

Aarhus 2015 CONFERENCE

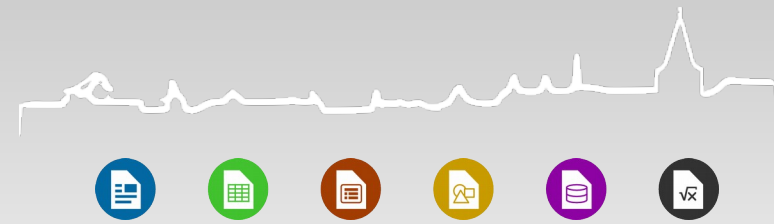


Maintaining lightweight office-based business applications

Florian Haftmann, it@M
(City of Munich)



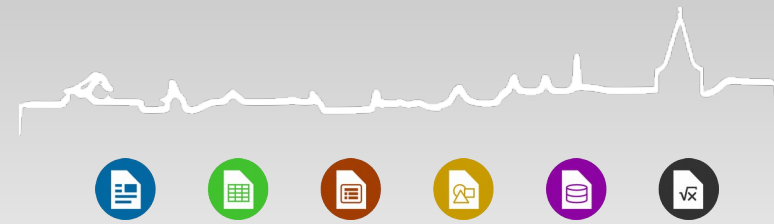
Context – Today



- ▼ Municipality of Munich runs with an Ubuntu-based Linux system on 18.000 machines with 33.000 users
- ▼ ...with leading office platform being LibreOffice 4.1 (OpenOffice.org 3.2.1 on older instances)



Context – History



- ▼ Decision of the city council in 2004:
Transition from proprietary desktop environments to a consolidated free-software desktop environment.
- ▼ Strategy: consolidation by *soft* migration



Context - History



OS consolidation



Context - History



Preparation of infrastructure in *parallel* with office consolidation

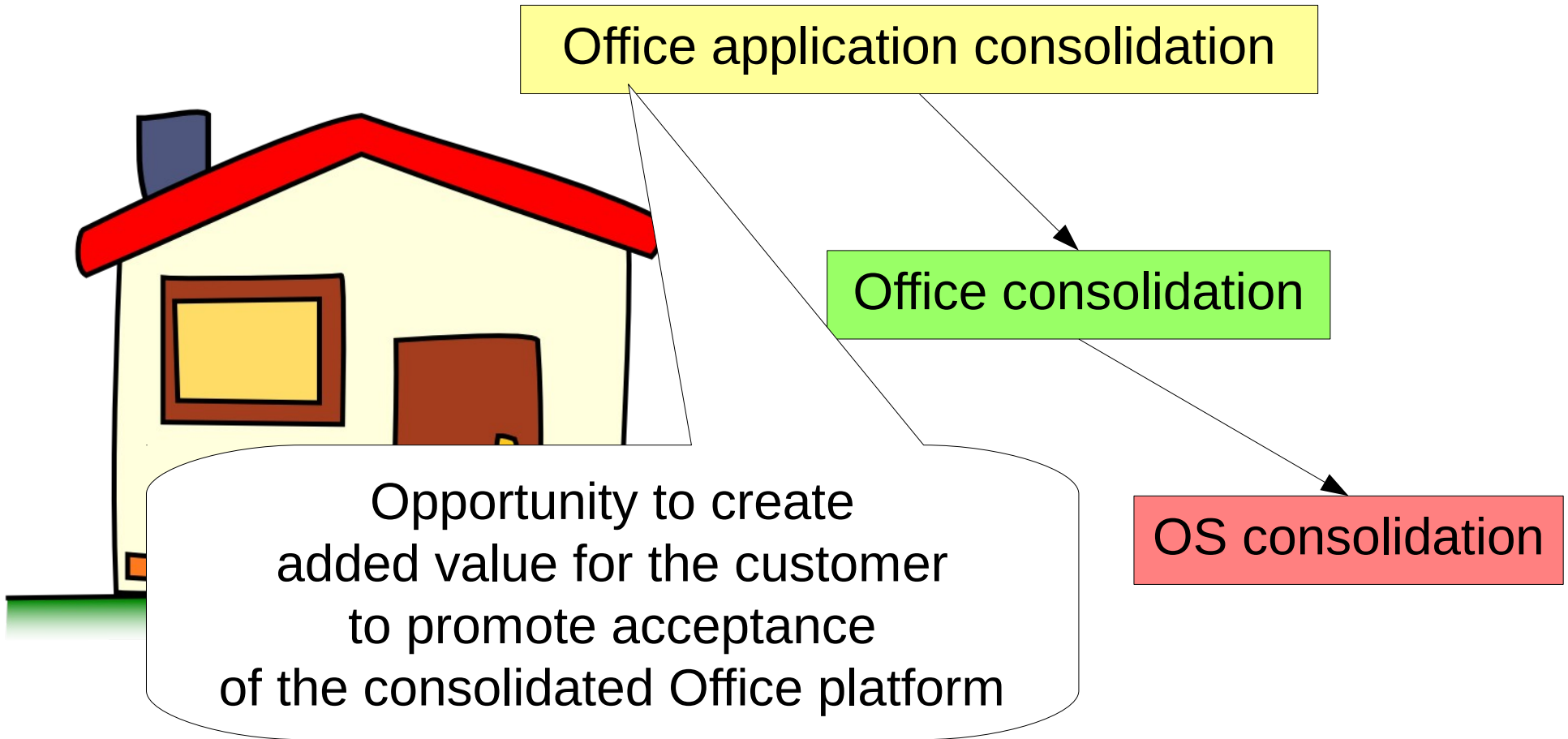
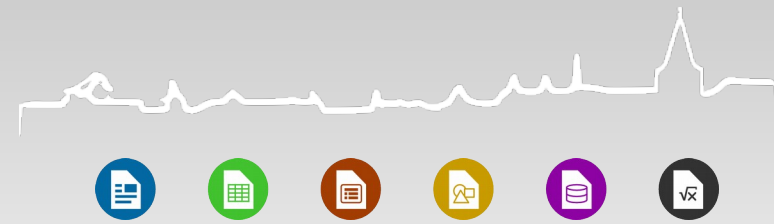
Office consolidation

