

# Open Source Projects

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**COSS C02**

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# Agenda

1. Process definition
2. Project communities
3. Open source foundations
4. Vendor-led foundations
5. User-led foundations
6. Project life-cycle

# 1. Process Definition

# 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
  - A piece of open source software
  - Developed by a community of people
  - Using the principles of open collaboration
- A community of people 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

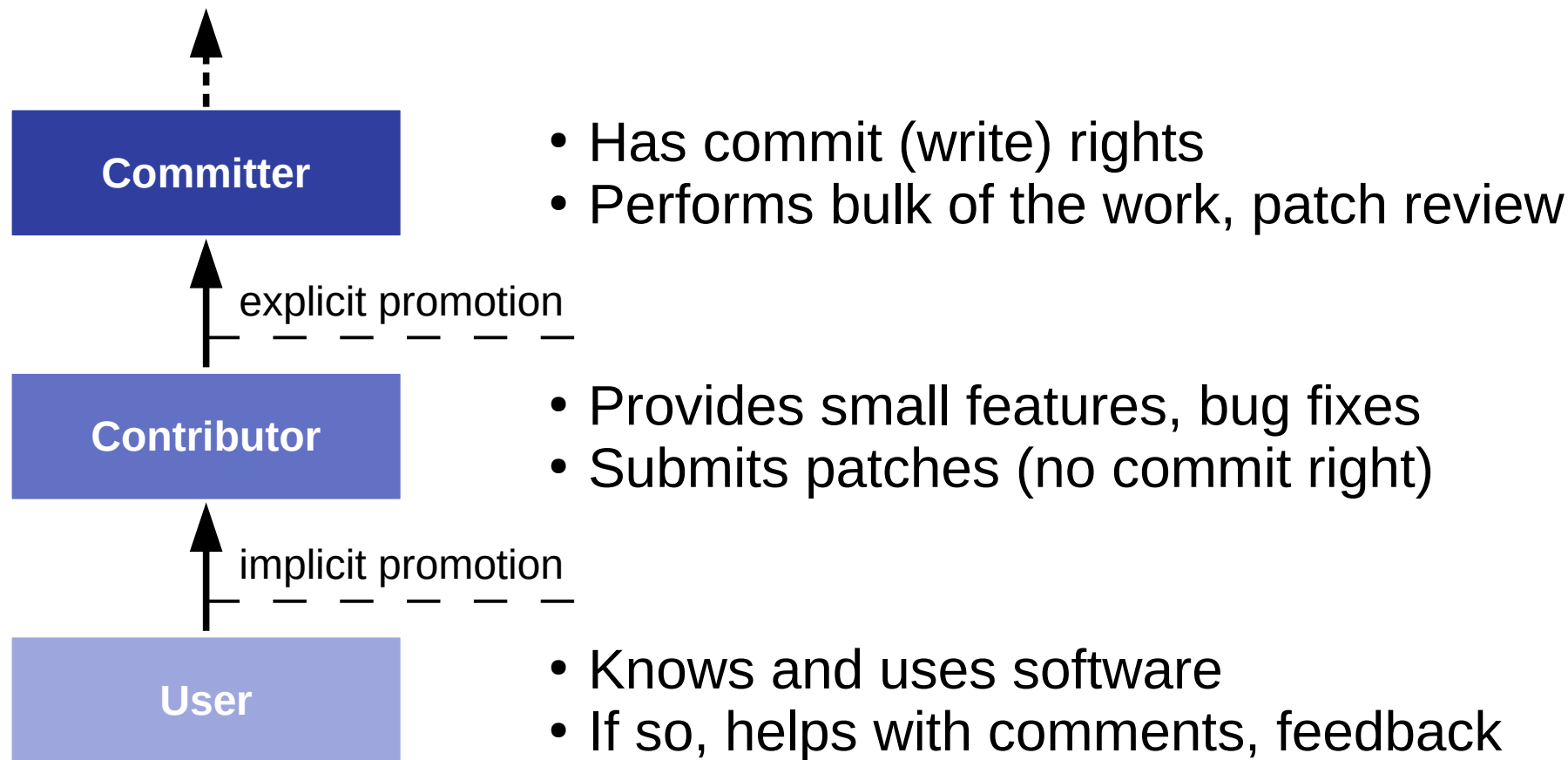


## 2. Project Communities

# Open Source Project Community

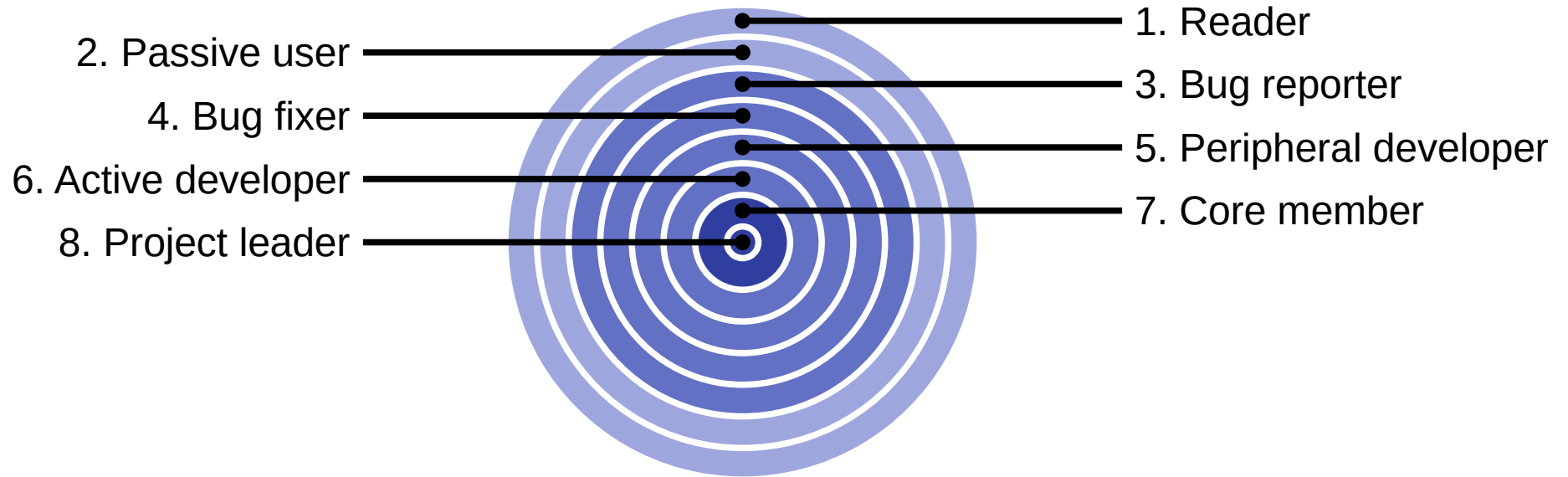
- An open source project community is
  - The group of people and companies engaged in an open source project
- The developer community is
  - The subset of the project community that is developing the software
- The user community is
  - The subset of the project community that is using the software

