Research and Startup

Prof. Dr. Dirk Riehle

Friedrich-Alexander University Erlangen-Nürnberg

COSS D02

Agenda

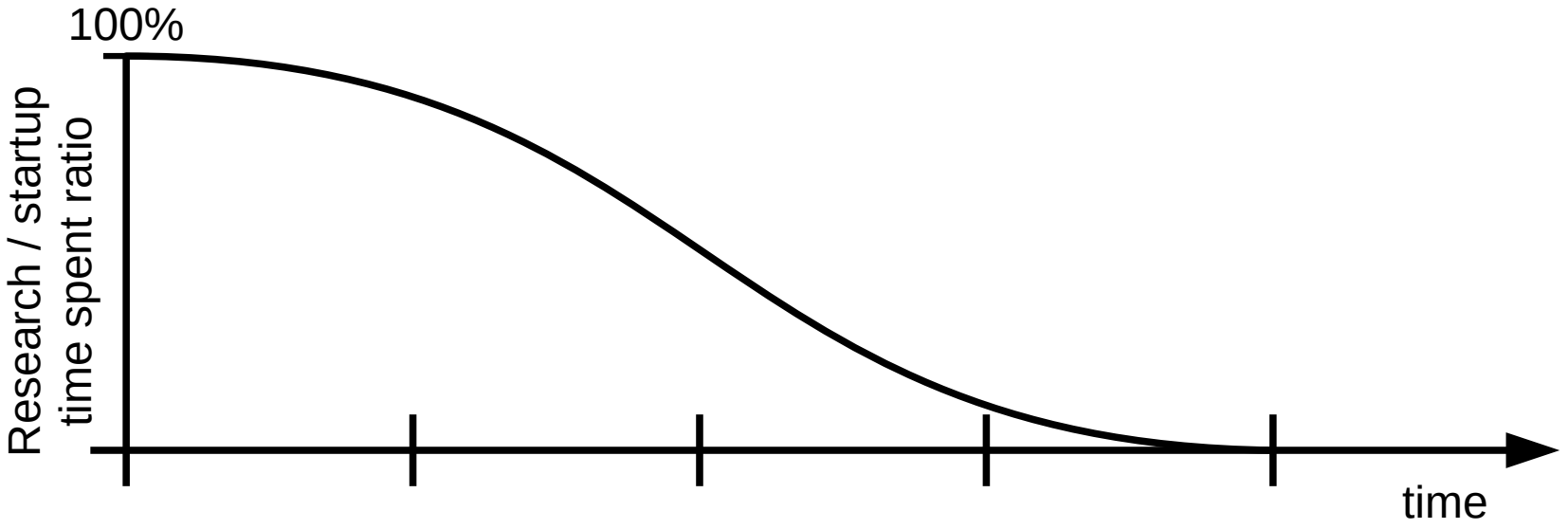
1. Research vs. startup
2. Project management
3. Lead programming
4. Open source strategy
5. Getting users
6. Getting contributions

