

# Open Source Projects

**Prof. Dr. Dirk Riehle**

**Friedrich-Alexander University Erlangen-Nürnberg**

**COSS C02**

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# Agenda

1. Process definition (open source)
2. Project communities
3. Open source foundations
4. Community-led foundation
5. Vendor-led foundations
6. User-led foundations
7. Project life-cycle

# **1. What is an Open Source Project?**

# The Other Definition of Open Source

“**Open source is a development method** for software that harnesses the power of **distributed peer review** and **transparency of process**. The promise of open source is **better quality, higher reliability, more flexibility, lower cost**, and **an end to predatory vendor lock-in.**” [O10]

# Open Source Project (= People + Software)

- An **open source project** is
  - (Not a project but rather) a piece of software
  - Provided under an open source license
  - **Developed by a community of people**
  - **Using the principles of open collaboration**
- A community of people here is a
  - Group of people independent of each other
  - That relate to and collaborate with each other
  - For a shared common goal of the software
- Apache's definition of independence
  - At least from three different legal entities
  - Legal entities = {legal person, natural person}
  - Called committer diversity

# Open Collaboration [R+09]

- **Open Collaboration**

- **Egalitarian**

- Open for contribution
    - Everyone can contribute

- **Meritocratic**

- Public discussion process
    - Decisions based on merit

- **Self-organizing**

- People find their process
    - People find their project

- **Traditional Work**

- **Hierarchical**

- Closed and hidden silos
    - Assigned to project

- **Status-based**

- Public + private discussions
    - Hierarchical status decides

- **Assigned tasks**

- Prescribed process
    - Prescribed jobs

# The Cathedral and the Bazaar [R99]

- The Cathedral

- Carefully crafted work
  - Performed by small group
  - Evolves slowly
- Bugs and problems are tricky, require deep analysis
- Project is led by command and control approach
- No early releases nor beta

- The Bazaar

- Incremental work
  - Performed by large group
  - Evolves rapidly
- Linus' law: "Given enough eyeballs, all bugs are shallow"
- Project is lead by convincing people, nudging them on
- "Release early, release often"

# The Apache Way

- Official [A10b]
  - Collaborative software development
  - Commercial-friendly standard license
  - Consistently high quality software
  - Respectful, honest, technical interaction
  - Faithful implementation of standards
  - Security as a mandatory feature
- Curcuru [C17]
  - Charity
  - Community
  - Consensus
  - Merit
  - Open
  - Pragmatic

