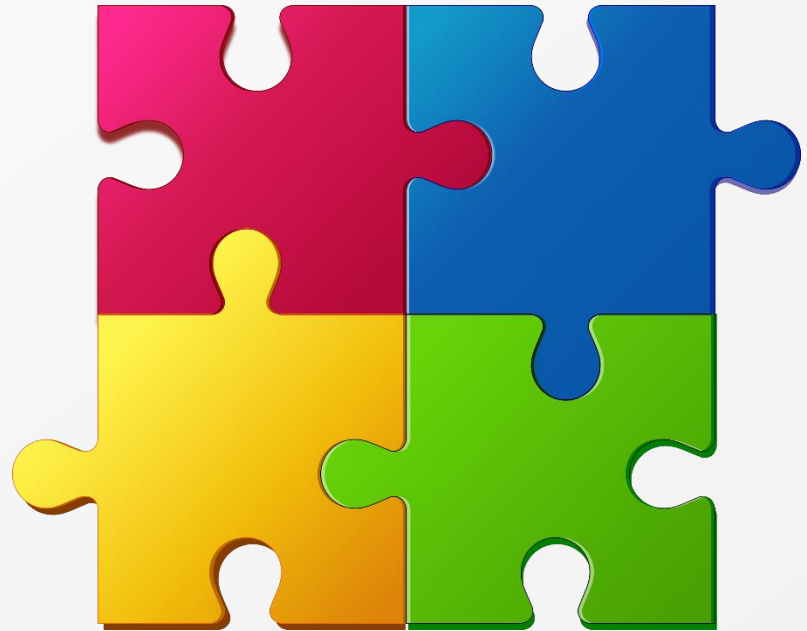


Open Source-Style Collaborative Development Practices in Commercial Projects Using GitHub

Eric Tran

Collaboration Challenges

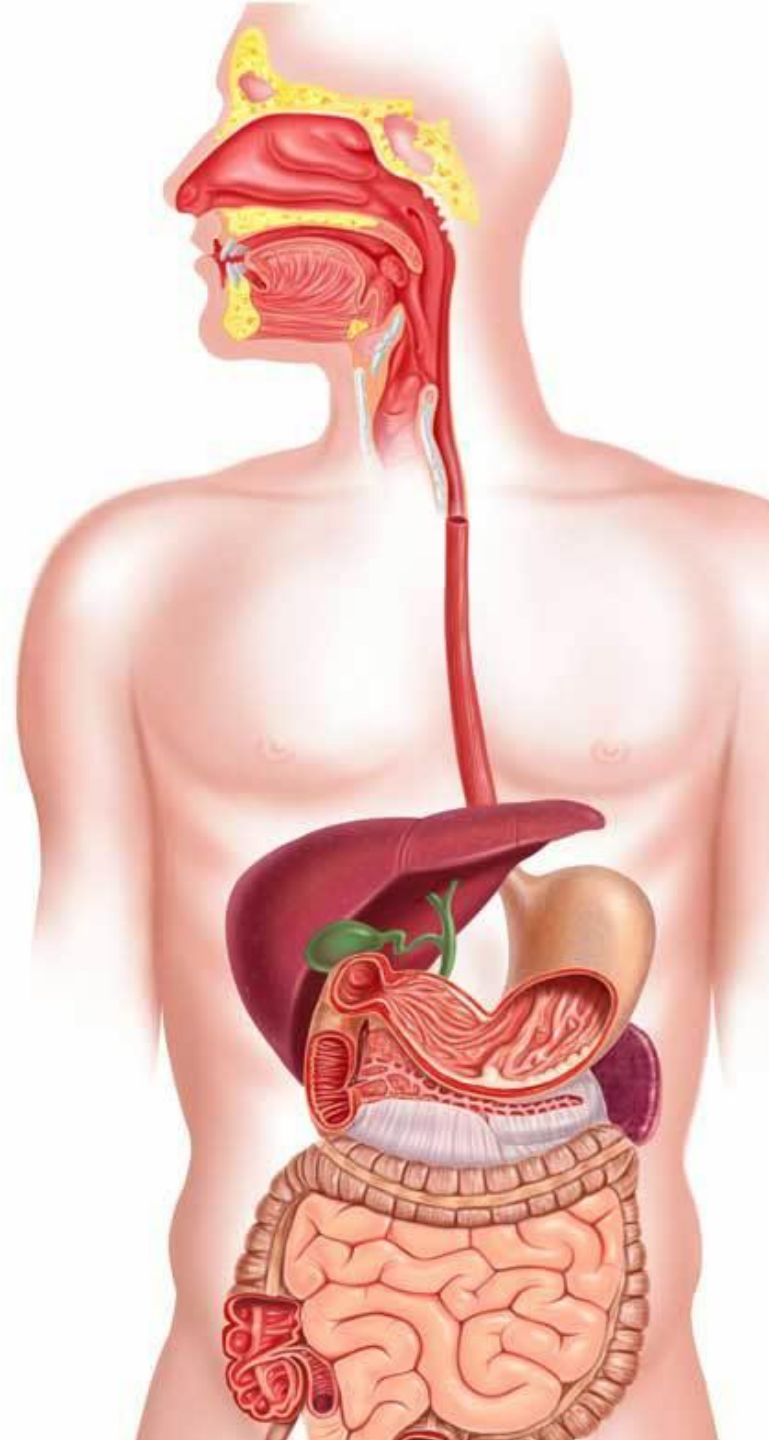
- Coordination and communication breakdowns
- Lack of awareness
- Code conflicts
- Task division