# The Basic Career Path [R15a]



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

# The Onion Model [CH11]

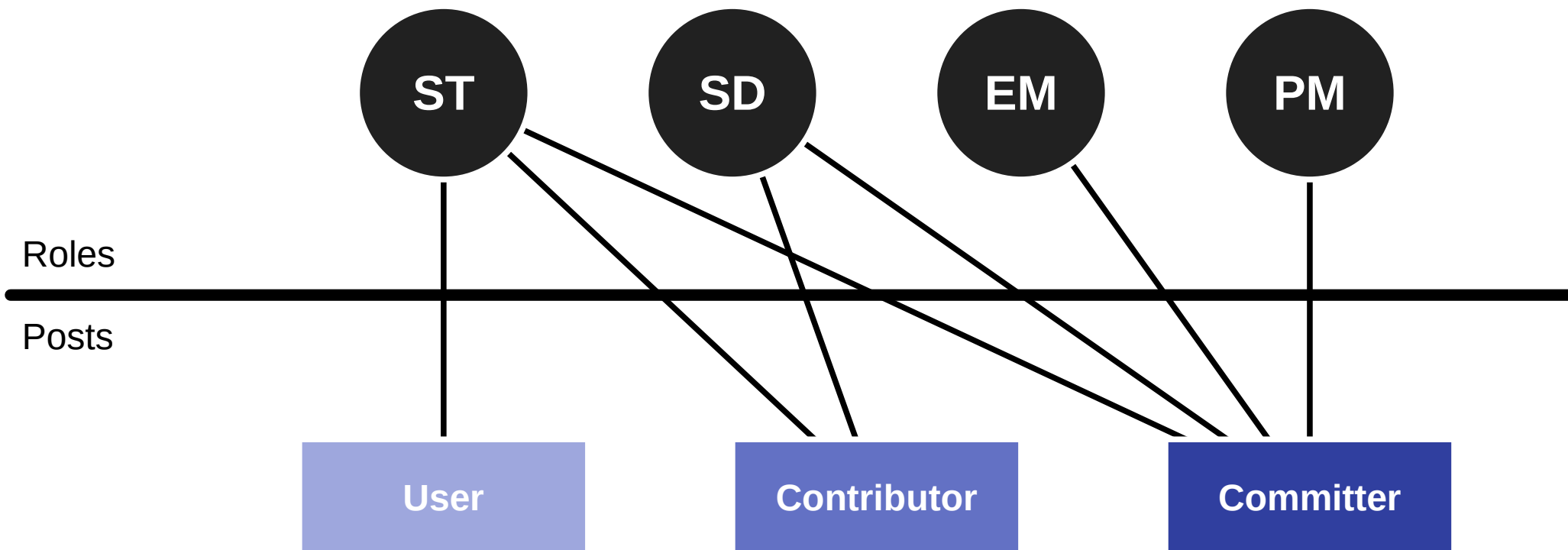


User

Contributor

Committer

# Roles and Posts in Open Source Projects



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

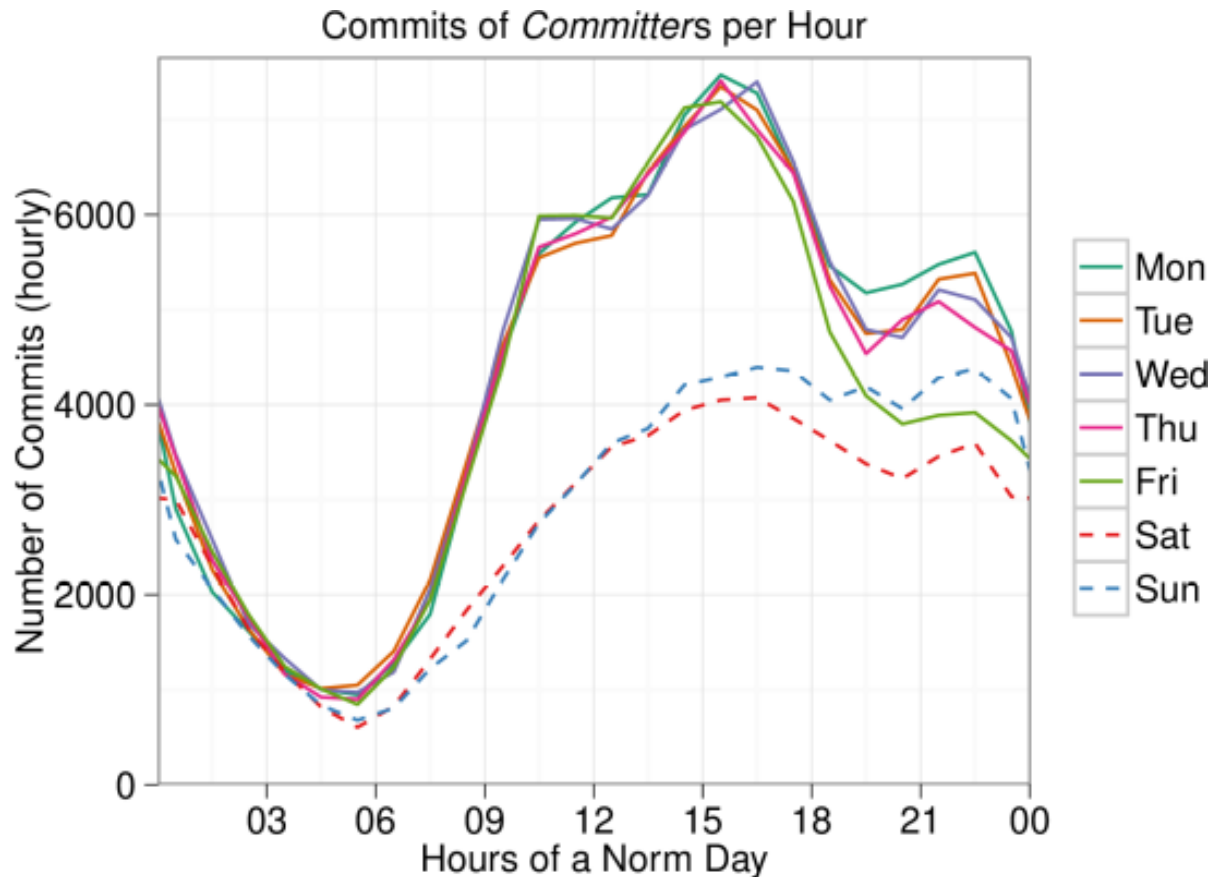
# Open Source Project Governance

- 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]

