The PostgreSQL Open Source Development Process

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This explores the Postgres open source development process and developer motivations.

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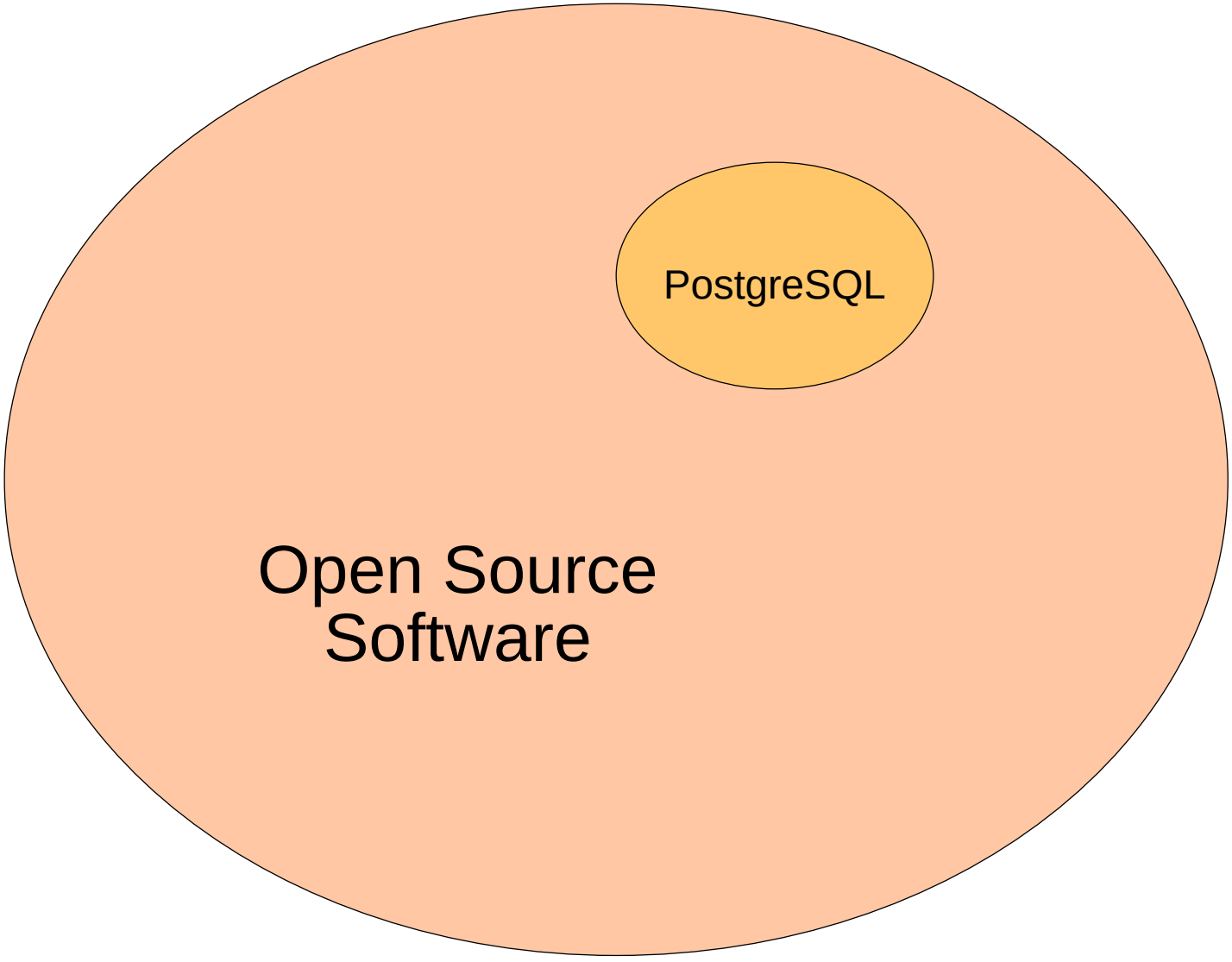
Introduction

- How is open source development different from closed source?
- What is the pattern of PostgreSQL adoption?
- What does the future hold for PostgreSQL?