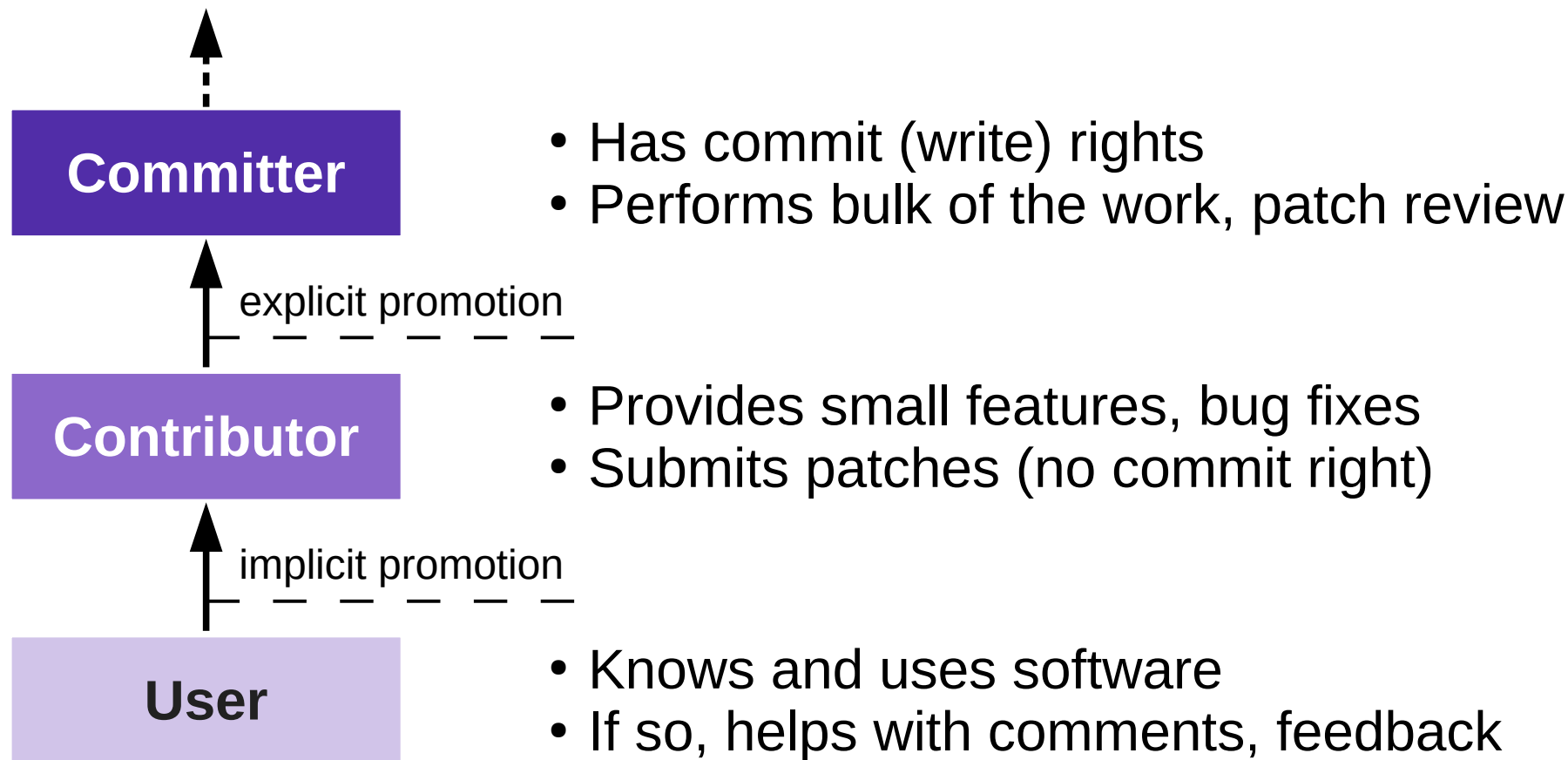


## 2. Project Communities

# Open Source Project Community

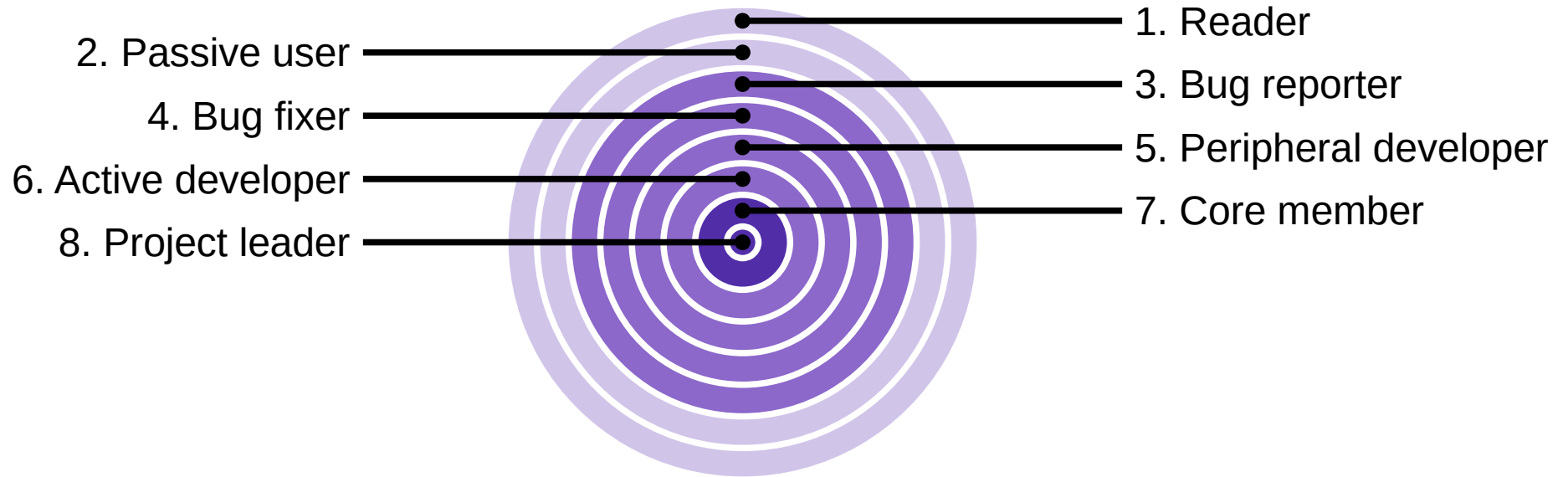
- An **open source project community** is
  - The group of people and companies engaged in an open source project
- The **developer community** is
  - The subset of the project community that is developing the software
- The **user community** is
  - The subset of the project community that is using the software

# The Basic Career Path [R15a]



[1] Committers are also called “maintainers” (mostly in the Linux context)

# The Onion Model [CH11]

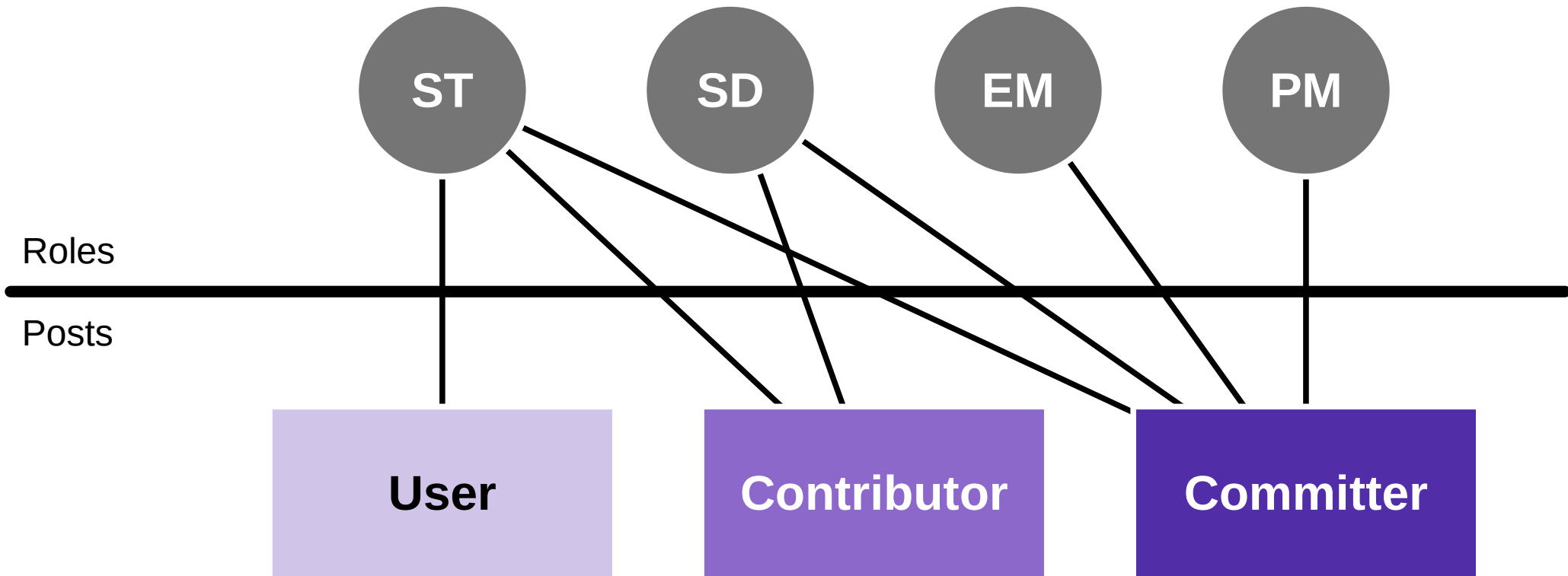


**User**

**Contributor**

**Committer**

# Roles and Posts in Open Source Projects



ST = Software tester  
SD = Software developer  
EM = Engineering manager  
PM = Product manager

