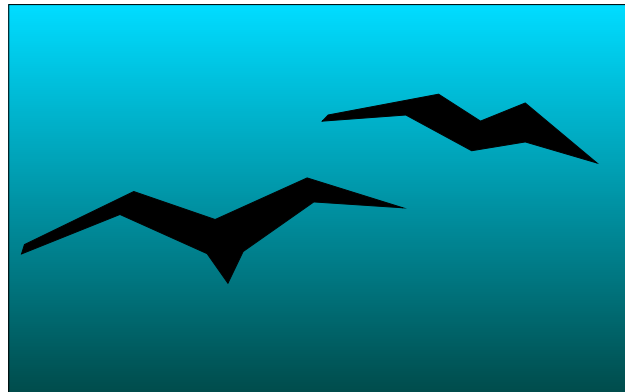


Hacking OpenOffice.org



Michael Meeks

<michael@ximian.com>

“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

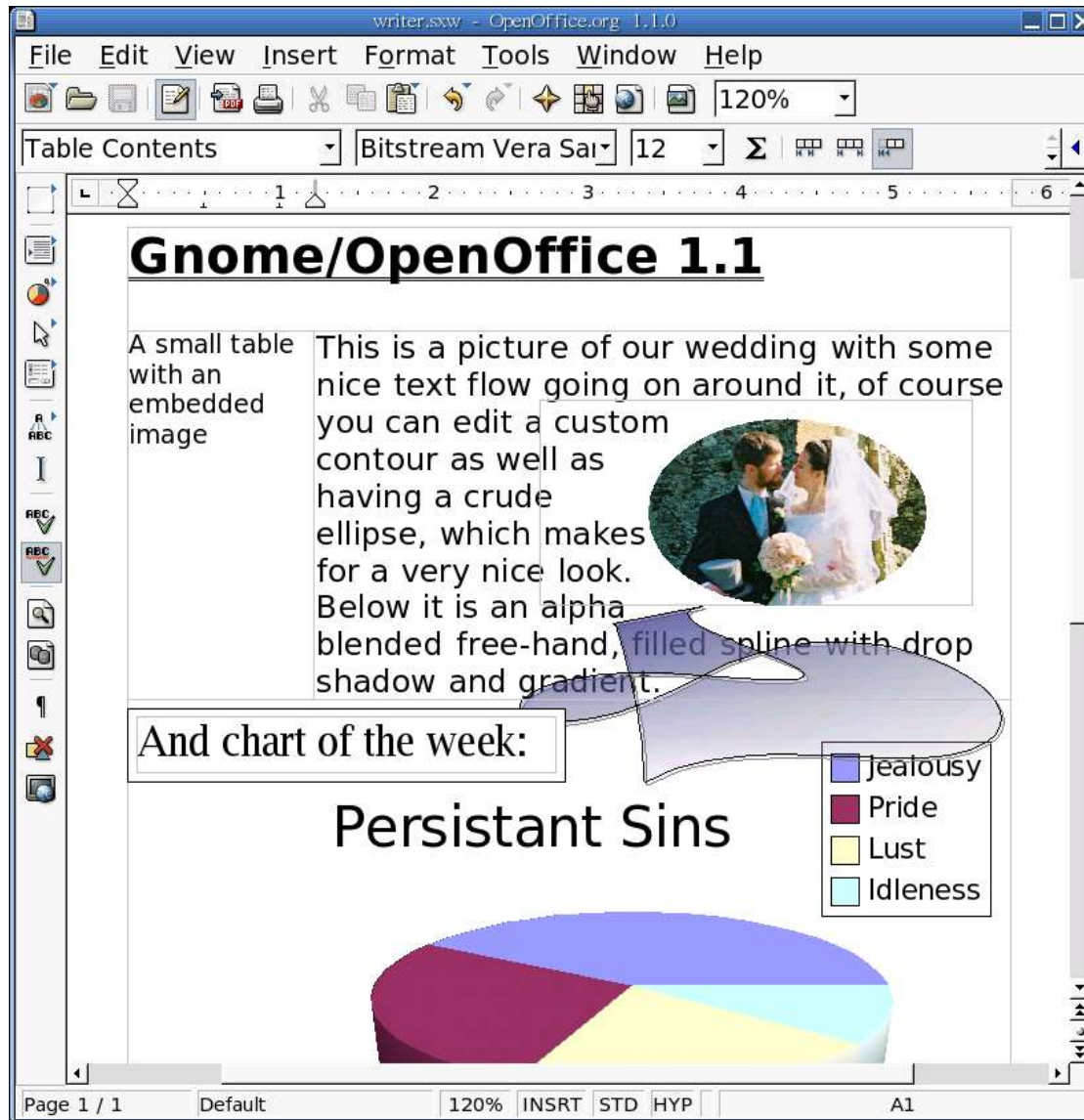
Overview

To try and demonstrate I planned this talk, and it has some vague structure

- OO.o – it rocks
 - power, depth, features
- Sun / the background
- Getting started hacking
 - ooo-build
 - going around a development iteration
 - making a real difference
- Desktop integration work
- Interesting development avenues
- Conclusions



OpenOffice.org rocks !



OpenOffice.org rocks !

calc.sxc - OpenOffice.org 1.1.0

File Edit View Insert Format Tools Data Window Help

100%

Luxi Sans 10

	A	B	C	D	E	F	G	H	I	J	K
1	Latest breaking research:										
2	Jealousy	30			first	second	third				
3	Pride	20		Egg	0.89	0.25	0.44				
4	Lust	15		Ham	0.79	0.31	0.95				
5	Idleness	7.5		Waffle	0.08	0.37	0.63				
6				Hash	0.27	0.65	0.43				
7				Banger	0.35	0.76	0.43				