Open Source World



Revolutionary Change in Software Development: Challenging Totalitarianism

- Central Control
- Few Choices
- Limited feedback from population

Bringing Democracy to Software Development

- Distributed Control
- Many Choices
- Driven by feedback from population

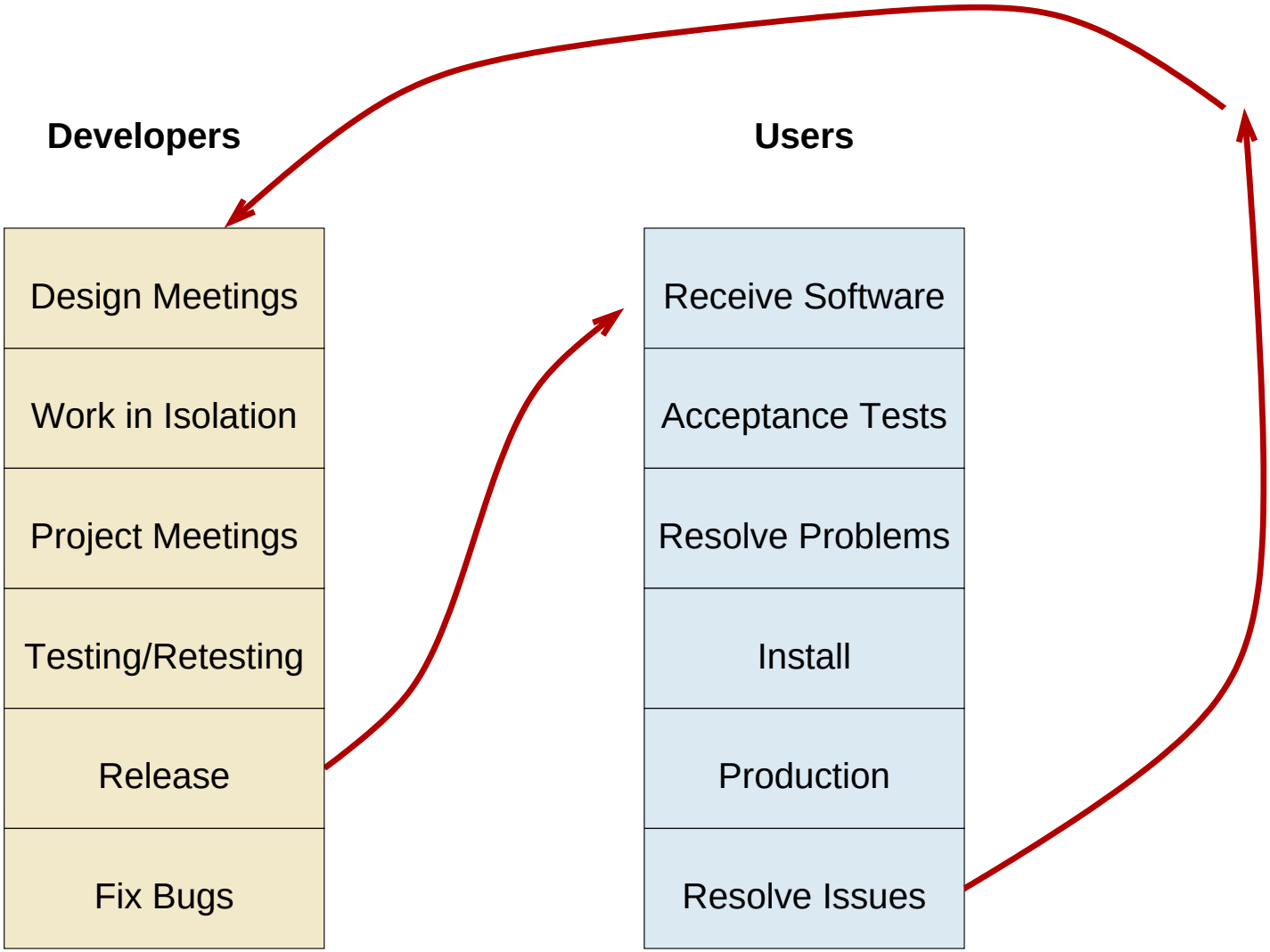
Proprietary Software Development

- Put everyone in a room
- Discuss new features and how to implement them
- Everyone goes back to their office
- More meetings
- Testing
- Release
- Gather user bug reports
- Repeat

