - Vendor neutrality / no copyright assignment barrier
- ~unrelated to Oracle – StarDivision have real autonomy
  - please don't hate them, they have hard problems
  - the 'community' has '~failed' them for many years
- we have great friends & hackers there
- motivated by a **love of freedom**, not by hatred.
- would love Oracle to join in with the fun.
Chris DiBona, Open Source Programs Manager at Google, Inc., has commented: "The creation of The Document Foundation is a great step forward in encouraging further development of open source office suites. Having a level playing field for all contributors is fundamental in creating a broad and active community around an open source software project. **Google is proud to be a supporter of The Document Foundation and participate in the project**."

- Who provides the 1st / lead Quote? Thanks to Chris & Jeremy Allison for their confidence.

- Also thanks to (also giving supporting quotes)
  - SUSE: Markus Rex, Guy Lunardi, RedHat: Jan Wildeboer, Jonathan Blandford, Canonical: Mark Shuttleworth
Logo Creation ...

- Many thanks to Christophe Noack
- Beautiful in its simplicity – *though I didn't see it initially*
- Checkout Wikipedia's [http://en.wikipedia.org/wiki/Logo](http://en.wikipedia.org/wiki/Logo) take ...
Going Live ...

pre-briefings / up all night
Volunteers!
THE FUTURE BELONGS TO THE FEW OF US STILL WILLING TO GET OUR HANDS DIRTY.
Commits per month

Measuring and demonstrating diversity, and growth → a metric for maturity & dependability
Committer Diversity

Active individual committers per month by affiliation

- Tata Consultancy Services
- SIL
- Oracle
- Nou & Off
- Munich
- Linagora
- Known contributors
- Intel
- IBM
- SUSE
- CodeWeavers
- CloudOn
- Bobiciel
- Apache Volunteer
- Assigned
- ALTA
- SYNERZIP
- RedHat
- Openismus
- MultiCoreWare
- Lanedo
- KACST
- Igalia
- Funky
- Collabora
- Canonical
- CodeThink
- Assigned
- ALTA
What is LibreOffice / The Document Foundation

- Finally “doing it right”
  - vendor neutral, no code ownership aggregation
  - a real Free Software / hackers project
  - Volunteers + RedHat + Novell + Debian + Canonical + Google …
  - FSF + OSI support, boycott + Novell support etc.
  - FreeDesktop hosting
  - LGPLv3+ / MPL for new code …
- An idea – whose time has finally come …
  - a beautiful, Office suite we can be proud of (in due course) backed by a real, open community
- Shipping now on Windows, Mac, GNU / Linux, *BSD etc.
- ODF enables trivial migration with your data …
All decisions about the project are taken by the elected representatives of the Members, and/or their appointees.

How all of this interacts ...

Trustees (Members)

Advisory Board

Board

Engineering Steering Committee

Membership Committee

Review & Approve

Elect

Elect

Appoint
Engineering Steering Committee

- Empowered by the board to handle day-to-day Engineering
- Primary role: to be boring
- 99% consensus based
- One controversial decision / vote – when to have 4.0
- Packed with good people …
- Includes relevant stake-holders; QA, UX, Dev, L10n …
- Minutes each week.
- Like all other bodies of TDF any single entity cannot be dominant.
Supporters of LibreOffice: the Advisory Board
LibreOffice Conferences: Paris 2011

Thanks to La Cantine and IRILL
LibreOffice Conferences: Berlin 2012

Getting better a conference photos

Thanks to German Federal Ministry of Economics and Technology.
LibreOffice Conferences: Milan 2013

Thanks to The University of Milan
LibreOffice Conference: 2014 … Bern Switzerland

- Beautiful Bern
- September 3rd → 5th 2014 …
- Thanks to the University of Bern
- Talks from all the core developers (that can attend)
- Deployments / case studies / etc.
- Look forward to seeing you there.

