Apache OpenOffice™

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Creating dictionaries for Apache OpenOffice and maintaining them through web services

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- VP, Apache OpenOffice
- Unaffiliated volunteer
- Dictionary packager
- Day job: web developer

Getting Started

OpenOffice Language Support

```
$ svn ls https://svn.apache.org/repos/asf/openoffice/trunk/extras/l10n/source/ | grep -c /
112
```

Writing Aids: An Overview

- Spell checker
- Thesaurus
- Hyphenation Patterns
- Grammar Checker

Spell Checker

- Engine: **Hunspell**, integrated in OpenOffice.
- Hunspell dictionaries available for 100+ languages.
- http://hunspell.sf.net

Thesaurus

- Engine: integrated.
- OpenOffice-specific format.
- Must start from scratch.
- lingucomponent.openoffice.org

Hyphenation Patterns

- Engine: Hyphen, from Hunspell.
- Integrated in OpenOffice.
- Format: tool-specific.
- But you can convert **TeX** patterns: http://ctan.org/

Grammar Checker

- Available only as API.
- Options as **extensions**: LanguageTool, LightProof, CoGrOO and more.
- Format: tool-dependent.

Licensing Issues

Mere Aggregation

- Crazy variety of licenses.
- Many incompatible with AL2.
- But bundling is allowed: "mere aggregation", LEGAL-117

Extensions (OXT)

- Writing Aids are now extensions (XML+data+ZIP)
- Hosted anywhere, bundled at build time.
- Reinforces “mere aggregation”.

Choose your license

- **AL2:** Apache License, free and permissive, GPLv3 compatible.
- **LGPLv3/GPLv3:** can be used through mere aggregation.
- **AGPLv3:** untested so far, but likely mere aggregation too.

(Don't) Meet Apache Legal

- Extensions are externally hosted
- extensions.openoffice.org considered external too.
- No paperwork needed!

Distributed Management

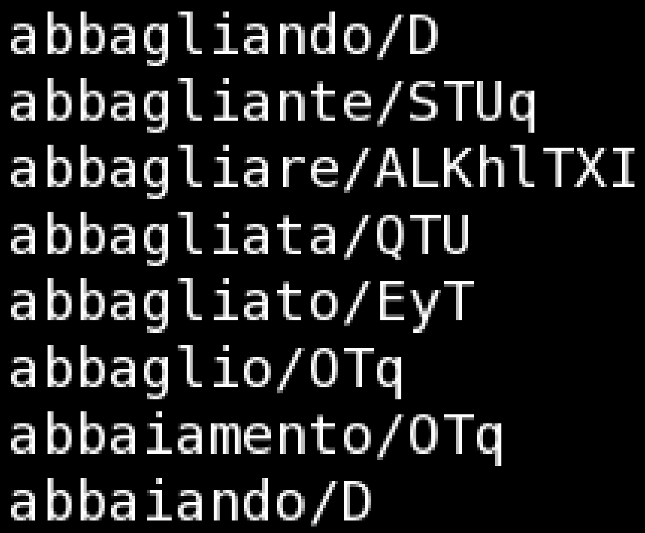
Use a repository

- Make sources available in an **online** repository.
- Use **version control**.
- Expose a web-based **change tracking** interface.

Spell Checker

- One file in text format.
- Human readable, except rules.
- Good for collaborative editing.

