Research and Startup

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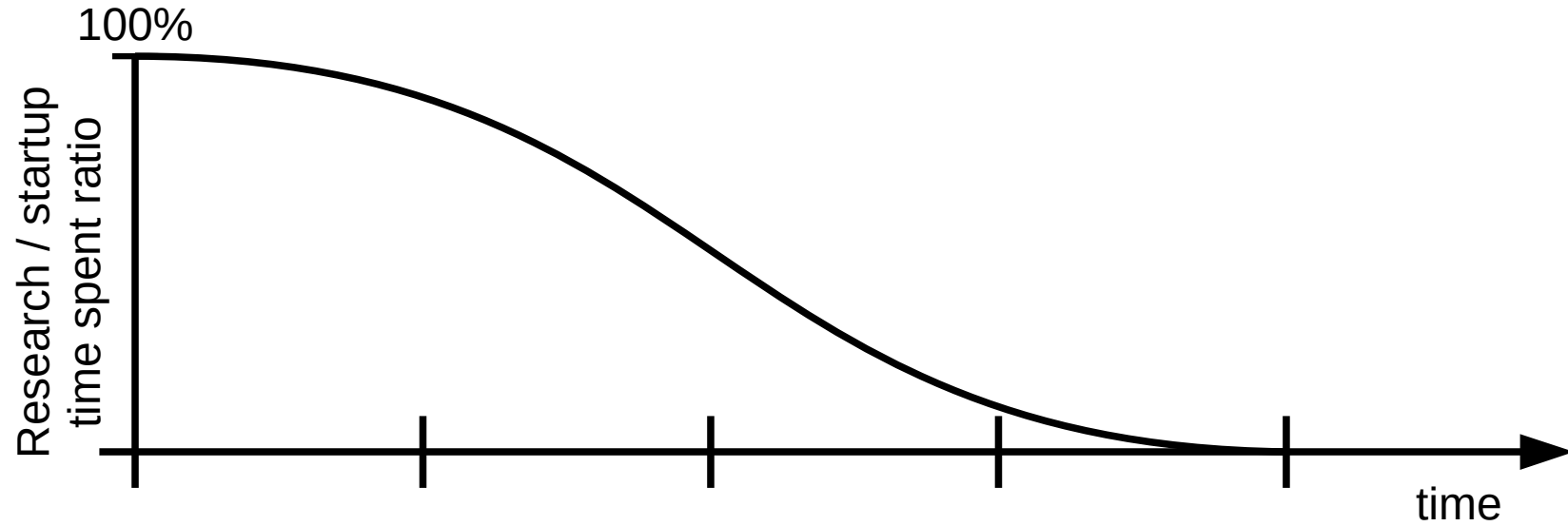
COSS D02

Agenda

1. Research vs. startup
2. Project management
3. Product management
4. Lead programming
5. Open source strategy
6. Setting-up shop
7. Getting contributions

1. Research vs. Startup
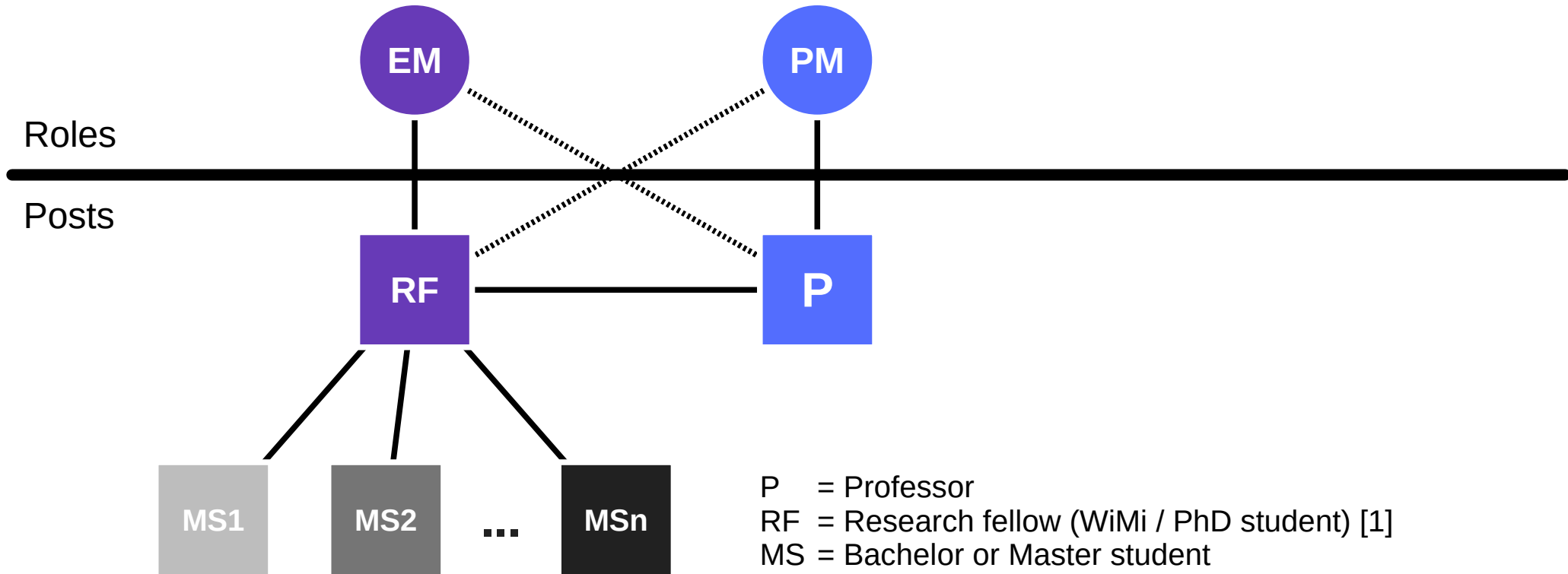
Goal Conflict

- Research
  - Desired output
    - Research papers
    - A dissertation

- Startup
  - Desired output
    - Software product
    - A startup

Resulting Time Allocation

2. Project Management

The Solo Founder Model

Roles

Posts

P = Professor
RF = Research fellow (WiMi / PhD student) [1]
MS = Bachelor or Master student

