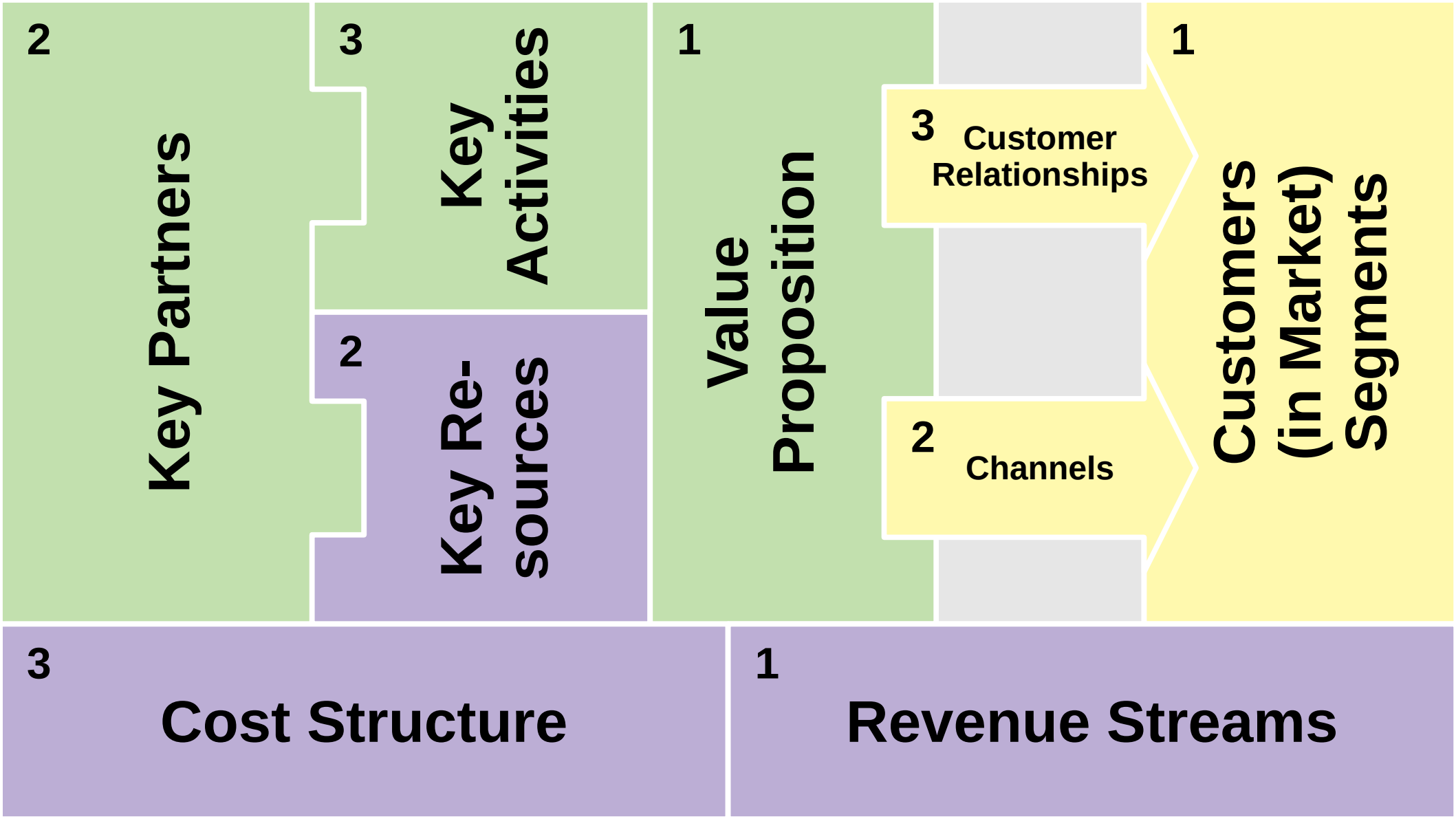


A01

Course Introduction



Key Partners

**Key Re-
sources**

**Key
Activities**

**Value
Proposition**

Channels

**Customer
Relationships**

**Customers
(in Market)
Segments**

Cost structure

Revenue Streams

A03

The Business Model Canvas

Problem / Need

Need

- Remove boredom
- Ease communication
- Display status

- Improve well-being

Problem

- Create savings
- End challenges
- Eliminate risks

- xxx

Pain

Gain

Pain / Gain

Key Partners

**Key
Resources**

**Key
Activities**

**Value
Proposition**

Channels

**Customer
Relation-
ships**

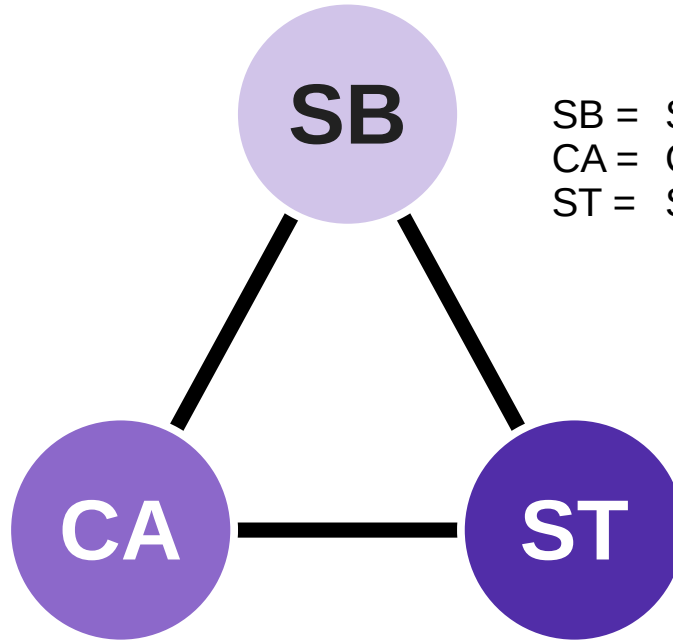
**Customers
(in Market)
Segments**

Cost Structure

Revenue Streams

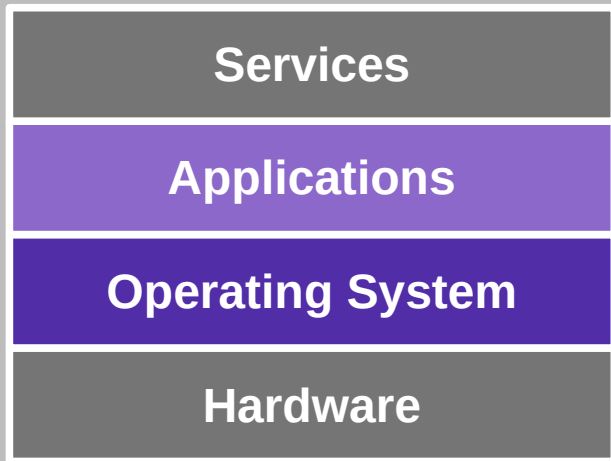
B01

The Software Industry

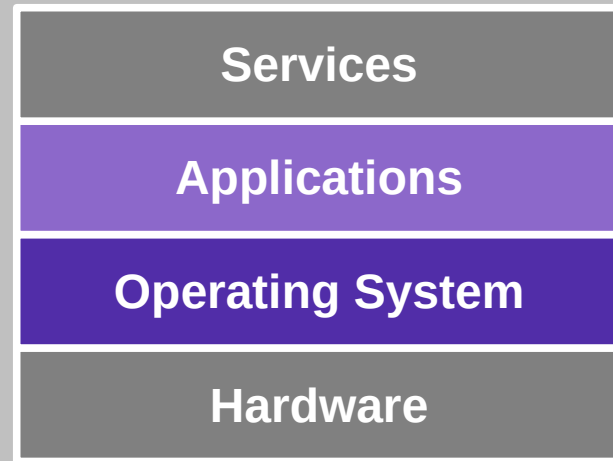


SB = Standards body
CA = Certification agency
ST = Standards trainer

IBM



DEC



Services

IBM

Accenture

Tata

Application

Microsoft Word

GIMP

Twitter

Operating System

Windows

Linux

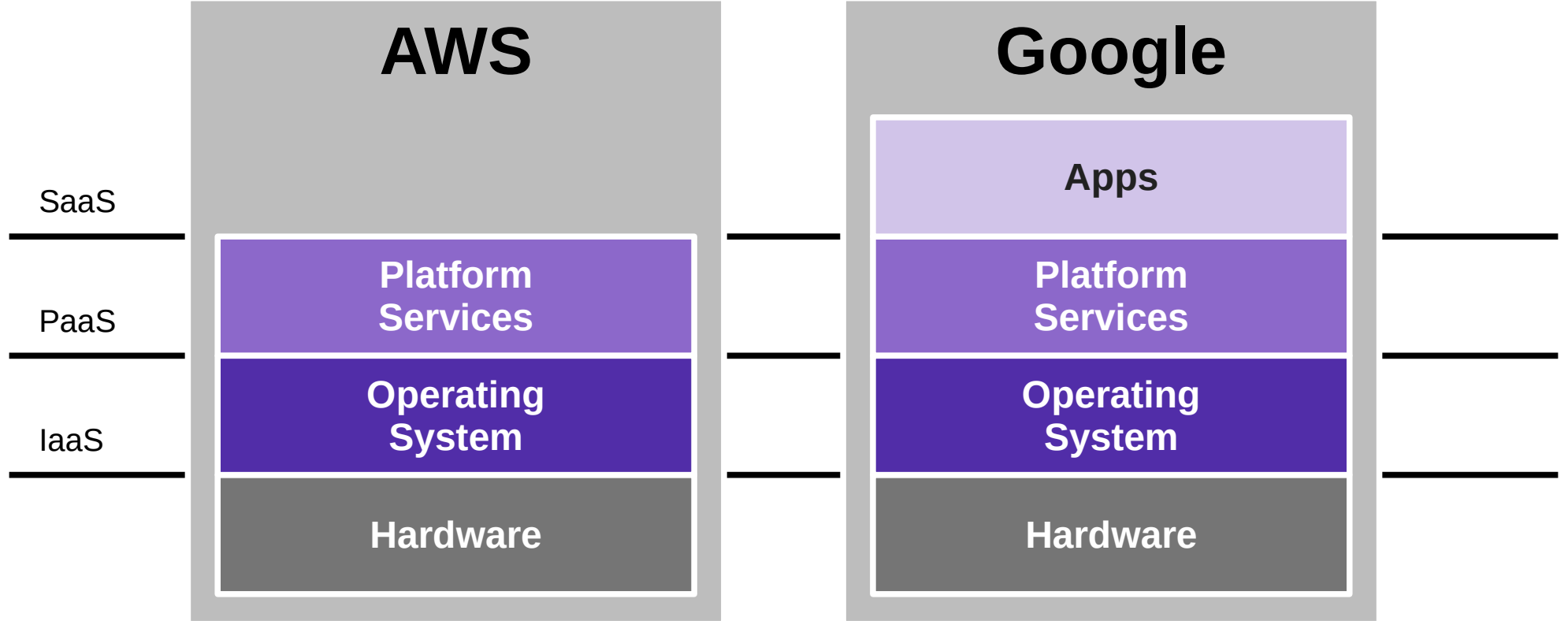
OS X

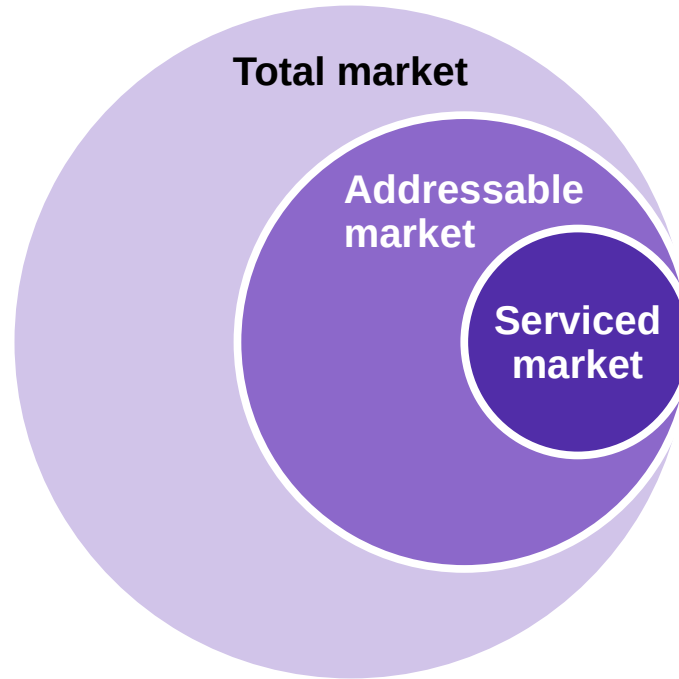
Hardware

IBM

Dell