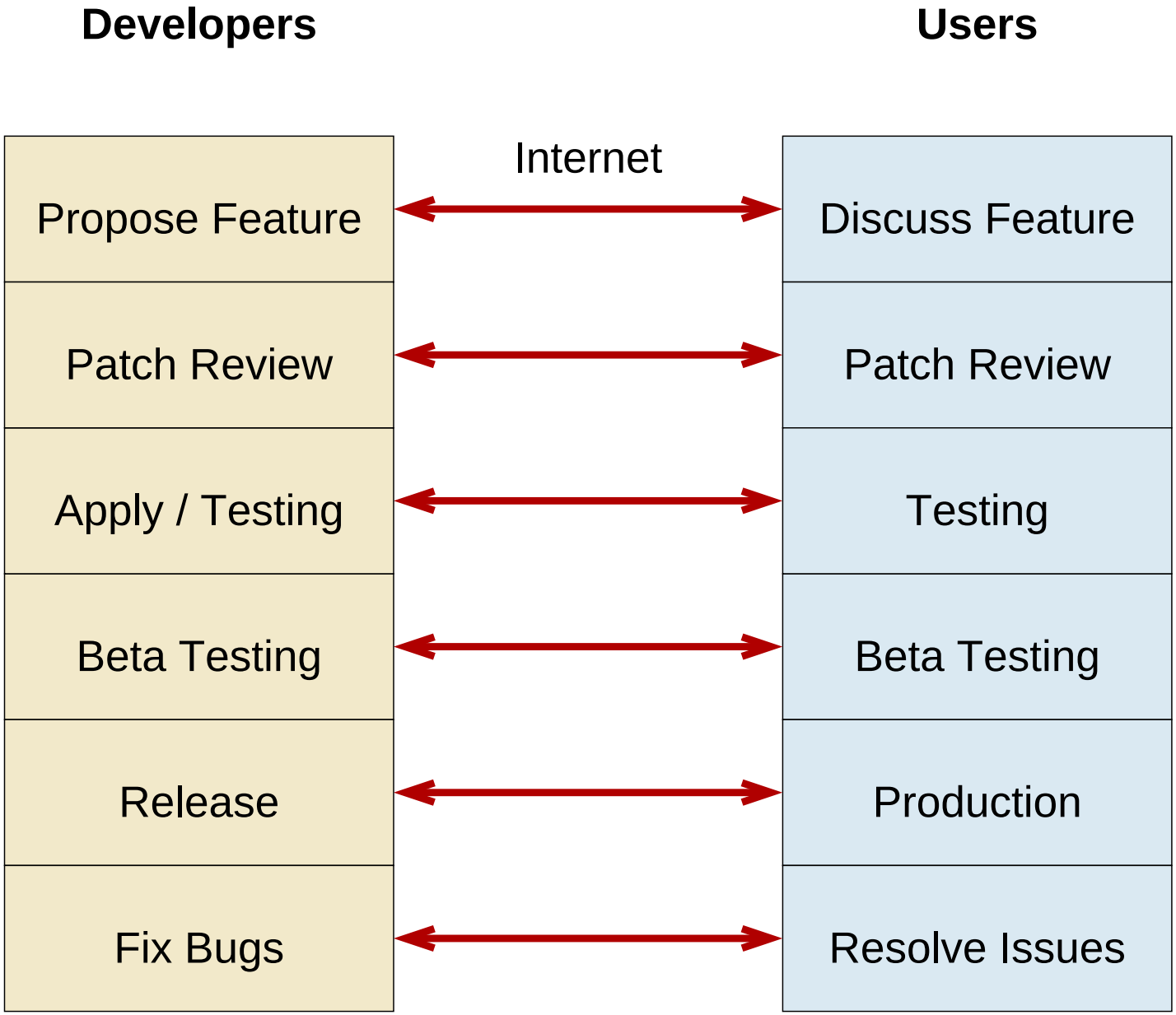
Open Source Development

- Discuss via email, with access to a world-wide pool of talent
- New features discussed over several days by developers and users
- Coding
- Patch review
- Patch application and testing
- User testing
- Release

Proprietary Software Development



Open Source Development



Typical Proprietary Database Product Life Cycle

- Create product
- Grow customer base
- Reduce development budget
- Decrease technical support costs
- Increase license fees
- Maximize revenue
- Customers leave
- End-of-life product

All possible because of high switching costs.