[1] The research fellow / PhD students acts as "lead programmer"

P = Professor
RF = Research fellow (WiMi / PhD student)
MS = Bachelor or Master student
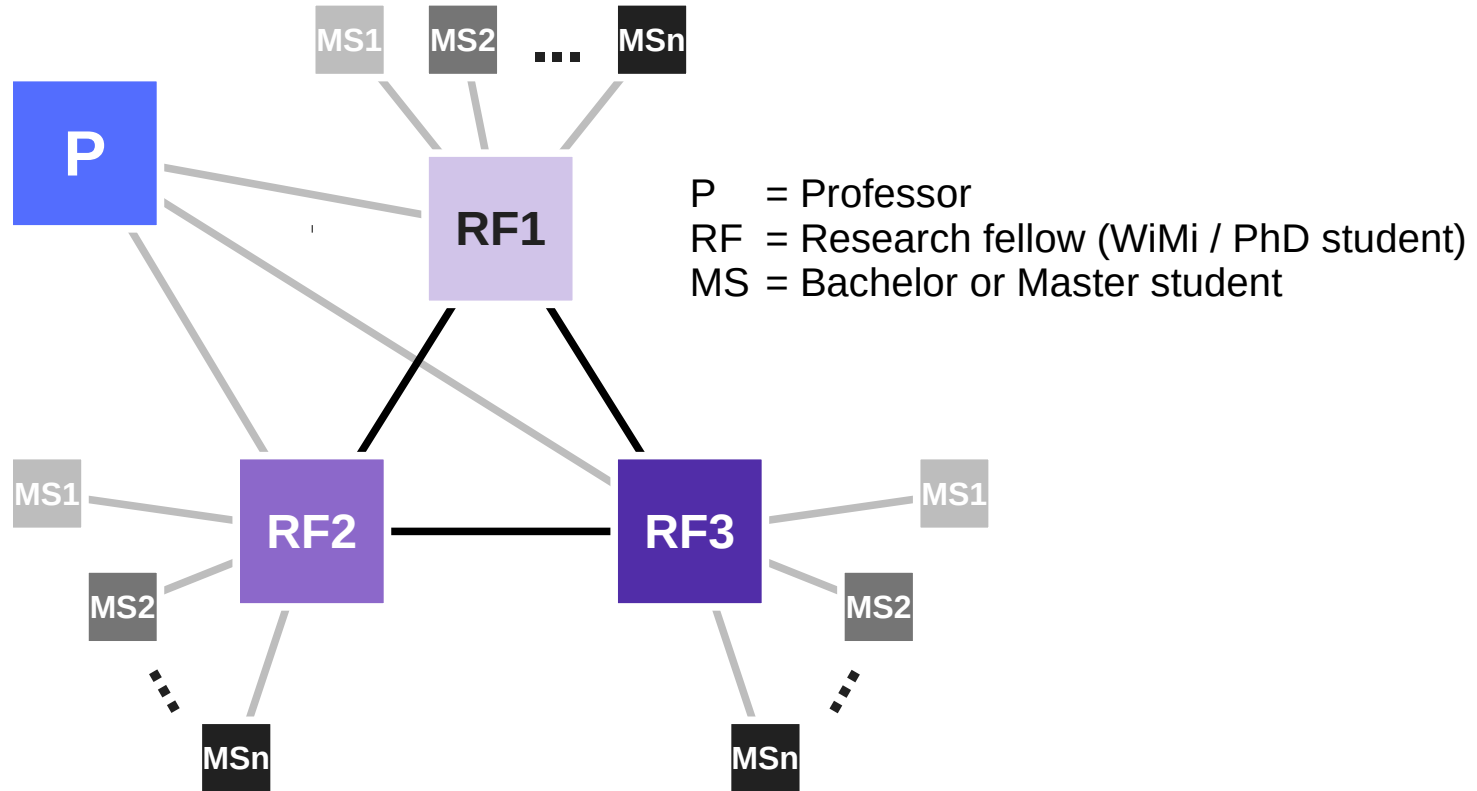
End of Project

- Research project finished
- Startup created (or failed)

3. Product Management

Who is the Product Manager?