1. Research vs. Startup

Goal Conflict

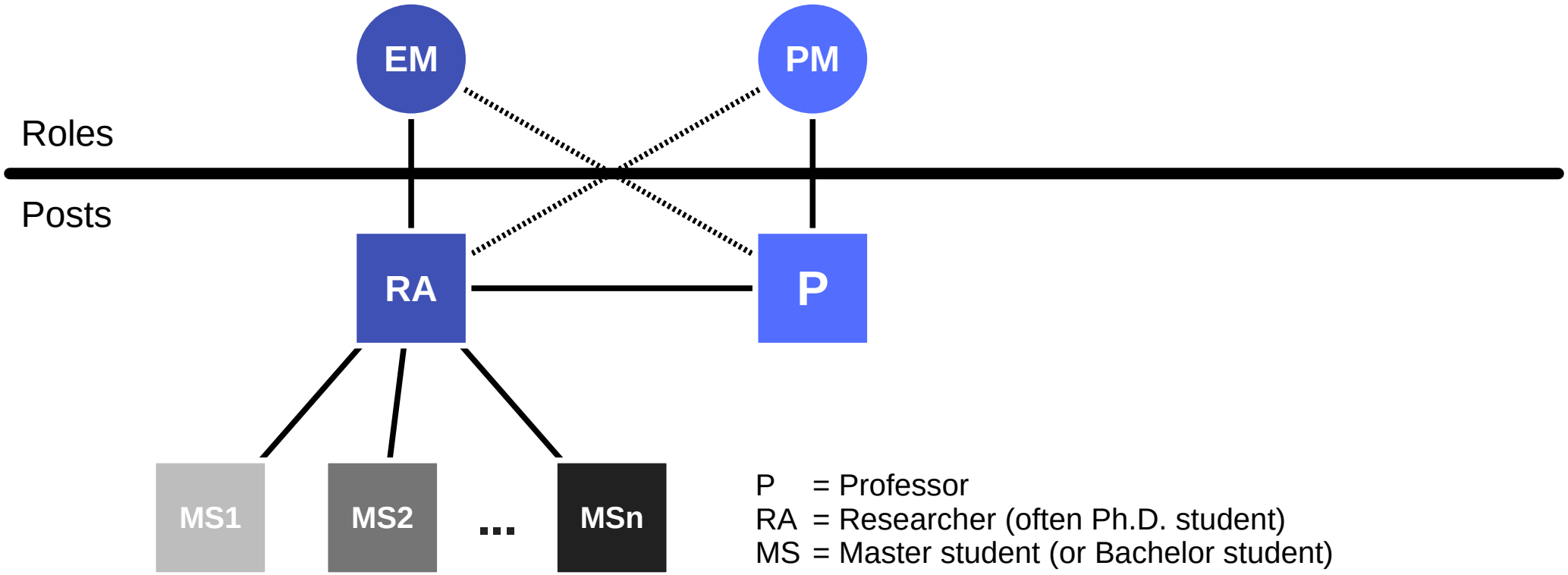
- Research
  - Desired output
    - Research papers
    - A dissertation
- Startup
  - Desired output
    - Software product
    - A startup

Resulting Time Allocation



2. Project Management

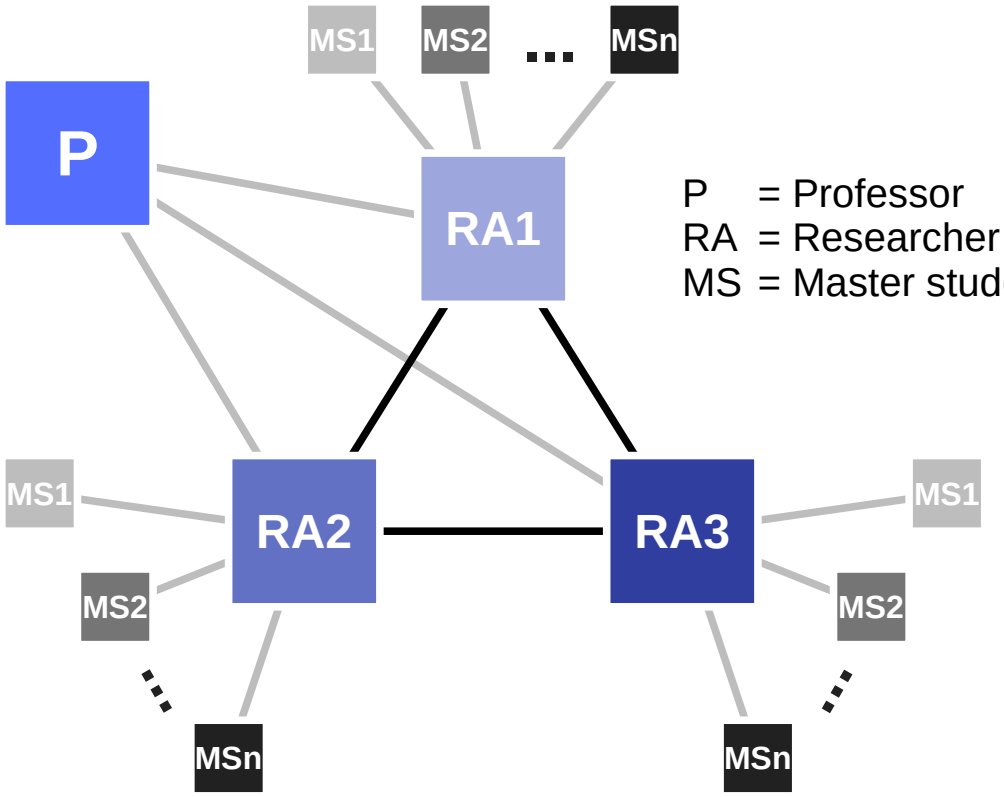
The Solo Founder Model



P = Professor
RA = Researcher (often Ph.D. student)
MS = Master student (or Bachelor student)

[1] The researcher (research project) acts as the lead engineer (startup)