Persistent Sins

- Jealousy
- Pride
- Lust
- Idleness

Breakfast

flavour

food

session

first second third

Q \xrightarrow{E} \xleftarrow{d}

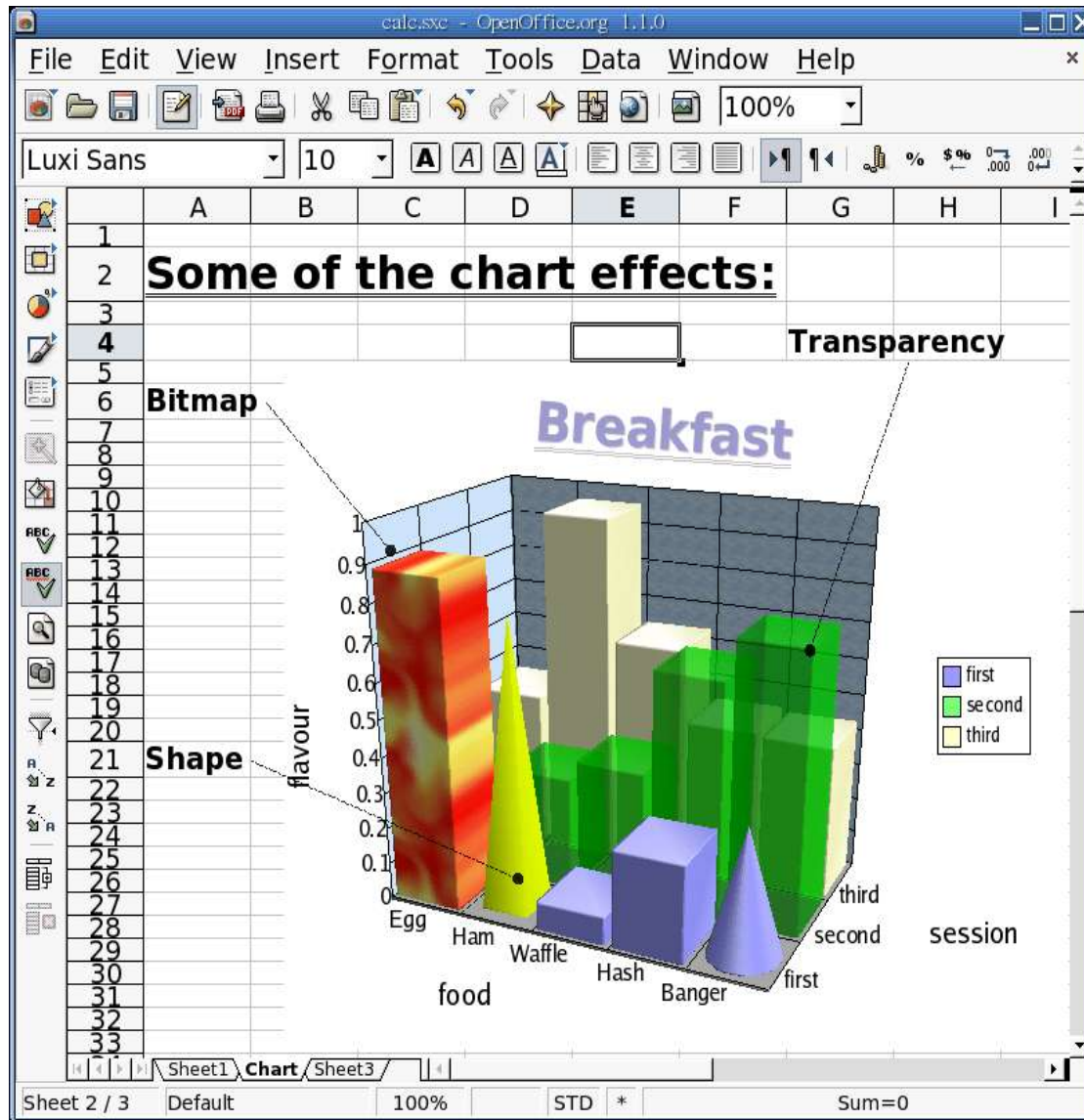
$$W = - \int_a^b E(x) \cdot dx$$

Sheet1 / Sheet2 / Sheet3

Sheet 1 / 3 Default 100% INSRT STD Sum=0



OpenOffice.org rocks !



OpenOffice.org rocks !

OpenOffice.org Help - Help about OpenOffice.org Calc

Help about OpenOffice.org Ca

Bookmarks

Contents | Index | Find

- Presentations and Drawing
- Spreadsheets
 - General Information and Command and Menu Ref
 - Functions Types and Ope
 - Loading, Saving, Importir
 - Formatting
 - Filtering and Sorting
 - Printing
 - Data Ranges
 - Data Pilot
 - DataPilot**
 - Creating DataPilot Tabl
 - Deleting DataPilot Tabl
 - Editing DataPilot Table
 - Filtering DataPilot Tabl
 - Selecting DataPilot Out
 - Updating DataPilot Tab
 - Scenarios
 - Using Scenarios
 - References
 - Viewing, Selecting, Copyi
 - Formulas and Calculation
 - Protection
 - Miscellaneous
- Formulas
- Text Documents
- HTML Documents

DataPilot

The DataPilot allows you to combine, compare and analyze large amounts of data. You can view different summaries of the source data, and you can display the details for areas of interest and create reports.

A table that has been created with the **DataPilot** is an interactive table. Data can be arranged, rearranged or summarized according to different points of view.

As an example, you have a data analysis table containing your company's sales figures, not only for specific product groups, but also for branches and years. Use the DataPilot to quickly find the data you are interested in.

	A	B	C	D	E	F
1	Sales					
2						
3						
4	Article	Area	Sales person	1998	1999	2000
5	Video	New York	Fisher	\$20,000.00	\$197,000.00	\$230,000.00
6	Audio	New York	Fisher	\$350,000.00	\$235,000.00	\$420,000.00
7	Accessories	New York	Fisher	\$50,000.00	\$60,000.00	\$70,000.00
8	Video	New York	Fisher	\$300,000.00	\$180,000.00	\$310,000.00
9	Audio	New York	Fisher	\$270,000.00	\$200,000.00	\$270,000.00
10	Accessories	New York	Fisher	\$25,000.00	\$90,000.00	\$40,000.00
11	Video	New York	Fisher	\$189,000.00	\$220,000.00	\$234,000.00
12	Audio	New York	Fisher	\$210,000.00	\$240,000.00	\$290,000.00
13	Accessories	New York	Fisher	\$100,000.00	\$80,000.00	\$90,000.00
14	Video	Miami	Brown	\$150,000.00	\$160,000.00	\$180,000.00
15	Audio	Miami	Brown	\$210,000.00	\$250,000.00	\$300,000.00
16	Accessories	Miami	Brown	\$10,000.00	\$20,000.00	\$15,000.00
17	Video	Kissimmee	Clark	\$250,000.00	\$300,000.00	\$340,000.00
18	Audio	Kissimmee	Clark	\$250,000.00	\$290,000.00	\$350,000.00
19	Accessories	Kissimmee	Clark	\$100,000.00	\$120,000.00	\$130,000.00
20	Video	Washington	Smith	\$200,000.00	\$220,000.00	\$250,000.00
21	Audio	Washington	Smith	\$240,000.00	\$260,000.00	\$300,000.00
22	Accessories	Washington	Smith	\$80,000.00	\$80,000.00	\$90,000.00
23						
24	Filter					
25						
26	Sum - 1998	Area				
27	Article	Kissimmee	Miami	New York	Washington	Total Result
28	Accessories	\$100,000.00	\$10,000.00	\$175,000.00	\$90,000.00	\$365,000.00
29	Audio	\$250,000.00	\$210,000.00	\$830,000.00	\$240,000.00	\$1,530,000.00
30	Video	\$250,000.00	\$150,000.00	\$689,000.00	\$200,000.00	\$1,289,000.00
31	Total Result	\$600,000.00	\$370,000.00	\$1,694,000.00	\$520,000.00	\$3,184,000.00
32						
33						