Samsung







 **Child**

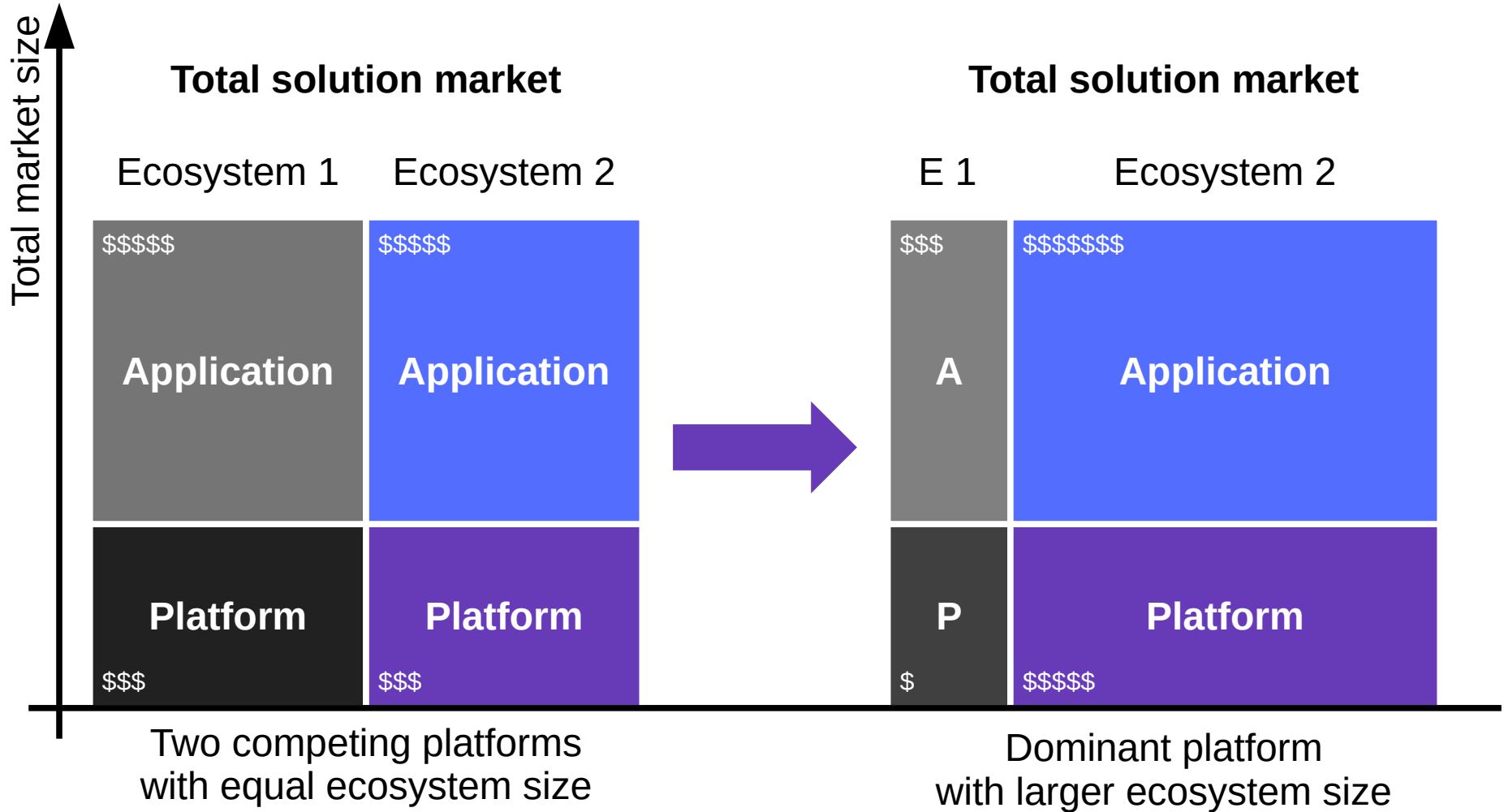
 **Teenager**

 **Single adult**

 **Married no kids**

 **Parent**

	Healthcare	Banking	Insurance	Energy	Automotive	...
CRM						
SRM						
ERP						
HRM						
...						



B02

Software Products

Whole product

Basic product

Core product (intellectual property)

Software

- Core software
- Additional software (extensions + plug-ins, tools and utilities, integrations)

Complementary materials

- Documentation
- Training materials

Self-help services

- Forums, mailing lists
- Help and chat agents
- On-line tutorials

Pricing of usage rights

- Quantity: User, machine, time, ...
- Duration: Perpetual, time-limited, ...
- Structured: Initial license fee, regular subscription fee

Guarantees (“insurance”)

- Fitness for use
- Certification

Pricing of guarantees

- By damage: Loss of business, fines received
- Structured: Levels / bands, formula

Support services

- Hot-line support
- On-site servicing

Pricing of support services (SLAs)

- By availability: Incident-based, 9x5, 24x7
- By quality: First-level, second-level, third-level