Typical Open Source Life Cycle

- Create project
- Developers create initial software
- Users and developers improve the software
- No development budget
- No technical support costs
- No license fees
- No maximizing of revenue
- No customers leaving!
- No end-of-life

PostgreSQL Is Completely Open Development

- No controlling company or individual
- Active multi-company and volunteer community
- Open development process
- Leadership encourages new members

PG Life: http://pglife.momjian.us/

PgLife Postgres Community Life

Users

General	Re: How can I select rows by comparing an array data type column with multiple values ?
Other	Re: [BUGS] postgresql test failure with Python 3.4.0 in plpython_do
Announce	PG Partition Manager v1.7.1 Released

Developers

Hackers	Re: backup_label revisited
Commit	Improve the efficiency of certain jsonb get operations.
Versions	Stable: 9.3.4+, 9.2.8+, 9.1.13+, 9.0.17+, 8.4.21+ | Development: 9.4 beta, 9.4beta1

External

Blogs	Leo Hsu and Regina Obe: psql watch for batch processing
News	PostgreSQL Maestro 14.5 released
Media	Met Office selects 2ndQuadrant to help with data migration to open source - Computing
Events	PGDay France 2014

IRC

sz4man: plundra: i'm not the maintainer of this particular postgresql server, but i think it could be a good idea, can transaction id be manually set while doing begin? it should be always the same for the same script
plundra: sz4man: No, but in that case use application_name?
andres: Yea, I'd go for including the application_name in the log_line_prefix.
sz4man: so pgbadger or similar programs would distinguish these commits by apllication names?
plundra: pgbadger uses it to some extent, but not all that much I believe? But you can probably filter out based on it an genererate a custom report.
sz4man: plundra: perhapns it would be not hard to find out, but could i ask quickly, how to set application name in psycopg2 ?
plundra: You have "Queries by application" in pgbadger.
plundra: sz4man: Throw application_name=foo on your DSN, maybe there it's possible with a (keyword)argument too, not sure.
sz4man: plundra: checking...
Zr40: can you only set application_name when connecting?