Related Topics

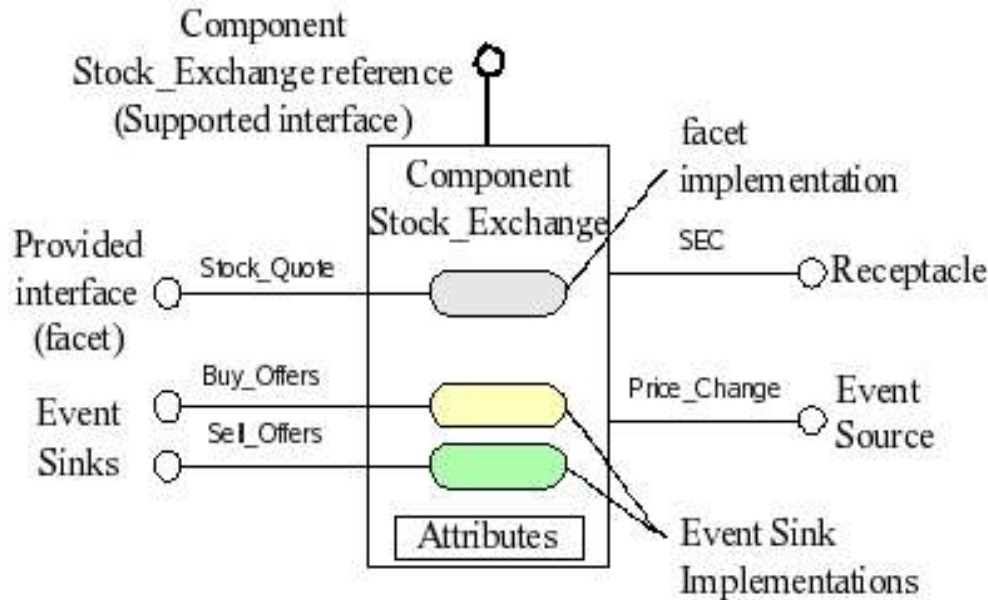
- [Creating DataPilot Tables](#)
- [Editing DataPilot Tables](#)
- [Filtering DataPilot Tables](#)
- [Updating DataPilot Tables](#)

Full help in:
French,
Spanish,
Italian,
Swedish,
Japanese,
Korean,
2x Chinese
English
(and German)



An example ... [Demo]

Why I think OO.o kicks the backside of any other free Office component out



```
interface Sell, Buy;

// Define an equivalent,
component Stock_Exchange
provides Stock_Quote;

consumes Buy_Offers;
consumes Sell_Offers;

publishes Price_Change
uses SEC;

...
};
```

Figure 2: An example CCM Component With IDL Specifici

A CORBA object reference is an abstract handle referring to an instance of a COI
implementation. An object references hide the location where the actual objec
resides and consists of contains protocol information as defined in by the C

Deleted: dschmidt - 09/15/2000 15:32

ell.

Other Free suites ...

- Gnome Office
 - libole2/ libgsf – basis of KDE & Gnome interop
 - libwv – basis of AbiWord/ KWriter word import
 - gnumeric - a lovely spreadsheet
- KOffice
 - no export - > no interoperability
- But XYZ feature is better in ABC !?!?
 - doubtless, any 1 feature may be better a < - > b
 - not a reasonable comparison
- Where is Freedom better served ?
 - Still interesting research test-beds though.
- Do real work, for real users, now: really.



StarOffice/ OpenOffice.org

How the two relate to each other a small and shrinking difference

Sun is doing it right

- OO.o CVS is the authoritative base source
- A few other packages plugged in externally for SO.
 - fonts / icons / clipart / Adabas etc.
- Sun is now offering support for OO.o
- Legal bits
 - JCA – shared copyright, minimal asymmetry
 - Source under LGPL / SISSL
 - SISSL: X11 + ~LGPL for ABI / file-format changes



Community ? / problems

The things that are wrong under the sun ...

- Scheduling problems 18 month releases ...
- Get your teeth pulled to experience up-streaming
 - vacillation, re-writing, 'in our plan'
- ooo-build
 - patch holding ground for up-streaming
 - collaborative effort between Linux distros:
Ximian, Debian, Red Hat, SuSE, Ark, PLD, [Win32]
 - Easy to commit to / get involved with
 - Ask for JCA in the post
 - Hack here ...
 - ~300 patches, sub-setted several ways.



ooo- build - [http:// ooo.ximian.com/](http://ooo.ximian.com/)

- Building made easy
- Wraps the existing OO.o build system

configure

download

make

make install

Prerequisites:

~4Gb+ spare space

~512Mb RAM

~1Ghz processor

- Used for the 1st build, & packaging
- Development iteration more cunning
- Hackers guide:
 - [http:// ooo.ximian.com/ hackers- guide.html](http://ooo.ximian.com/hackers-guide.html)



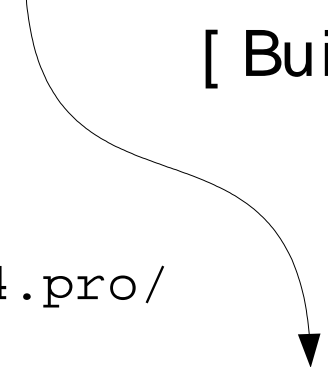
Final result: after 'linkoo'

```
/opt/
  OpenOffice/
    program/
      libsw645li.so
```

[Install]

```
ooo-build/
  build/
    ooo_1_1_2/
      sw/
        unxlngi4.pro/
          lib/
            libsw645li.so
```

[Build - Tree]



```
LinuxIntelEnv.Set.sh
```

- Simply run 'build debug=true', run OO.o
- Demo: 'My first hack'.



Where to hack

How to grapple with the beast, and find what you're looking for

- <http://ooo.ximian.com/lxr>
 - UI string -> freetext search -> SID
 - SID -> identifier search -> case SID_....:
- **Ignore the build** – *but don't despair*
 - Do **NOT** try to 'fix' the build, don't even try
 - Lost too many good hackers down that hole
- Fix the things Sun does not: ergonomics ?
 - *The customer is [almost] always right*
 - eg. Word count.
- Bite sized tasks – don't re-write everything
 - Zoom combo box, X session slaved quick-starter
 - Emacs key-bindings ?, just sniff around



Making a difference

The grass is greener on the other side of the fence...