Training

- In-house training
- Off-site training

Pricing of training

- Fixed fee
- Per participating person

Consulting

- Technical implementation services
- Strategic solution consulting

Pricing of consulting

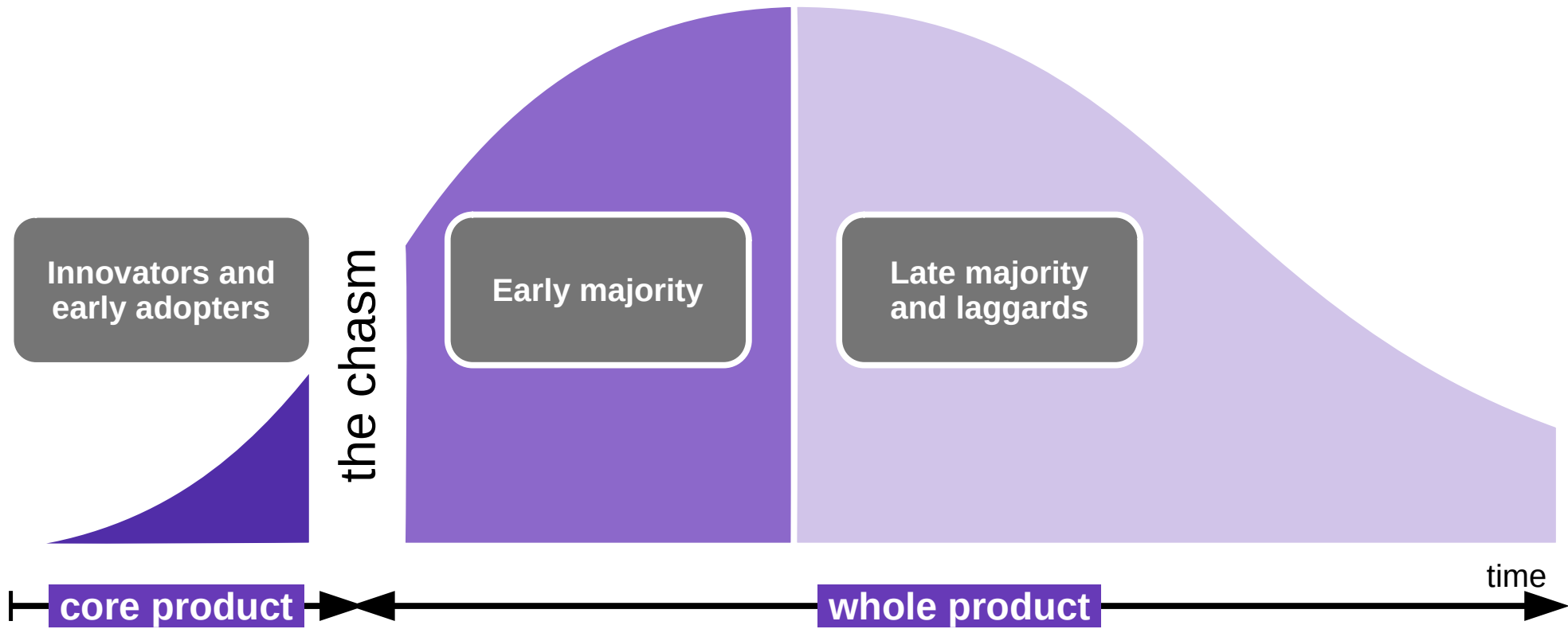
- Fixed fee
- Time and materials

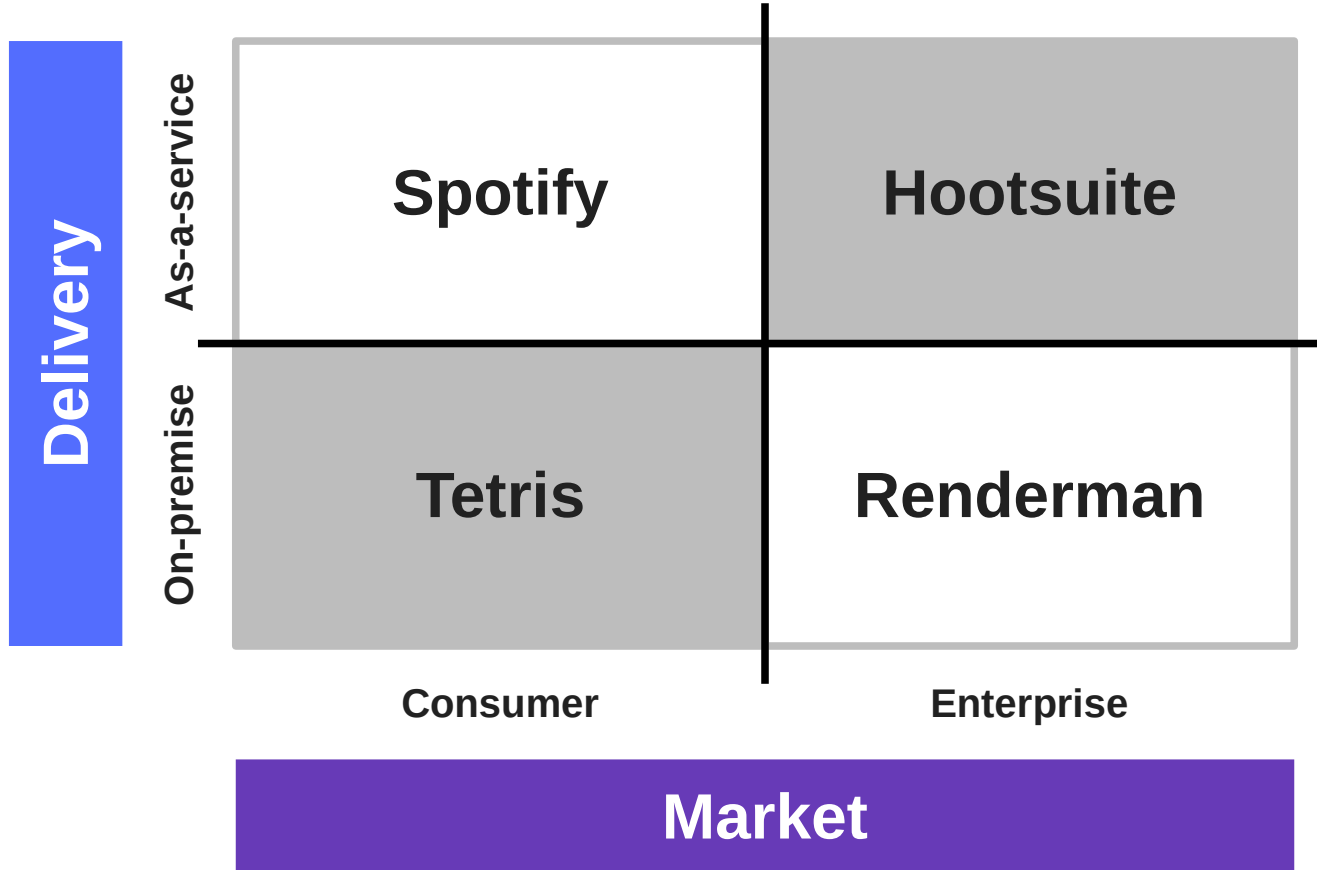
Operations

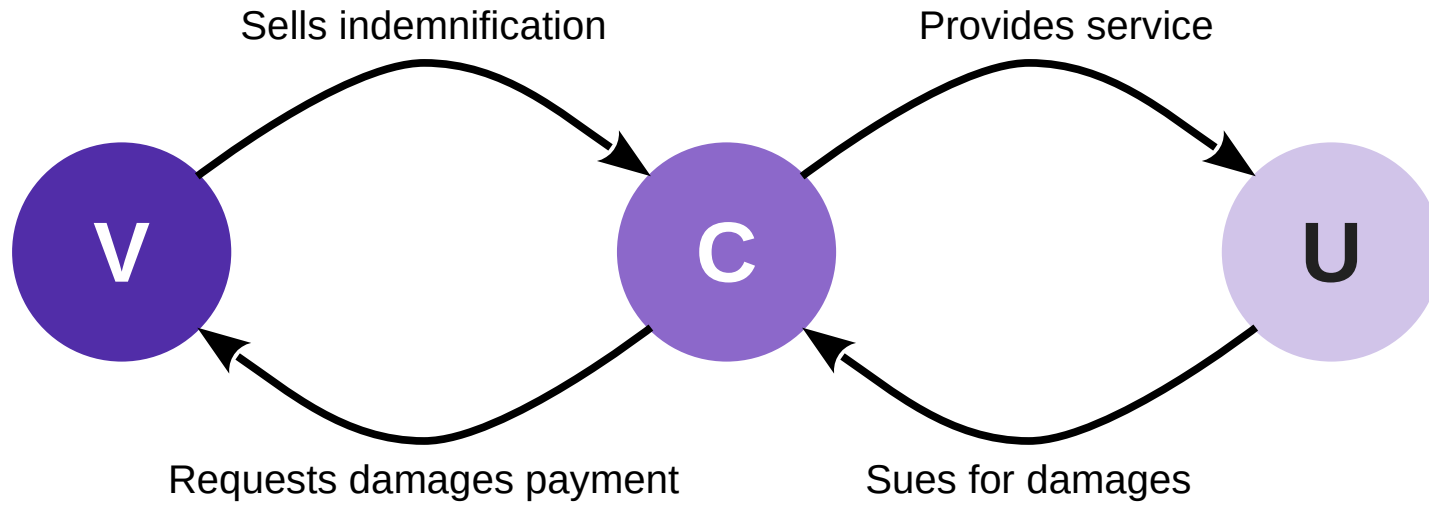
- Provision of SaaS (managed service)

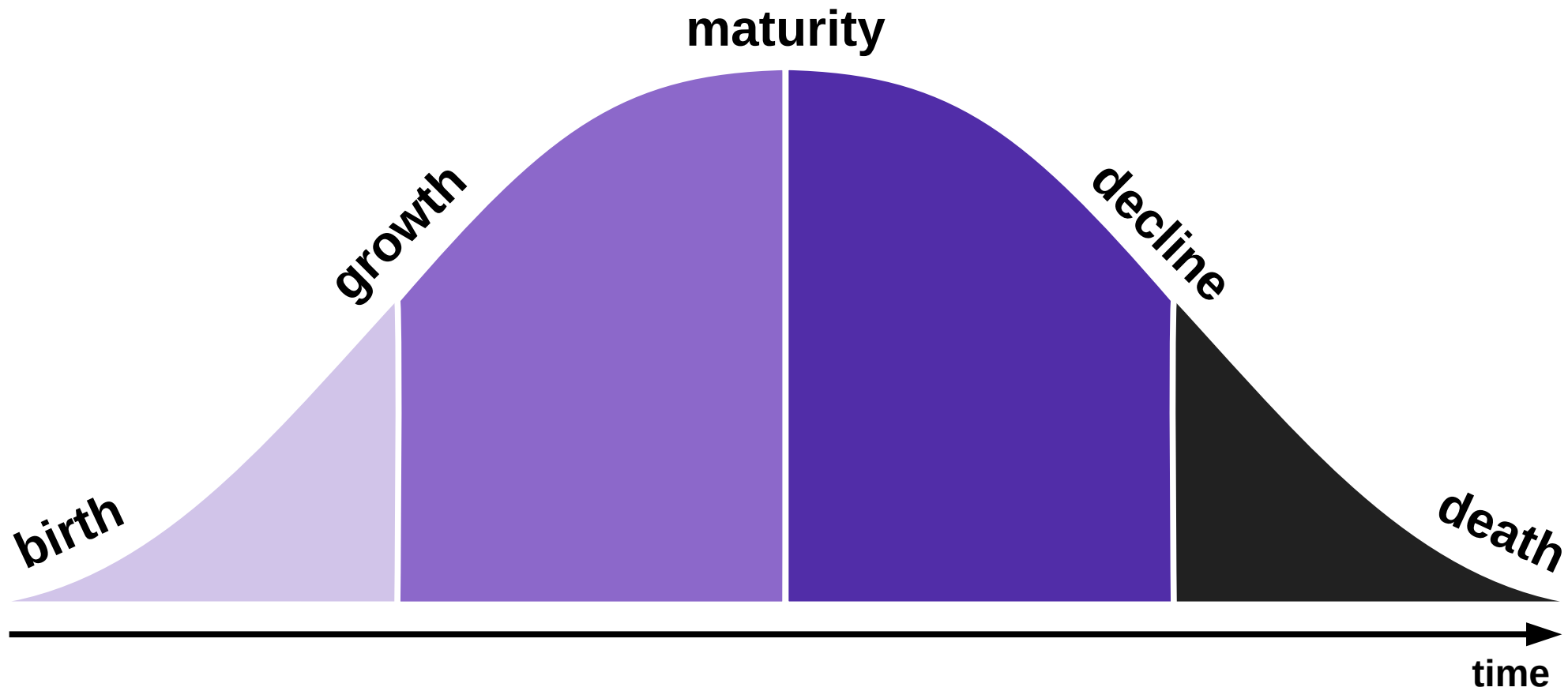
Pricing of operations

- Quantity: Users, resources, ...
- Duration: Always time-limited
- Structured: Set-up, subscription