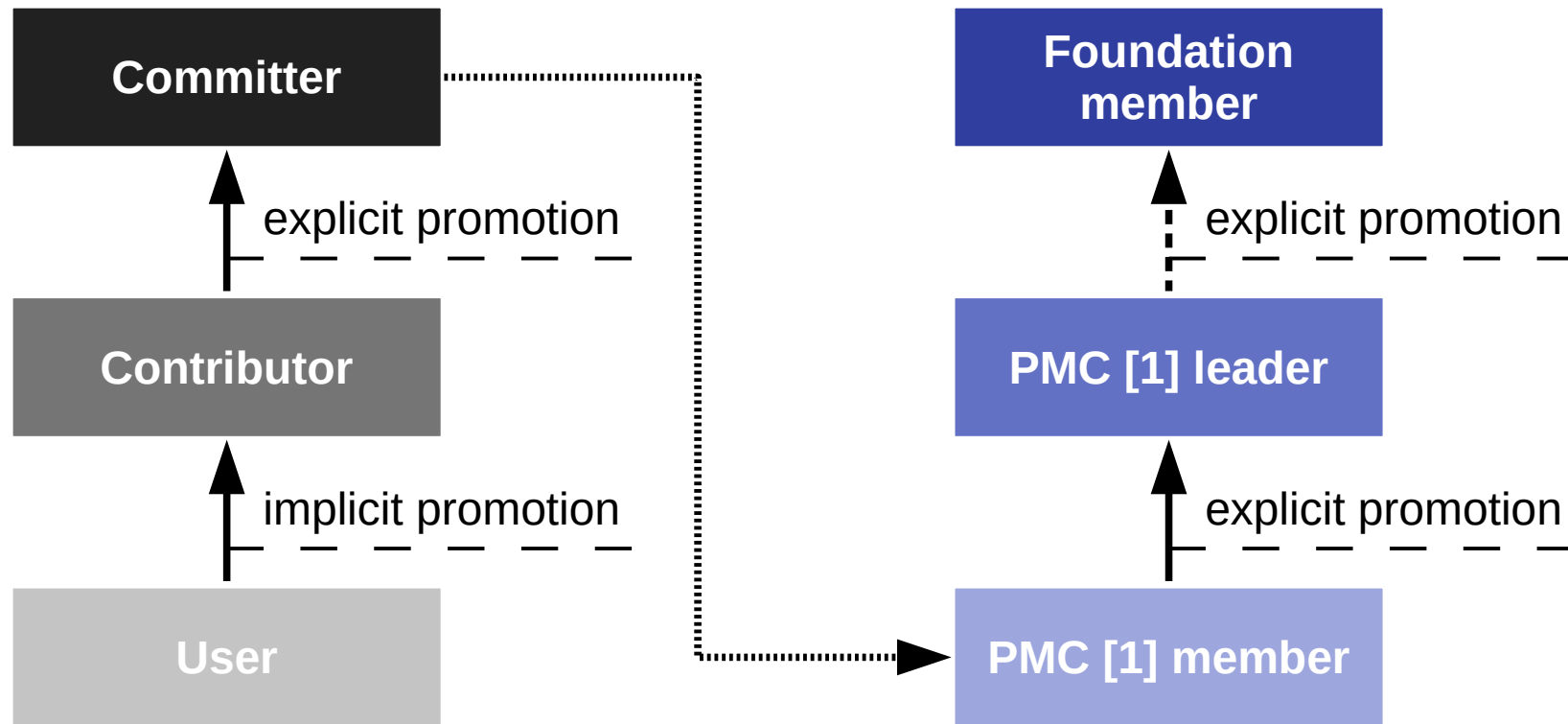
- An open source foundation is
  - a non-profit organization (foundation, consortium)
  - with the purpose of managing and performing the development of
  - non-differentiating (community, sic!) open source software
  - made available to foundation members and the general public
- Members of an open source foundation can be
  - Natural people
  - Companies, e.g.
    - Software vendors
    - Service providers
    - Consulting firms