- Research fellow (German: WiMi)
- Professor

Product Vision, Glossary, and Features
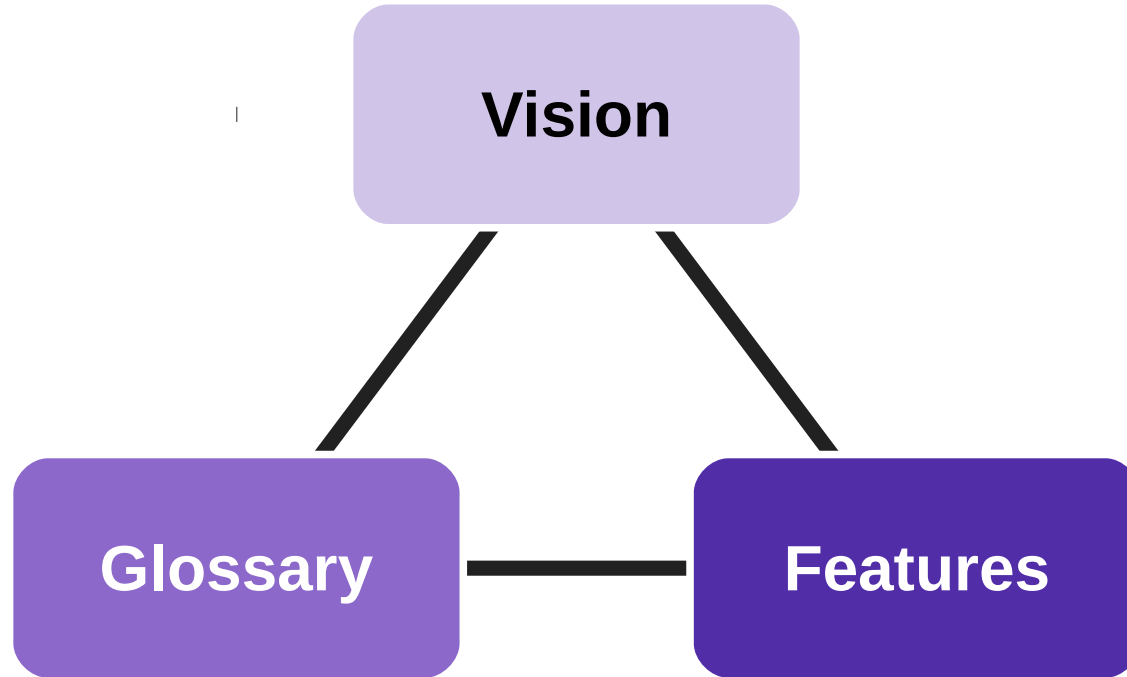
Product Releases

- Product release
  - A deployable product increment
    - That provides new significant business value to market / customer

- Iteration release
  - A demonstratable product increment
    - That serves to gather relevant feedback from market / customer

Product Roadmap

- External roadmap
  - Overview-oriented; few details are provided
  - Serves communication needs
  - Serves external stakeholders

- Internal roadmap
  - As detail oriented as needed (richer than external roadmap)
  - Serves planning and communication needs
  - Serves internal stakeholders