The best conference yet …
(constant improvement)
People started using it en-masse …

Too many to count, but here are a handful of Government deployments …
Umbria moves 5,000 to LibreOffice

Munich advocacy of OSS LibreOffice on 15,000 PC
25,000 Copenhagen Workers will use LibreOffice

Netherlands defence ministry LibreOffice on 42,000 PCs
Valencia region government completes switch of 120,000 PCs to LibreOffice

Paris plans 800,000 roll-out of LibreOffice
>1 million new unique IP addresses look for an update each week (never before seen)

Plus the global Linux Desktop user-base (not counted):
~35m (a Gartner guess)
It's easy to get involved: no really!

- From basket case to:
  “LibreOffice is now ridiculously easy to build”

  Karl Fogel – (now working on “Producing OSS” (v2) …)

- Credit to team on gnumake port & other cleanups

- We love people to contribute changes:
  - We want your first patch to be non-controversial, and easy, so you're up-to-speed and included outright:
New developer training bits ...

- gnumake overview documentation: 'make dump-deps-png'
  - Thanks to David Ostrovsky and Peter Foley
- Training slideware with code overview / basics:
  - Module overview:
  - Low-level types / utilities overview:
- Code overview focused on comprehensibility – not machismo
  - Focus on core coding not extensions ...
LibreOffice 4.1 – fun features
Font embedding for beauty & fidelity ...

<table>
<thead>
<tr>
<th>Embedded fonts test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Libre - Callibri</td>
</tr>
<tr>
<td>Libre - Cambria</td>
</tr>
<tr>
<td>Libre - Bauhaus</td>
</tr>
<tr>
<td>Libre - Blackadder</td>
</tr>
<tr>
<td>Libre – Vladimir Script</td>
</tr>
<tr>
<td>Libre - Jokerman</td>
</tr>
<tr>
<td>Libre – Lucida Cal</td>
</tr>
<tr>
<td>Libre – Old English T.</td>
</tr>
<tr>
<td>Libre – Ravie</td>
</tr>
<tr>
<td>Libre – Sketchflow</td>
</tr>
</tbody>
</table>

Import / export to ODF and OOXML - thanks to Lubos Lunak, Noel Power, Radek Doulik and the Open Source Business Alliance.
Easy photo album deck building ...

Thanks to Gergő Mocsi
UI tweaks / wins: 90 degree image rotation

Writer could not rotate images at all.

Thanks to Tomaž Vajngerl

We now do the common case easily.
Stepped line scatter charting ...

With thanks to Eric Seynaeve
Many Base improvements: finally getting some love ...

Limit and Distinct values support: with thanks to Tamás Zolnai

Also significant work cleaning / debugging base & lots of work on eg. Nanosecond timestamps from many thanks to Lionel Elie Mamane
Sidebar from IBM / AOO (Experimental)

Various tabs … embed existing gallery & navigator conveniently.

LibreOffice with Experimental Sidebar

Menu → Tools → Options → LibreOffice → Advanced → Enable experimental Sidebar.

Also, improved gallery / clipart & improved translation mechanism
Other misc. flavours:

- GStreamer 1.0 support (as well as 0.10)
- ~3000 bug fix patches (400 from @apache)
- cf. ~5000 open bugs @ fdo
- 10k commits since 4.0
- Lots of incremental interoperability wins.
- Ctrl-F search bar: close + match case thanks to Andrzej Hunt & Joren De Cuyper
LibreOffice 4.2 new stuff …

Shipping in a rather stable mode ~now ...
Shell / overview ...

Thumbnails of recent document types from all applications
Much improved Android Impress remote

With thanks to Artur Dryomov

Connection failed

Make sure you enabled remote control. Go to “Tools → Options → LibreOffice Impress → General” in LibreOffice Impress.

You should enable experimental features at “Tools → Options → LibreOffice → Advanced” as well.
Initial iOS Impress remote control

With thanks to Siqi Liu – sign up for the Beta

I'm not sure if I'm missing something but what should be a simple task just doesn't want to work. I'm trying to add a drop shadow to a UIView in iOS 6. I'm using storyboards and auto layout. I'm drawing the UIView in the storyboard canvas with a white background.
GDrive integration (via libcmis)

With thanks to Cuong Cao Ngo and Cedric Bosdonnat
### Conditional fmts: bars + icons