    - User firms

# 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

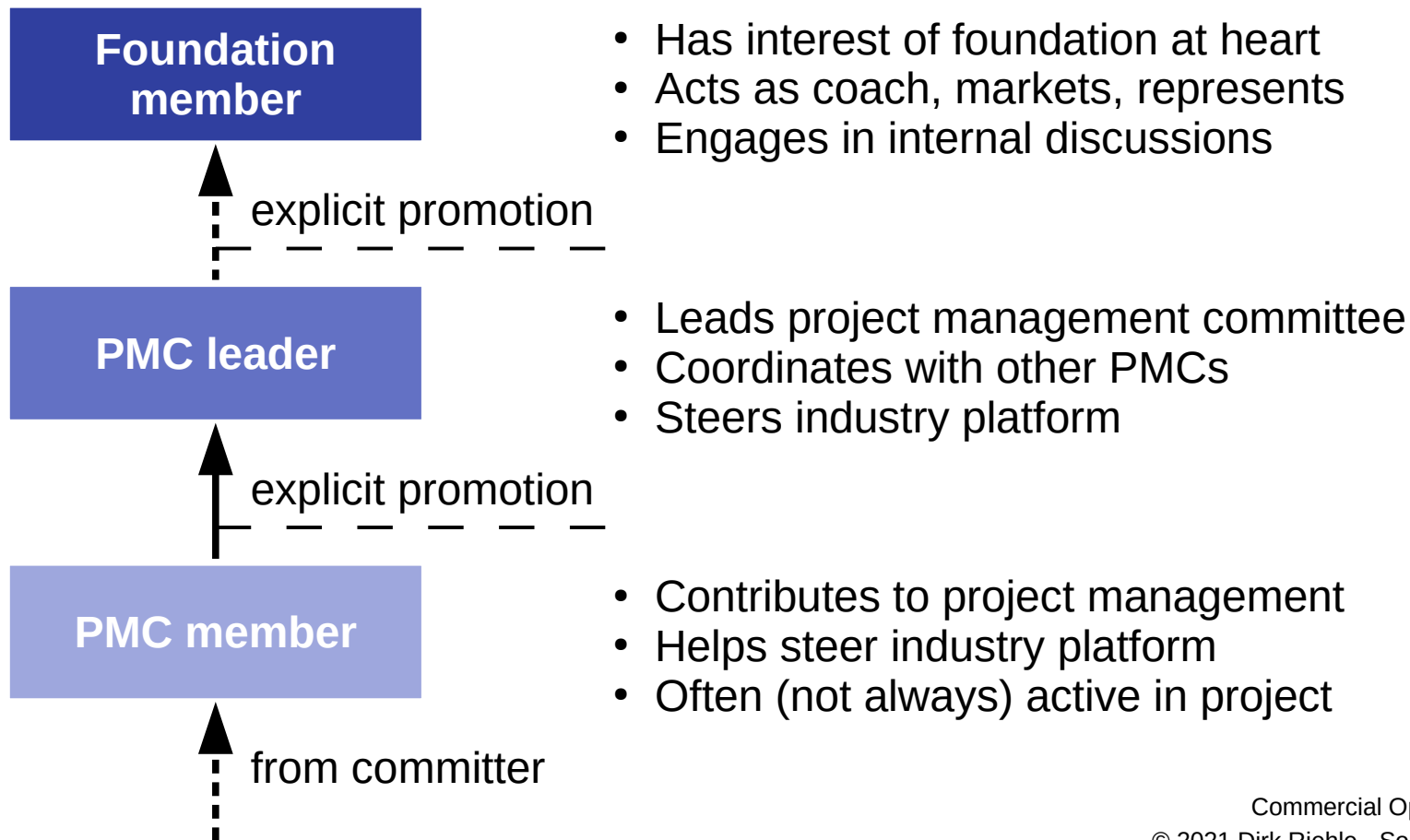
The Apache Software Foundation [...] provides **an established framework for intellectual property** and financial contributions that simultaneously **limits contributors potential legal exposure**. Through a collaborative and meritocratic development process, Apache projects deliver [...] software products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