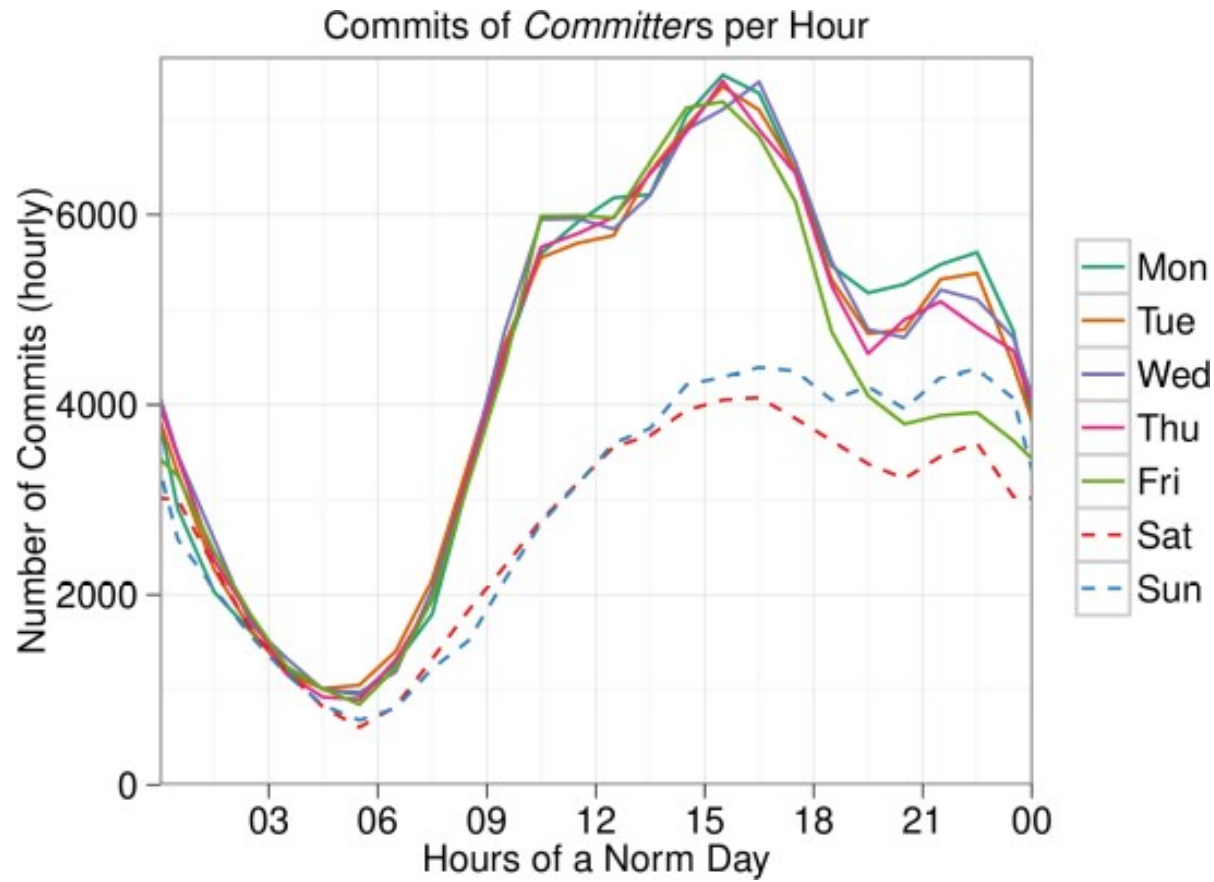
# Open Source Project Governance

- Governance (recap)
  - Is the set of processes, practices, institutions, and roles used to lead and manage a social system
- **Open source project governance**
  - Is the governance of an open source project

# Three Different Governance Models

- The BDFL Model
  - Hierarchical with strong code ownership
  - Example: The Linux kernel
- The Peer Group model
  - Core group of committers and evangelists
  - Example: The PostgreSQL RDBMS
- The Do-ocracy
  - Those who do, rule
  - Example: Tiki Wiki CMS Groupware