- OO.o is a comprehensible code- base
 - Different != Wrong
- User base affects impact
 - substantially larger for OO.o than anything else
 - Windows users need to hear about Free software
- You count:
 - Gnome: 2000+ CVS accounts
 - OO.o: 15+ (*external*) CVS accounts
 - Get in now – I'm hoping for 3 new hackers.
- Sensible not to have got involved yet
 - No better time to start than now; sign the JCA today



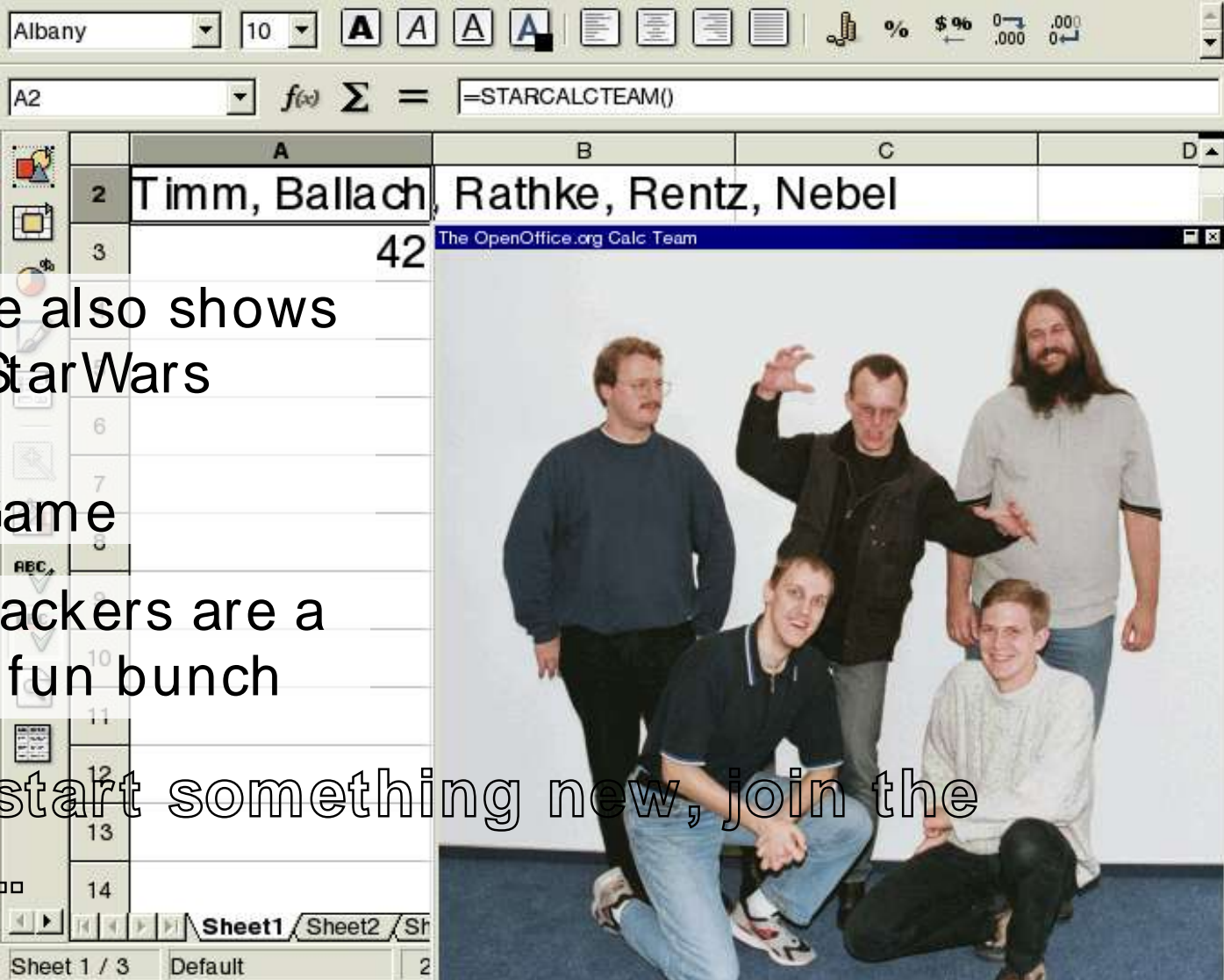
Developing with plugins ...

- Uno Developers Kit (*UDK*)
 - allows 3rd party components
 - eg. libwpd – Will Lachance
 - <http://libwpd.sf.net>
 - Imports WordPerfect files into OO.o (& AbiWord)
 - Pretty unusably bad
 - portability, exposed API
- Scripting – lots of API exposed by UNO
 - an exciting scripting framework
 - Python, StarBasic, [Java: non-free], Mono ?
 - more language bindings appreciated; Perl etc.
- Templates / artwork for non-hackers.



You too could be famous:

There was time to shoe-horn several other easter eggs into OO.o too ...



The screenshot shows an OpenOffice Calc spreadsheet with the following content:

	A	B	C	D
2	Timm, Ballach	Rathke, Rentz, Nebel		
3	42	The OpenOffice.org Calc Team		

The spreadsheet interface includes a toolbar at the top with various icons, a formula bar showing the formula `=-STARCALCTEAM()`, and a status bar at the bottom indicating 'Sheet 1 / 3' and 'Default'.

- Source code also shows signs of a StarWars game:
 - LXR: ScGame
- The OO.o hackers are a bright, and fun bunch

Don't start something new, join the team ...