Spell Checker: example

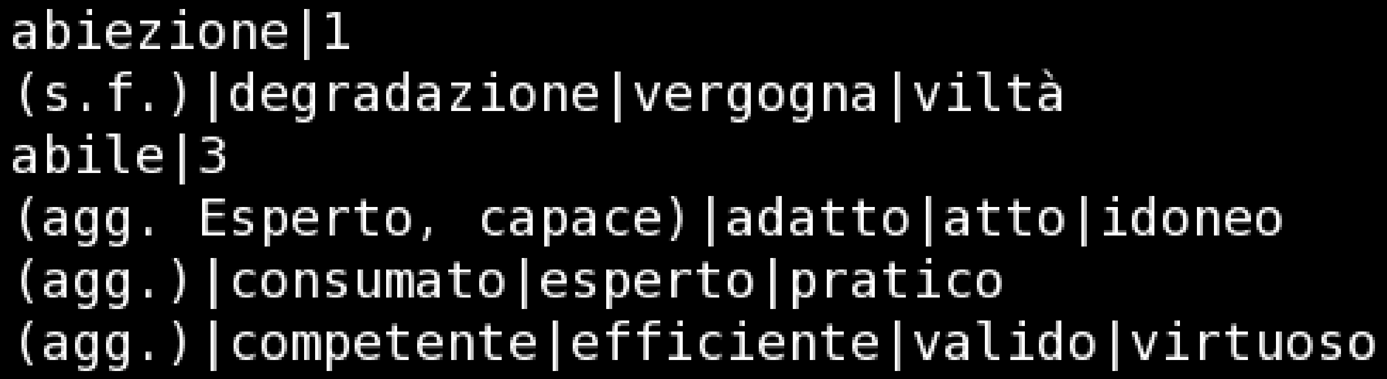


```
abbagliando/D
abbagliante/STUq
abbagliare/ALKhlTXI
abbagliata/QTU
abbagliato/EyT
abbaglio/OTq
abbaiamento/OTq
abbaiando/D
```

Thesaurus

- One file in text format.
- A generated index.
- Human readable.
- Good for collaborative editing.

Thesaurus: example

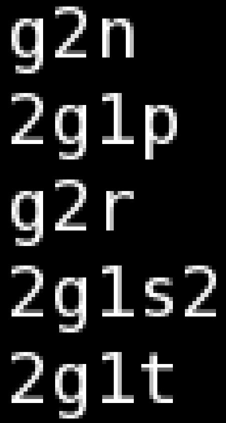


```
abiezione|1
(s.f.)|degradazione|vergogna|viltà
abile|3
(agg. Esperto, capace)|adatto|atto|idoneo
(agg.)|consumato|esperto|pratico
(agg.)|competente|efficiente|valido|virtuoso
```

Hyphenation

- One text file.
- Format: less readable than Perl!
- Changes very rarely.
- Fix bugs upstream, in TeX.

Hyphenation: example



```
g2n
2g1p
g2r
2g1s2
2g1t
```

Grammar checker

- LanguageTool: rules in XML.
- Fix upstream, in LanguageTool.
- Collaboration possible.

Grammar checker: example

```
<!-- Punto esclamativo ripetuto (!) -->
<rule>
  <pattern>
    <token>!</token>
    <token>!</token>
  </pattern>
<message>Se ne mette uno solo: <suggestion>!</suggestion>.</message>
<example type="incorrect">Fammi parlare<marker>!!</marker></example>
<example type="correct">Fammi parlare<marker>!</marker></example>
</rule>
```

Packaging

- Generation of the OXT extension is scriptable.
- Post-commit hook possible.
- Keep generated OXT files in the same repository.

Team Structure

- Collaboration possible in every component.
- A script to package the extension.
- A **release manager** to make stable versions available.