# Daily and Weekly Work in Open Source Projects [R+14]





### 3. Open Source Foundations

# Open Source Foundations [R10a]

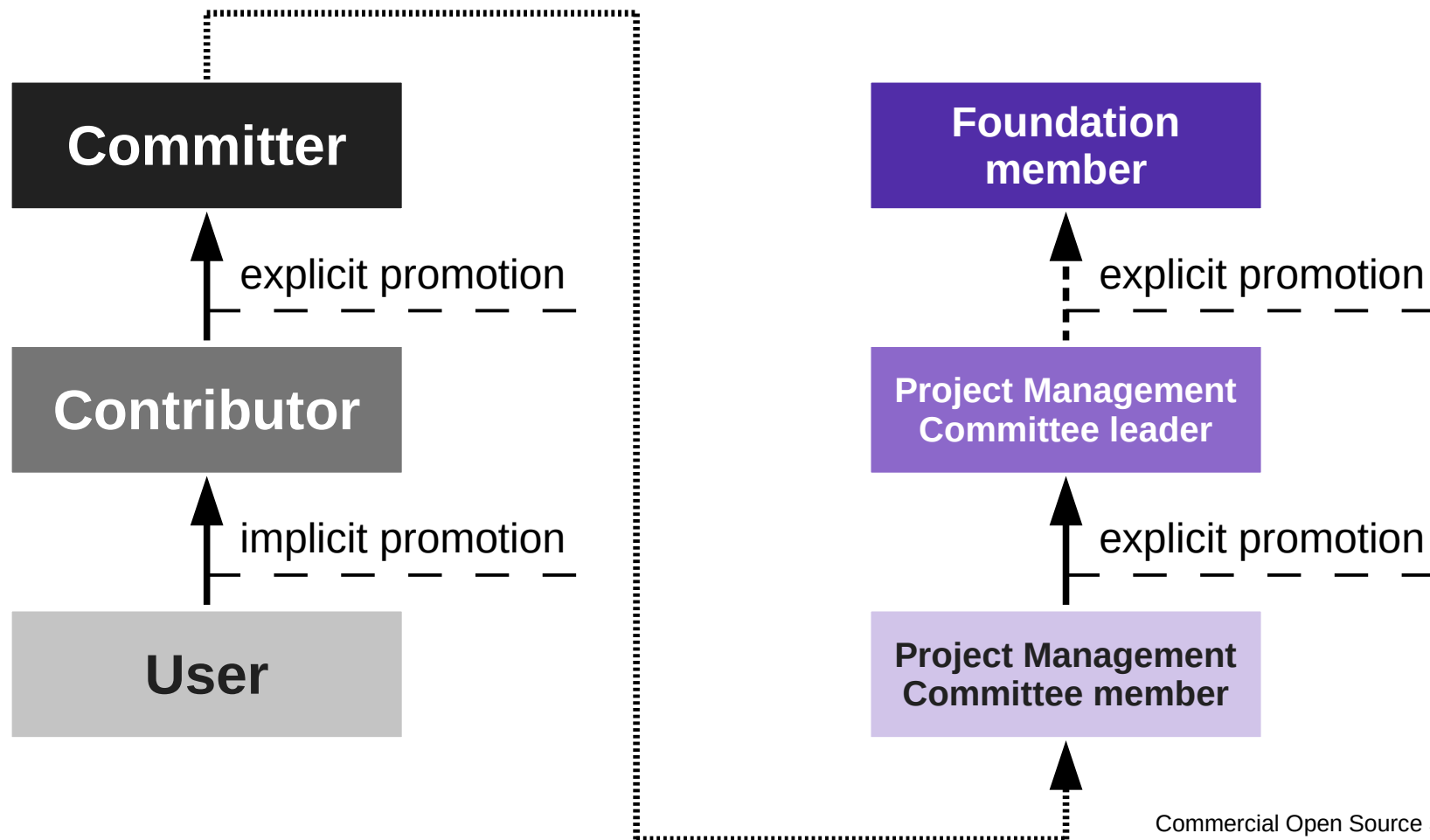
- An **open source foundation** is
  - a **non-profit organization** (foundation, consortium)
  - with the purpose of **managing and performing the development** of
  - **non-differentiating open source software**
  - made available to foundation members and **the general public**
- Typical members of a developer-led foundation are
  - Individual developers
  - Software vendors
  - Service providers
  - Consulting firms
  - Software users

# Motivation for Open Source Foundations

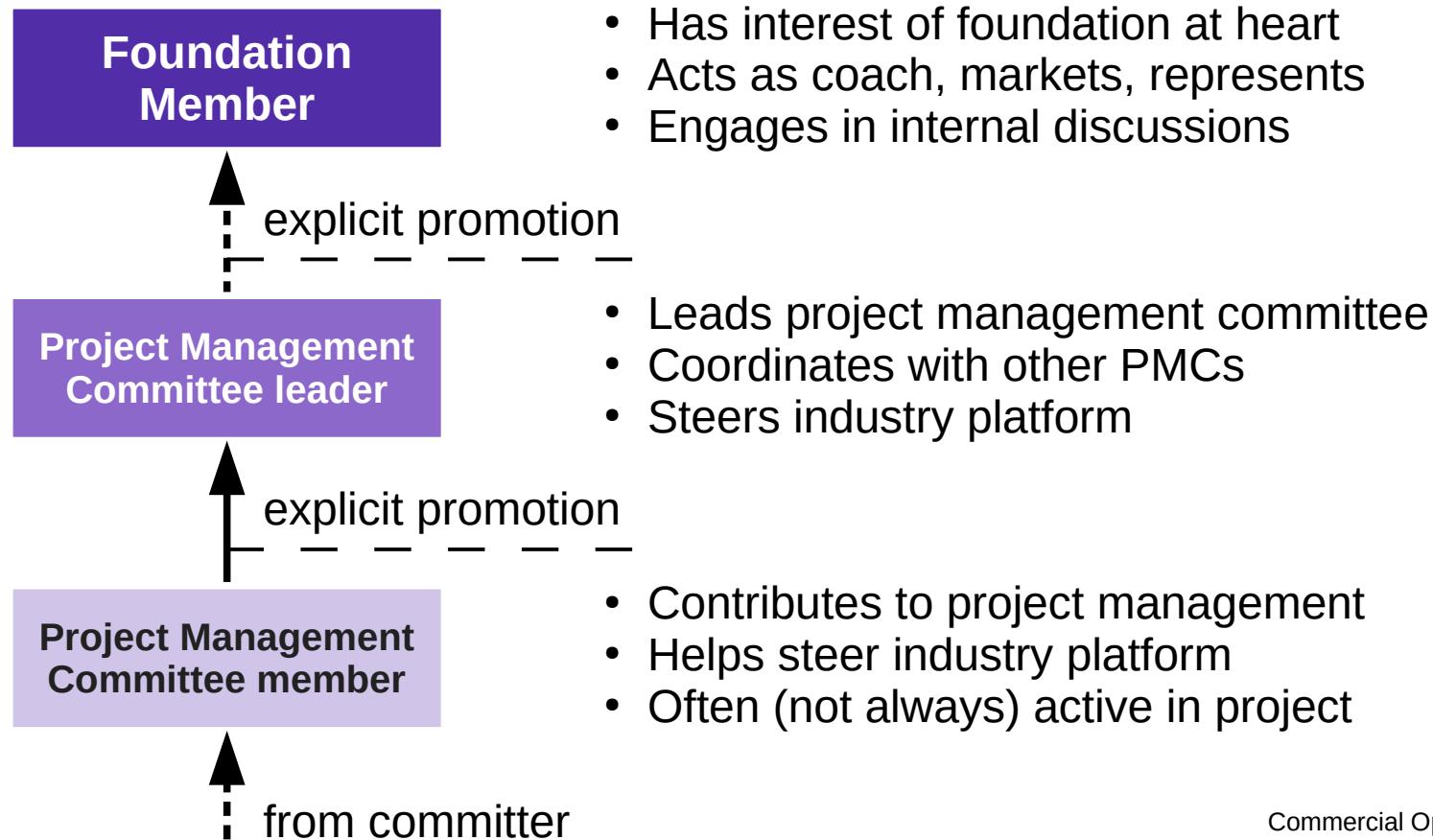
1. Support and protect people and their projects
  - Protect developers from lawsuits
  - Accept donations; manage books
  - Legally represent project interests
2. Create a fair and equal playing field for members
  - Regulate access to intellectual property
  - Regulate access to marketing channels
  - Regulate product roadmap and development

The Apache Software Foundation [...] provides **an established framework for intellectual property** and financial contributions that simultaneously **limits contributors potential legal exposure**. Through a collaborative and meritocratic development process, Apache projects deliver [...] software products [...]