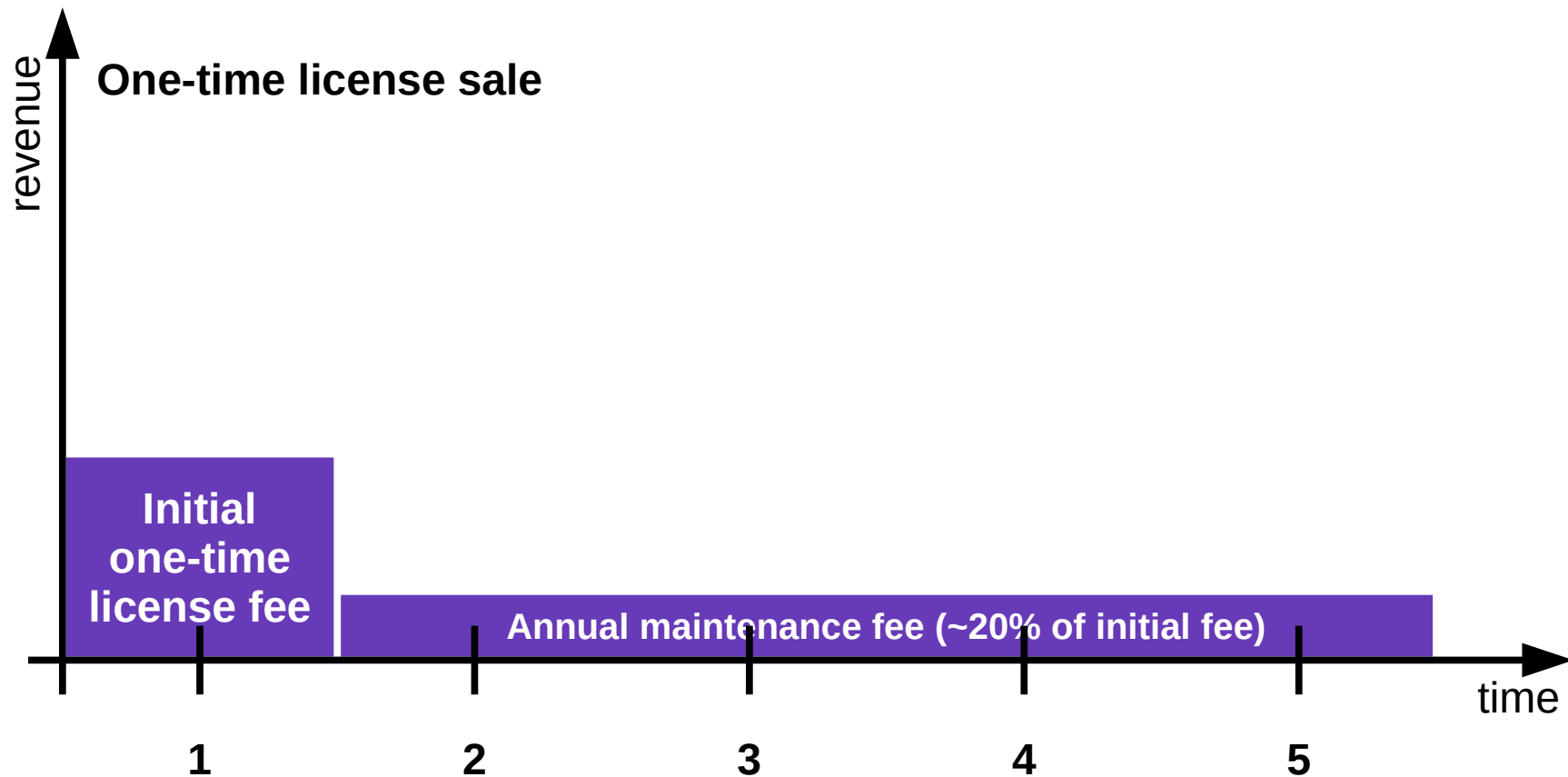


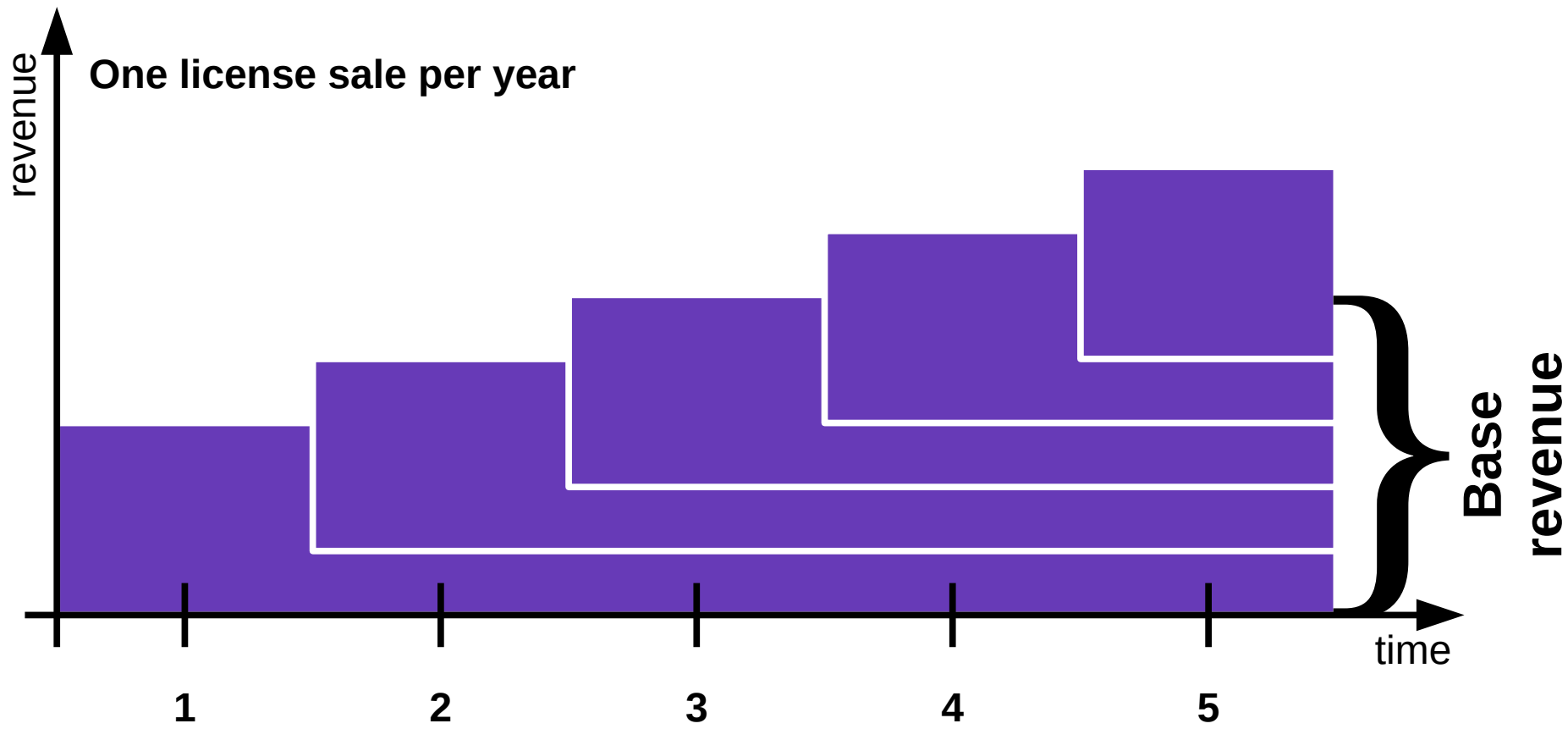


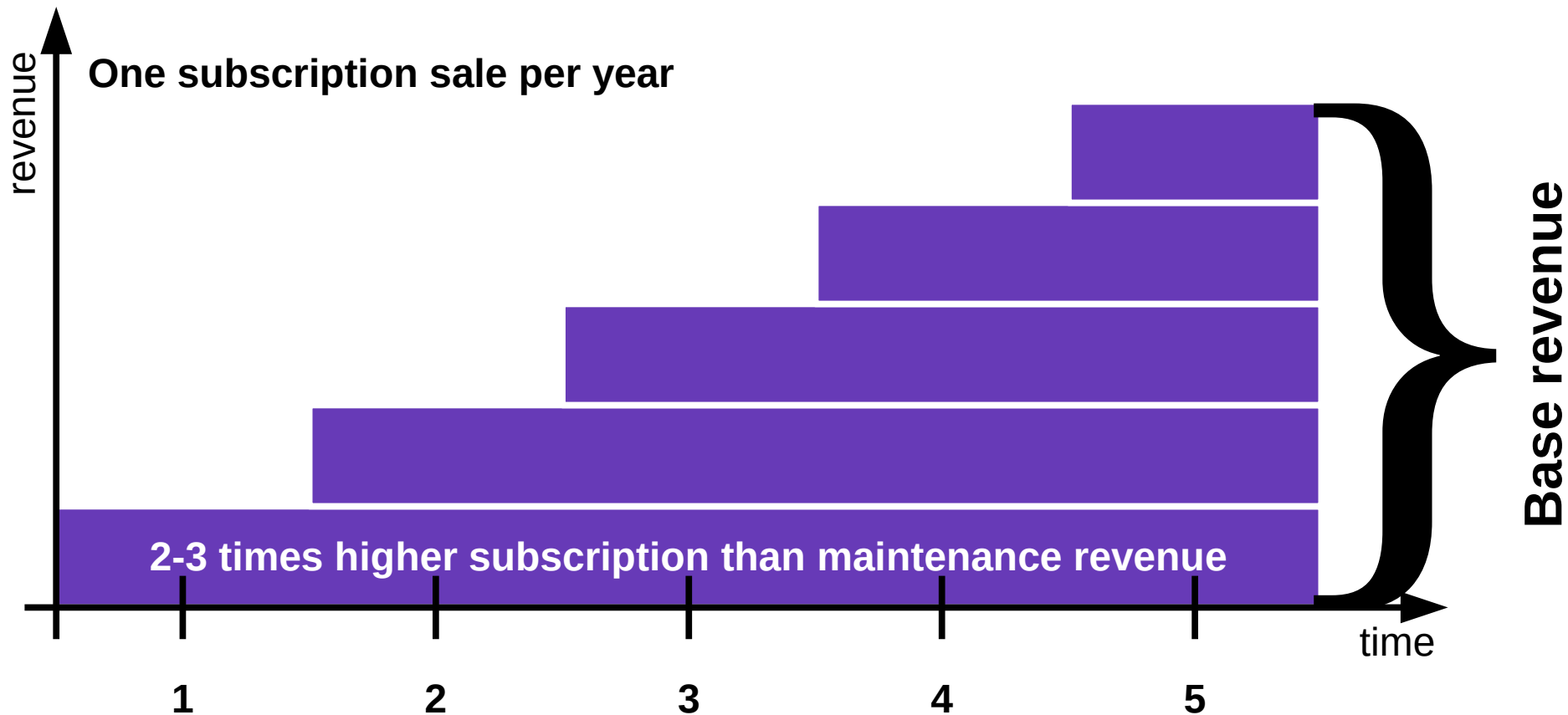


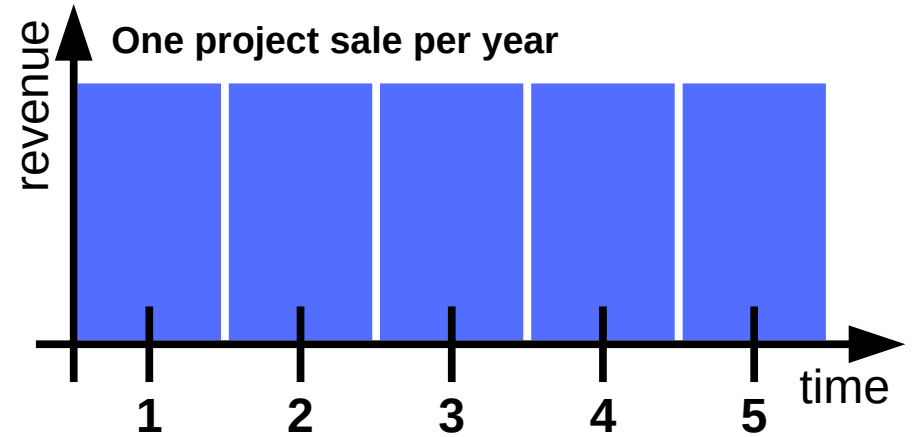
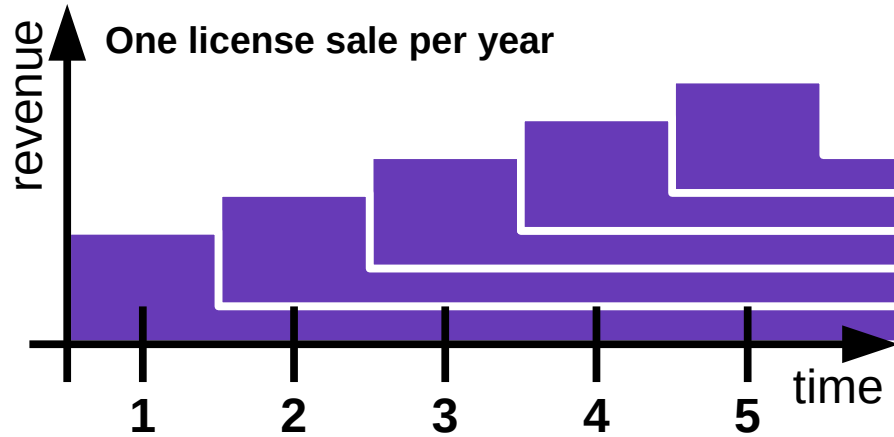