OS consolidation

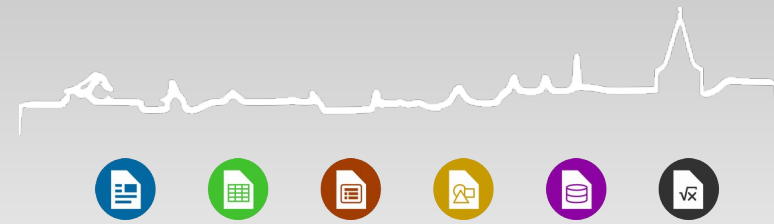
Office platform is users' »main window« to the system



Context - History



Office and Office application consolidation



Before

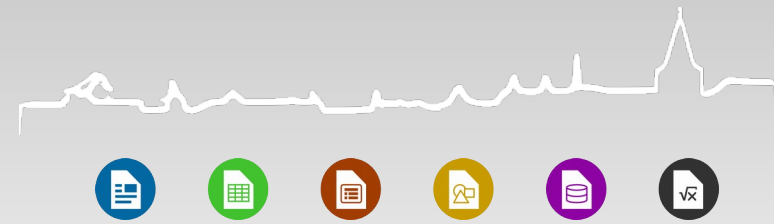
Rich zoo of various office-based business solutions
(about 21.000 macros, templates, forms)

Various versions of a popular proprietary office suite

After



Office and Office application consolidation



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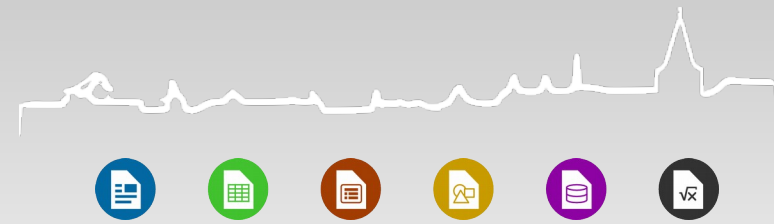
Various versions of a popular proprietary office suite

After

Free office suite with a managed life cycle



Office and Office application consolidation



Before

Rich zoo of various office-based business solutions
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One strategic key component in a public administration.

Various versions of a popular proprietary office suite

After

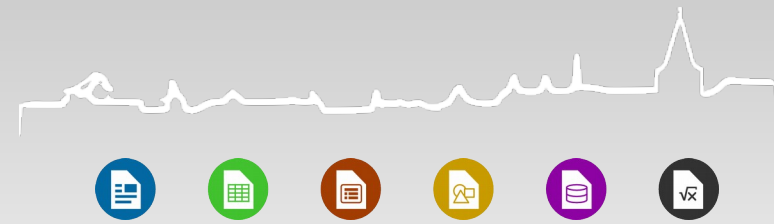
Consolidated templates

Letter head system (WollMux)

Free office suite with a managed life cycle



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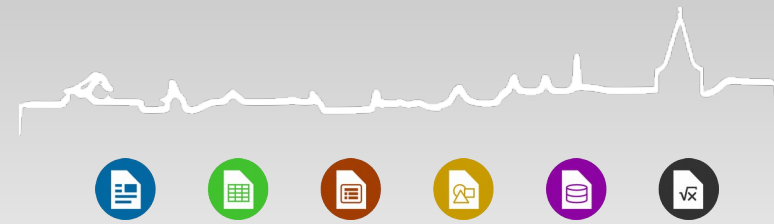
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About 100 specific solutions

Web-based applications

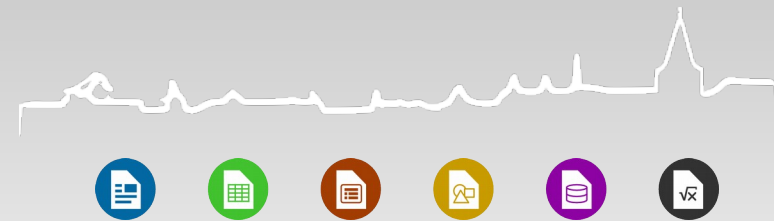
Consolidated templates

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Office and Office application consolidation



Before

Examples:

- »Parkraumbewirtschaftung«
(parking lot management)
- »Elternbriefe«
(letters to parents)
- »Hundesteuer«
(dog tax)

Various versions of a popular proprietary office suite

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Various versions
proprietary

A **macro** is a

- lightweight
- office-based
- business application

After

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Office and Office application consolidation



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Letter

Word

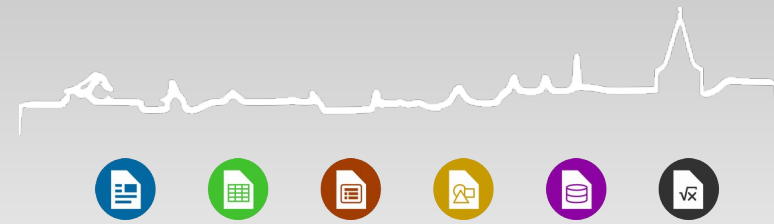
re

managed life cycle

This tiny obstinate core of macros is what the whole story is actually about.



Macros: common attitude

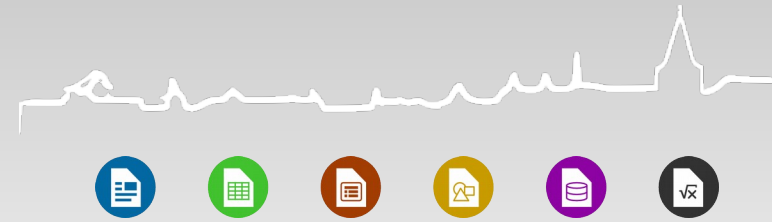


- ▼ Not really relevant
- ▼ Private artefacts
- ▼ Under full responsibility of those who develop them
- ▼ Keep away!

So why care about macros at all?



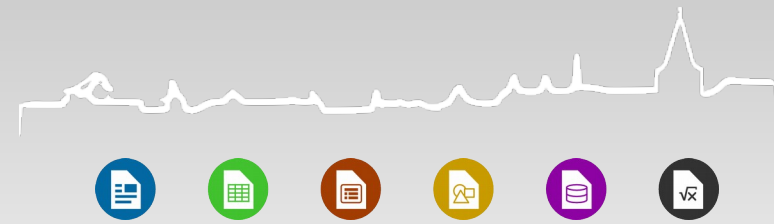
Macros: Why you should care



- ▼ Issue: considerable number of customers with quite selective expectations preferences regarding the office *platform*.



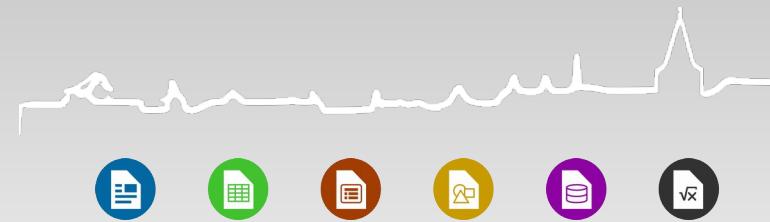
Macros: Why you should care



- ▼ Issue: considerable number of customers with quite selective expectations preferences regarding the office *platform*.
- ▼ Solution: fill remaining gap to provide a business-oriented office *service*.



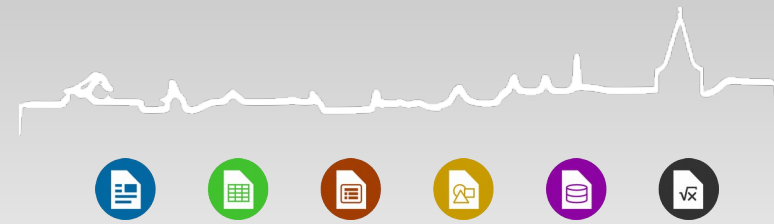
Macros: Technical state of matters after consolidation



- ▼ About 100 macros
- ▼ Downloadable from a Wiki, no integration with automated software distribution:
»click-and-save deployment«
- ▼ Stand-alone extensions as well as macros embedded into documents
- ▼ 98% Star Basic, 2% Java
- ▼ User, admin and developer documentation
- ▼ Quite uniform design concerning configurability and access to external databases