# The Extended Open Source (Foundation) Career Path



[1] PMC = project management committee

# 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



# Types of Community Open Source Projects

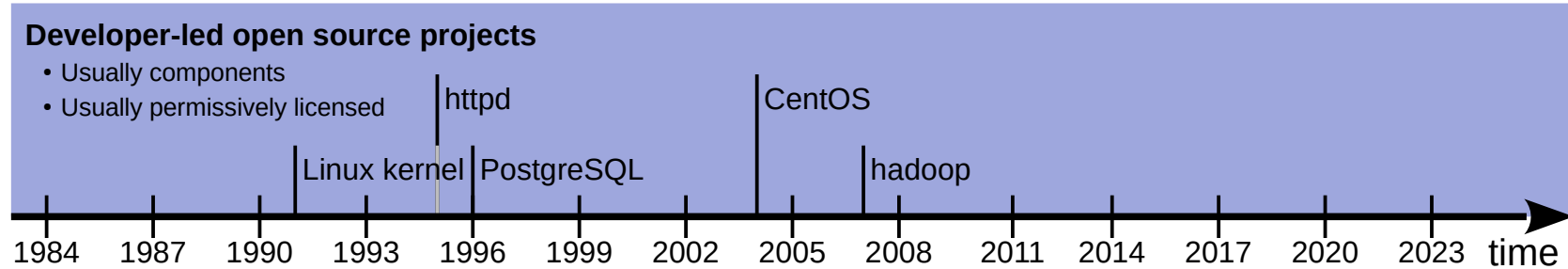
- Developer-led projects
  - Develop components (for use in products)
  - Are usually permissively licensed
  - Are performed by developers (mostly vendors)
- User-led projects
  - Develop applications
  - Are often copyleft licensed
  - Are sponsored by user companies

# Project Types, Governance, and Foundations

- Different types of projects need different forms of governance
- Foundations often specialize in one type of project, hence
  - Developer-led project → vendor-led foundation
  - User-led project → user-led foundation