The Peer Group Model



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Project Recruiting

- Researchers
  - Recruited by professor
  - Funded through research grants, self-funded
- Masters students
  - Recruited by researchers with support by professor
  - Funded through research grants, self-funded

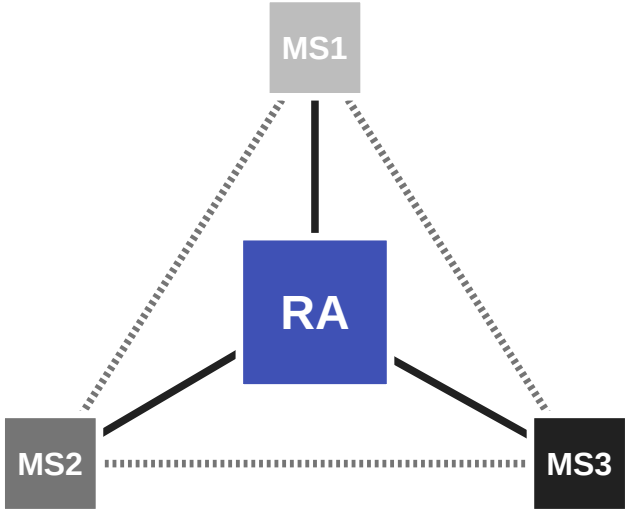
Project End

- Research project finished
- Startup created (or failed)

3. Lead Engineering

Lead Engineer [1]

- A lead engineer
  - 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
- Contributors are
  - Students at the university (e.g. Master's students)
  - Later: Open source volunteers



Role Name Equivalencies

Context	Lead role	Helper role
University	Ph.D. student	Master student
Research project	Graduate researcher	Research assistant
Startup project	Lead engineer	Student engineer
Open source project	Committer	Contributor
Company	Co-founder	Early employee

Lead Engineer / Student Engineer Collaboration

- Lead engineer defines feature
  - If necessary breaks it down into tasks
  - Assigns tasks or waits for volunteers
- With student engineer, discusses design
  - Helps break down work into tasks / increments
  - Ideally, discussion is public (in open source anyway)
- In multiple increments, reviews and merges code
  - Student engineer provides sufficiently small commit
  - Lead programmer reviews, comments, integrates
- Until feature is fully implemented

Central Project

Q

qdacity

Project ID: 12461679

Star 2 | Fork 9

8,117 Commits | 36 Branches | 24 Tags | 216.5 MB Files | 50 GB Storage

Backend Coverage 65.00% | Frontend Coverage 11.20%

master | qdacity / | History | Find file | Web IDE | Clone

Merge branch 'bundlemap' into 'master'

Andreas Kaufmann authored 11 hours ago

293aad4b

Upload File | README | CI/CD configuration | Add LICENSE | Add CHANGELOG | Add CONTRIBUTING | Add Kubernetes cluster

Name	Last commit	Last update
.gitlab/issue_templates	Update ReleaseChecklist.md	2 weeks ago

Distributed Development

Projects

New project

Your projects 37 | Starred projects 0 | Explore projects

Filter by name... | Last updated

All | Personal

Q	Professorship of Open Source Software / QDAcity / **qdacity**	Owner		★ 2	9	9	259	Updated 9 hours ago
Q	Professorship of Open Source Software / QDAcity / student-projects / **qdacity-oscar-rosner**	Owner		★ 0	0	0	0	Updated 9 hours ago
Q	Professorship of Open Source Software / QDAcity / student-projects / **qdacity-vishwas-anavatti**	Owner		★ 0	0	0	0	Updated 9 hours ago
Q	Professorship of Open Source Software / QDAcity / student-projects / **qdacity-hugo-ibanez**	Owner		★ 0	0	0	0	Updated 14 hours ago
Q	Professorship of Open Source Software / QDAcity / student-projects / **qdacity-julian-lehrhuber**	Owner		★ 0	0	0	0	Updated 1 day ago
Q	Professorship of Open Source Software / QDAcity / student-projects / **qdacity-bharathwaj-rav**	Owner		★ 0	0	0	2	Updated 1 day ago
Q	Professorship of Open Source Software / QDAcity / student-projects / **qdacity-markus-goller**	Owner		★ 0	0	0	0	Updated 4 days ago

Issue Management

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
#700 · opened 1 week ago by Julia Doing
0 updated 2 days ago

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

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

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

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

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

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

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

Project Board

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 challeng
Backend Feature
#270