Release 1.3
New functionality
2017-10-01

Release 2.0
New architecture
2018-04-01

Release 2.1
Major bug fixes
2018-10-01

time

Rel. m-1

Rel. m

Rel. m+1

6-12 months

6-12 months

6-12 months

time

[1]   The release rhythm depends on the software's position in the tech. stack
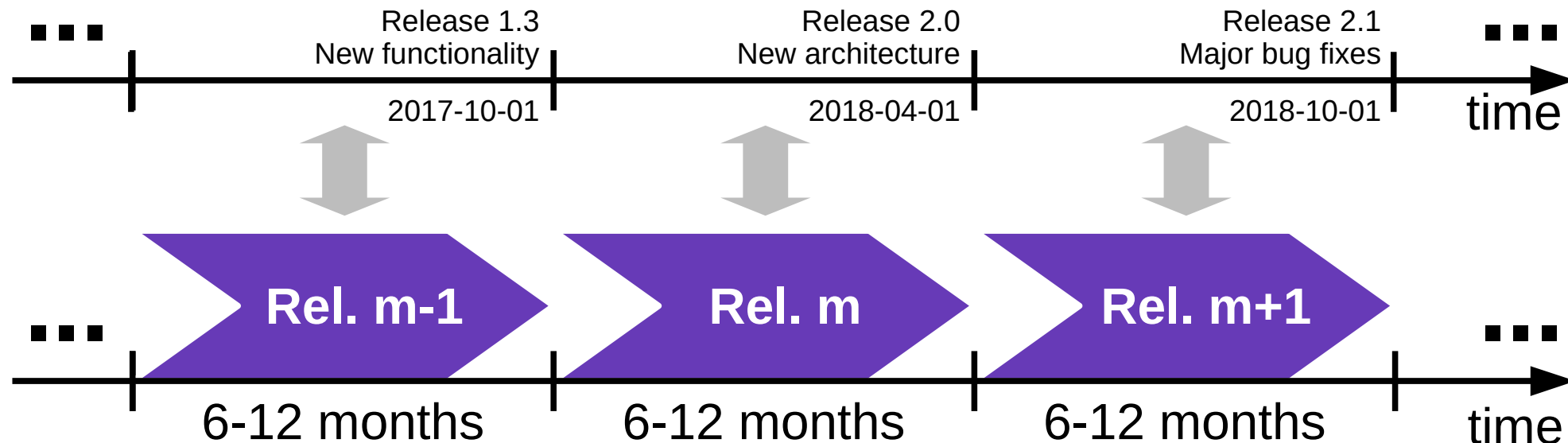
Example Product Roadmap
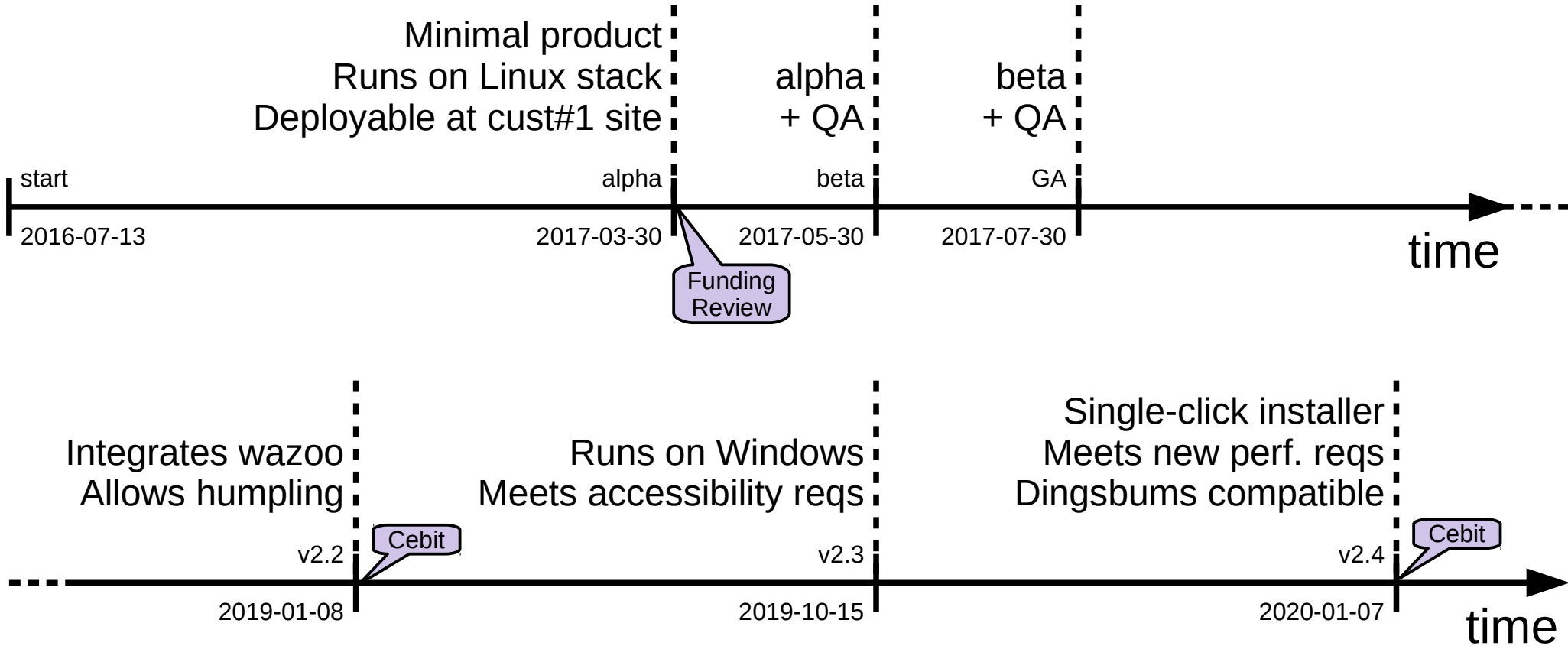
Product Vision, Roadmap, and Release

	Timeframe	Content	Certainty	(Responsible) Owner
Vision	Long-term (3+ years)	High-level ideas	Low	CEO and / or strategic product manager
Roadmap	Medium (1-5 years)	Themes and epics	Medium	Strategic product manager
Release	Short-term (months)	Epics and features	High	Technical product manager

4. Lead Programming

Lead Programmer [1]

- A lead programmer
  - Is an engineer who leads the development of a component / system
    - In case of solo founder: The system
    - In case of peer group: A key component

  - W.r.t. the component, is responsible for maintaining
    - Product vision and getting the features done
    - Architectural integrity and code quality

  - Manages other people as they contribute to the component
    - In the beginning, they write most of the code themselves
    - Later, they review and integrate code more than they write

- Other / helper engineers are
  - Students at the university (e.g. Master thesis students)
  - Open source volunteers
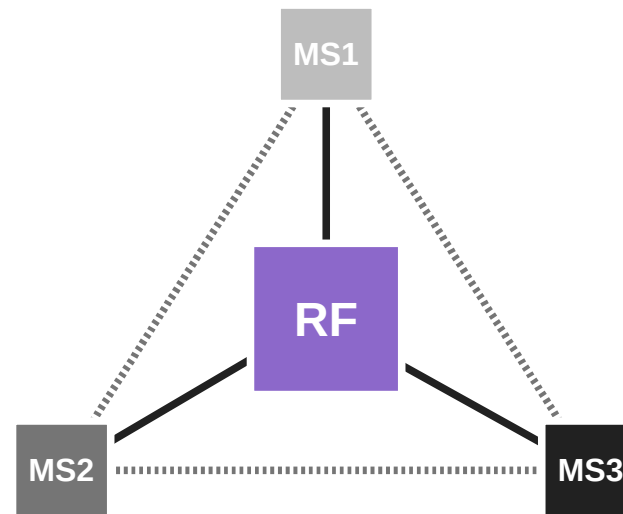
[1] A pun on Mills' "chief programmer teams"

Lead Programmer / Helper Engineer Collaboration

- Lead programmer provides feature
  - If necessary breaks it down into tasks
  - Assigns tasks of waits for volunteers

- With helper, discusses design and implementation
  - Helps break down work into tasks / increments
  - Ideally, discussion is public (in open source anyway)