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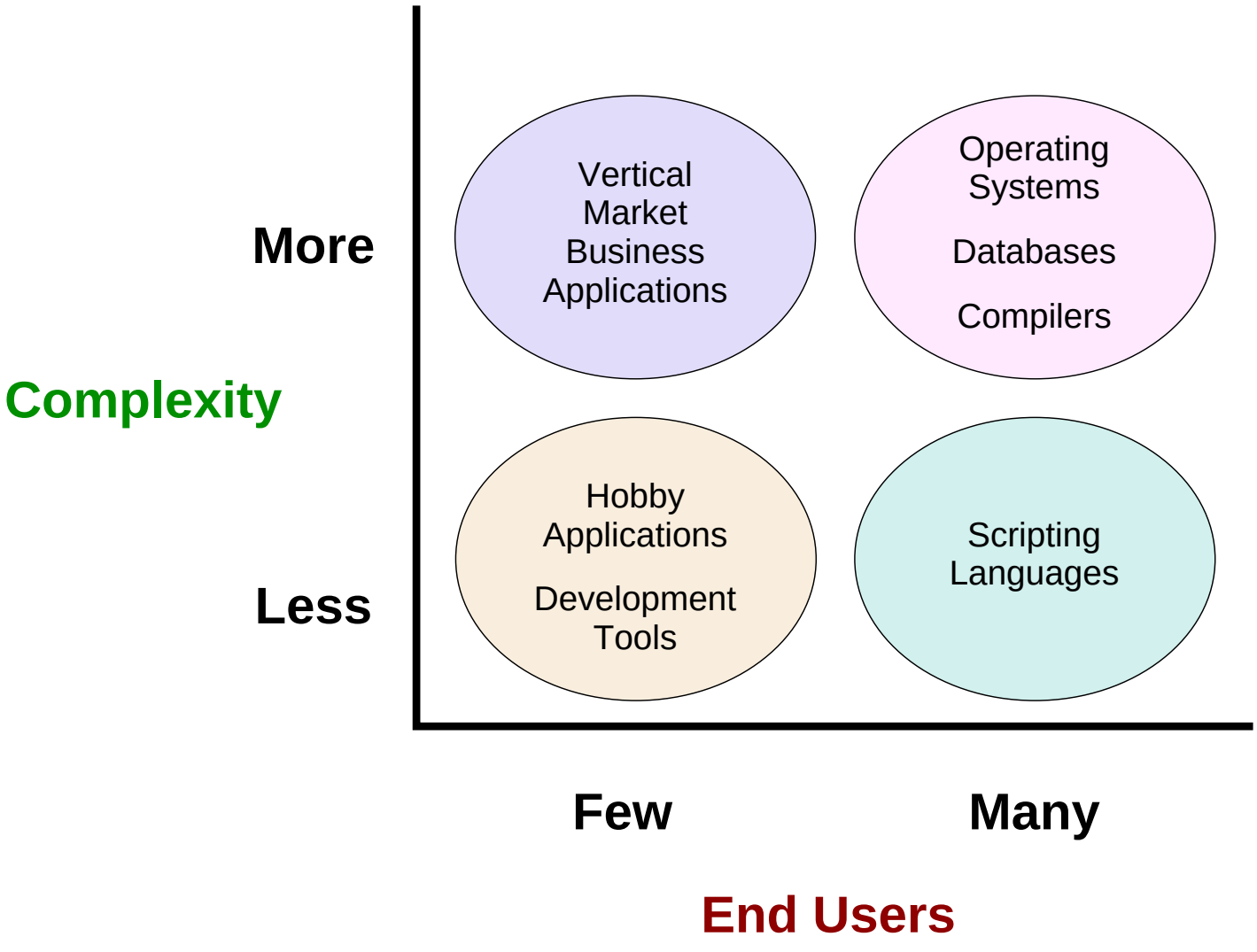
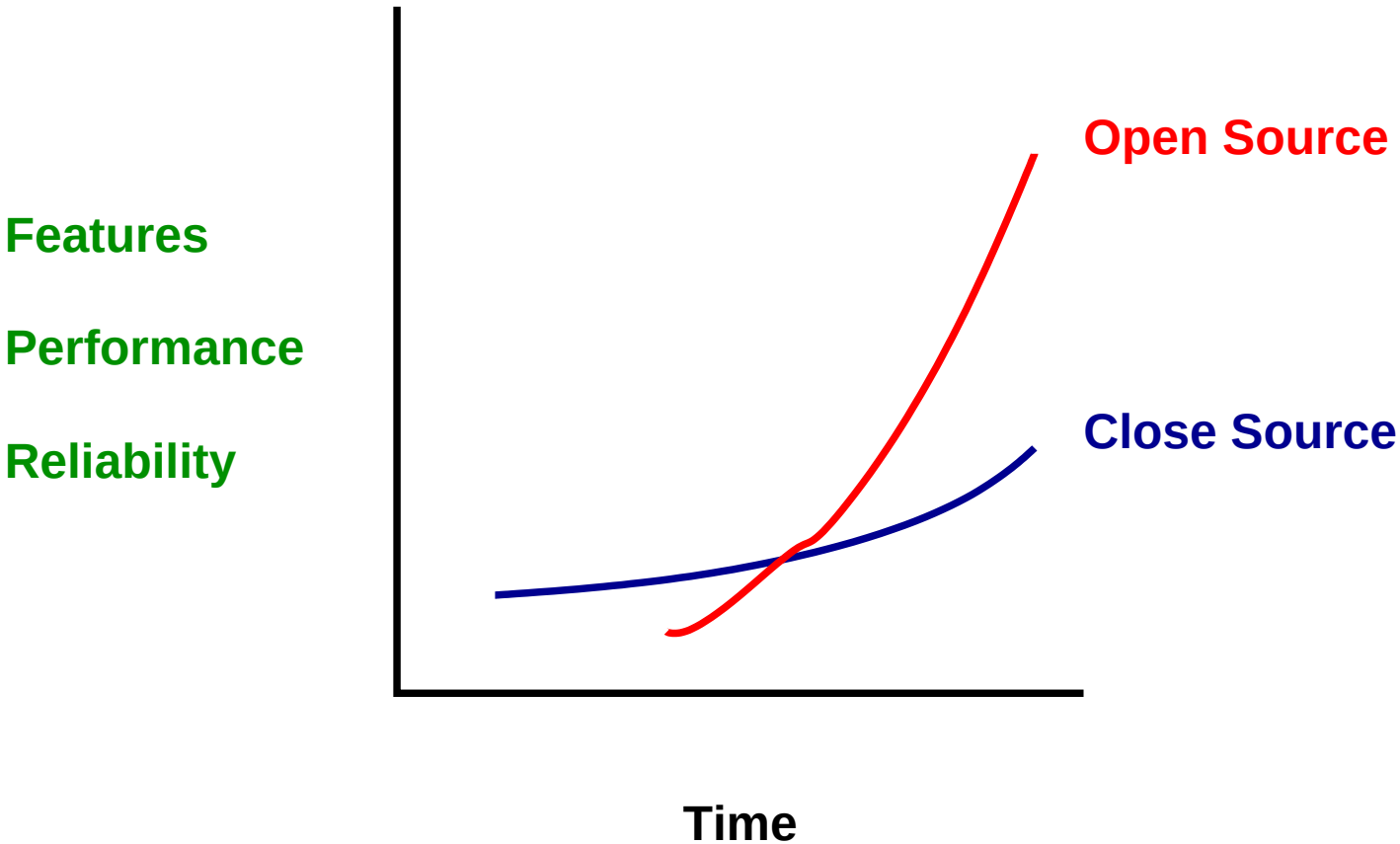
Open Source Software Availability