Landing Page
Feature Frontend
#188

Merge Request Backlog

Professorship of Open Source Software › QDAcity › qdacity › **Merge requests**

Open 9 | Merged 205 | Closed 19 | All 233

Edit merge requests | New merge request

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

remove URL.js from project
!234 · created 1 day ago by Oscar Rosner | Frontend Performance Optimization (Oscar Rosner) | Frontend
8 · updated 9 hours ago

refactor loadGAPIs()
!232 · created 1 day ago by Oscar Rosner | Technical Debt: Q3 2021 | Frontend
5 · updated 9 hours ago

cleanup / update index.jsp
!231 · created 1 day ago by Oscar Rosner | Frontend Performance Optimization (Oscar Rosner) | Frontend
12 · updated 9 hours ago

Notification test - more tests added
!230 · created 2 days ago by Vishwas Anavatti | Improving Development Setup (OSS-SEMI) | Backend | Test
0 · updated 2 days ago

Refactor notification
!229 · created 2 days ago by Vishwas Anavatti | Collaborative Workflows (OSS-PROJECT) | Backend | Refactoring
0 · updated 2 days ago

Draft: User Group Revamp - delete UserGroup and UserGroupuser(Backend)
!228 · created 2 days ago by Vishwas Anavatti | Collaborative Workflows (OSS-PROJECT) | Backend | Feature
0 · updated 9 hours ago

Draft: User Group Revamp - create/update/list of UserGroupUser (Backend)
!227 · created 2 days ago by Vishwas Anavatti | Collaborative Workflows (OSS-PROJECT) | Backend | Feature
0 · updated 9 hours ago

Builder pattern NotificationFilter class
2

Threaded Discussions

Professorship of Open Source Software › QDAcity › qdacity › Merge requests › !234

Open Created 1 day ago by Oscar Rosner Developer

Edit Mark as draft

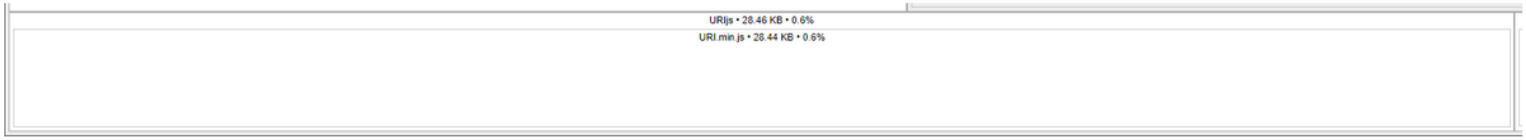
remove URL.js from project

Overview 8 Commits 3 Pipelines 3 Changes 12

2 unresolved threads

We use URL.js to extract query params from urls.

The minified version of URL.js makes up 0.6% (28.44 kB) of our bundle which isn't justified considering its small usecase and the fact that we can fall back to URLSearchParams.



We only use a subset of the functions provided by URL.js but it can't be treeshaked by webpack because it's a non-module javascript file and just adds functions and variables to the global namespace.

Edited 1 day ago by Oscar Rosner

Request to merge `profoss/qdacity/stu…` `:remove urljs from p…` **into** `master`

The source branch is 62 commits behind the target branch

Open in Web IDE Check out branch

Add a to do

Assignee Edit
Oscar Rosner
@kexplx

Reviewer Edit
@kaufmann_osr

Milestone Edit
Frontend Performance Optimization (Oscar Rosner)

Time tracking
No estimate or time spent

Labels Edit
Frontend ×

Lock merge request Edit
Unlocked

2 participants

Notifications

Thread Resolution

Oscar Rosner @kexplx started a thread on the diff 1 day ago
Last updated by Oscar Rosner 20 hours ago

Toggle thread

war/assets/js/pages/ExercisePage/ExercisePage.jsx

```
5  5
6  6  import ExerciseEndpoint from '../../common/endpoints/ExerciseEndpoint';
7  7  import CourseEndpoint from '../../common/endpoints/CourseEndpoint';
8     - import 'script-loader!../../../../components/URIjs/URI.min.js';
```

Oscar Rosner @kexplx · 1 day ago — Developer

An upcoming MR will remove the deprecated and unmaintained `script-loader` so this MR is a nice start.

Andreas Kaufmann @kaufmann_osr · 20 hours ago — Owner

I believe since we have started using it, webpack have added better native support for importing assets as asset modules (came with v4 I think), is that the replacement for this type of loader?

Oscar Rosner @kexplx · 20 hours ago — Developer

Script Loaders GitHub says to use `raw-loader` but i think there is another more webpacky option yes.