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Score A</th>
<th>Score B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mary</td>
<td>16.38%</td>
<td>65.98%</td>
</tr>
<tr>
<td>3</td>
<td>Bob</td>
<td>22.35%</td>
<td>32.36%</td>
</tr>
<tr>
<td>4</td>
<td>Abdul</td>
<td>22.61%</td>
<td>13.90%</td>
</tr>
<tr>
<td>5</td>
<td>Holly</td>
<td>49.00%</td>
<td>77.50%</td>
</tr>
<tr>
<td>6</td>
<td>Oak</td>
<td>17.57%</td>
<td>18.98%</td>
</tr>
</tbody>
</table>

Customer requested feature:
Implemented by a Collabora Engineer.
Developers behind the calc re-work:

Kohei Yoshida:
MDDS maintainer
Heroic calc core re-factorer
Code Ninja etc.

Markus Mohrhard
Calc maintainer,
Chart2 wrestler
Unit tester par Excellence
etc.

Matus Kukan
Data
Streamer,
G-builder,
Size
optimizer..

Jagan Lokanatha
Kismat Singh

A large OpenCL team,
Particularly I-Jui (Ray) Sung
Before (ScBaseCell)

ScDocument

ScTable

ScColumn

ScValueCell

ScStringCell

ScEditCell

ScFormulaCell

ScNoteCell*

Scattered pointer chasing walking cells down a column ...

Script type (1 byte)

Cell type (1 byte)

Text width (2 bytes)

Broadcaster (8 bytes)
After (mdds::multi_type_vector)
New Feature: Sifr Icon Set

Thanks to Issa Alkurtass (KACST), Norah A. Abanumay (KACST)
New Feature: Firebird Database

Bringing love to the 'Base' backend
Thanks to
Andrzej Hunt
Lionel Elie Mamane
An Experimental feature replacing HSQLDB in 4.3 ...
Misc. New Features

- OOXML import/export fidelity
- round-trip of un-interpreted data (*CloudOn*, *SyneZip*, *Igalia*)
- Agile encryption (*Tomaz Vajngerl*)
- BCP47 Language Tags (*Eike Rathke*)
- Import filter for various e-book formats, mostly Palm-based (*David Tardon*)
  - FictionBook 2, PalmDoc, PeanutPress (eReader), Plucker, TealDoc, zTXT
- Import of more legacy Mac document types (*Laurent Alonso*)
Initial Keynote Filter

Thanks to David Tardon (RedHat)
GNOME 3.0 Menu
UI → Layout conversion

- 84% complete  64 dialogs to go in 4.2
- Thanks to:
  - **Caolán McNamara** (Red Hat), Manal Alhassoun (KACST), Olivier Hallot (EDX), Faisal M. Al-Otaibi (KACST), Laurent Balland-Poirier, Efe Gürkan Yalaman, Krisztian Pinter, Jan Holesovsky (Collabora), Andras Timar (Collabora), Cao Cuong Ngo, Gergo Mocsi, Katarina Behrens, Abdulmajeed Ahmed (KACST), and Alia Almusaireae (KACST)
- Checkout [Caolan's blog](#) to help out ...

![UI Layout Dialog Conversion Graph](image-url)
Chart: new Trend lines

Thanks to Tomaž Vajngerl
Unit testing ...

- 216 new CPPUNIT_TESTs
- 2160+ new CPPUNIT_ASSERTS
- Lots of format import / test / export / re-import / re-test – round-trip interop.

Growth in unit tests over time

count of various CPPUNIT macros
Why OpenCL & HSA ...

- GPU and CPU optimisation …
- Why write custom SSE2/SSE3 etc. assembly detect arch, and select backend cross platforms.
- Instead get OpenCL (from APU vendor) to generate the best code ...
- Heterogenous System Architecture rocks:
  - An AMD64 like innovation:
  - shared Virtual Memory Address space & pointers: GPU ↔ CPU.
  - Avoid wasteful copies, fast dispatch
  - Great OpenCL 2.0 support.
  - Use the right Compute Unit for the job.
#pragma OPENCL EXTENSION cl_khr_fp64: enable
int isNan(double a) { return isnan(a); }
double legalize(double a, double b) { return isNan(a)?b:a;}
double tmp0_0_fsum(__global double *tmp0_0_0)
{
    double tmp = 0;
    int i;
    i = 0;
    tmp = legalize(((tmp0_0_0[i])+(tmp)), tmp);
    i = 1;
    tmp = legalize(((tmp0_0_0[i])+(tmp)), tmp);
    i = 2;
    tmp = legalize(((tmp0_0_0[i])+(tmp)), tmp);
} // to scope the int i declaration
return tmp;

double tmp0_nop(__global double *tmp0_0_0)
{
    double tmp = 0;
    int gid0 = get_global_id(0);
    tmp = tmp0_0_fsum(tmp0_0_0);
    return tmp;
}