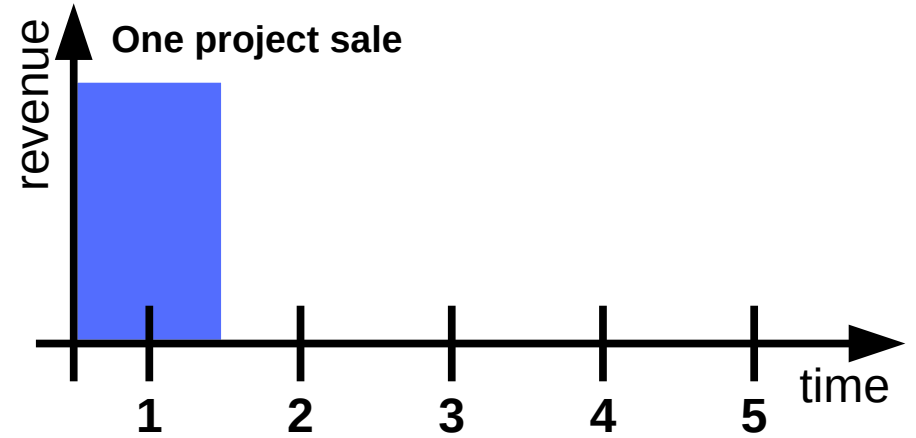
B03

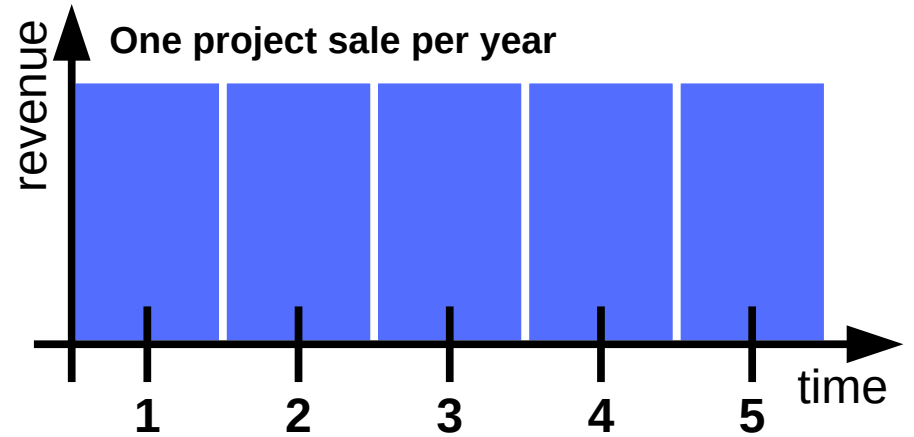
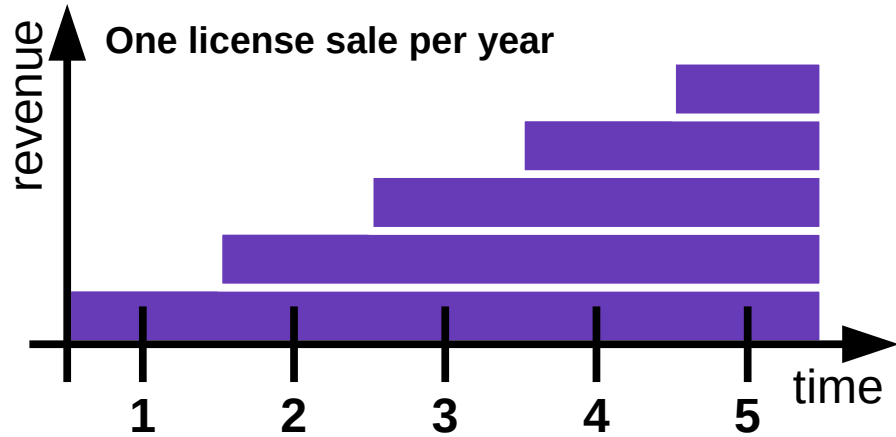
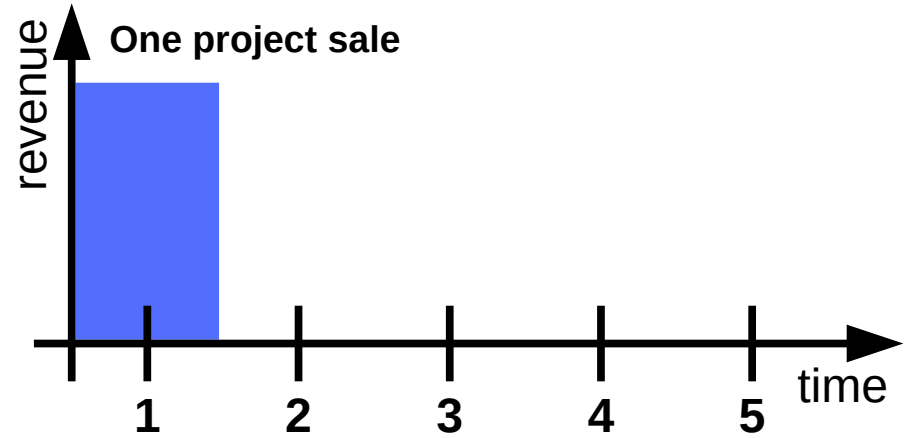
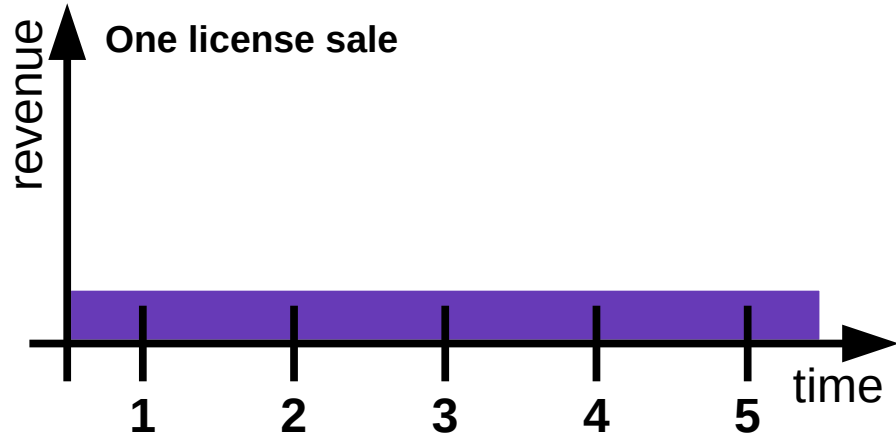
Software Vendors



