The package bazaars and the cathedrals

source: https://en.wikipedia.org/wiki/Sagrada_Fam%C3%ADlia CC BY-SA 3.0 by Bernard Gagnon
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My mission: make it easier to reuse FLOSS

Enthusiast FLOSS developer
AboutCode, Linux kernel, a bit on strace, SPDX (and Eclipse, JBoss, and more)

CTO at nexB Inc. a software company helping software teams understand where their code comes from (and its licensing, vulnerability, quality, etc) with a combo of:
  ○ FLOSS tools
  ○ a commercial enterprise Dashboard
Why do

$ apt/rpm install/update

work all the times?
.... and why

$ pip/npm/bundle...install/update
does NOT work always?
Last century..., esr wrote the seminal catb essay:

“I had been preaching the Unix gospel of small tools, rapid prototyping and evolutionary programming for years. [...] I believed that the most important software (operating systems and really large tools like the Emacs programming editor) needed to be built like **cathedrals**, carefully crafted by individual wizards or small bands of mages working in splendid isolation, with no beta to be released before its time.

Linus Torvalds’s style of development—release early and often, delegate everything you can, be open to the point of promiscuity—came as a surprise.

PACKAGE CATHEDRALS
pAckage bAZaaRs
Not the same packages!

- multiple OSes vs. single OS
- Language-specific vs. general purpose
- Author vs. Maintainers
- Builder vs. Users
- Test one vs. test them all
- Release alone vs. release together
- Simple deps vs. rich dep semantics
- Latest and greatest vs. working and compatible set
- As-is & unmodified vs. patched & deconstructed
VS.

sources: https://www.amazon.com/Bucket-Building-Bricks-Blocks-Compatible/dp/B01JHGJSNC
https://www.amazon.com/Nanoblock-Sagrada-Familia-Building-Construction/dp/B01DIQJSZA
Perspectives

As a user, I want a stable, integrated and working whole system

As a builder, I want a function-specific, single purpose and simple building block
Dependencies

Language-specific PMs have simpler dependency models

- build or runtime
- limited conflicts resolution

Distro PM dependencies use rich vocabulary

- Build, Depends, Pre-Depends, Recommends, Suggests, Enhances, Breaks, Conflicts, Obsolete, etc.
- Boolean satisfiability based (e.g. SAT) complex conflicts resolution
Social contract & coordination

Language-specific Packages are built by an individual
- single "function" focus
- no coordination
- utilitarian injection molding

Distro Packages are built by a team
- whole system focus
- extensive coordination and collaboration
- art and architecture!
bazaar & cathedrals all the way

yields

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bazaar & cathedrals all the way

Each Language-specific Package is a mini cathedral
● single "function" focus
● no coordination

Distro Packages are built by a team
● whole system focus
● extensive coordination and collaboration
We are all system integrators!

- Coordination is HARD!
- Call to action:
  - I am a user and builder at the same time
  - I will stop bitching about out-of-date distro packages
  - Distro packages need our love!
Plug

Join me for **Build tracing with strace 13:00** in the debugging tools dev room
Thank you!
Credits

Special thanks to all the people who made and released these awesome free resources:

- Presentation template by SlidesCarnival
- Photographs by Unsplash
- Icons from openclipart.org

And all the FLOSS software authors!