- In multiple increments, reviews and merges code
  - Helper provides sufficiently small commit
  - Lead programmer reviews, comments, integrates

- Until feature is fully implemented

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🏠 Project overview

📄 Repository

📋 Issues   134

    List

    Boards

    Labels

    Service Desk

    Milestones

🔀 Merge Requests   1

📑 Requirements

⚙ CI / CD

🛡 Security & Compliance

☁ Operations

📦 Packages & Registries

📊 Analytics

📖 Wiki

✂ Snippets

👥 Members

⚙ Settings

Open 134   Closed 560   All 694

Edit issues   New issue

Recent searches ∨   Search or filter results...   Created date

Add new Requirement Specification View   0 of 2 tasks completed   0
#700 · opened 1 week ago by Julia Doing   updated 2 days ago

Update to Endpoint API to use Cloud Endpoints Portal   0
#699 · opened 2 weeks ago by Julia Backend To Do   updated 2 weeks ago

Save Document on switch between Text- & Coding Editor   ✳   0
#698 · opened 1 month ago by Julia Bug Frontend To Do   updated 1 month ago

Vertically center star icon   ✳   0
#695 · opened 6 months ago by Andreas Kaufmann Coding Editor Frontend To Do   updated 6 months ago

Saturation Metric Maximum   ✳   0
#694 · opened 7 months ago by Andreas Kaufmann Backend Bug To Do   updated 7 months ago

Add symbol for codebookentry to the code status bar   ✳   0
#693 · opened 7 months ago by Julia Frontend Nice to have   updated 7 months ago

Implement Lombok to support a better code overview?   ✳   0
#692 · opened 8 months ago by Julia Backend   updated 7 months ago

Save state of Code System   0
#690 · opened 8 months ago by Julia Backend Coding Editor Frontend   updated 8 months ago

Notify about not-saved code book entries   0
#689 · opened 8 months ago by Julia Coding Editor Frontend   updated 8 months ago

Delete coding easier   0
#688 · opened 8 months ago by Julia Coding Editor Feature Frontend   updated 8 months ago

Down arrow key to change code segment   0
#687 · opened 8 months ago by Julia Coding Editor Feature Frontend   updated 8 months ago

Add Code by Drag'n'Drop   0
#686 · opened 8 months ago by Julia Coding Editor Feature Frontend   updated 8 months ago

Code System Search delete button   0
#685 · opened 8 months ago by Julia Feature Frontend   updated 8 months ago

Better Solution for CodeIDs   0
#684 · opened 9 months ago by Julia Backend Coding Editor   updated 9 months ago

Code color inherited from category   0

◀ Collapse sidebar

Q qdacity

Professorship of Open Source Software › QDAcity › qdacity › **Issue Boards**

- Project overview
- Repository
- Issues · 134
  - List
  - **Boards**
  - Labels
  - Service Desk
  - Milestones
- Merge Requests · 1
- Requirements
- CI / CD
- Security & Compliance
- Operations
- Packages & Registries
- Analytics
- Wiki
- Snippets
- Members
- Settings

Development ⌄ | Search or filter results... | Show labels 🔵 | Edit board | Add list ⌄ | Add issues