# The Extended Open Source (Foundation) Career Path



# Tasks and Purpose of New Positions



# Solutions to Abuse of Intellectual Property Ownership

- The foundation becomes the owner of all relevant (“chokepoint”) properties
  - Re: **copyright**
    - The foundation acquires copyright via contributor license agreement
    - The foundation licenses out using an agreed-upon open source license
  - Re: **patent rights**
    - The foundation chooses an open source license with a patent usage rights grant
    - The foundation arranges for a FRAND [1] patent usage rights grant (uncommon)
  - Re: **trademark rights**
    - The foundation acquires all necessary trademark rights
    - The foundation clarifies access to and usage rights of trademarks
  - Re: **other properties** (e.g. domain names)
    - The foundation acquires them and handles them appropriately

[1] FRAND = “fair, reasonable, and non-discriminatory”

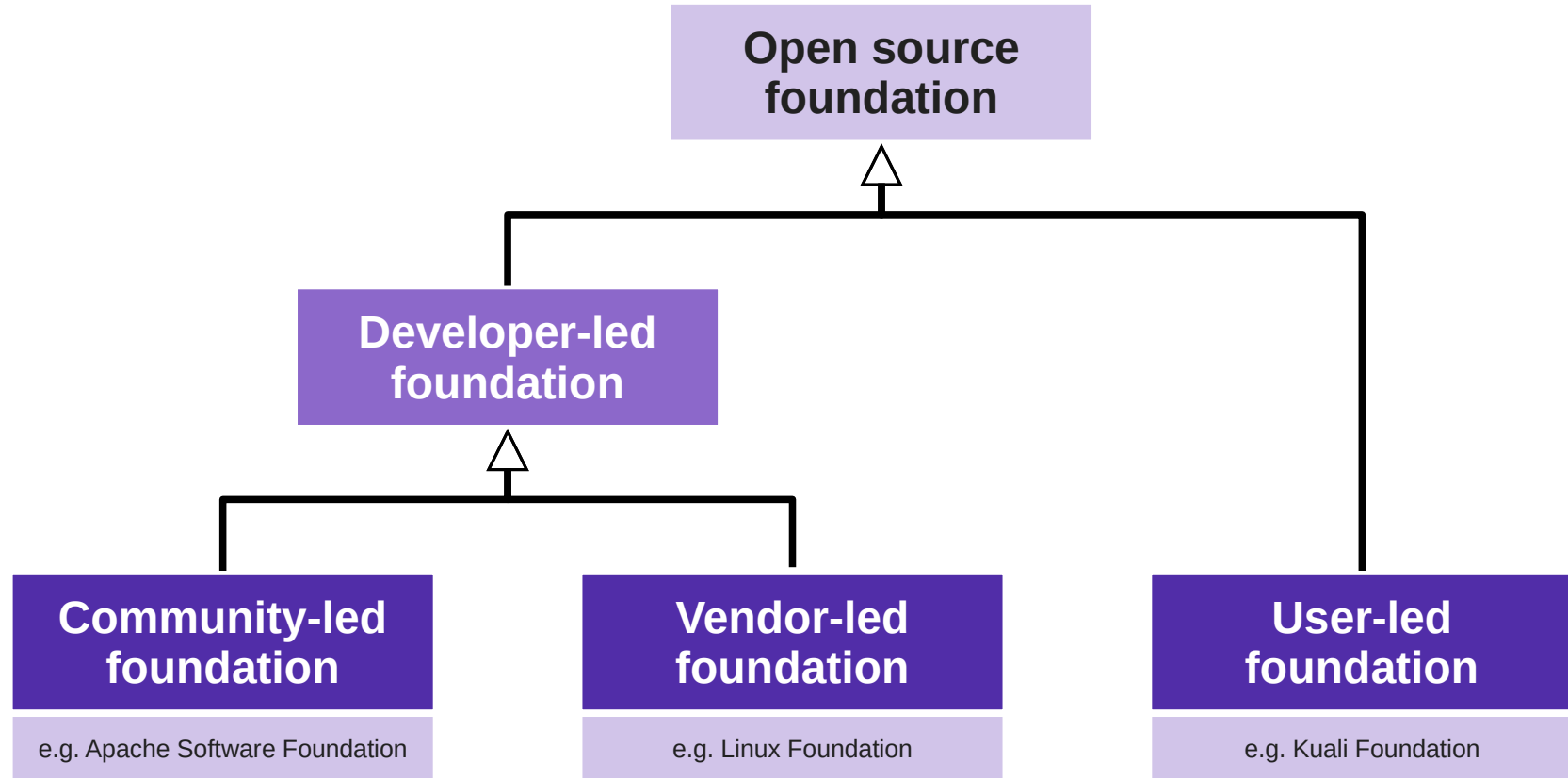
# Solutions to Abuse of Social Leadership

- The foundation defines governance processes that resolve project strife
  - Re: **social leadership / committer status**
    - The foundation sets-up appropriate processes to avoid strife in the first place
    - If necessary, the foundation can still step in if project leaders misbehave