OO.o the future: 2.0 and beyond

The world out there from an OO.o perspective

- Google for OpenOffice:
- Lots of new features in 2.0
 - Startup speed ...
 - Improved Calc
 - row-limit, forms, interop.
 - Improved Writer
 - tables, interop etc.
 - NWF
 - Evolution / addressbook bits

Sponsored Links

Install [OpenOffice Now](#)
Install OpenOffice with one touch
of your mouse with Click-N-Run!
clicknrun.com
Interest: 

[OpenOffice slow, bloated?](#)
Try the fast, efficient alternative
TextMaker for Linux and Windows
www.softmaker.com
Interest: 

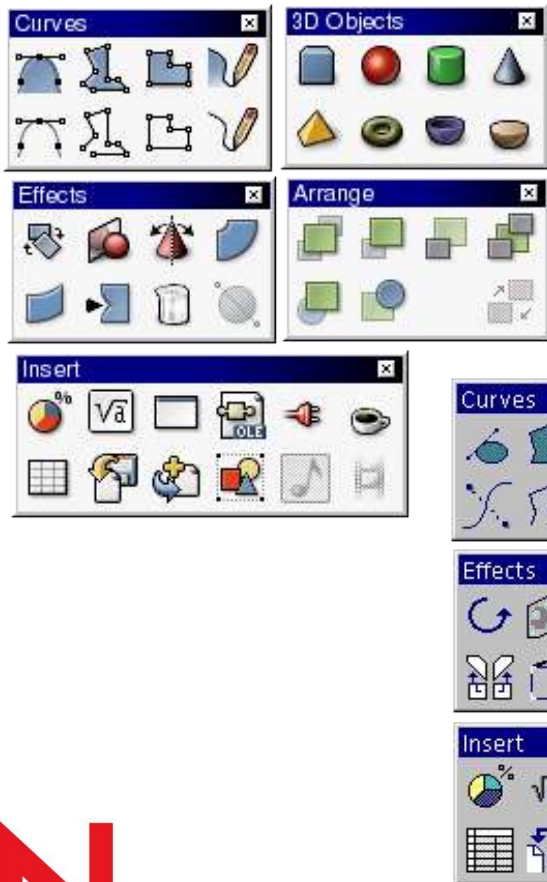
Aesthetic beauty - Icons

Many hundreds of hours of high quality artistic output

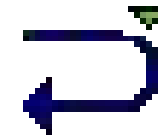
- Tigert / Jmmac – they rock.

(a calculator apparently)

[24bit + alpha gives some major advantages]



$f(x)$



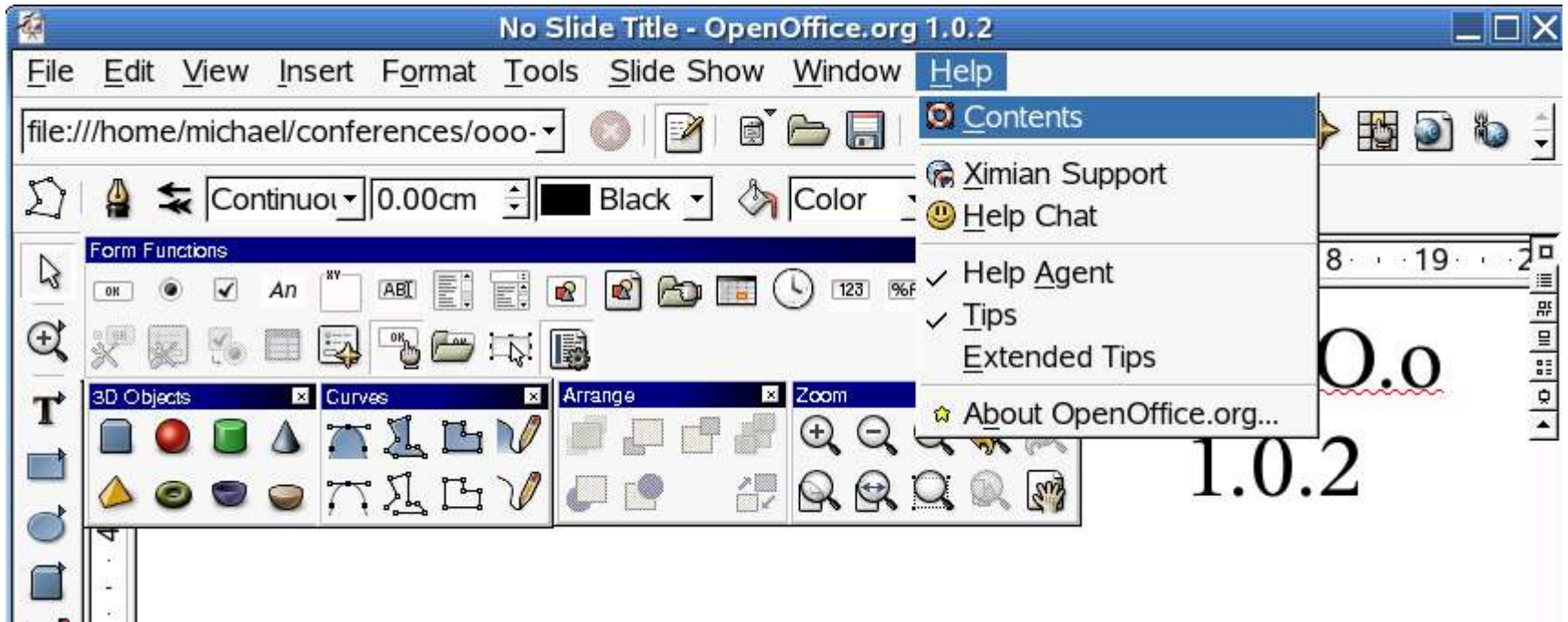
- Hundreds of new industrial strength icons.



Novell

Ximian OpenOffice.org 1.1.x

The amazing way a little rendering can hide those cracks:

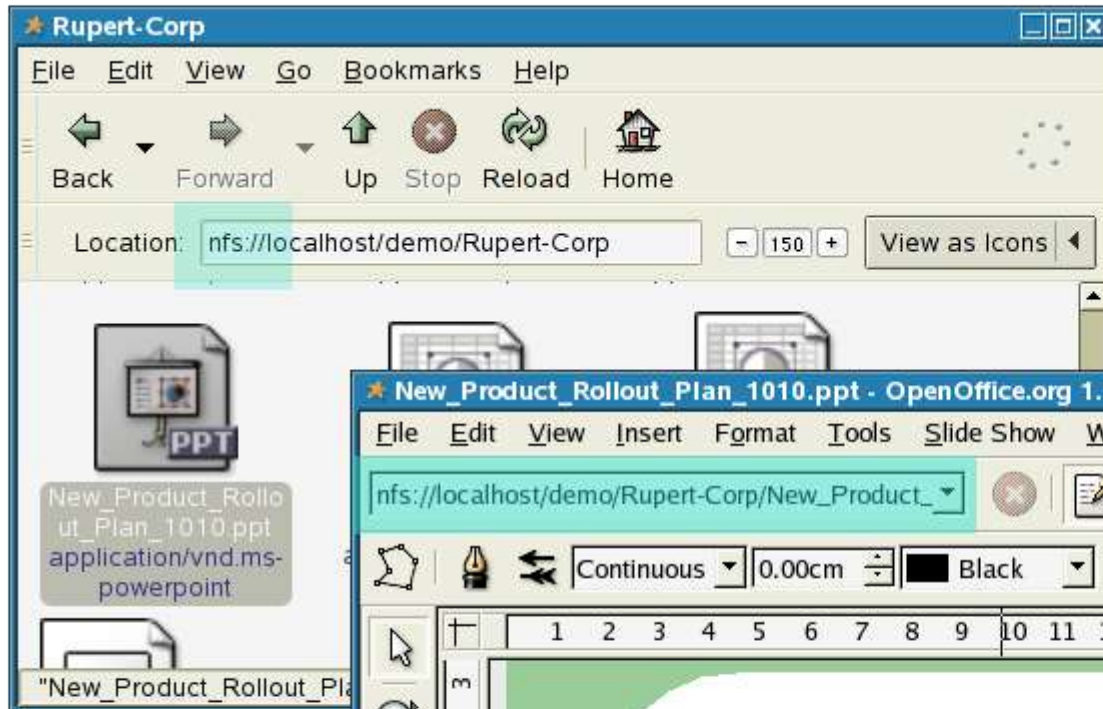


- pretty AA UI font
- 32 bit 24x, alpha blended, high- color art
- Once seen – not forgotten cf. Typography.
- more sensible menu layout



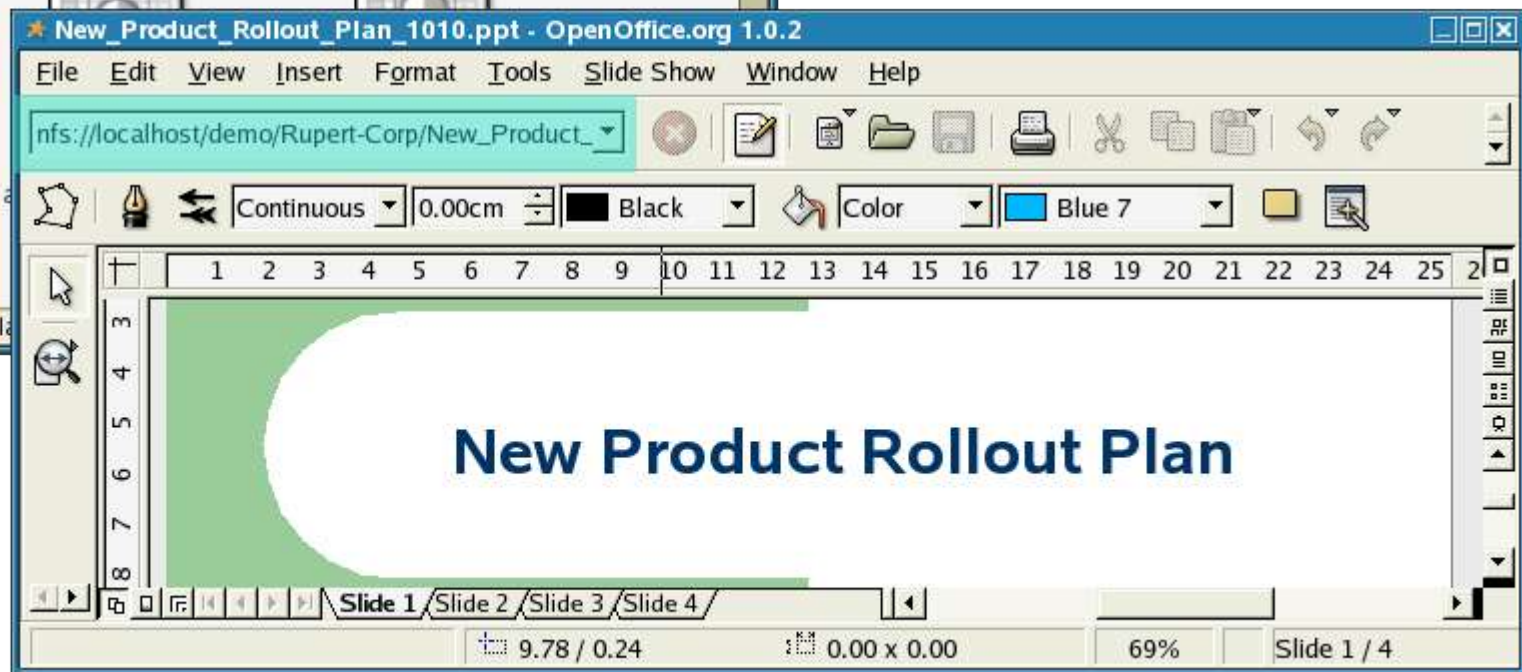
Samba / NFS integration

*The real world is (sadly) not a homogeneous Unix environment –
Interoperability is key*