Is It As Good As Proprietary Software?



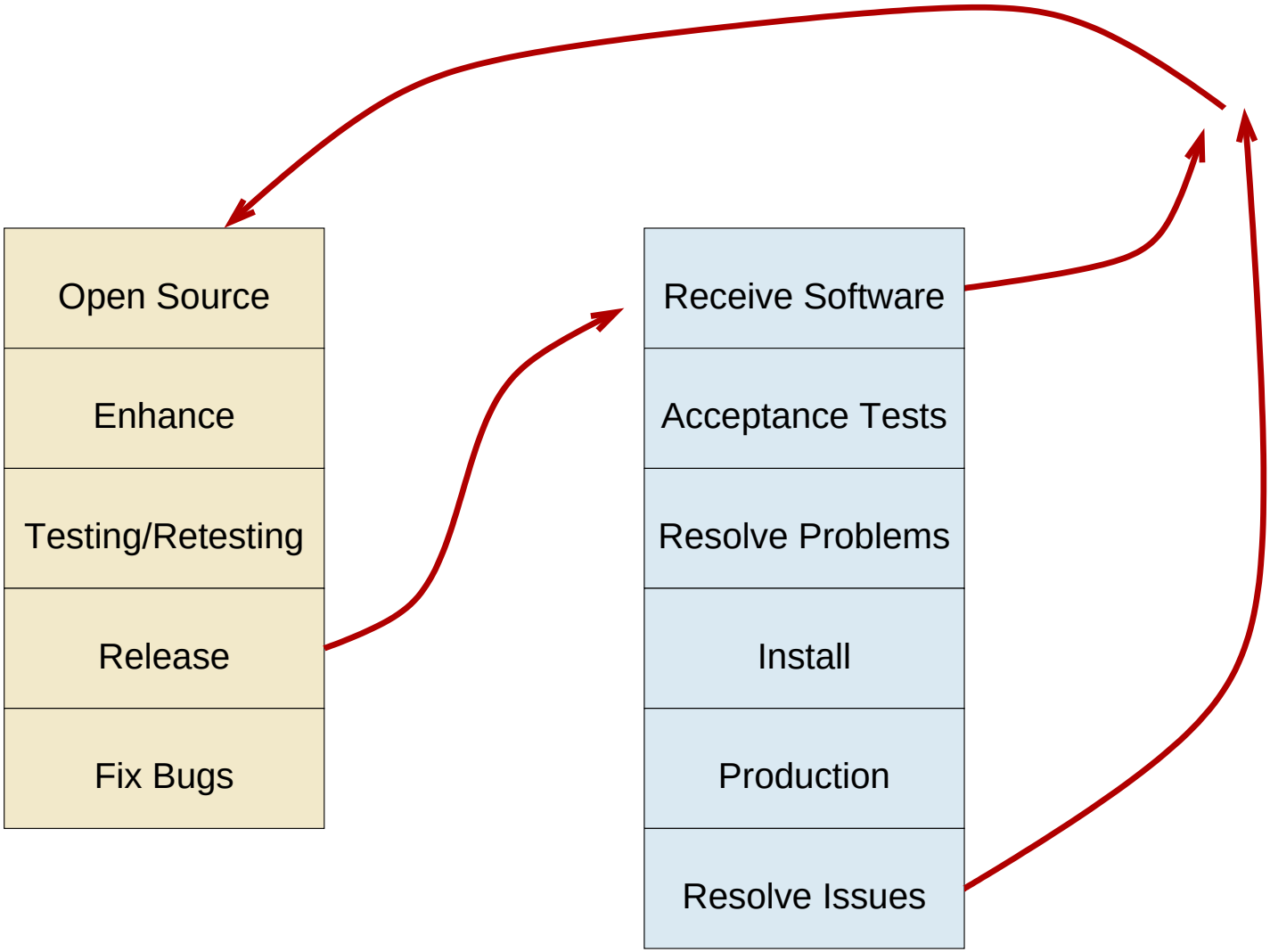
Problems With Open Source (and Democracy)