Community Involvement

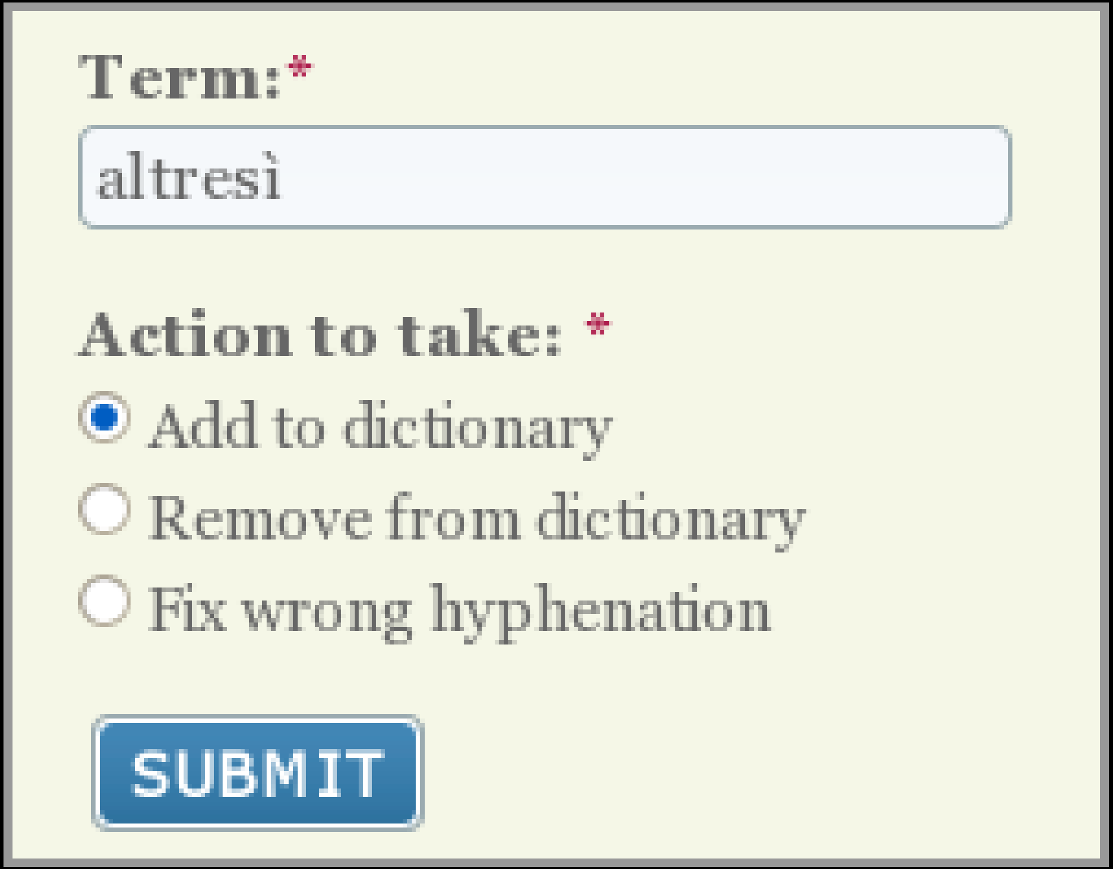
Going 2.0

- Native-lang community: best people to improve N-L tools.
- Motivated users, interested in improving OpenOffice.
- Issue: providing efficient infrastructure.

Web-based interface

- An idea from OOoCon 2010.
- Report missing or erroneous words from within OpenOffice.
- Easy to setup as web service.
- Notifications: e-mail to maintainers, suggestions in DB.

Web based interface: example



Term:*

altresì

Action to take: *

● Add to dictionary

○ Remove from dictionary

○ Fix wrong hyphenation

Expose web services

- Direct usage of the web application via browser.
- Access available through web services too.
- Suitable for applications or macros.

Web services in OXT

- Embed a macro in the OXT dictionary package.
- Right-click on a word:
  - Nominate for inclusion in dictionary
  - Nominate for removal from dictionary
  - Report wrong hyphenation

Thesaurus maintenance

- Vithesaurus: free online tool for collaboratively creating and maintaining a thesaurus.
- In use (German) at http://www.openthesaurus.de
- https://github.com/danielnaber

Handling Duplicates

- Millions of users can lead to duplicate reports.
- But it's a plus: use frequency for ranking.

Handling Wrong Reports

- Annoying: users make some **wrong** suggestions and repeat them!
- The web application supports “motivated blacklisting”: repeated wrong submissions are handled and a message can be shown to the user.

Thanks for attention

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Image credits: Flickr, PLIO Archives.