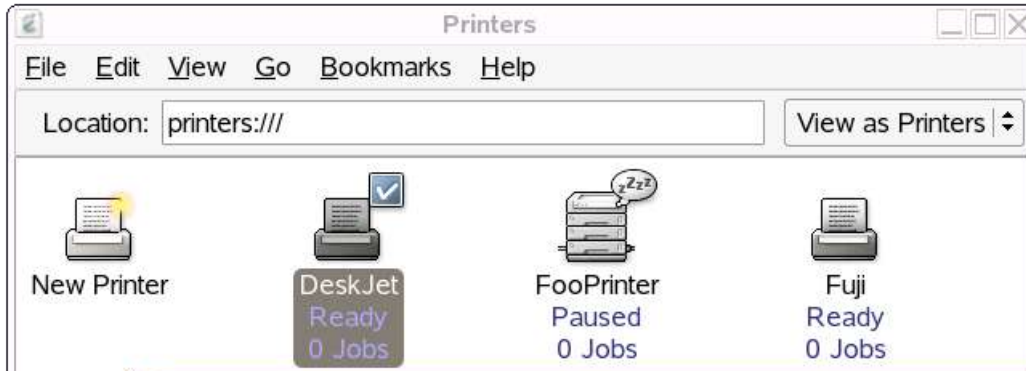
Full gnome- vfs
integration

- authentication
- seekability

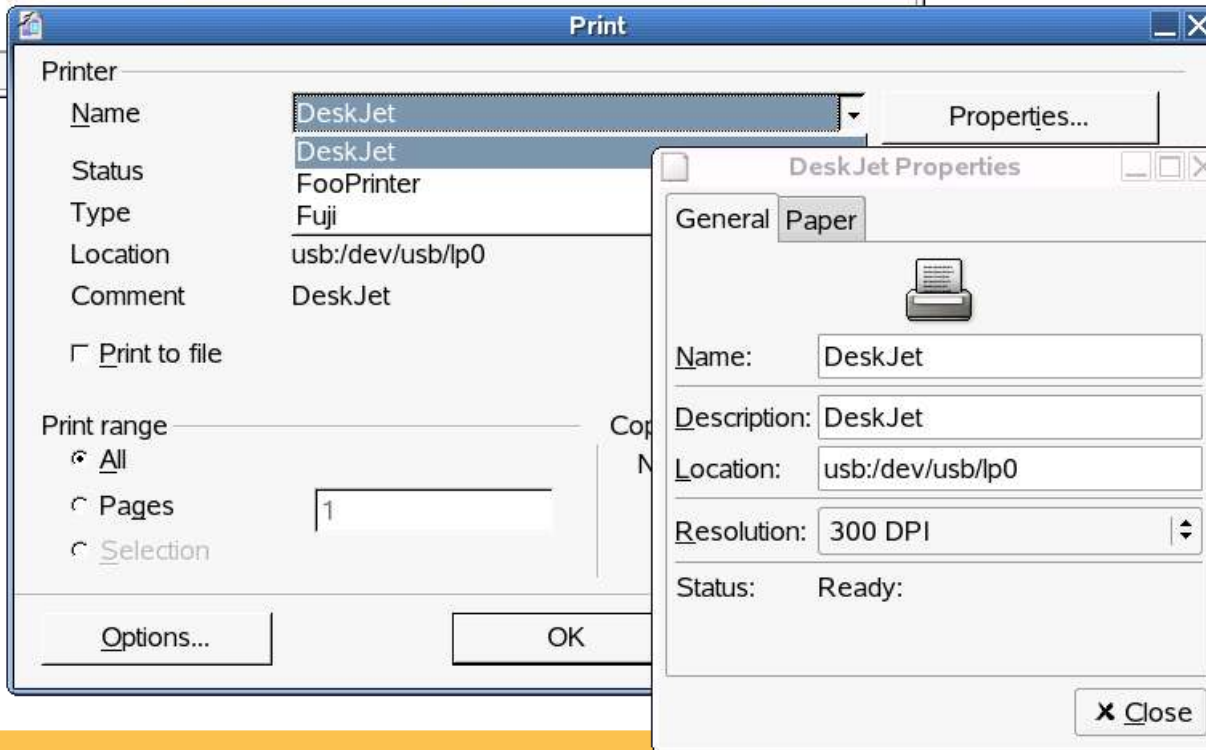


Integrated printing ...

CUPS – the unpleasant truth of the Unix printing standard



Integration with system / network printer discovery and properties

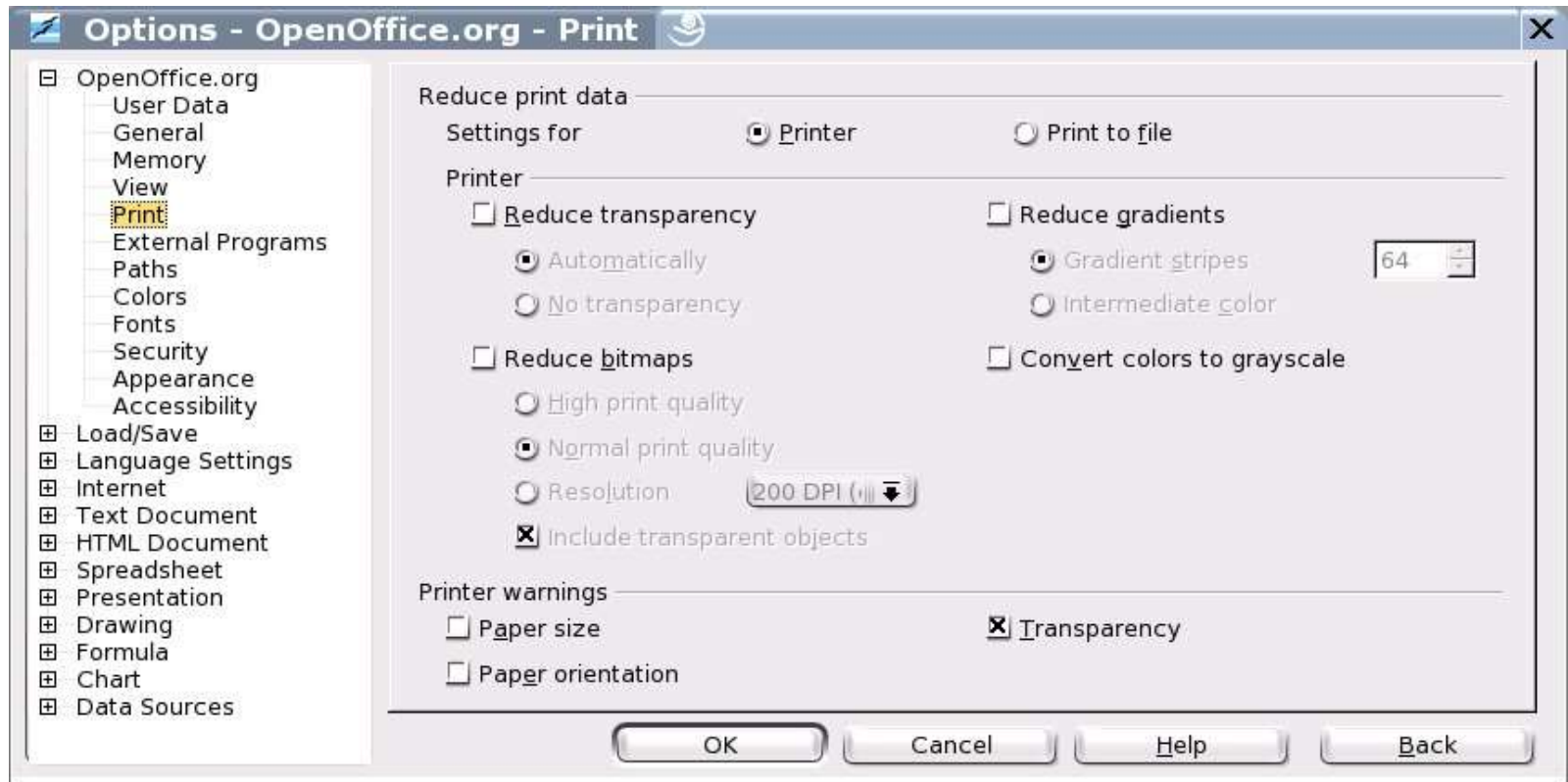


Native Widgets ...