Reply…

Resolve thread

Oscar Rosner @kexplx started a thread on an old version of the diff 1 day ago
Resolved by Andreas Kaufmann 20 hours ago

Toggle thread

Assignee — Edit
Oscar Rosner
@kexplx

Reviewer — Edit
@kaufmann_osr

Milestone — Edit
Frontend Performance Optimization (Oscar Rosner)

Time tracking
No estimate or time spent

Labels — Edit
Frontend ×

Lock merge request — Edit
Unlocked

2 participants

Notifications

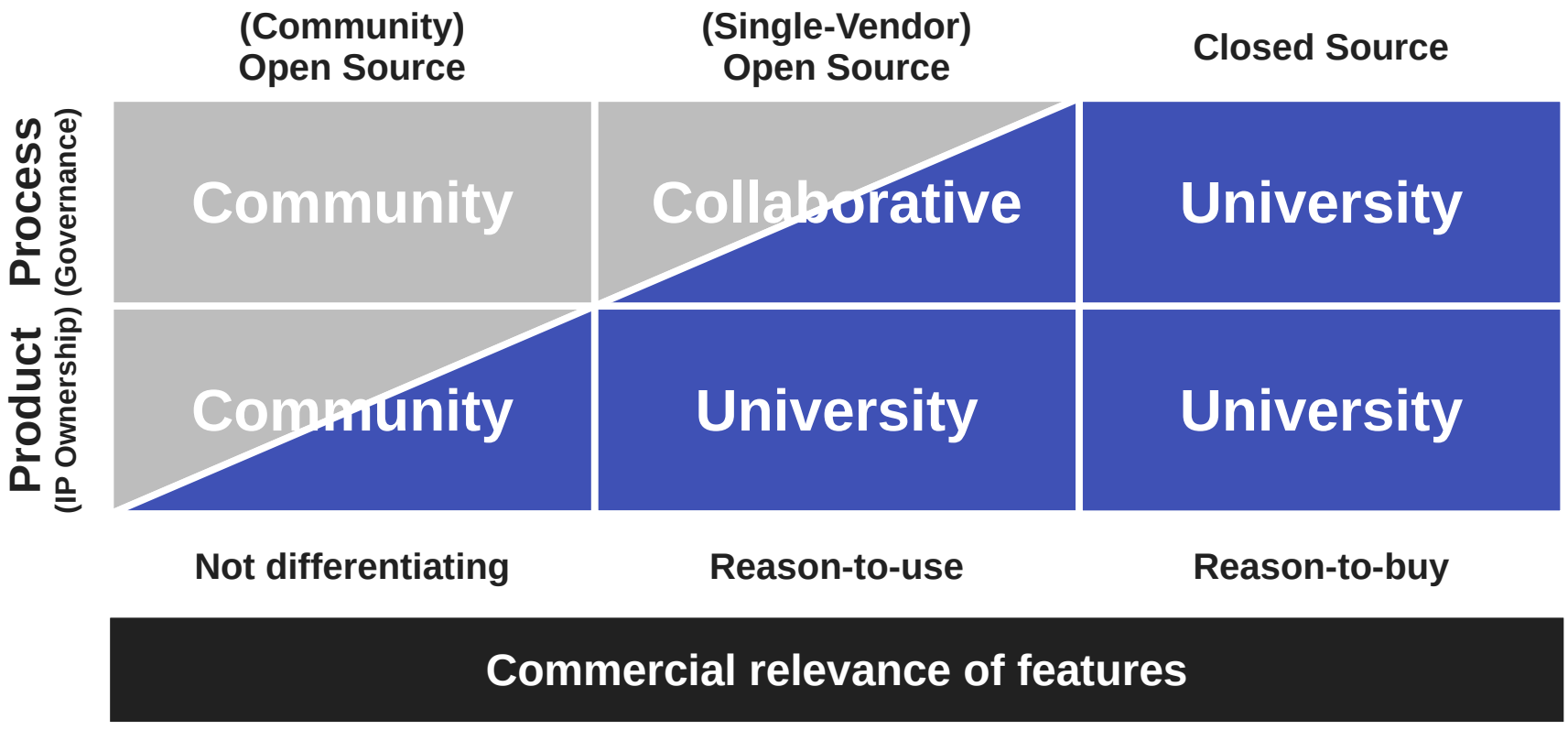
Reference: profoss/qdacity/qdacit

Other Considerations

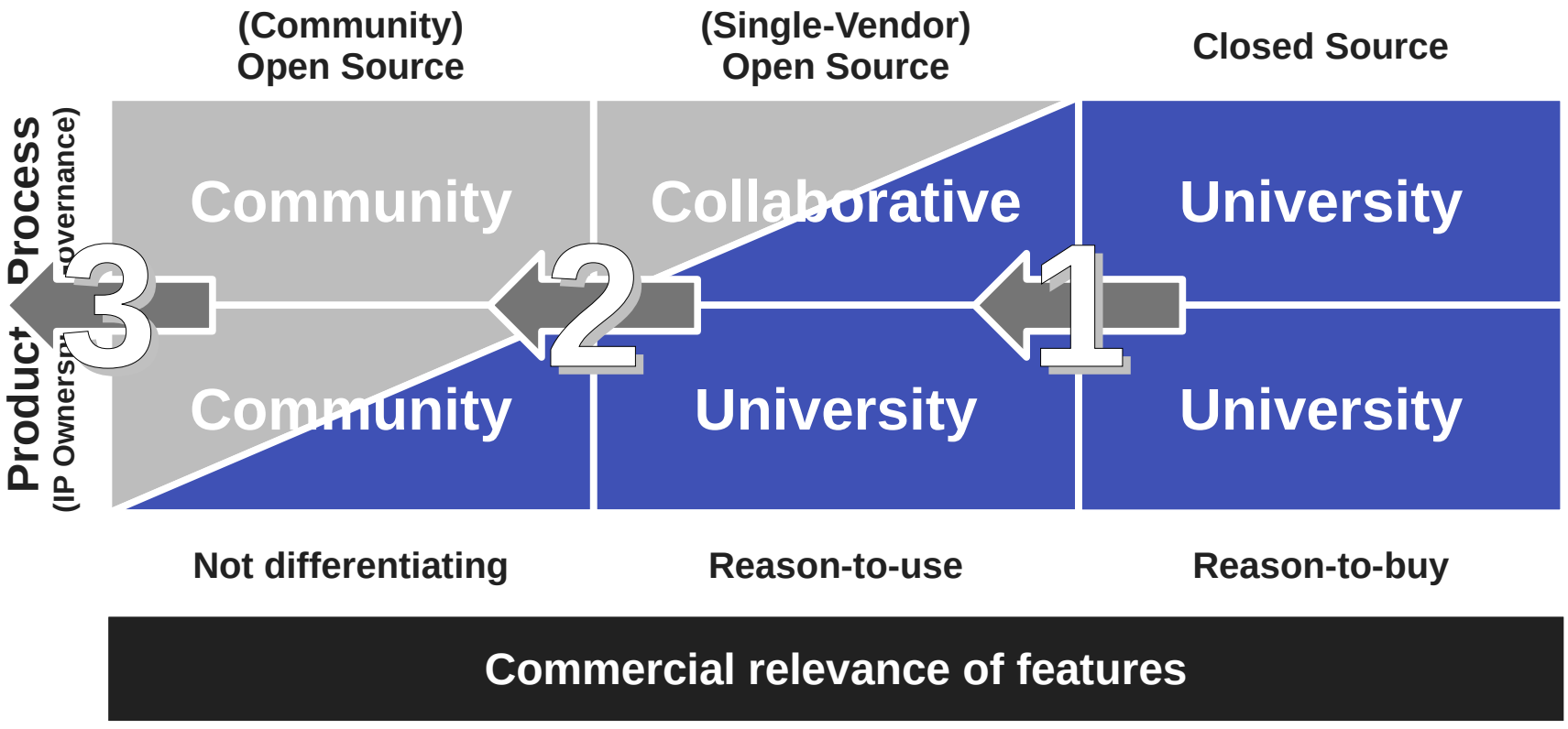
- Single (mono) repository vs. many
- Main-line vs. feature branches