InnerSource

“InnerSource takes the lessons learned from developing open source software and applies them to the way companies develop software internally.”

— InnerSource Commons



@WalmartLabs

<https://github.com/walmartlabs>



joi



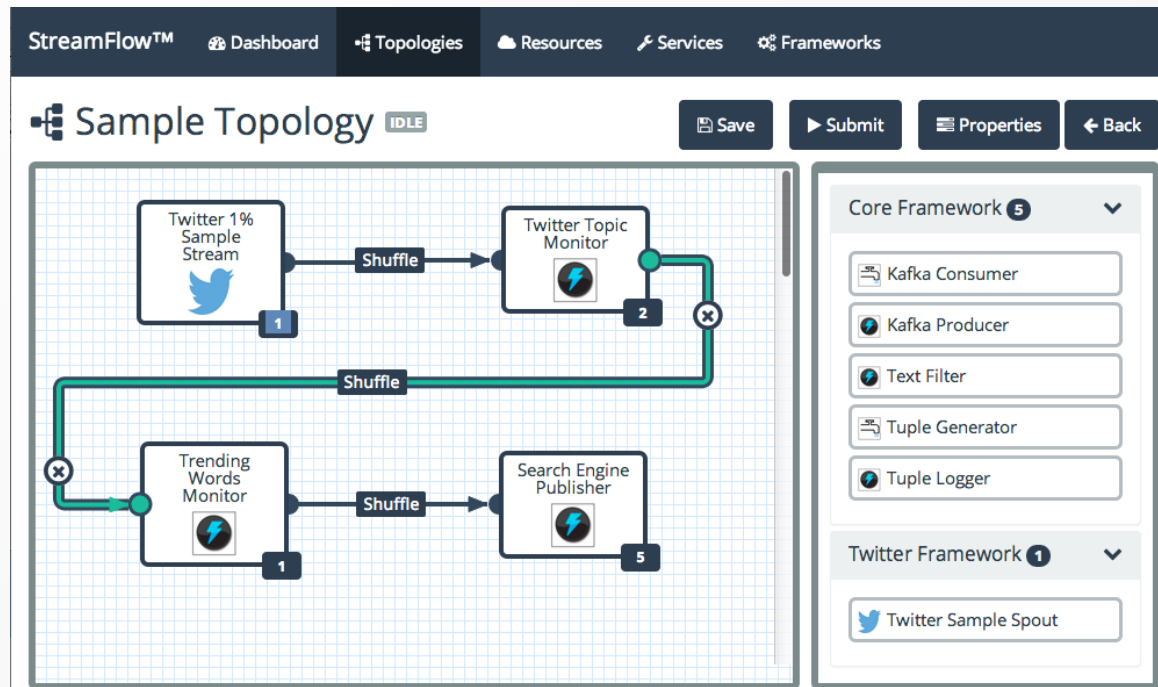
hapi

lazojs



LOCKHEED MARTIN

<https://github.com/Imco/>



GitHub

- Collaborative development environment
- Code hosting
- Code review mechanism
- Issue tracking
- Social features



Survey Responses

	Pilot Survey	Revised Survey
# Surveys Sent	100	1,000
# Responses	19	240

Survey Item	Top Survey Responses	240
GitHub Use	Primarily for collaboration	148 (62%)
Reason for Adopting GitHub	To contribute to OSS or share code	67 (28%)
GitHub's Effect on Development	Adopt branching workflow	53 (22%)

Branching Workflow

- One central repository per project
- Branches isolate feature work



The diagram consists of two overlapping arrow-shaped boxes pointing to the right. The left box is a dark magenta color and contains the text 'Independent Development'. The right box is a lighter pink color and contains the text 'Minimized Coordination Needs'. The two boxes overlap, with the right box partially covering the right side of the left box.