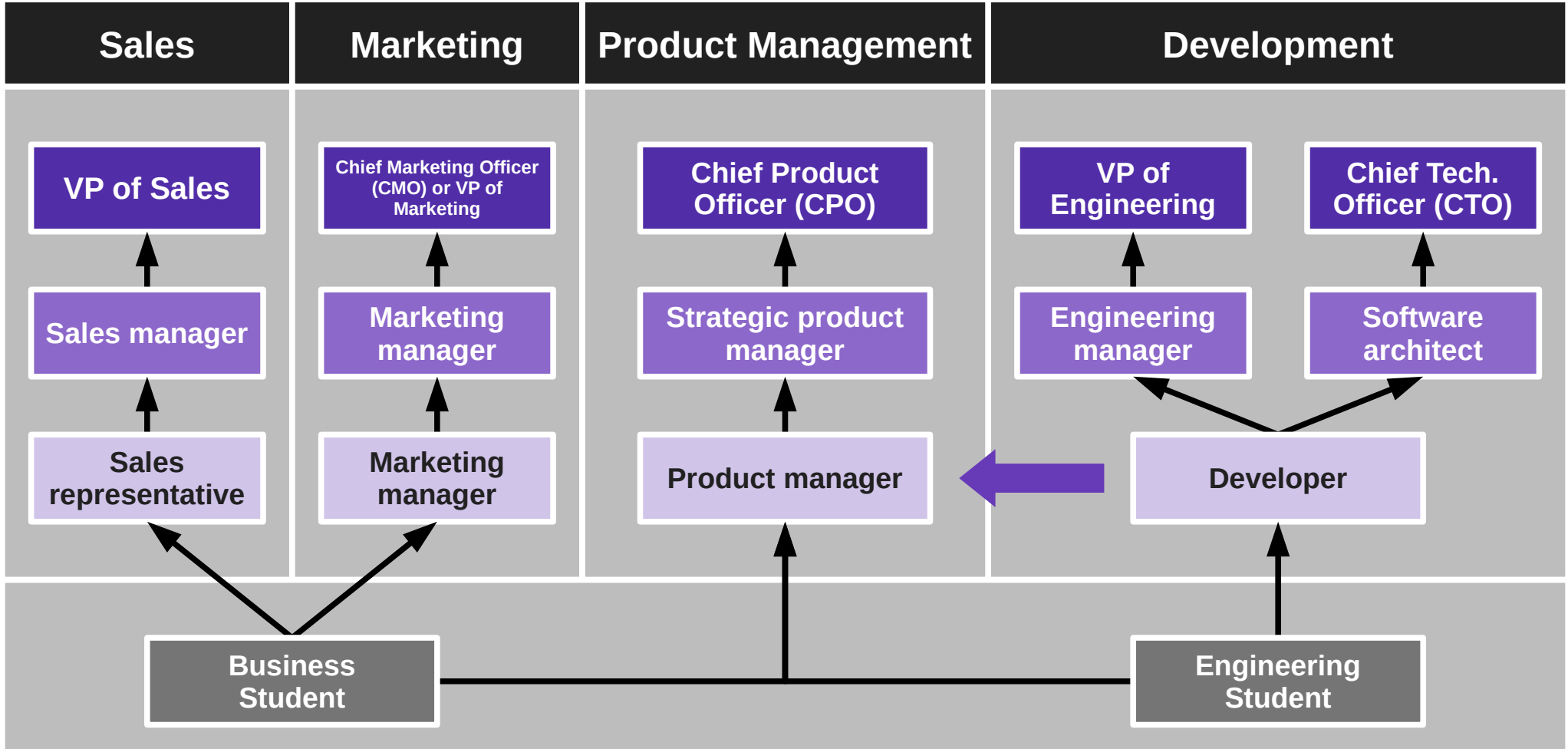


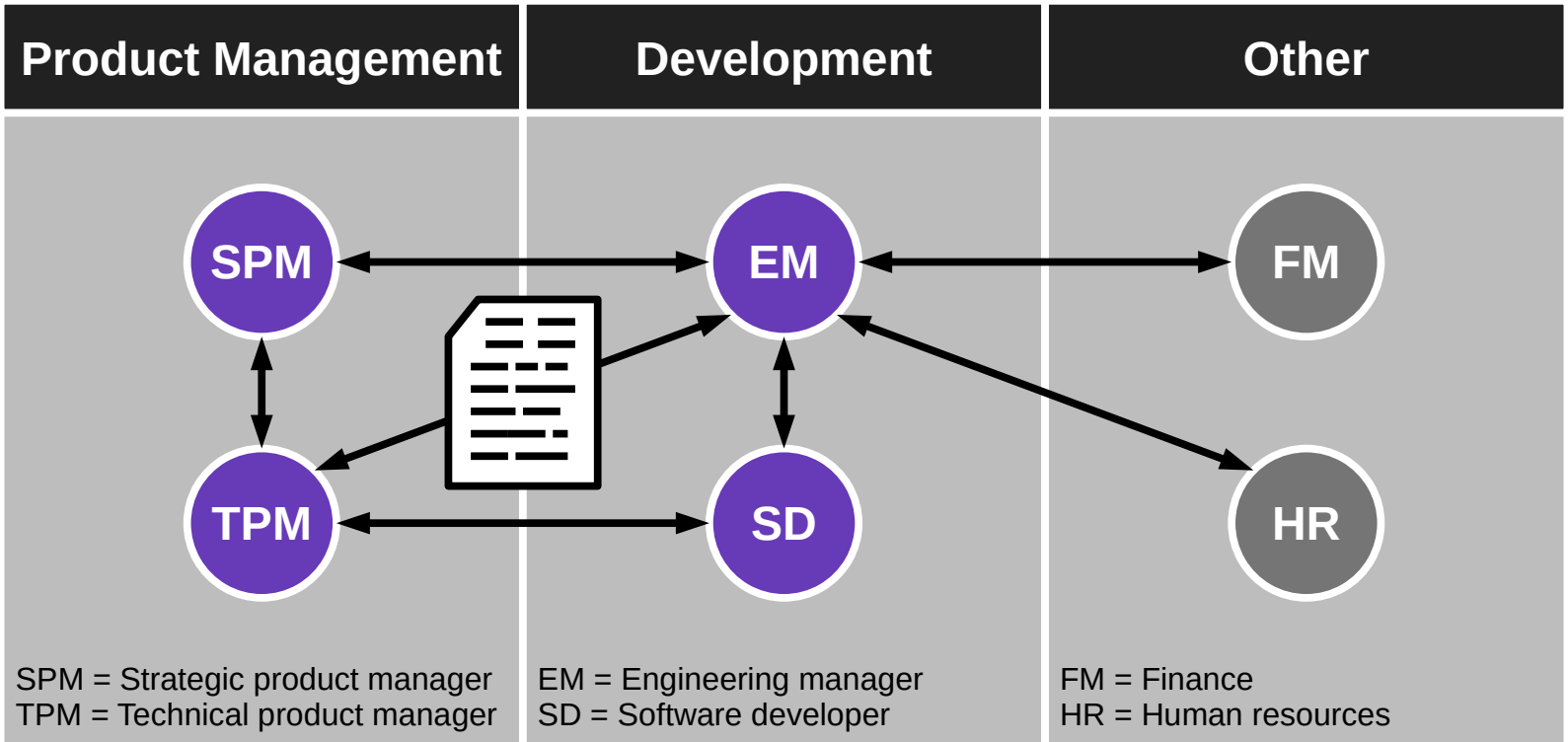


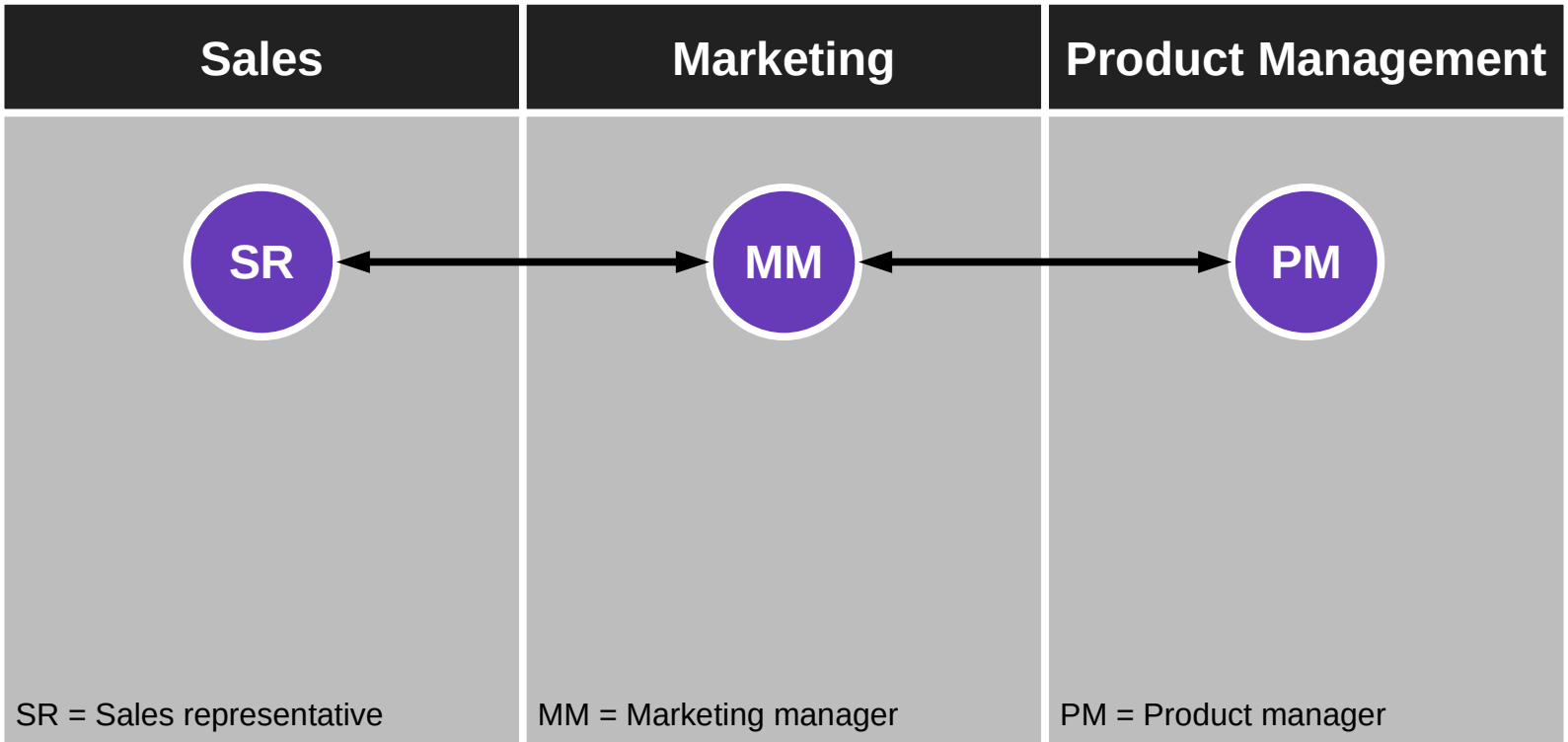


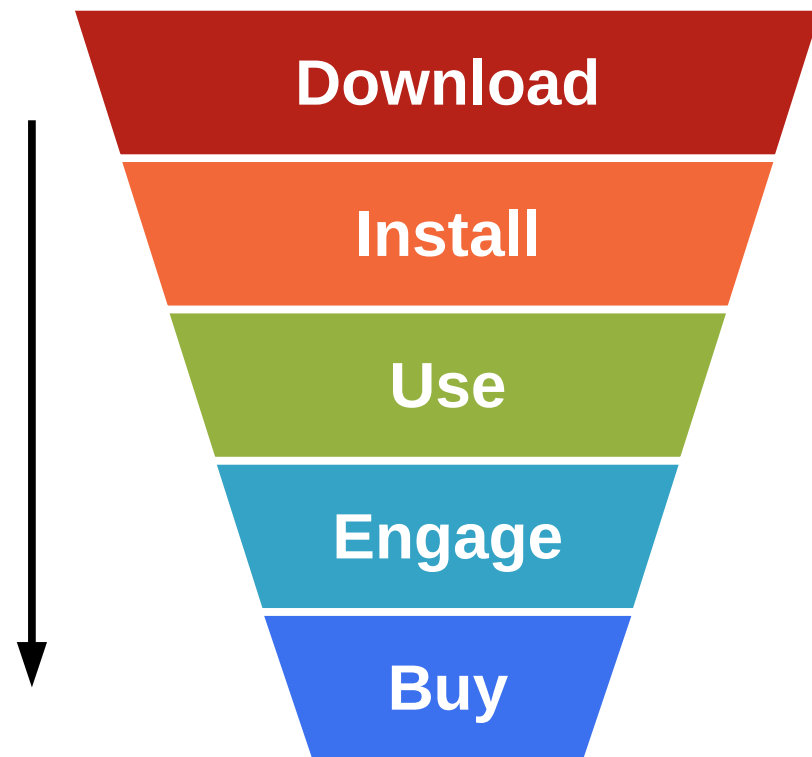


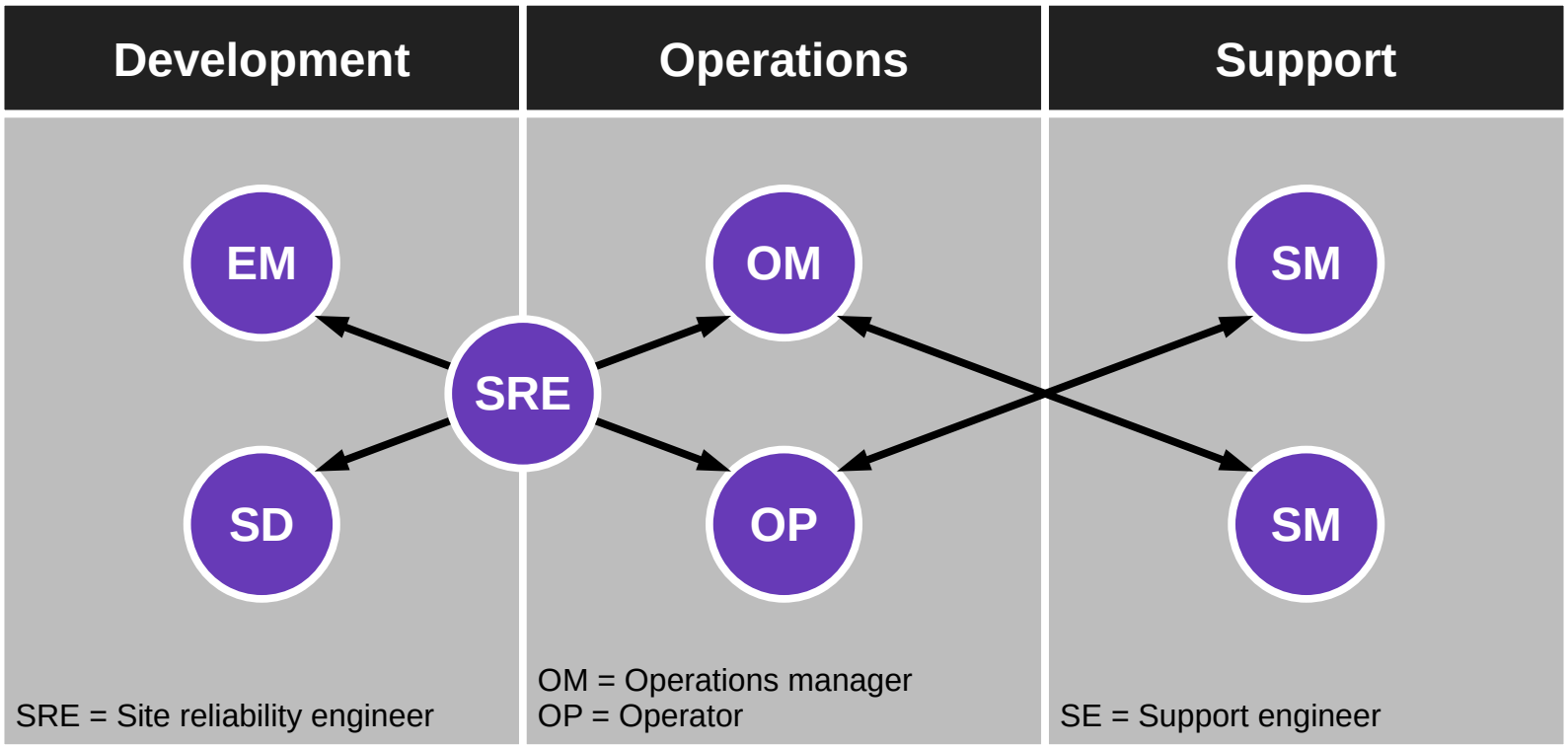
Sales and Marketing			Professional services	Product management	Engineering			Other (HR, Finance, ...)