4. Open Source Strategy

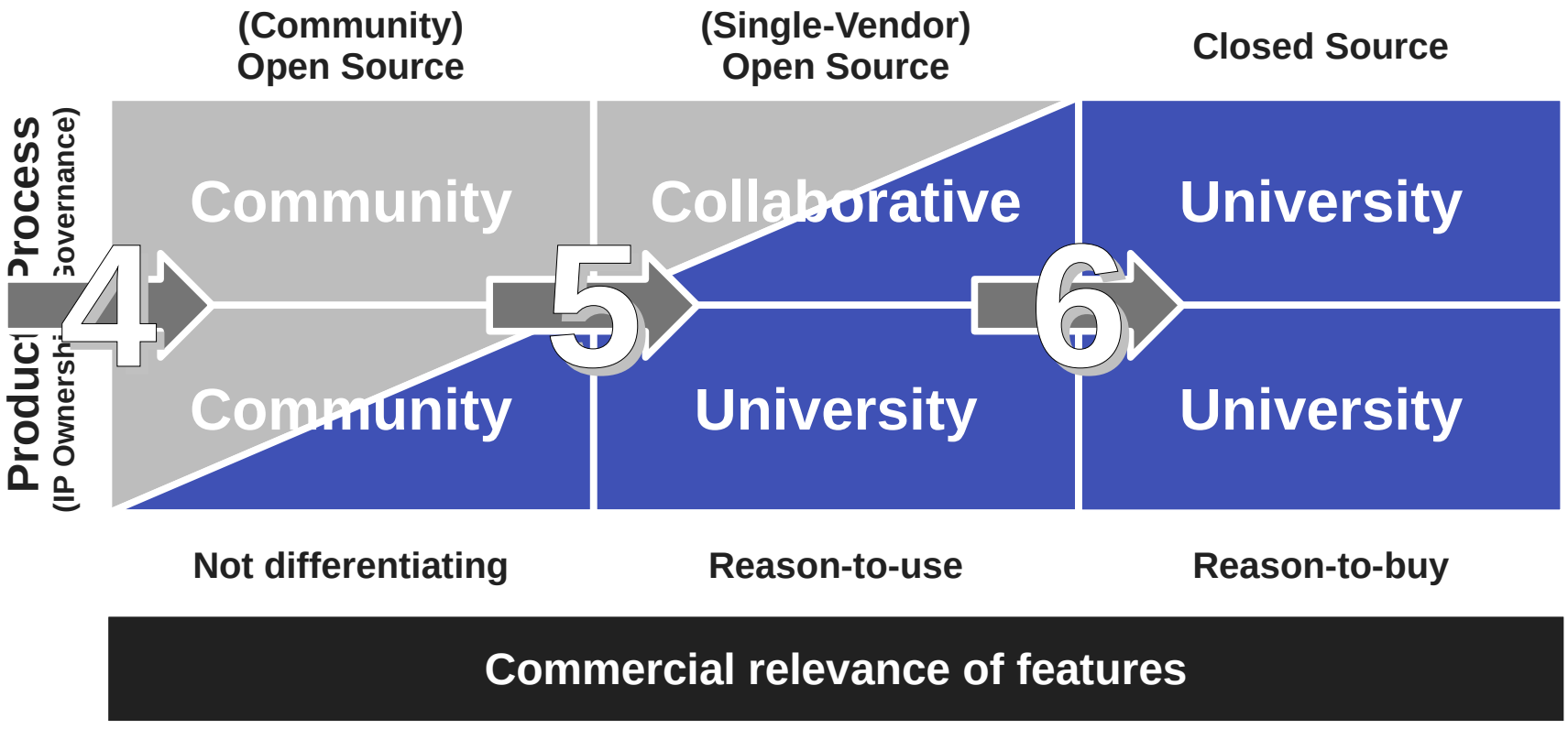
Open Source Community vs. University / Company



Pushing out Features



Pulling in Features



Public Money, Public Code?