__kernel void DynamicKernel_nop_fsum(__global double *result, __global double *tmp0_0_0)
{
    int gid0 = get_global_id(0);
    result[gid0] = tmp0_nop(tmp0_0_0);
The same formula for a longer sum ...

Compiled from standard formula syntax

double tmp0_0_fsum(__global double *tmp0_0) {
    double tmp = 0;
    int gid0 = get_global_id(0);
    tmp = (tmp0_0[gid0])+(tmp);
    return tmp;
}

double tmp0_nop(__global double *tmp0_0) {
    double tmp = 0;
    int gid0 = get_global_id(0);
    tmp = tmp0_0_fsum(tmp0_0);
    return tmp;
}

__kernel void DynamicKernel_nop_fsum(__global double *result, __global double *tmp0_0) {
    int gid0 = get_global_id(0);
    result[gid0] = tmp0_nop(tmp0_0);
}
Performance numbers for sample sheets.

Yet another log plot … milliseconds on the X axis ...

30x → 500x faster for these samples vs. the legacy software calculation on Kaveri.
Parallelised load: (boxes are threads).

- Split XML Parse & Sheet populate
- Parallelised Sheet Loading ...
- Parallel compilation

Thread 1
- Unzip, XML Parse, Tokenize

Thread 2
- Populate Sheet Data Structures.

Unzip, XML Parse, Tokenize

Populate Sheet Data Structures.

=COVAR(A1:A300,B1:B300)

→ OpenCL code
→ Ready to execute kernels

Tools->Options->Advanced->”Experimental Mode” required for parallel loading
Does it work? with Parallel enabled

Wall-clock time to load set of large XLSX spreadsheets: 8 thread Intel machine

Shorter is better

Apologies for another log scale: **Average 5X vs. 4.1.3**
Fantastic work on a diversity of file filters: Wordperfect, MS Publisher, MS Works, Keynote, Visio, MWAW (stable), Abiword, E-book, Freehand & more in progress.

David Tardon, Fridrich Štrba, Валёк Филиппов & others
LibreOffice 4.3 new stuff …
the deep future (2-3 months out)
Completed OUString migration → Long Paragraphs ...

A single writer paragraph with more than 65535 characters.
Built-in CUPS / FAX support (no more psadmin) ...
Printing Notes ...

DEARbhÍ UILE-CHOTÉANN CEARTA AN DUINE

BROLLACH

De Bhígh curh é an t-aithint duine d'éirigh agus chearta comhionannacha de-shamhradh an uile duine den chine domhanda is foins don teachTG, don chearta agus don duine na haoirse a dhochadh.

De Bhígh curh thIÓNSAINT A NEOMHARDH AGUS AN-MIWBHÉAS AC CHEARTA AN DUINE gnoimhtharba banbhortha a chuir uafás ar cheasstas an chine domhanda, agus go bhfuil forógra curh é meánmar is uaidhe ag an gholláintacht naídal a d’fhadh leis an dtaobh don duine saorise cheire agus chreidimh agus saorse d’éagla agus d’aimgair.

De Bhígh go robhna poball na Náisiún Aontaithe sa Choil dearbhrí air a aisteachadh i gcróna bunúsacha an duine, i ndiaidh agus i bhfeidhmí pearsan an duine agus i gcroíta comhionanna fear agus bean, agus gofhreidh leis eisign an aer an amhail mhí dhá lach agus réim maithreacha níos fearr a chabhraí ar gheithi fáil shaoine níos faísinse.