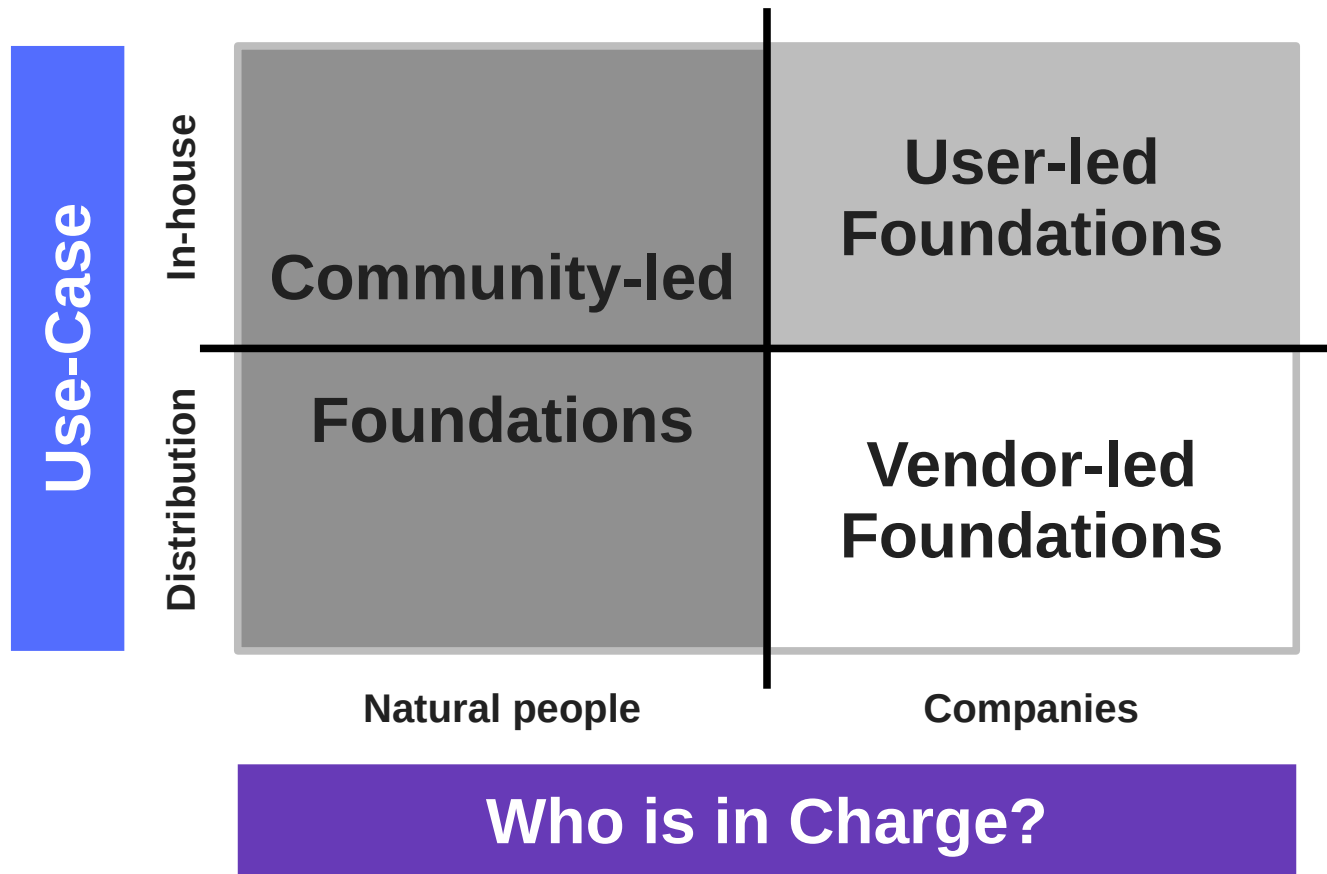


## 4. Community-led Foundations

# Types of Open Source Foundations



# Open Source Foundations by Leadership and Use-case



# Community-Led Open Source Foundations

- A **community-led open source foundation**
  - Is an open source foundation predominantly led by **natural people**



## 5. Vendor-led Foundations

# Vendor-led Open Source Foundations

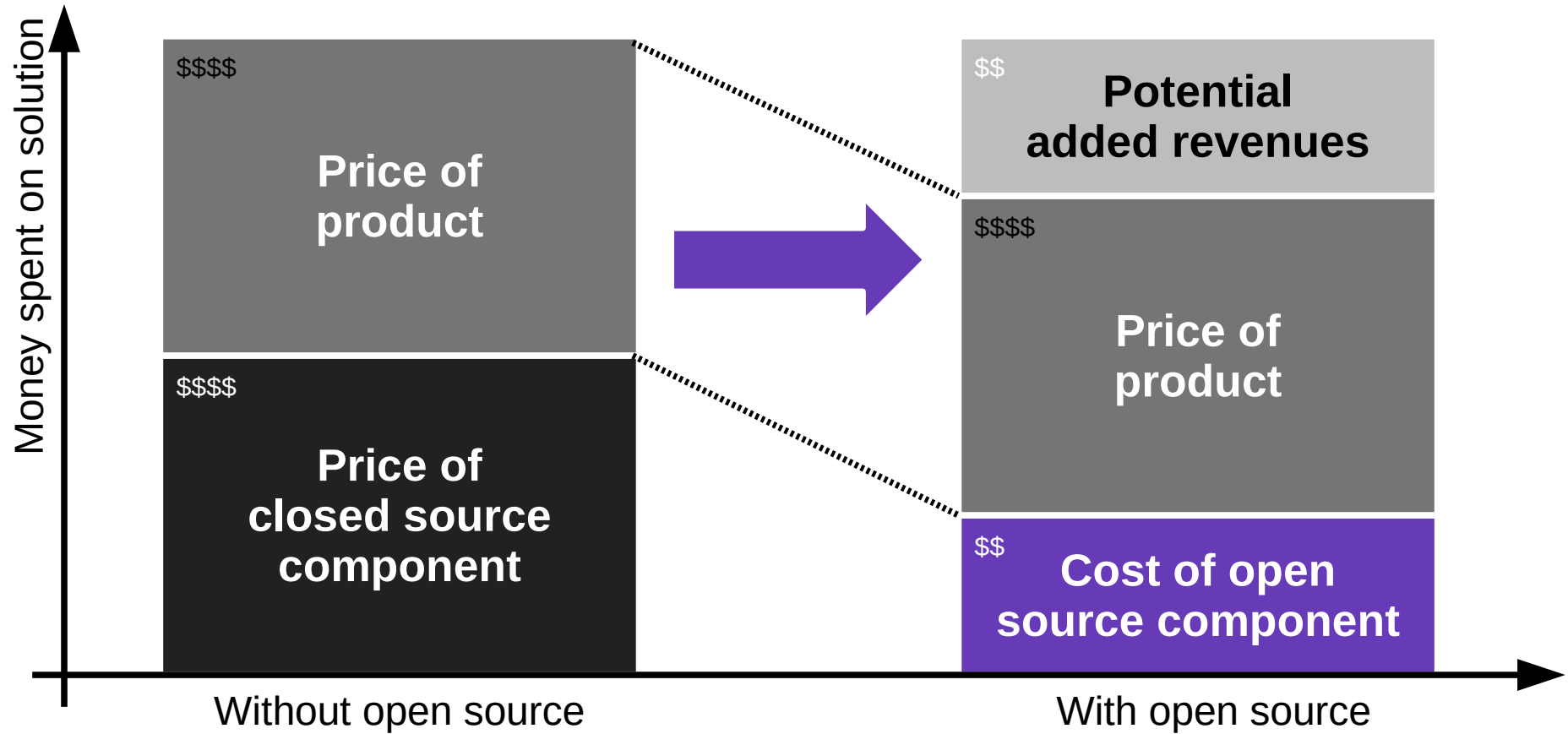
- An **vendor-led open source foundation** is
  - Is an open source foundation predominantly led by **software vendors**
  - To collaboratively develop non-differentiating components for products