## 4. Vendor-led Foundation

# Time-line of Example Developer-led Projects



# Vendor-led Open Source Foundation

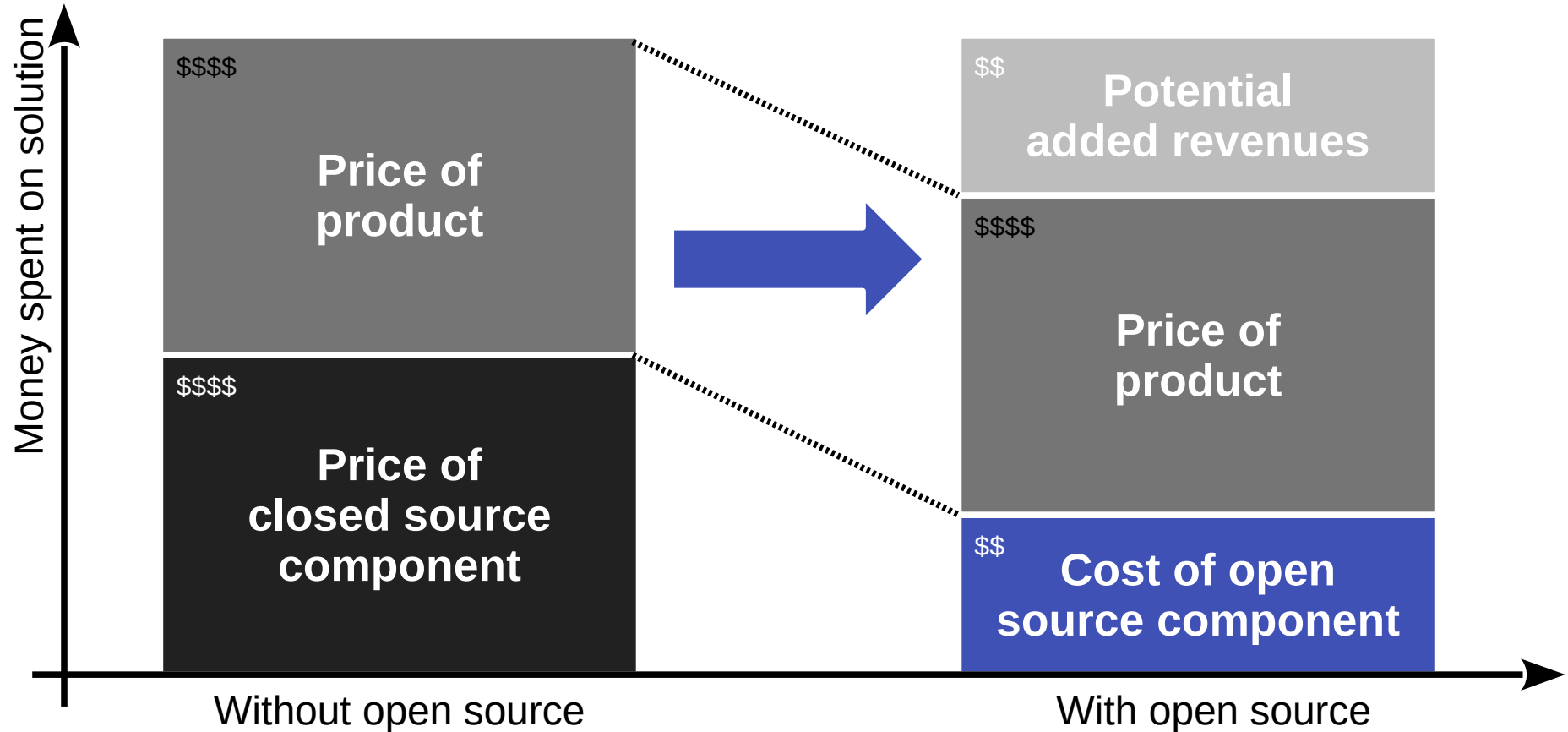
- A vendor-led open source foundation is
  - Is an open source foundation predominantly led by software vendors
  - To collaboratively develop non-differentiating components for products



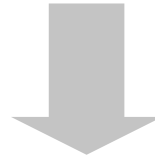
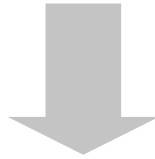
# Motivation for Vendor-led Foundations

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
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”