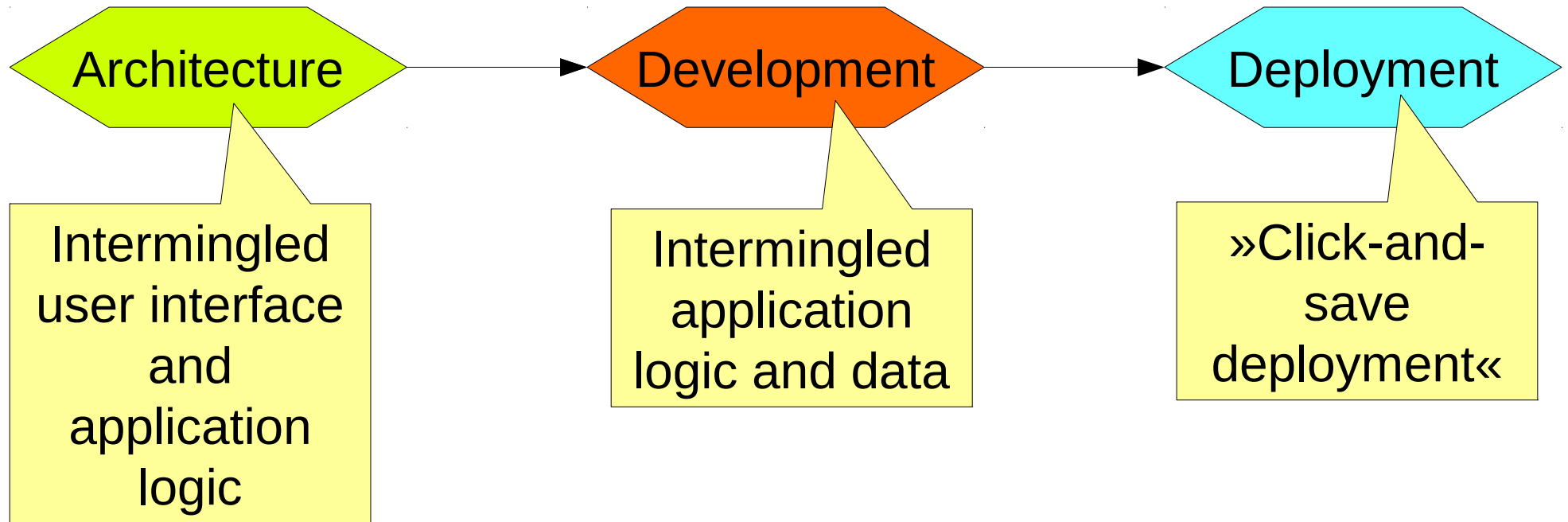


The build and deployment chain



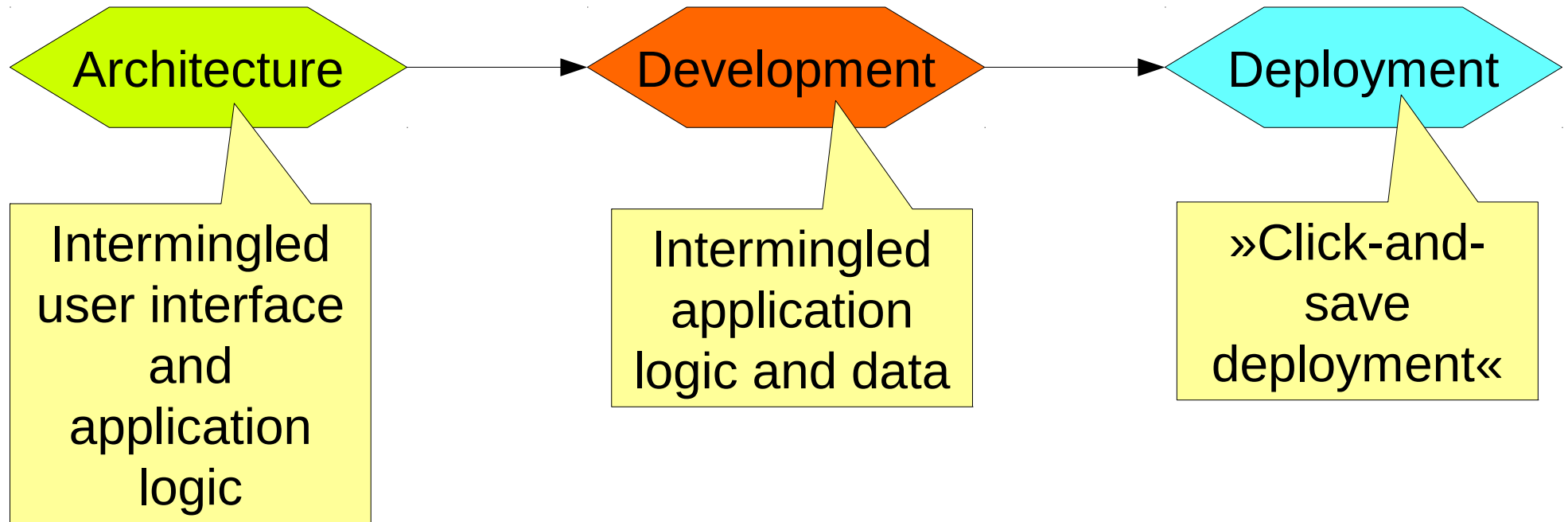
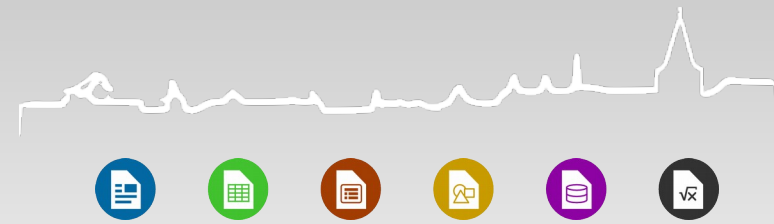
The build and deployment chain