› Open · 📄 57 · 👤 0 · +

Add symbol for codebookentry to the code status bar
Frontend · Nice to have
#693

Implement Lombok to support a better code overview?
Backend
#692

Save state of Code System
Backend · Coding Editor · Frontend
#690

Notify about not-saved code book entries
Coding Editor · Frontend
#689

Better Solution for CodeIDs
Backend · Coding Editor
#684

Problems with Chrome
Bug · Frontend · Low Priority
#678

Delete coding easier
Coding Editor · Feature · Frontend
#688

Down arrow key to change code segment
Coding Editor · Feature · Frontend
#687

› To Do · 🗑 · 📄 66 · 👤 0 · + · ⚙

Update to Endpoint API to use Cloud Endpoints Portal
Backend
#699

Save Document on switch between Text- & Coding Editor
Bug · Frontend
#698

Vertically center star icon
Coding Editor · Frontend
#695

Saturation Metric Maximum
Backend · Bug
#694

Code color inherited from category
Coding Editor · Feature · Frontend
#683

Duplicate code locations
Bug · Coding Editor · Frontend
#682

Updating coding brackets on rename
Bug · Coding Editor · Frontend
#681

Crash on switching documents
Bug · Coding Editor
#680

› Doing · 🗑 · 📄 4 · 👤 0 · + · ⚙

Add new Requirement Specification View
#700

List support in Editor
Backend · Feature
#645

Fix acceptance tests for pipeline
Dev · Feature · Refactoring
#673

Wiki Documentation
Dev · Documentation · Research
#633

› In Review · 🗑 · 📄 7 · 👤 0 · + · ⚙

Add sync for Meta Model attributes
#657

Finer grained merge
Feature · Frontend
#666

Editable Conflict
Feature · Frontend
#667

Sync positions in diff views for theirs and mine
Feature · Frontend
#669

Deploying the NLP service
Backend · Dev
#664

Remove coding when offline
Feature · Frontend
#611

No Updates Before Sync Finished
Feature · Frontend
#591

› Closed

Restructure war folder
Frontend · Refactoring
#86

Removing Codings
Bug · Coding Editor · Fronten
#274

getCurrentUser not working
Backend · Bug
#327

Mixed Content
Bug · Frontend
#169

General Refactoring
Frontend · Refactoring
#171

Update App Engine SDK to 1.
Dev
#318

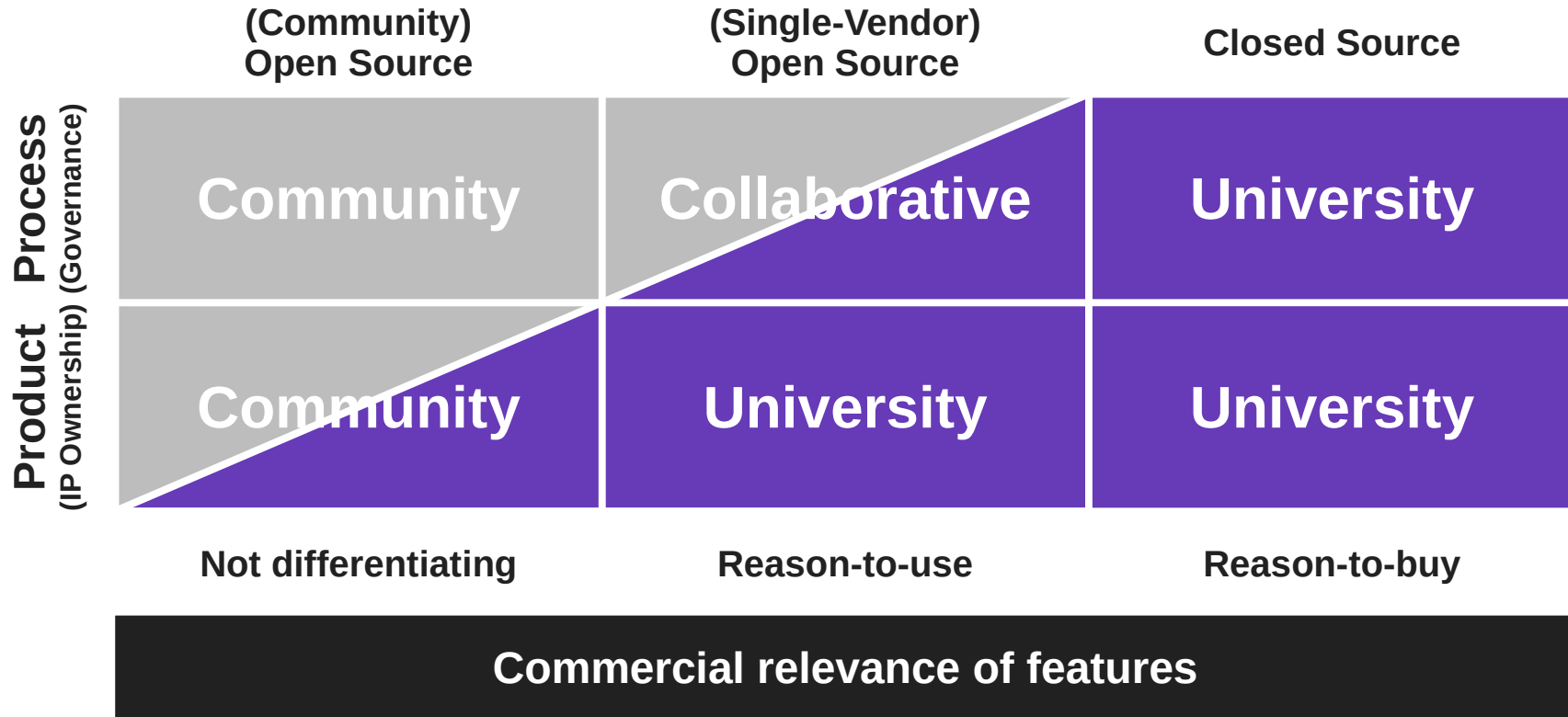**Add servlet for SSL challenge**
Backend · Feature
#270