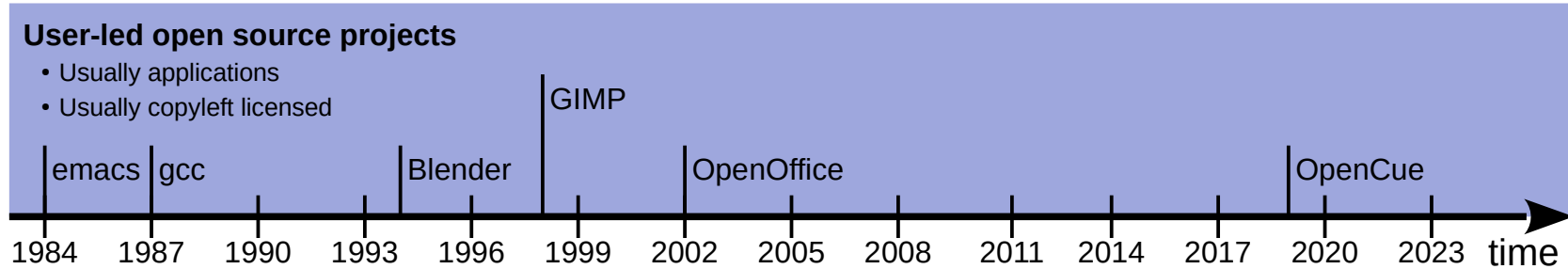


# Dysfunctions of Vendor-led Foundations

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

## 6. User-led Foundations

# Time-line of Example User-led Projects



# 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

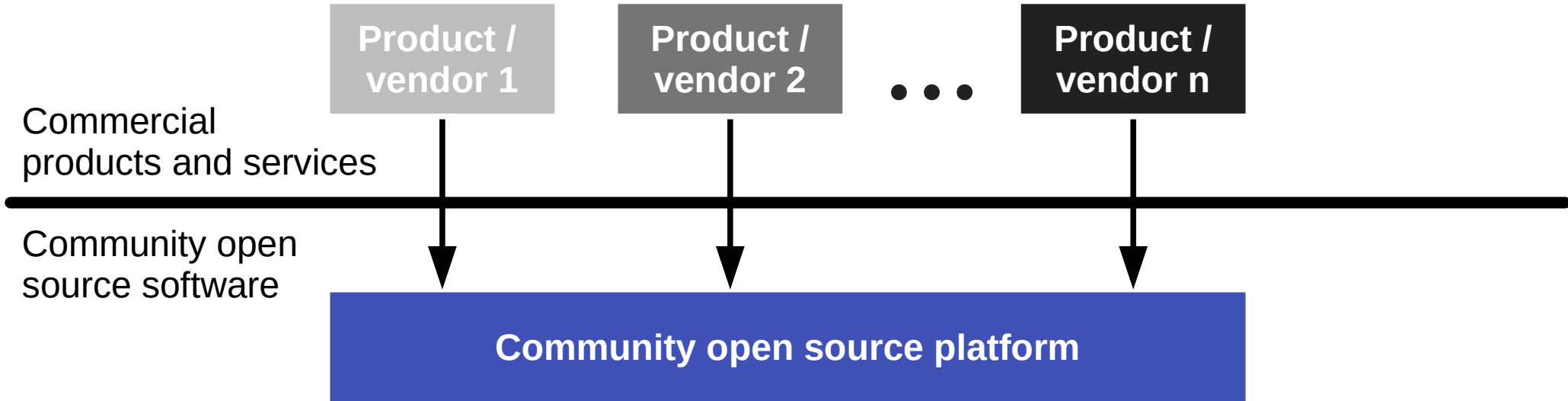
# Example User-led Foundations



# 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

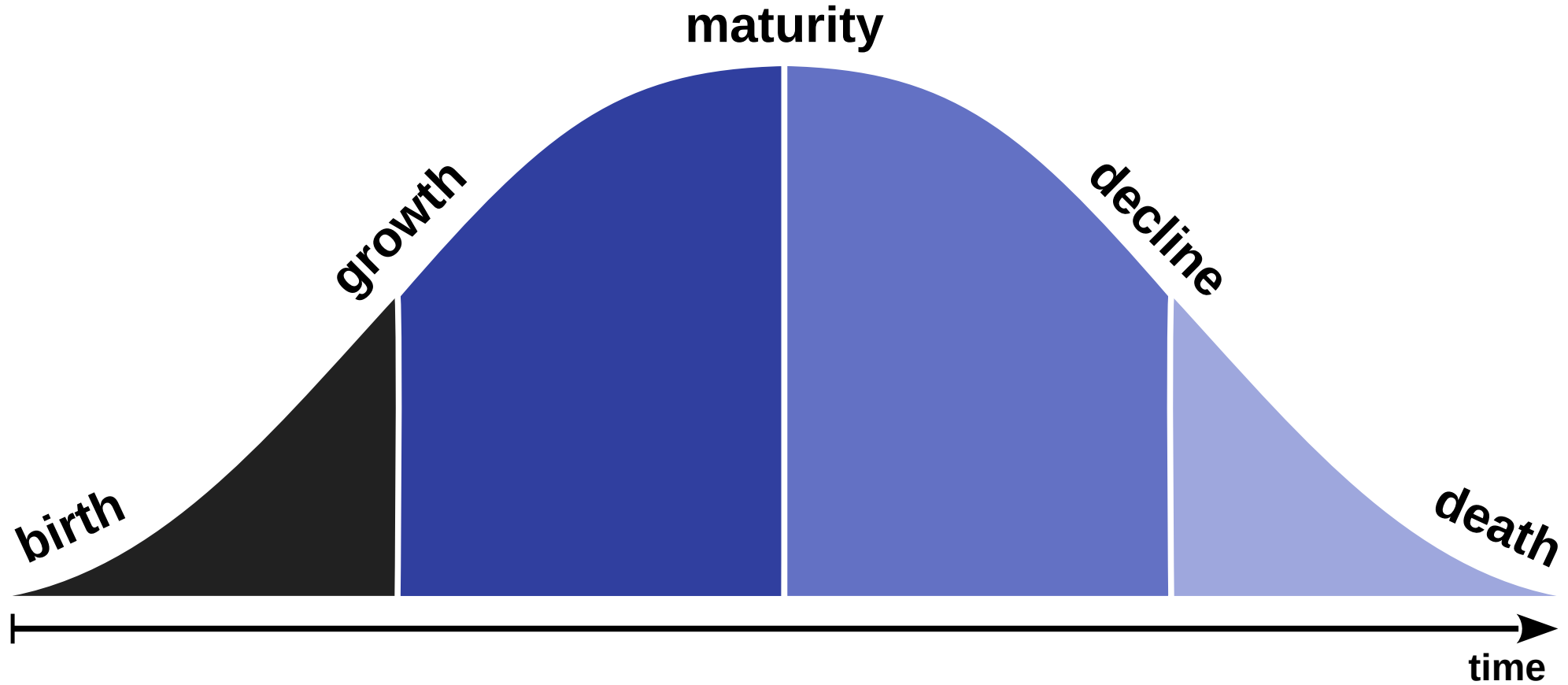
# Software and Services Ecosystem of Suppliers