– Major pitfalls



The build and deployment chain

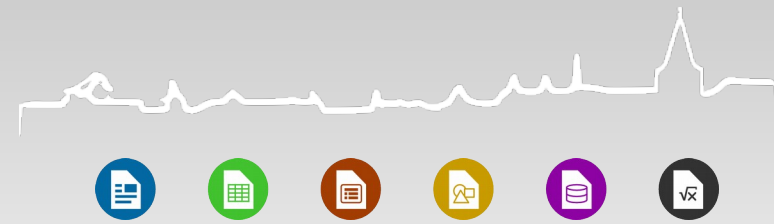
– Major pitfalls



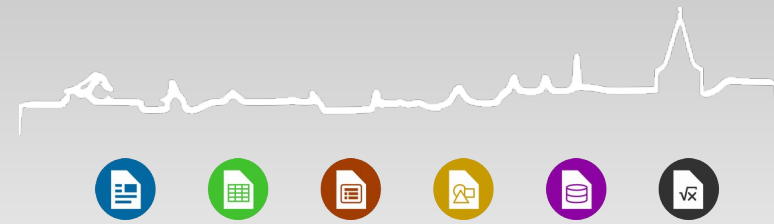
- ▼ This is why macros in first place run against best practice...
- ▼ ...and make maintenance and life cycle management hard!



Improving architecture



Improving architecture



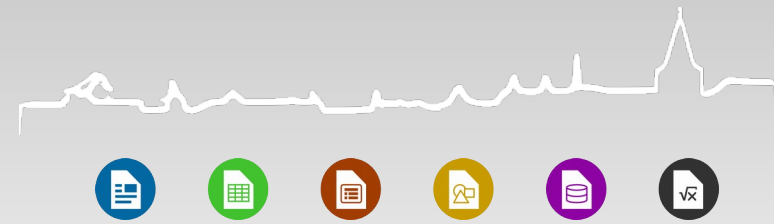
Intermingled
user interface
and
application
logic



- Fundamental design decisions**
- UI of a macro may consist of
 - Menu
 - Button bar
 - Document Templates
 - Logic container
 - Extension (*.opt)
 - (Embedded macros are tolerated for already existing macros)



Improving architecture



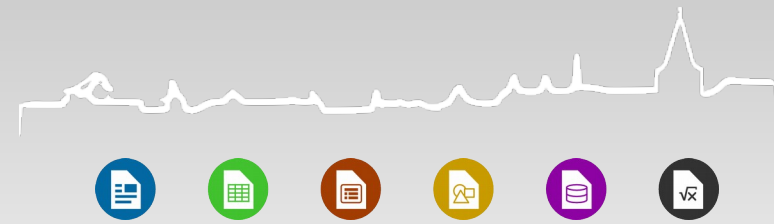
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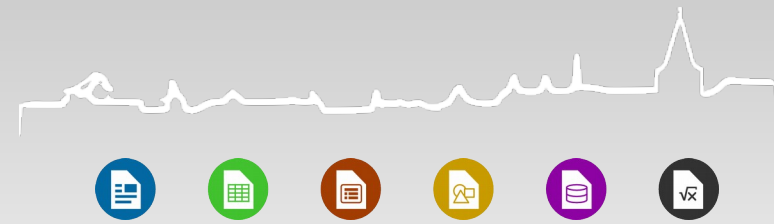
Improving development



Intermingled
application
logic and data



Improving development



Intermingled
application
logic and data

solution

Source storage

- Extensions and documents in *extracted* form
 - Dedicated extraction and bundling tool (*odoc*)
 - Star Basic files as *real* plaintext
 - ≠ Flat OpenDocument
 - Neatless incorporation of Java sources etc.



Improving development



Example sources

```
Addons.xcu
description.xml
Lizenz.txt
MAK_132/dialog.xlb
MAK_132/dlg_abgleich.xdl
MAK_132/dlg_suchen.xdl
MAK_132/dlg_warten.xdl
MAK_132/_Info.star_basic
MAK_132/MAK132_Abgleich.star_basic
MAK_132/MAK132_DBTools.star_basic
MAK_132/MAK132_Import.star_basic
MAK_132/MAK132_Init.star_basic
MAK_132/MAK132_ManuelleKorrekturEin.star_basic
MAK_132/MAK132_Model.star_basic
MAK_132/MAK132_SQL.star_basic
MAK_132/MAK132_Suche.star_basic
MAK_132/MAK132_Tools.star_basic
MAK_132/RegisteredFlag
MAK_132/script.xlb
META-INF/manifest.xml
pkg-desc/pkg-description.txt
```

Deployment

Storage

Icons and documents in
od form
Automated extraction and
indexing tool (*odoc*)
Basic files as *real* plaintext
OpenDocument
Seamless incorporation of Java
Scripts etc.