Landing Page
Feature · Frontend
#188

No Delete Btn for Validation

Collapse sidebar

5. Open Source Strategy

Open Source Community vs. University / Company

Pushing out Features
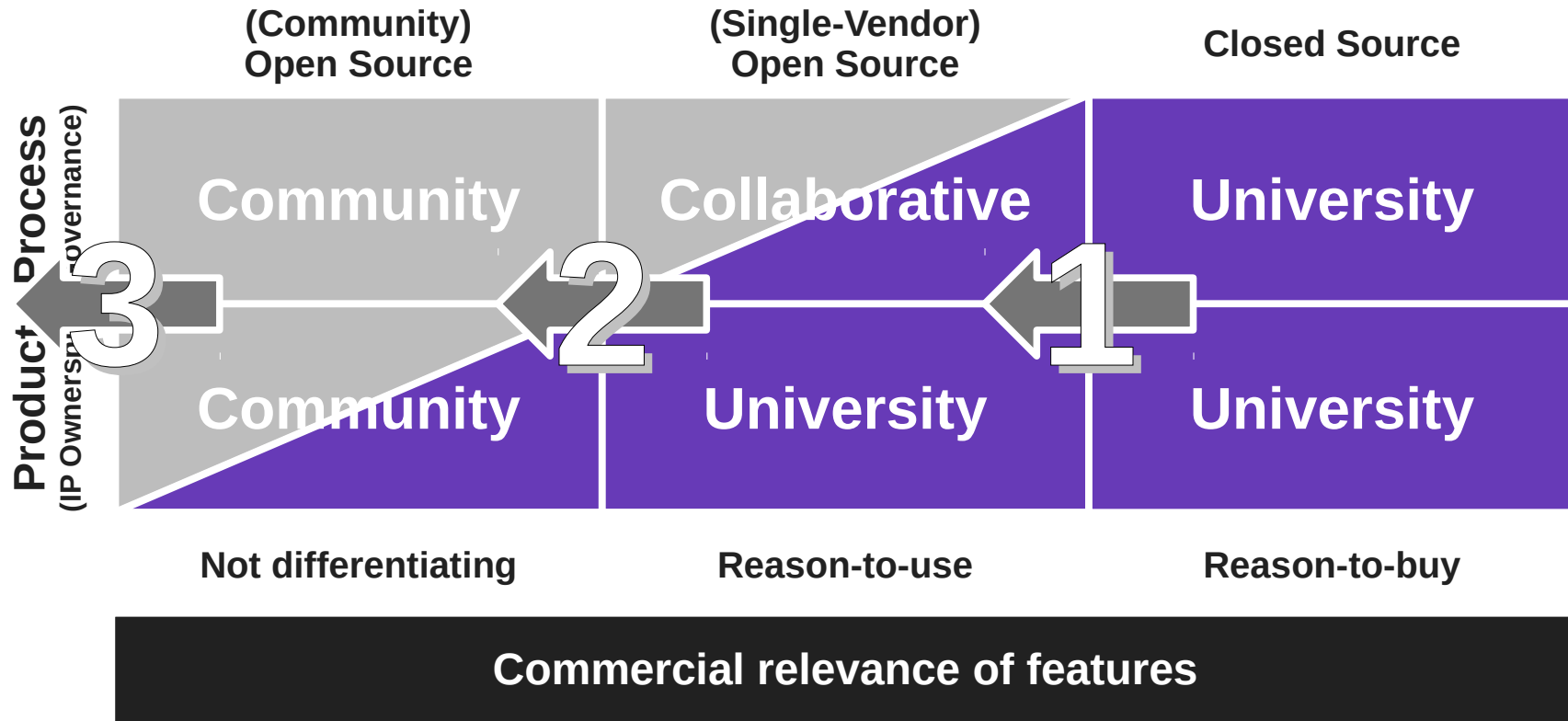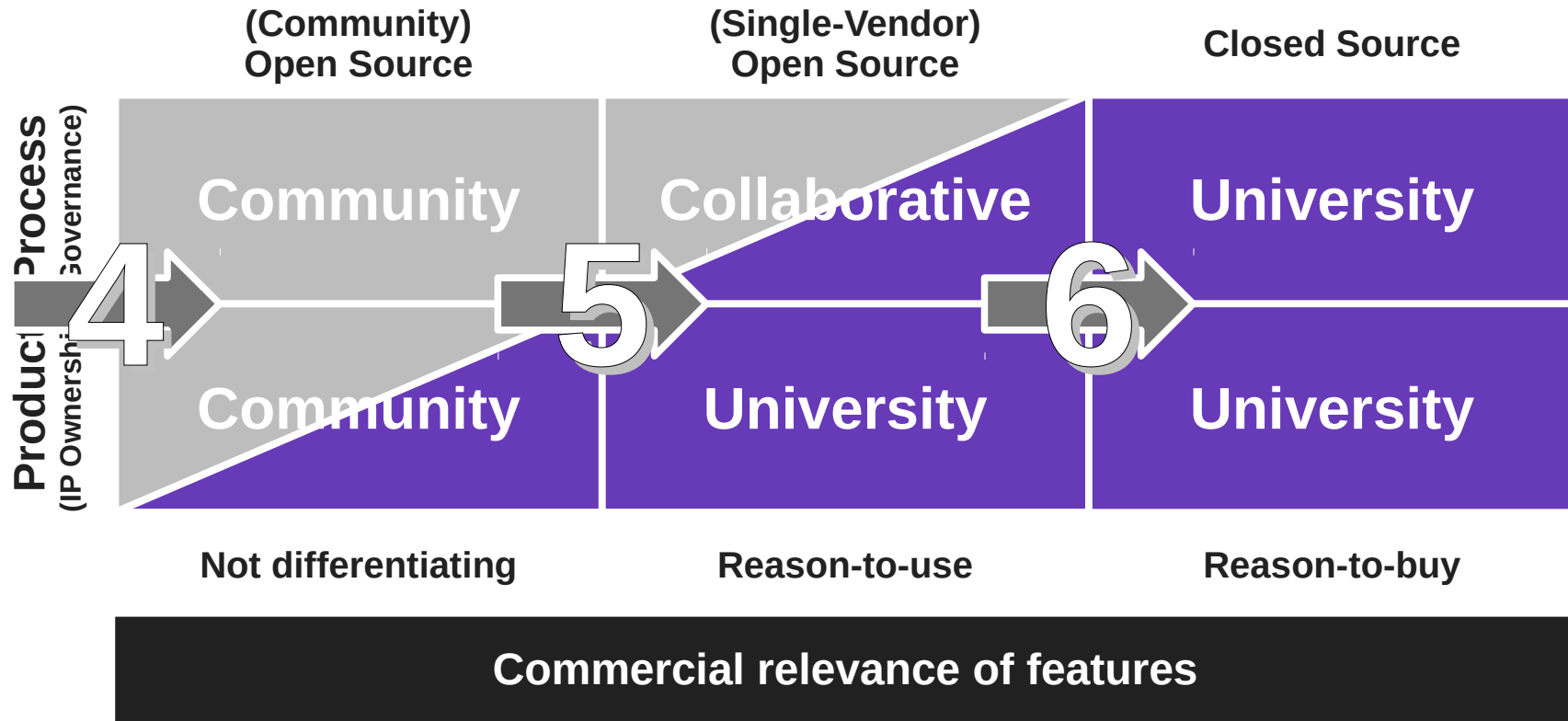
Public Money, Public Code?