De Bhígh curh thIÓNSAINT a bhí ann an Staí Chumhachtais faoi chur sin gheall ar aon fhoireann, go ndéanfaidh, in go mheadh leis na Náisiún Aontaithe, uraim uile-choineamh éifeachtach d’fhéiní do chearta agus do shaoire bunúsacha an duine.

De Bhígh curh thIÓNSAINT a bhí ann an Staí Chumhachtais faoi chur sin gheall ar aon fhoireann, go ndéanfaidh, in go mheadh leis na Náisiún Aontaithe, uraim uile-choineamh éifeachtach d’fhéiní do chearta agus do shaoire bunúsacha an duine.

De Bhígh curh thIÓNSAINT a bhí ann an Staí Chumhachtais faoi chur sin gheall ar aon fhoireann, go ndéanfaidh, in go mheadh leis na Náisiún Aontaithe, uraim uile-choineamh éifeachtach d’fhéiní do chearta agus do shaoire bunúsacha an duine.

Aimhí ar an abhar sin forógra an Tionsóil Ginearálta an Dearbhí Uile-chotéann seo ar Chearta an Duine mar cheannaí talún agus gheall air gach pobaclach agus gach mbíonn aon gheall air gach pobaclach. Mar cheannaí talún, áfach, tháinig don duine sear a n-áirítear agus dá ndéanfaidh, díchthi, tríl an tseacht agus an t-éideachas, chuimhne a d’aois do na cearta agus do na saorise sin a chabhraí agus chun a d’aois tríúonta a rabhtaí, níos fearr náis an ghealláit. go mbíonn séimhin agus séimhin éifeachtach uile-chotéann ná, ní bhfuil in measc pobail na Staí Chumhachtais aon, ach i measc pobail na Staí Chumhachtais aon, ach i measc pobail na Staí Chumhachtais aon

And easier to format; thanks to Caolan McNamara
Much improved Shape / Text Frame / OOXXML interop.
Other bits and pieces ...

- HiDPI Support (thanks to Keith Curtis)
- Native toolbar rendering on Mac (Joren De Cuyper)
- Initial support for OOXML Strict (Markus Mohrhard, Miklos Vajna)
- Much improved PDF Import (Vort)
- Improved Calc selection reporting (Manmeet Singh)
- Improved Calc cell reference highlighting (Rachit Gupta)
- Improved Document Navigation (Samuel Mehrbrodt)
- Light Blue for non-printing Characters (Tomaž Vajngerl)


> And still not feature complete yet ...
Future / research pipeline ...
(or some things we're slowly working on)
Android & iOS prototypes
Fast Tiled Rendering in textures

Tablet display

Large Pre-rendered area for fast pan / zoom etc.

LibreOffice / Android 4.x

This is a picture of our wedding, nice text flow going on around it, you can edit a custom contour as well as having a crude ellipse, which makes for a very nice look. Below it is an alpha blended free-hand filled spline with drop shadow and gradient.

And chart of the week:

Persistant Sins
Subsidiary of Collabora
Leading Open Source Consultancy
12 Certified LibreOffice Developers

Team spun out of SUSE
SUSE needed to focus …
LibreOffices' growth areas:
   Windows, Android, iOS, not a great match.
   Best Possible outcome given the circumstances

Personally impressed by SUSE's commitment to the community
Cudos to: Ralf, Nils, Gerald, Jan Weber etc.
Be encouraged ...
LibreOffice Conclusions

- **LibreOffice is growing & executing**
  - We've changed radically since we started
  - We continue to be open to new things, ways to improve etc.
  - Code & feature set significantly better

- **LibreOffice is diverse & easy to deploy**
  - Lots of corporate and individual support
  - Encouraging progress

- **Thanks for all of your help and support!**
  - *we rely on you*, to prove the power of Freedom with us.
  - to get people *excited* about Free Software they use …

- **Please do get involved** and help us …
Oh, that my words were recorded, that they were written on a scroll, that they were inscribed with an iron tool on lead, or engraved in rock for ever! I know that my Redeemer lives, and that in the end he will stand upon the earth. And though this body has been destroyed yet in my flesh I will see God, I myself will see him, with my own eyes - I and not another. How my heart yearns within me. - Job 19: 23-27