# Motivation for Vendor-led Foundations

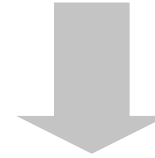
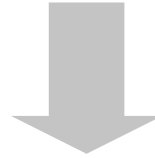
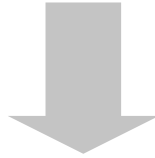
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2. Create a fair and equal playing field for members
  - Regulate access to intellectual property
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  - Regulate product roadmap and development
3. **Create a stronger more competitive ecosystem**
  - **Increase share of customer wallet**
  - **Reach more price-sensitive customers**
  - **Grow addressable market**

# Increase Share of Customer Wallet





# “Ganging Up On The 800lb Gorilla”



# Dysfunctions of Vendor-led Foundations

- Misuse of projects as marketing channels
- Special provisions in bylaws for ensuring influence

## 6. User-led Foundations

# User-led Open Source Foundation

- **A user-led open source foundation**
  - Is an open source foundation predominantly led by **software user (firms)**
  - To sponsor / develop the software needed to operate their business

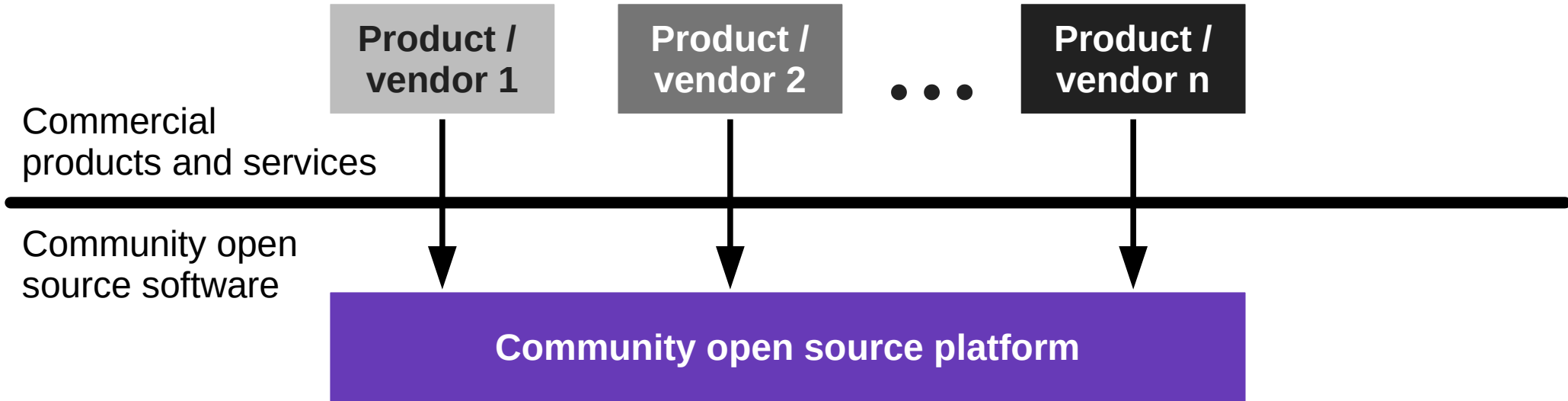
# Example User-led Foundations



# Motivation for a User-led Foundation

- To get rid of or reduce the problems of vendor lock-in
  - High total cost of ownership
  - Innovation blockage
  - Operational risk
- By establishing a supplier ecosystem
  - For software products and services that
  - Is based on community open source software and
  - Conforms to the economics of the sponsors

