Managing Quality in an Open Source Project

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Trust Your Users

- Open Source doesn't mean better programmers, it means better users.
  - User bug reports are the most valuable quality feedback you have. Cherish them.
  - Samba uses Jitterbug - another Open Source tool - to collect and reply to user bugs.
  - Jitterbug is now used by Linuxcare as their bug tracking database.
- Open Source empowers end users to help you maintain high quality.
  - Samba patch quality varies enormously, but even incorrect patches often reveal the actual problem.

Maintain Strict Revision Control

- Necessary for any complex software project.
  - Samba learned this lesson fairly early on.
- Revision control allows easy duplication of user bugs.
  - Samba has more problems with variations in Microsoft clients - "DLL hell" where every new Microsoft application is an OS upgrade.
- Samba developers use Open Source software
  - CVS for revision control.
  - ssh for secure remote source code access.

Keep Control of Master Source Code Write Access

- Only "core" contributors have code write access.
  - Even though Samba has a "bazaar" style development model, a core team is needed to review code changes.
- Patch contributions go into the master source code via one or more members of the core team.
- Defer patch decisions to the Team Lead (this can lead to bruised egos).
- When regular patch contributors appear, invite them into the core team.
- Give feedback to patch contributors.

Peer Review ALL Submissions

- As Samba is a daemon running as "root", security is paramount. All code contributions must pass a security review.
  - Unilateral decision was taken to ban the use of certain 'C' language functions that lead to buffer overflow.
- Appoint subject area experts, but the Team Lead must be able to override their decisions.
  - Team Lead is "benevolent dictator".
- Promote "egoless" programming.
  - Don't get hung up on formatting style.
  - Everyone writes buggy code.
  - Finding bugs is a group effort with your users.

Let the outside contributors be experts

- Integrating patches is dull work. Let the core team do this (they get paid after all :-).
- Allow outside contributors to do some of the exciting work - it will keep them interested.
- Don't be afraid to heavily modify patches when integrating - but keep the algorithms used by the contributors.
  - Test the change, but trust the expert to use their skills.
- Infrastructure changes are still best done by the core team.
  - Only they have the overview that allows this to be done.

Manage the Core Team

- People management is harder than writing code.
  - Email discussions suck up hours of time.
  - People get easily offended when a decision goes against them.
- Samba uses the IETF mantra of "rough consensus and working code".
  - If contributors disagree, let them fight it out in implementation, may the best win !
- Allow people to fall into their natural roles.
  - Samba has a release/QA manager, a design specialist, an advanced projects coder, etc.

Keep the Documentation Current

- Users who want to contribute but cannot code are often the most useful here.
- Man pages should always match the code for a current release, Samba is good at this (after a shaky start).
- Provide a project roadmap so users are aware of your future plans. Users need to know the software is being actively developed and has a future.
- If the project is very successful, commercial authors will help document the software.

Don't Blow it if You Go Commercial

- Use a license that achieves the authors aims
  - Samba uses the GPL, this has served us well.
- Many users will want to pay for the software.
  - Samba Team has jumped through hoops to provide zero dollar invoices to companies who are prohibited from using "freeware".
- Samba provides a list of commercial support consultants with the software.
  - This is not an endorsement from the Samba Team, but allows users and consultants to get in touch.
- Keep code ownership with the community of authors and users.

References

- Samba Web site:
  - http://samba.org
- Samba consultants list for commercial support:
  - Click on "Support" link on main Web site.
- Samba vendors list (commercial Samba):
  - Click on "Vendors" link on main Web site.
- Slides availability (for all Samba related slides) :
  - ftp://ftp.samba.org/pub/samba/slides/