Improving development



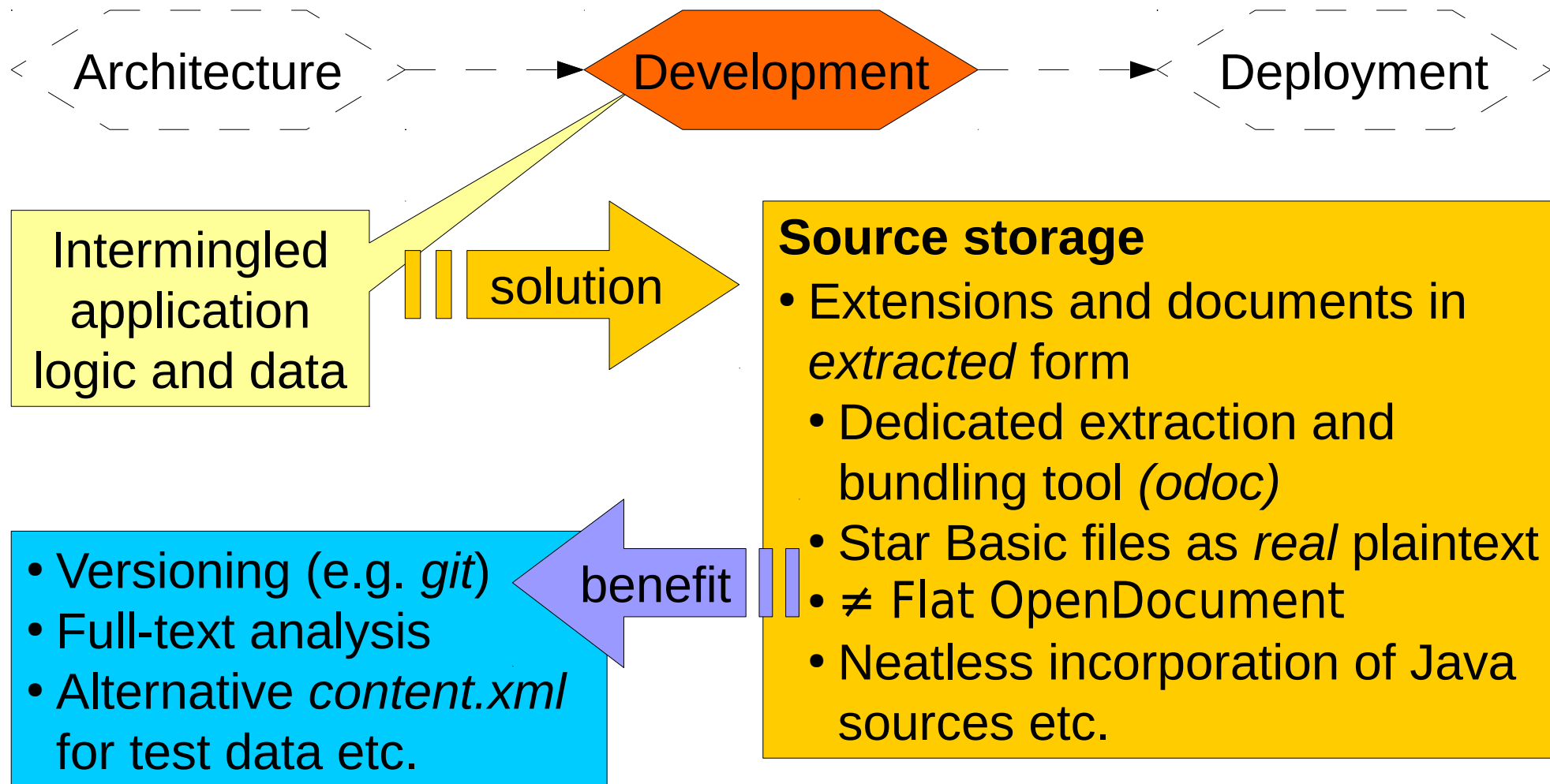
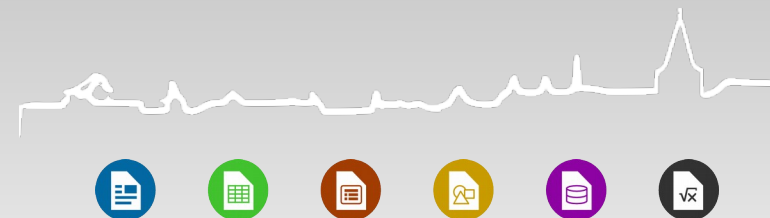
option explicit