Sales	Marketing	Customer success			Development	Operations	Support	
<div></div>	<div></div>			<div></div>	<div></div>	<div></div>		<div></div>
	<div></div>			<div></div>				
				<div></div>	<div></div>	<div></div>	<div></div>	
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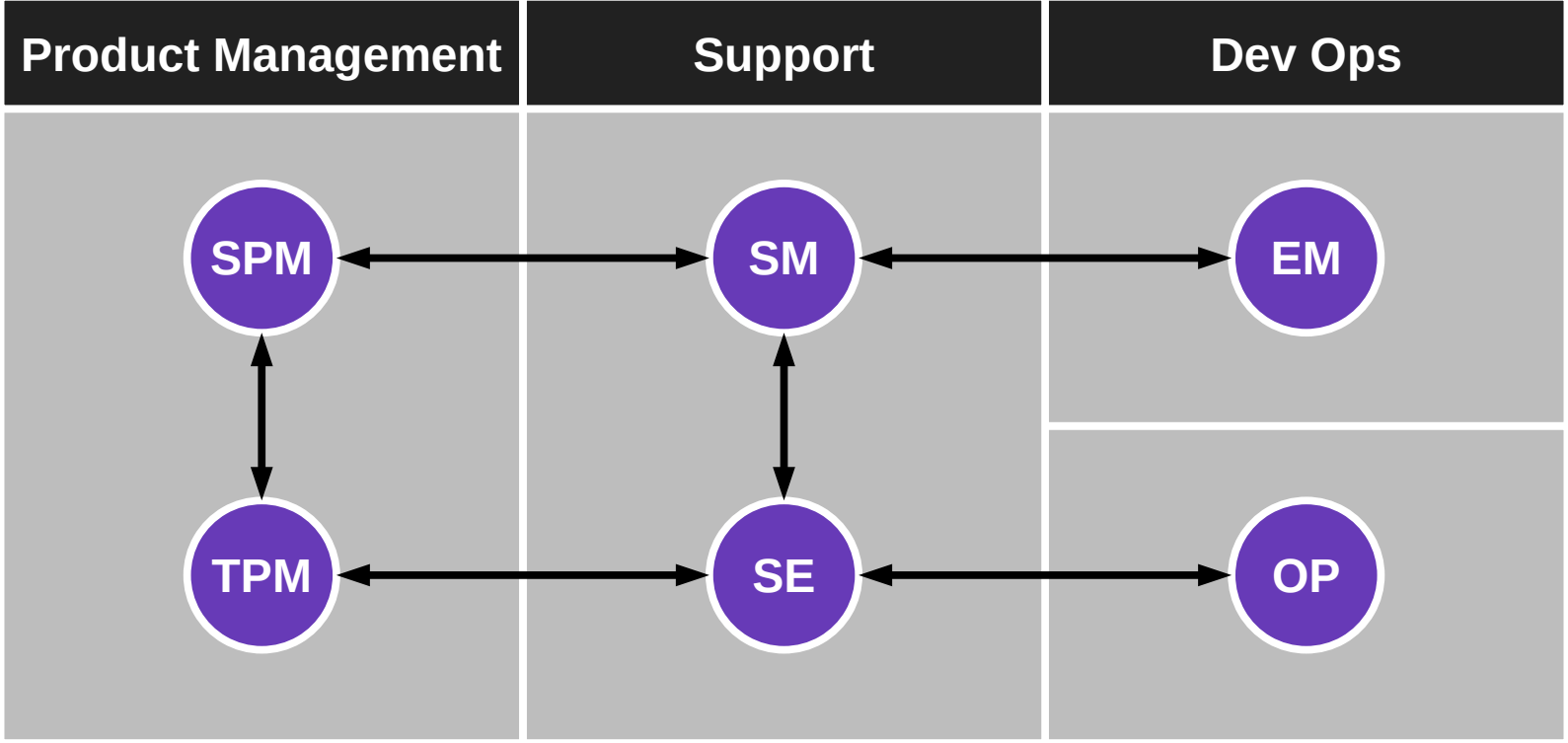


