Vertical Writing: typical use-cases and current status in LibreOffice

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Agenda

- Japanese vertical writing basics and use-cases
- Current implementation of LibreOffice vertical writing
- Deeper look from the end-user point of view
- Conclusion
Japanese vertical writing basics and use-cases
Japanese specific text rendering

- Vertical Writing (TTB)
  - Top to bottom, right to left
  - Used by Japanese, Chinese
  - Only for text writing, NOT UI
- Ruby
  - Pronunciation expression

See:
Requirements for Japanese Text Layout
by W3C Working Group Note 3 April 2012
http://www.w3.org/TR/jlreq/
Vertical Writing Basic (from the W3C document)

Vertical Writing
縦組；tate gumi

The process or the result of arranging characters on a line from top to bottom, of lines on a page from right to left, and/or of columns on a page from top to bottom. (JIS Z 8125)

Requirements for Japanese Text Layout
Appendix G Terminology
http://www.w3.org/TR/jlreq/#term.vertical-writing-mode

http://www.w3.org/TR/jlreq/#vertical_writing_mode_and_horizontal_writing_mode
Typical use-cases of vertical writing

- Non-technical / Scientific publications
- Novels
- Magazine
- Papers
- Business/Popular Science books
- School Education
- Letter
- Diploma
Typical use-cases of vertical writing

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NOT for specific people
Used in usual business

See “Credits” page for copyright informations of each images
Vertical Writing is key feature for...

- (non-professional) Novel writers
  - … to publish their novels personally
- Teachers
  - … to make drills / exams / subtexts
- Public Organizations
  - … to make “FORMAL” letters
    - Elder people thought vertical writing letter is more formal in our culture
  - … to create their own magazine / papers
Current implementation of LibreOffice vertical writing
LibreOffice for Japanese

- Translations
  - UI / Help
  - Release Notes / Announcements
  - Documents...

- Functions
  - Basic CJK text rendering (CTL Support)
  - Japanese specific rendering (see next slide)
  - JP locale specific features
    - e.g. Japanese Calendar
How to use vertical writing

- Need to enable “Asian” language support in Option ▶ Language Settings ▶ Language

- Format ▶ Page ▶ Text Direction appers (in Writer)
How to use vertical writing (cont'd)

Format ➤ Page ➤ Text Direction appers (in Writer)

… or “vertical text” box icon can be seen in the “Drawing” toolbar (Calc, Impress and Draw)
Functionality

- Page can be set text direction in Writer
- Or create “vertical writing” box as well (Calc, Impress, Draw)
- Basically works well
  - Even vertical-writing support fonts are needed
- Several “corner-case” bugs
- ... will discussed later
Implementation

- Starting point:
  b14861e1dfb9f83d26d6032ae96b664845528f2a
- Fix tdf#77514 CJK ruby text in RTL( vertical ) base line issue.
- Thanks Mark Hung to his great works about CJK!!
- Looking into this…
  - IsVertical() function tell us it's in vertical writing mode
  - git grep “IsVertical()” sw
  - Many many many many…

```c
if (xxx->IsVertical()) {
  ...
}
```
Implementation (cont.d)

Back to the document and found the “swapped frame”

“The three main tasks of the text formatting (formatting paragraphs, painting of text and cursor travelling) are performed on swapped frames and afterwards the results are translated back.”

“Writer/Text Formatting” - “Vertical formatting”
https://wiki.openoffice.org/wiki/Writer/Text_Formatting#Vertical_Formatting
Implementation (cont.d)

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“Writer/Text Formatting” - “Vertical formatting”
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Deeper look of LibreOffice vertical writing

... Functional (end-users) view

**Note:** the goal of this talk is NOT reporting bugs, my point is there are many “corner case” specifications that should be cared by us (Japanese users / developers)
Rendering bug in Mac OS X

- Problem with input method...?
- Seems the effect of font metrics
- e.g., IPA Gothic vs. Hiragino
Proportional fonts

- Basically, **non-proportional** fonts should be used in vertical writing mode
- However, default font sets of Writer are **proportional**
- Easy to make a mistake
- There are several rendering issues with proportional fonts
- Wrong usage but MS Word seems OK
- Having a **specific default font for vertical writing** is considerable option
Western characters

- Basically, western characters should rotate 90° clockwise
- If you won't, use FULLWIDTH LATIN (U+FF21-FF3A, U+FF41-FF5A)
- In OS X, the rotating doesn't work if we combined Western font
- IPA Gothic + Liberation Sans
- Using Hiragino, not only as Asian font but also Western font is OK
Horizontal-in-vertical composition

- Horizontal-in-vertical composition (縦中横；tate-chu-yoko)
- Format ▶ Character... ▶ Position Rotation / Scaling: 90 degrees
- Hard do find for end users
- Any shortcut?
- MS Word has ;)
- (could be an extension??)
Minor UI Issues

- **Common:**
  Some images indicate a form of document should be rotated

- **Tool Bars**
  - Icons are OK, but tooltips aren't

- **Side Bars**
  - Icons don't rotate
  - “text direction” icons doesn't exist even the “text formatting” toolbar has
Minor UI Issues (cont'd)

- Format Page, “Columns” tab
- Image preview tells columns split vertically,
- But actually split horizontally

![Image of column settings interface]
Conclusion
Vertical Writing is...

✔ Used in normal documents, in usual business scene
✔ Key feature for some kind of people

Vertical Writing in LibreOffice is...

✔ **Works well** in generally use, but there is **some room to improve**
✔ To fix rendering problems, deep dive into Writer's (complex) rendering code
✔ But we, Japanese, must try because we know how vertical writing should work
✔ Some UI improvements are **good exercises** for development newbie (like me!)
Thank you having an interest!

- I hope I will fix a “easy-to-fix” bug in the term of this conference
- Please brave, and mentor me :(
Credits

- Mori Ōgai, “Takasebune,” Aozora-bunko
  http://www.aozora.gr.jp/cards/000129/card45245.html
  Public Domain

- ASCII Media Works, Ubuntu Magazine Japan vol.10
  http://ubuntu.asciimw.jp/elem/000/000/010/10558/UM10_P4-7.pdf
  Creative Commons 3.0 BY-NC-SA

- お礼状、案内状、手紙の書き方と例文
  (Writing how-to and examples of thanks letters, invitation letters and other letters)
  http://letter.sincerite-shop.com/sub38.html

- Wikipedia 「賞状」 (Diploma)
  https://ja.wikipedia.org/wiki/%E8%B3%9E%E7%8A%B6