Example module

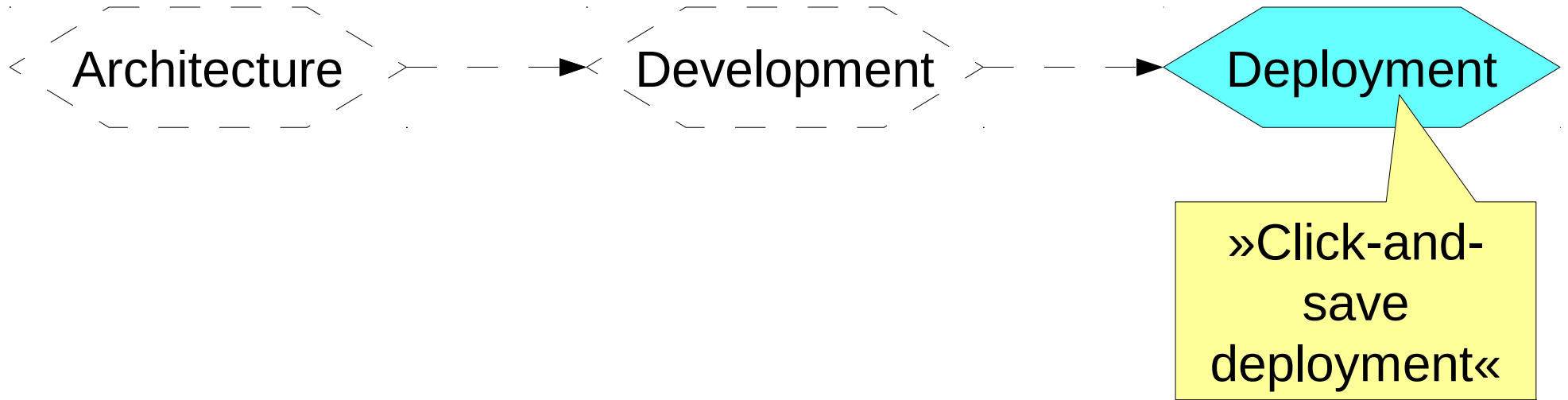
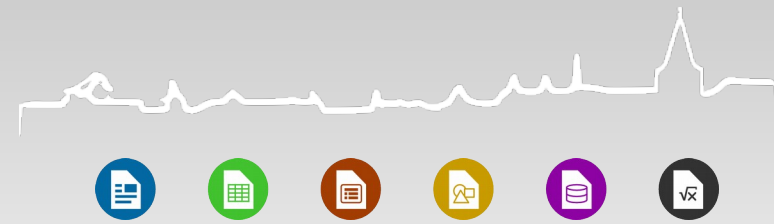
```
'/** MAK132_getGZDByDatum
'*****
' * @kurztext Holt die GZD-Daten für einen definierten Zeitraum
' * kann optional die Suche auf eine Händlerkartenummer eingeschränkt werden
' *
' * @param1 Datum1
' * @param2 Datum2
' * @param3 Kürzel des GZD, optional
' *
' * @return Ergebnis als Array
'*****
'*/
function MAK132_getGZDByDatum(sDatum1 as string, sDatum2 as string, ...
    dim sSql as string
    if isMissing(sGzdkurz) then
        sSql = MAK132_sqlGZDByDate(sDatum1, sDatum2)
    else
        sSql = MAK132_sqlGZDByDate(sDatum1, sDatum2, sGzdkurz)
    ...
```