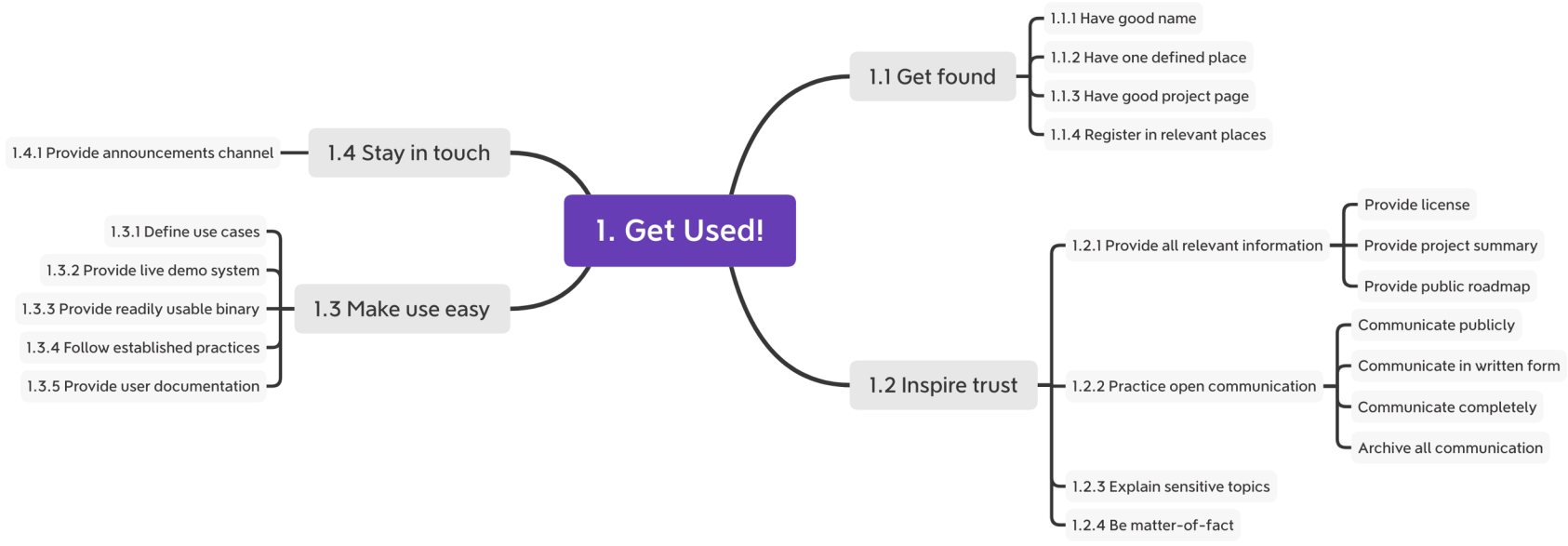
- Universities have both a non-profit and commercial part
  - Universities are tasked with research and teaching, among others
  - Universities are also tasked with exploiting their innovations
- It is the university's choice what to give away for free

Why Professors (Universities) Open Source

- To document research
- To make software sustainable
- To commericalize some software

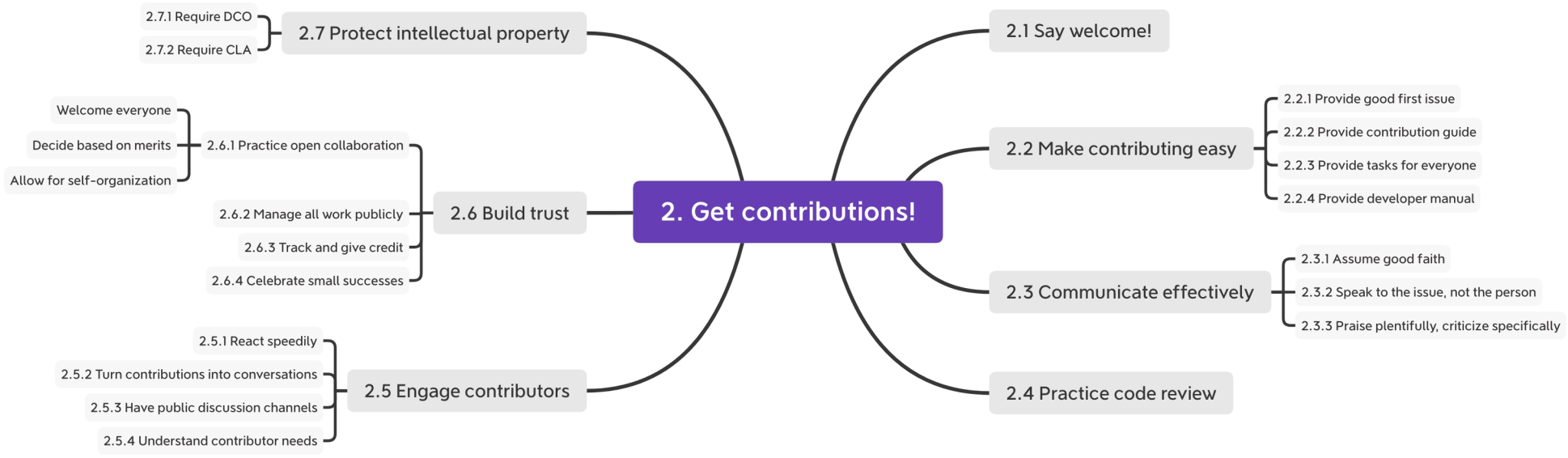
5. Getting Users

Best Practices for Setting-up Shop and Getting Users [R20]



6. Getting Contributions

Best Practices for Getting Contributions [R20]



Summary

1. Research vs. startup
2. Project management
3. Lead programming
4. Open source strategy
5. Getting users
6. Getting contributions

Thank you! Questions?

dirk.riehle@fau.de – https://oss.cs.fau.de

dirk@riehle.org – https://dirkriehle.com – @dirkriehle

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