- Universities have both a non-profit and commercial part
  - Universities are tasked with research and teaching [1]
  - Universities are also tasked with exploiting their innovations

- It is the university's choice what to give away for free

[1] And spending inordinate amounts on useless administrative matters

6. Setting-up Shop

Best Practices for Setting-up Shop and Getting Users

1. Get Used!

1.1 Get found
- 1.1.1 Have good name
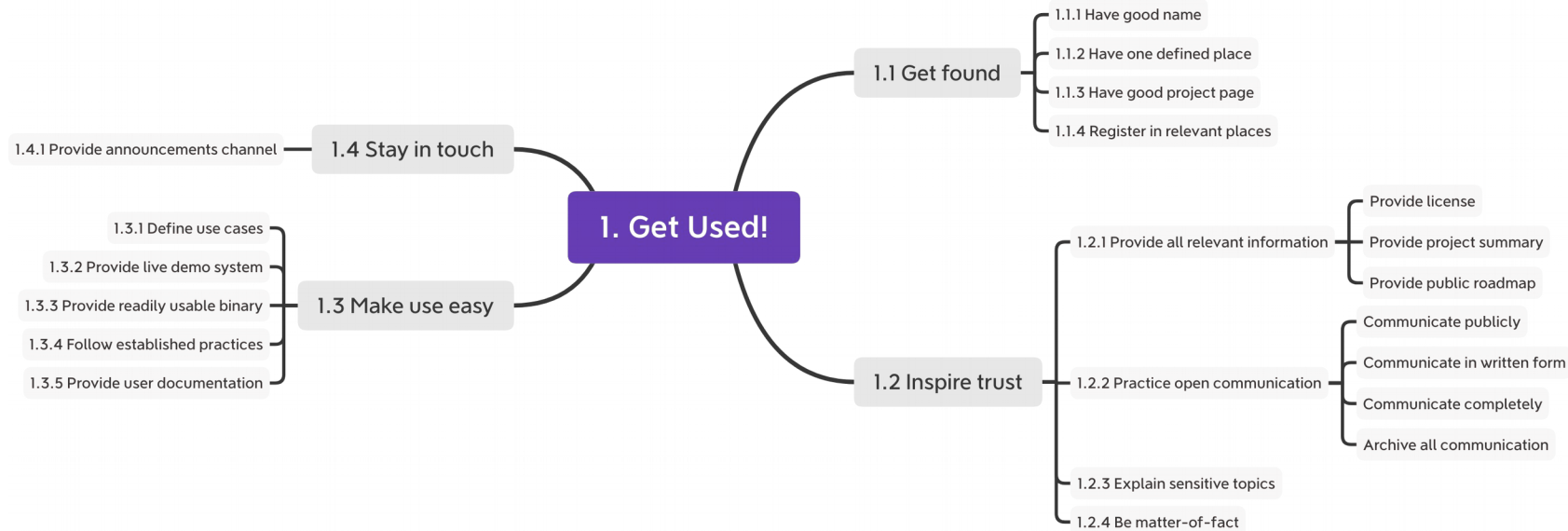- 1.1.2 Have one defined place
- 1.1.3 Have good project page
- 1.1.4 Register in relevant places

1.2 Inspire trust
- 1.2.1 Provide all relevant information
  - Provide license
  - Provide project summary
  - Provide public roadmap
- 1.2.2 Practice open communication
  - Communicate publicly
  - Communicate in written form
  - Communicate completely
  - Archive all communication
- 1.2.3 Explain sensitive topics
- 1.2.4 Be matter-of-fact

1.3 Make use easy
- 1.3.1 Define use cases
- 1.3.2 Provide live demo system
- 1.3.3 Provide readily usable binary
- 1.3.4 Follow established practices
- 1.3.5 Provide user documentation

1.4 Stay in touch
- 1.4.1 Provide announcements channel

7. Getting Contributions

Best Practices for Getting Contributions

2.7 Protect intellectual property
- 2.7.1 Require DCO
- 2.7.2 Require CLA

2.6 Build trust
- 2.6.1 Practice open collaboration
  - Welcome everyone
  - Decide based on merits
  - Allow for self-organization
- 2.6.2 Manage all work publicly
- 2.6.3 Track and give credit
- 2.6.4 Celebrate small successes

2.5 Engage contributors
- 2.5.1 React speedily
- 2.5.2 Turn contributions into conversations
- 2.5.3 Have public discussion channels
- 2.5.4 Understand contributor needs

2. Get contributions!

2.1 Say welcome!

2.2 Make contributing easy
- 2.2.1 Provide good first issue
- 2.2.2 Provide contribution guide
- 2.2.3 Provide tasks for everyone
- 2.2.4 Provide developer manual

2.3 Communicate effectively
- 2.3.1 Assume good faith
- 2.3.2 Speak to the issue, not the person
- 2.3.3 Praise plentifully, criticize specifically

2.4 Practice code review

Summary

1. Research vs. startup
2. Project management
3. Product management
4. Lead programming
5. Open source strategy
6. Setting-up shop
7. Getting contributions

Thank you! Questions?

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DR

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- Contributions
  - None yet