Democratic governments have a long history of success, with some setbacks. This talk explains how democratic principles underpin the success of the open source relational database Postgres.

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1. History of governance structures
2. Strengths of each structure
3. Efficiency and messiness of democracy
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Autocracy

• Single person or small group in power
• Examples
  • dictatorship, e.g., Syria
  • absolute monarchy, e.g., Saudi Arabia
  • communist, e.g., North Korea
• First governing structure
Representative Democracy

• First established in ancient Athens
• Historically only a small group of the population could vote
• Elect representatives to vote on issues
2. Strengths of Each Structure

Chepstow Castle, Wales

https://www.flickr.com/photos/damiavos/
Autocracy Strengths

• Good for focusing a fixed amount of resources on a clear goal
• Examples
  • space exploration
  • military
Democracy Strengths

• Allows rapid adjustment for unclear goals
• Emboldens talent to act near the problem
• Expands the pool of talent
• Examples
  • consumer goods
  • software
3. Efficiency and Messiness of Democracy

Madison, Wisconsin

https://www.flickr.com/photos/dennisdeery/
Efficiency of Democracy

- Unleashes a flurry of activity based on agency, i.e., personal power
- Fluidity of solutions
Messiness of Democracy

• Hard to predict behavior
• Problems can get stuck
• Difficulty with large projects that span multiple elections
• Direct democracy rarely tried, yielded mixed results
4. Ultimate Success of Democracy

Moscow

https://www.flickr.com/photos/varfolomeev/
Democracy’s Checkered History

• First democracy in Athens, suspended during wars
• Roman democracy ended in dictatorship
• Middle Ages, Magna Carta, Renaissance
• American Revolution, black and women’s voting rights
• French Revolution leads to monarchy
Democracy Today

- Democracy continues to make steady progress
- There are still setbacks
Democracy in the Past 200 Years

https://www.flickr.com/photos/dennisdeery/

https://ourworldindata.org/democracy
Democracy in the Past 40 Years

https://www.pewresearch.org/fact-tank/2019/05/14/more-than-half-of-countries-are-democratic/
5. Software Governance History

Redwood City, California

https://www.flickr.com/photos/nzdave/
Proprietary Autocracy

- Executives make decisions
  - input from sales and marketing
  - indirectly from customers
- Decision matrix
  - “If we do this, what percentage of customers will we gain?”
  - “If we don’t, what percentage of customers will we lose?”
  - gains are more sensitive to the decision than losses
  - “Do gains or avoided losses justify the implementation costs?”
Open Source Democracy

- Mix of direct democracy and meritocracy
- Voting can be problematic
- Sometimes too much feedback
  - bike shedding
- Bad decisions can be quickly corrected, i.e., easy to revert
- No reliable road map
Internet Makes Direct Democracy Possible

- Easy to share ideas and iterate new solutions
- Rapid global communication
Autocratic Development Flow

Developers
- Design Meetings
- Work in Isolation
- Project Meetings
- Testing/Retesting
- Release
- Fix Bugs

Users
- Receive Software
- Acceptance Tests
- Resolve Problems
- Install
- Production
- Resolve Issues

Sales
Democratic Development Flow

Developers

Propose Feature
Patch Review
Apply / Testing
Beta Testing
Release
Fix Bugs

Users

Discuss Feature
Patch Review
Testing
Beta Testing
Production
Resolve Issues

Internet
Hybrid Development Models

- Single company controls development
- Open source distribution
- Uses autocratic decision matrix
- Lacks democratic feedback
- More comfortable for users transitioning from proprietary since there is a single company to contact
- Examples
  - MySQL, MariaDB
  - MongoDB

6. Where Does This Leave Postgres?

https://www.flickr.com/photos/tomas_vondra/
Postgres Wins Because Democracy Wins

- Uses democracy to attract talent
  - talent pool can easily compete with proprietary staff
- Superior feedback and decision matrix lead to success
- This is a challenge for niche software
- Setbacks still possible
Rise of Open Source

Features
Performance
Reliability

Time

Open Source
Closed Source
7. Democracy in Action

https://www.flickr.com/photos/tomas_vondra/
Many Focuses

**New Workloads Platforms (Big Data/Cloud)**
- Liaisons with other communities
- FDW for common no-SQL DB’s
- Continue to evolve new datatypes: JSON, XML, HStore

**Easy to use / deploy**
- Diagnosing Problems
- Configuring for success
- Still easier installs
- Tighter integration with frameworks
- Integration with other data stores
- Very simple in the cloud

**High-end Enterprise Requirements**
- Vertical Scale (parallel query)
- Horizontal Scale
- Performance Diagnostics
- Incremental Backup
- Integration with other data stores
- Zero down time upgrades

*Keith Alsheimer, EDB, 2013*
Foreign Data Wrappers

- Postgres
  - mon_tab
  - ora_tab
  - tw_tab

- MongoDB

- Oracle

- Twitter
Foreign Data Wrappers

- 100+ interfaces to foreign data
- Read/write
- Sophisticated push down of joins, sorts, and aggregates

PostGIS

• PostGIS is a full-featured Geographical Information System (GIS)
• Implemented as a extension
• Independent development team and community

https://postgis.net/
My Postgres Activities
- Committers nominate new committers
- Core team nominates new core members
- Development is open to all, even occasional visitors
  - “Let the best idea win!”
  - “Where did that guy come from?”
  - Focus talent like a lens on every task
• Individuals and political parties have roadmaps
• Democratic governments don’t
• Developers and companies have roadmaps
• Postgres doesn’t
PgLife

PgLife Postgres Community Life

**Users**
General  Re: How to use 32 bit ODBC driver
Other RE: multiple sessions to create index in parallel support
Announce PostgreSQL 14.4 Released!

**Developers**
Hackers RE: Replica Identity check of partition table on subscriber
Commit Simplify tab completion of extension versions.
Versions Stable: 14.4+, 13.7+, 12.11+, 11.16+, 10.21+ | Development: 15 beta1+

**External**
News PostgreSQL 14.4 Released!
Tweets Ever wanted to check out books about @PostgreSQL?
Media How to Connect to a PostgreSQL Database Using Node.js - MUO - MakeUseOf
Events Postgres London 2022

IRC (also Slack)
peerce: two of them in fact, one that fed the local reporting databases, and another that filtered and fed a subset to the corporate EDW
peerce: crap, dog is in back yard, barking at stupidity.
peerce: brb
peerce: oh geez, i had left the front door open, screen closed, to get some air in the house now that it has cooled, and forgot to latch the screen. dog was OUT FRONT where hes' not supposed to be.
peerce: so i see him, he sees me, I signal him to come and go inside, he trots up to the screen door, reaches up with a paw and bounces it open so he can slip back in. #@$$@## border collie is too damn smart.
peerce: smart
peerce: totally deaf, so you cant call him or yell at him or anything
dmj: nice

London 04:36  Berlin 05:36  Moscow 06:36  Mumbai 09:06  Beijing 11:36  Tokyo 12:36  Los Angeles 20:36  New York 23:36  Sao Paulo 00:36
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8. Conclusion