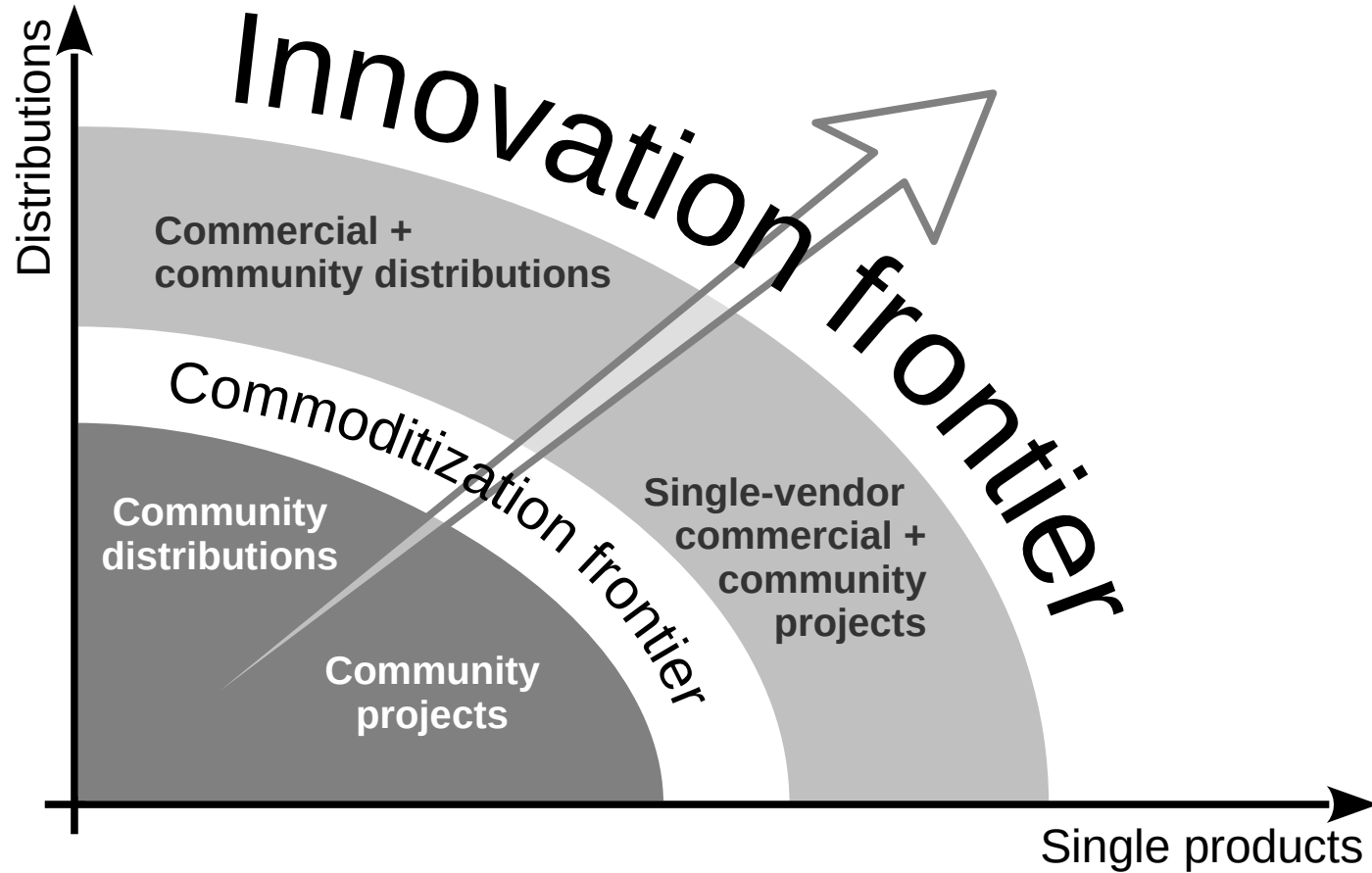
## 7. Project Life-cycles



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



# Innovation and Commoditization



# Summary

1. Process definition
2. Project communities
3. Open source foundations
4. Vendor-led foundations
5. User-led foundations
6. Project life-cycle

# Thank you! Questions?

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