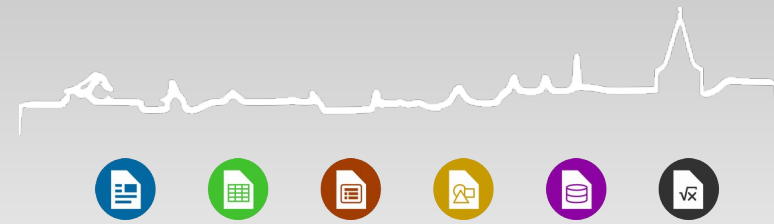
Improving development



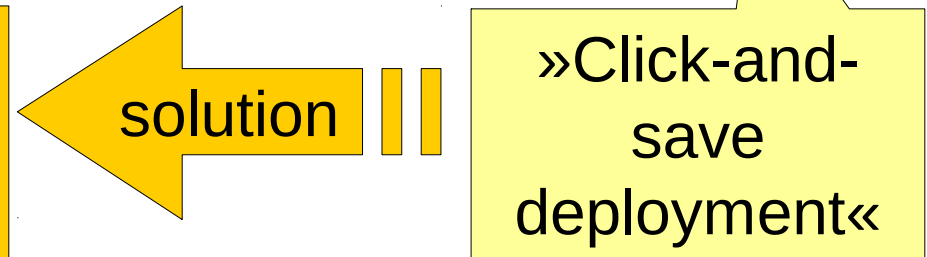
Improving deployment



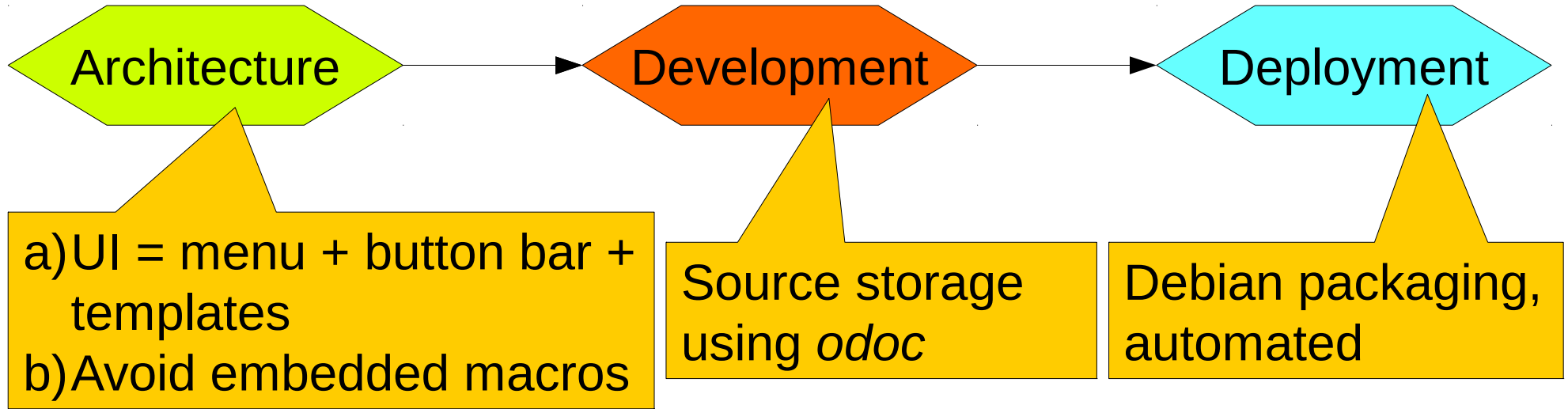
Improving deployment



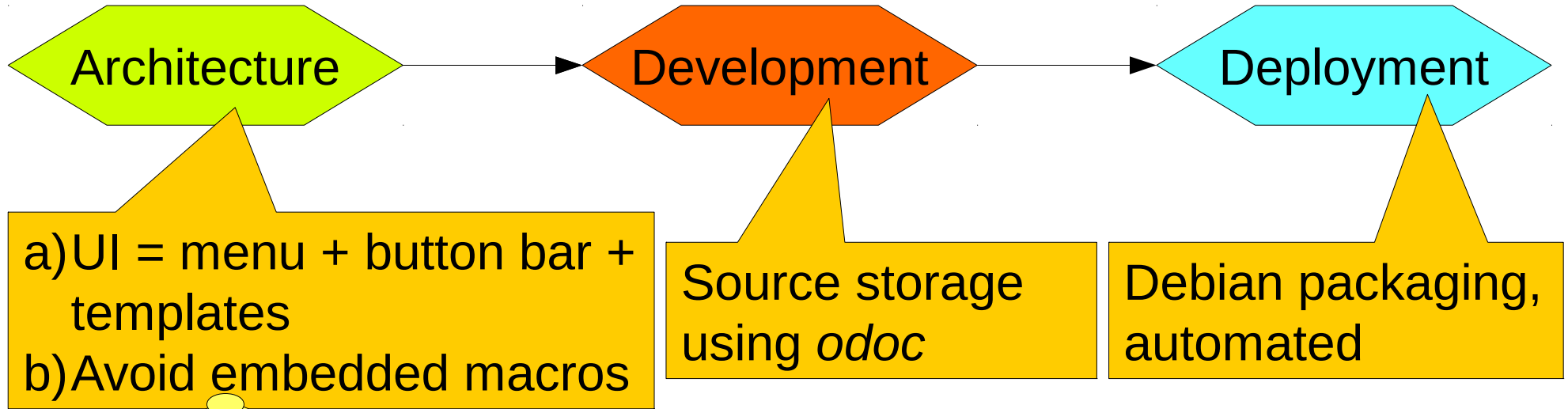
- Deployment as Debian package
 - Installed extension
 - Installed templates
 - User documentation (PDF from source ODT)
- Prevent irregular change of application logic by *encryption* (tool *ocrypt* in *python3-uno-util*)
- Automated packaging process



Stocktaking: Vital elements



Stocktaking: Vital elements and missing pieces



Technologies beyond Star Basic?



Stocktaking: Vital elements and missing pieces



a) UI = menu + button bar + templates
b) Avoid embedded macros

Source storage using *odoc*

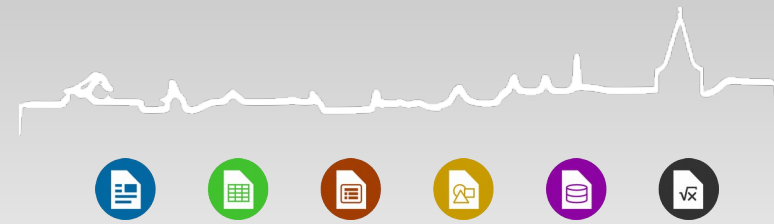
Debian packaging, automated

Technologies beyond Star Basic?

Using software distribution for configuration parameters (presently requires manual hands-on)

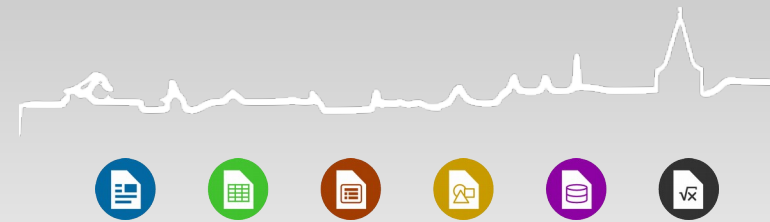


The story continues...



- ▼ Upcoming challenge: transition to LibreOffice 5.0
- ▼ Unknown territory: How big is the demand for further macros and how can that be managed?
- ▼ Alternative implementation technologies beyond Star Basic to be explored





- ▼ An office service is more than an office platform.
- ▼ Make use of our tools if they are useful (GPLv2, EUPL):
 - ▼ <http://www.wollmux.net/>
 - ▼ <https://bitbucket.org/haftmann/odoc>
 - ▼ <https://bitbucket.org/haftmann/python3-uno-util>
- ▼ Similar experiences you want to share? Or just being curious?
 - Talk to or contact us:
 - ▼ (during conference) florian.haftmann@in.tum.de
 - ▼ (in general) limux@muenchen.de