# Software and Services Ecosystem of Suppliers



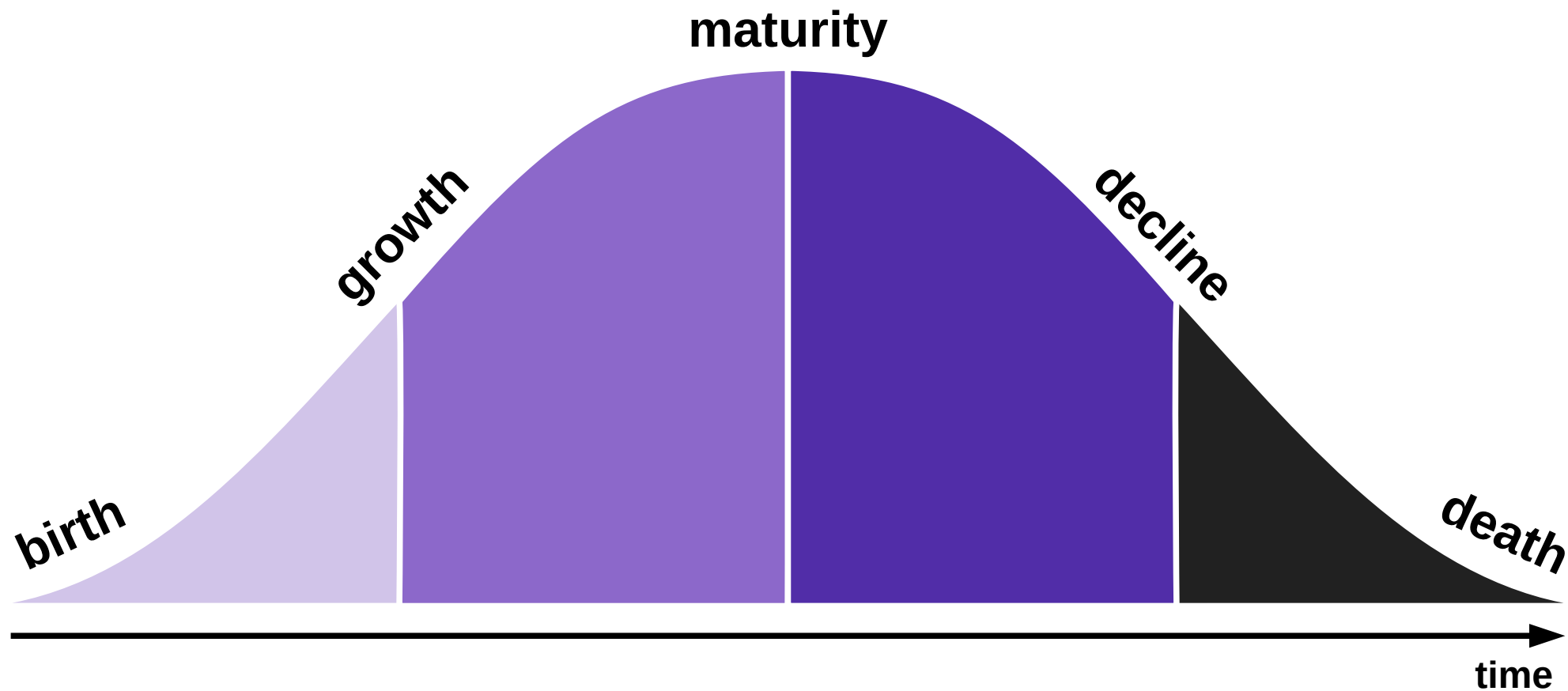
# Eclipse Industry Working Groups



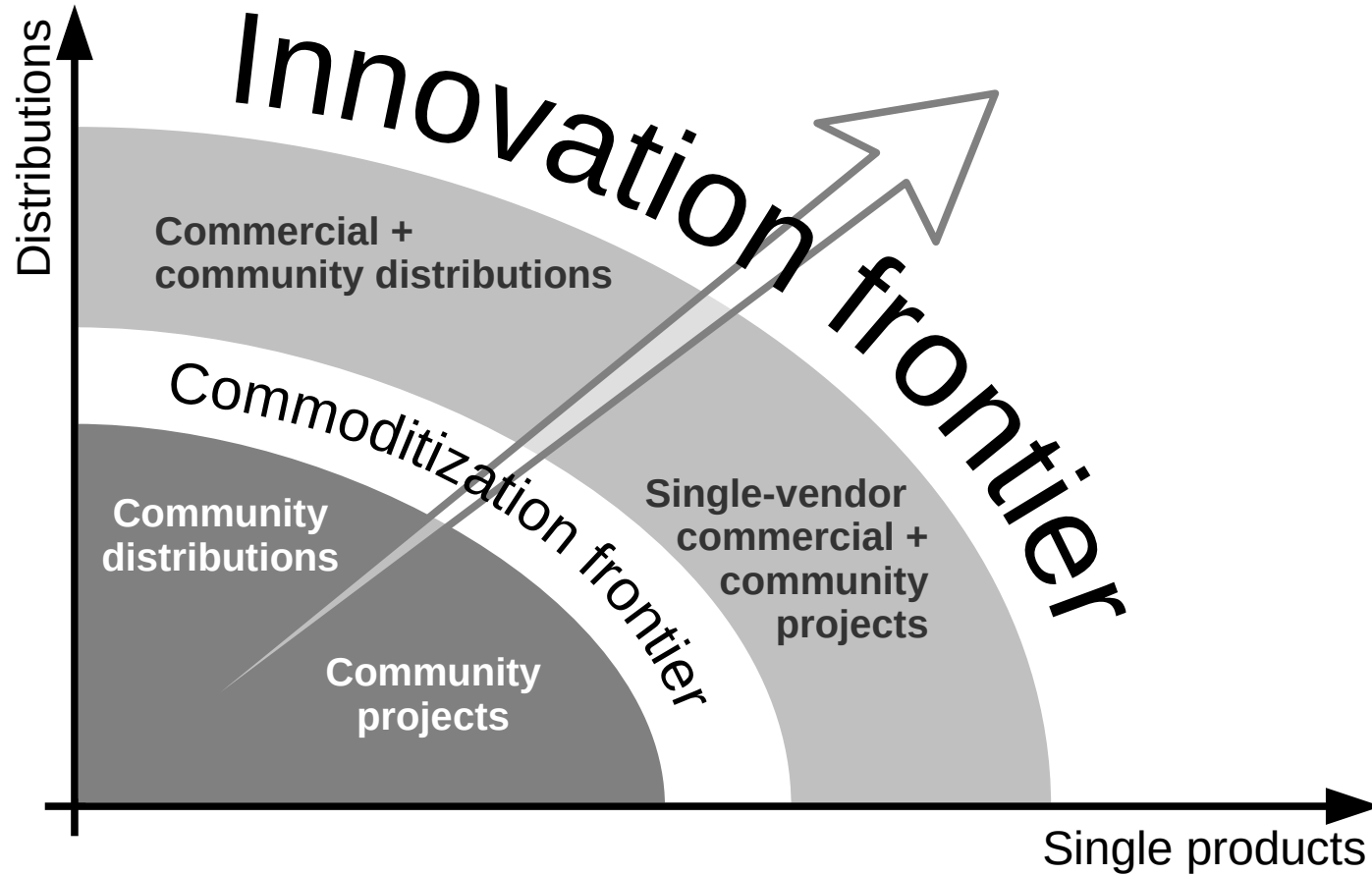


## 7. Project Life-cycles

# Life-cycle of Open Source Projects (Similar to Products)



# Innovation and Commoditization



# Summary

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# Thank you! Questions?

[dirk.riehle@fau.de](mailto:dirk.riehle@fau.de) – <https://oss.cs.fau.de>

[dirk@riehle.org](mailto:dirk@riehle.org) – <https://dirkriehle.com> – [@dirkriehle](#)

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