- Requires effort to stay informed
- Requires effort to receive assistance
- Database changes more rapidly
- More self-help

Businesses Supporting Open Source Users

- Customization
- Technical support
- Packaged releases
- Add-on software
- Training
- Localized

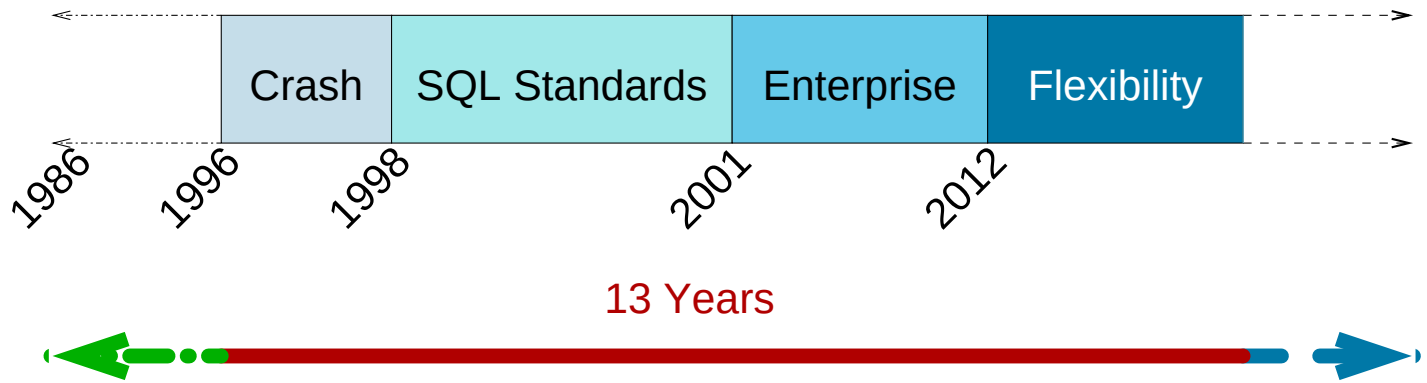
Hybrid Development



Licensing

- BSD license, limitation of liability
- Not GPL, which requires unrestricted source distribution

PostgreSQL Evolution



Flexibility includes:

- Application-specific data types, e.g. JSON, range types
- Advanced index types, e.g. GIN, SP-GiST
- Single and multi-node scalability

Our Developers

Why is programming fun?

- Joy of making things
- Joy of making useful things
- Fun of a complex puzzle
- Joy of learning
- Tractable medium

Concepts derived from *The Mythical Man-Month* by Frederick P. Brooks, Jr.

Open Source Motivations

- Professional advancement, learn new skills
- Practical need for the software
- Mental stimulation
- Belief in open source

Concepts derived from a survey conducted by OSDN and reported in "Open source a needed outlet for programming pros", *The Register,* May 2, 2002, http://www.theregister.co.uk/content/4/23935.html.

PostgreSQL Motivations

- Professional advancement, learn new skills
- Practical need for the software
  - *Business needs the enhancement*
  - *Business wants PostgreSQL to thrive*
- Mental Stimulation
- Belief in open source

Extreme Case

It was cheaper

to pay to add missing features

to PostgreSQL

than to buy Oracle.

Questions

http://momjian.us/presentations

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