Making everything look that much more friendly

gtk+ - Dan Williams / Philipp / Stephan

Qt – Jan Holesovsky: Keramic:



Options - OpenOffice.org - View

- OpenOffice.org
 - User Data
 - General
 - Memory
 - View**
 - Print
 - External Programs
 - Paths
 - Colors
 - Fonts
 - Security
 - Appearance
 - Accessibility
- Load/Save
- Language Settings
- Internet
- Text Document
- HTML Document
- Spreadsheet
- Presentation
- Drawing
- Formula
- Chart
- Data Sources

Display

Look & Feel: Standard

Scale: 100%

Icon size: Small

Flat buttons

Screen font antialiasing
from 1 Pixels

Menu follows mouse pointer

Single line tab headings

Colored tab controls

Preview in fonts lists

Inactive menu items

Font history

Show icons in menus

Restore

Editing view

Open windows

3D view

Use OpenGL

Optimized output

Use dithering

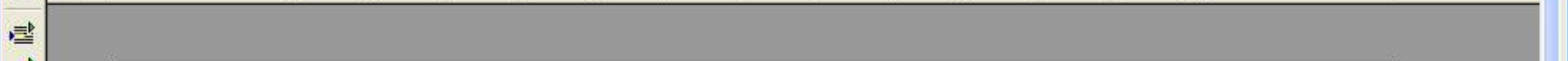
Object refresh during interaction

Mouse

Mouse positioning: No automatic positioning

Middle mouse button: Paste clipboard

OK Cancel Help Back



Options - OpenOffice.org - View

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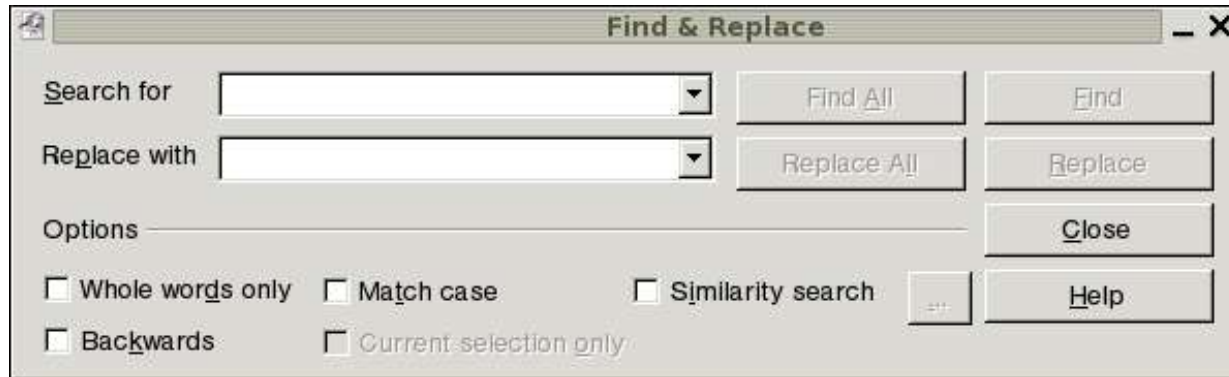
Interesting things ...

- VBA / macro interoperability
 - Translation – not an interoperable solution
 - Have the nasty file format problems cracked
 - Some re-factoring required there
 - Work needed expanding / mapping the OO.o API & improving StarBasic
 - Can't wait for Mono / .Net - ~2006
 - Excel API more intuitive / understood anyway
 - Lots of useful, bite-sized work here.
- File format / filters – plenty of work here
- Ergonomic cleanups all over the shop

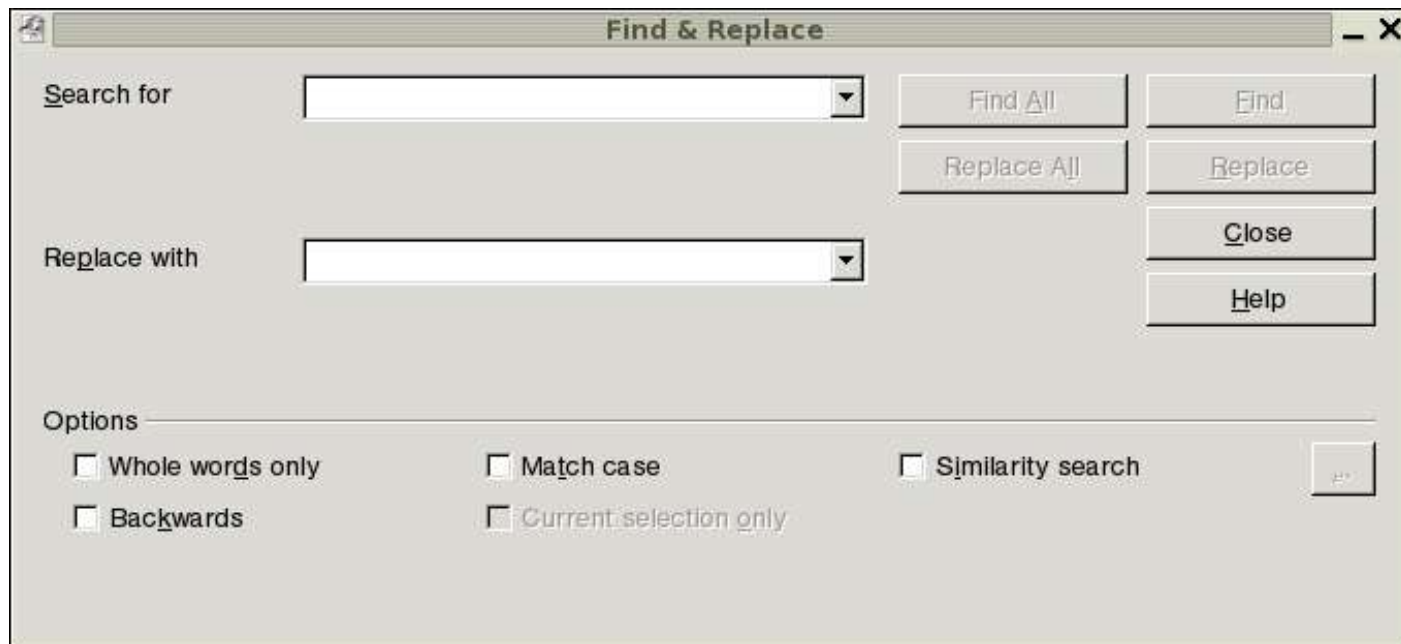


Improving the beauty: layout

We need a GUI design tool too – an area I want to work on.



**Positional
layout can
look no better
than auto
layout**



Conclusions / Thanks

What I spent the last minutes saying – nudge your neighbour it's nearly over

- OpenOffice.org substantially the best
- Work on OO.o:
 - Lots of polish required
 - Lots of small, easy, big- hitting changes left
 - Amazing the documents you'll get sent
- Make a difference for Freedom
- **Sign the JCA today ...**

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