Independent
Development

Minimized
Coordination
Needs

Pull Requests

- Signals coordination points
- Opportunity for discussion and review



Timelines, Notifications, Integrated Chat

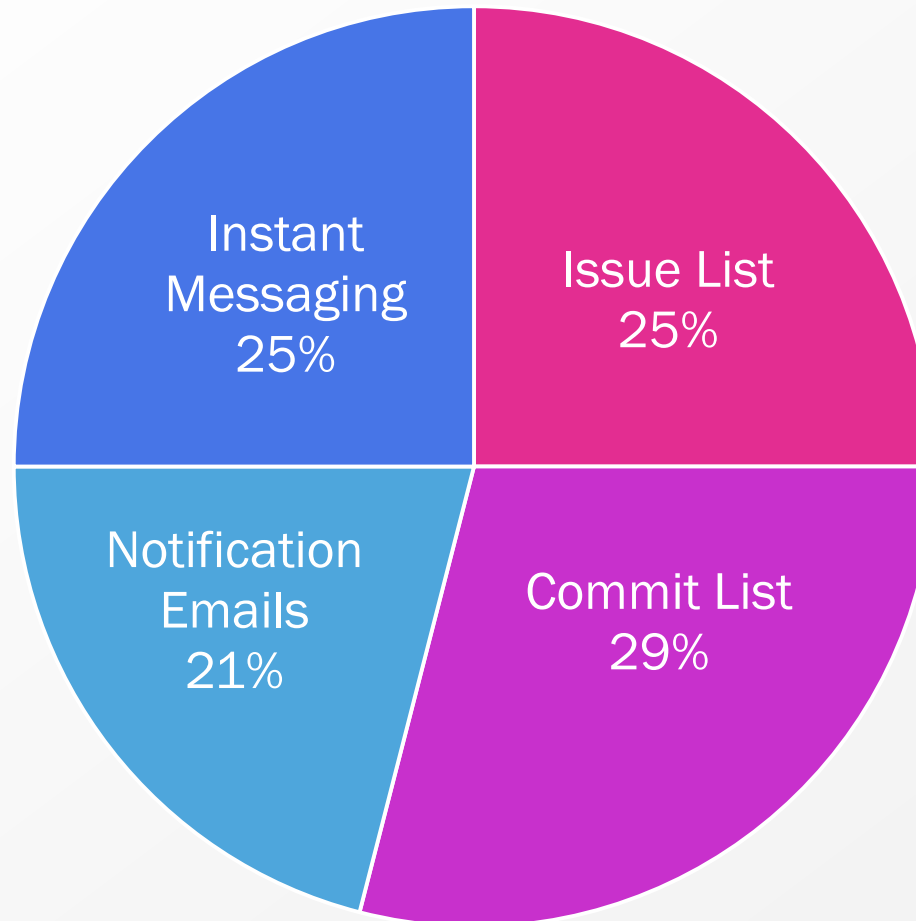
- Issue and commit lists
- Notification emails
- Chat clients with GitHub integration



Progress and
Status
Monitoring

Increased
Awareness

Preference for Keeping Track of Activity



Comments on Commits, Issues, and Pull Requests

- In-line comments
- @ mentions



The diagram consists of two overlapping arrow-shaped boxes pointing to the right. The left box is a dark magenta color and contains the text 'Code-centric Communication'. The right box is a lighter pink color and contains the text 'Targeted Communication'. The two boxes overlap, with the right box partially covering the right side of the left box.

Code-centric
Communication

Targeted
Communication

Public Issue Tracking

- Self-assignment of tasks



Service Hooks in Corresponding Tools

- Accountability



Automatic
Testing and
Deployment

Conflict
Resolution

Challenges

- Collaboration with non-technical members
- Elaborate conversations
- Lack of common processes and tools

Questions

1. Are there situations where OSS-style practices are inappropriate?
2. What are possible challenges faced by organizations trying to implement OSS-style practices?
3. What are possible problems when commercial products like GitHub are standardized?