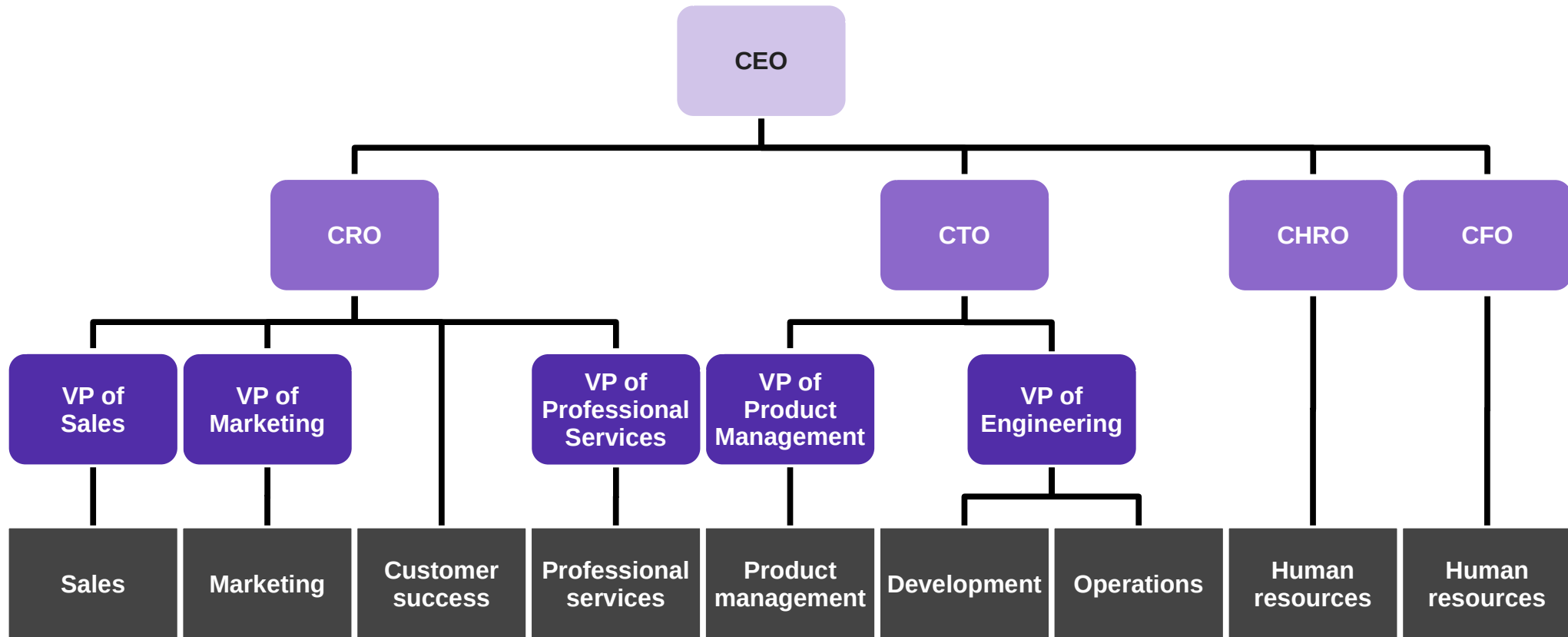






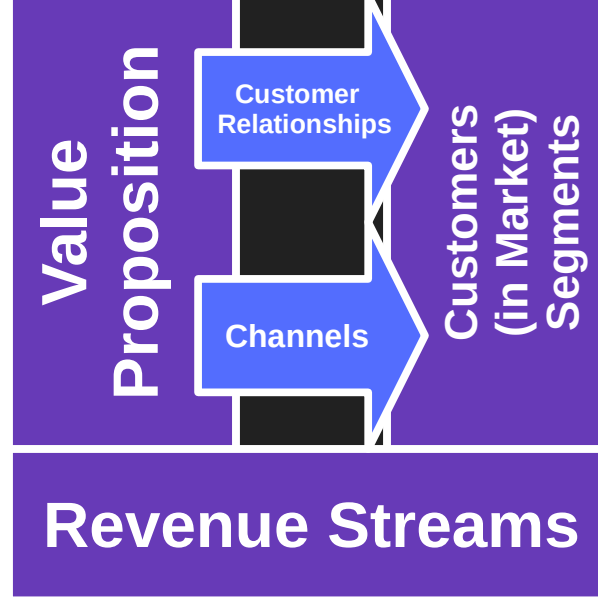


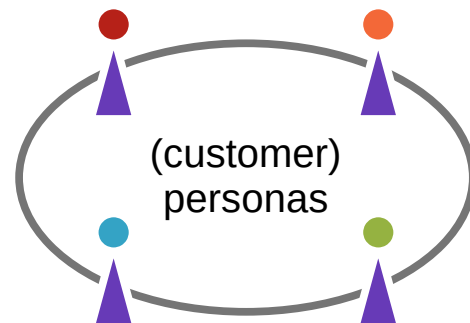
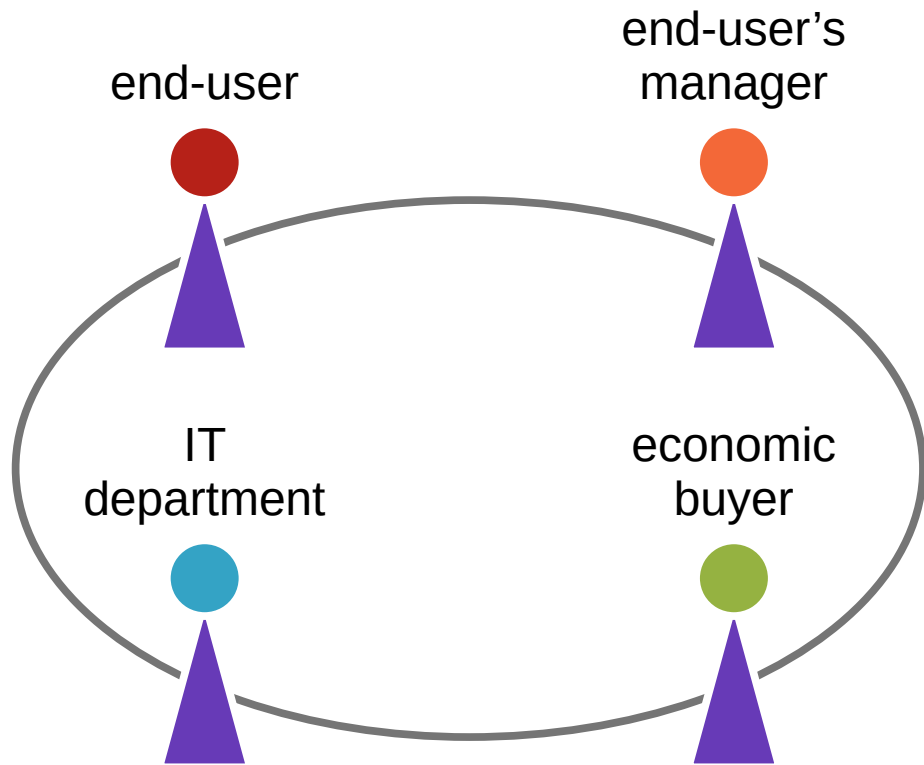




B04

Business Models





Customer = user (same legal entity), and economic buyer = end-user



Customer = user (same legal entity), but economic buyer is different from end-user

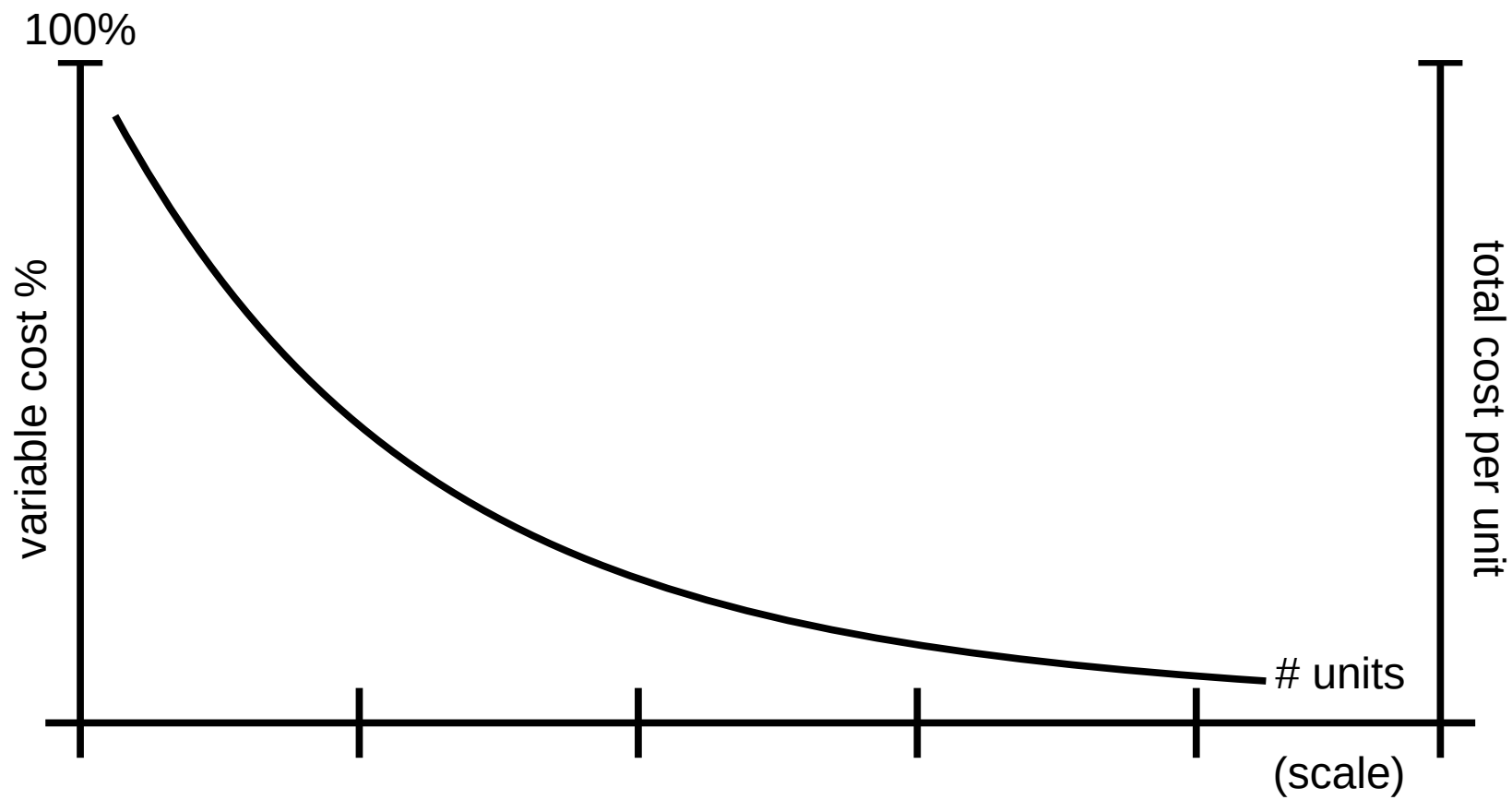


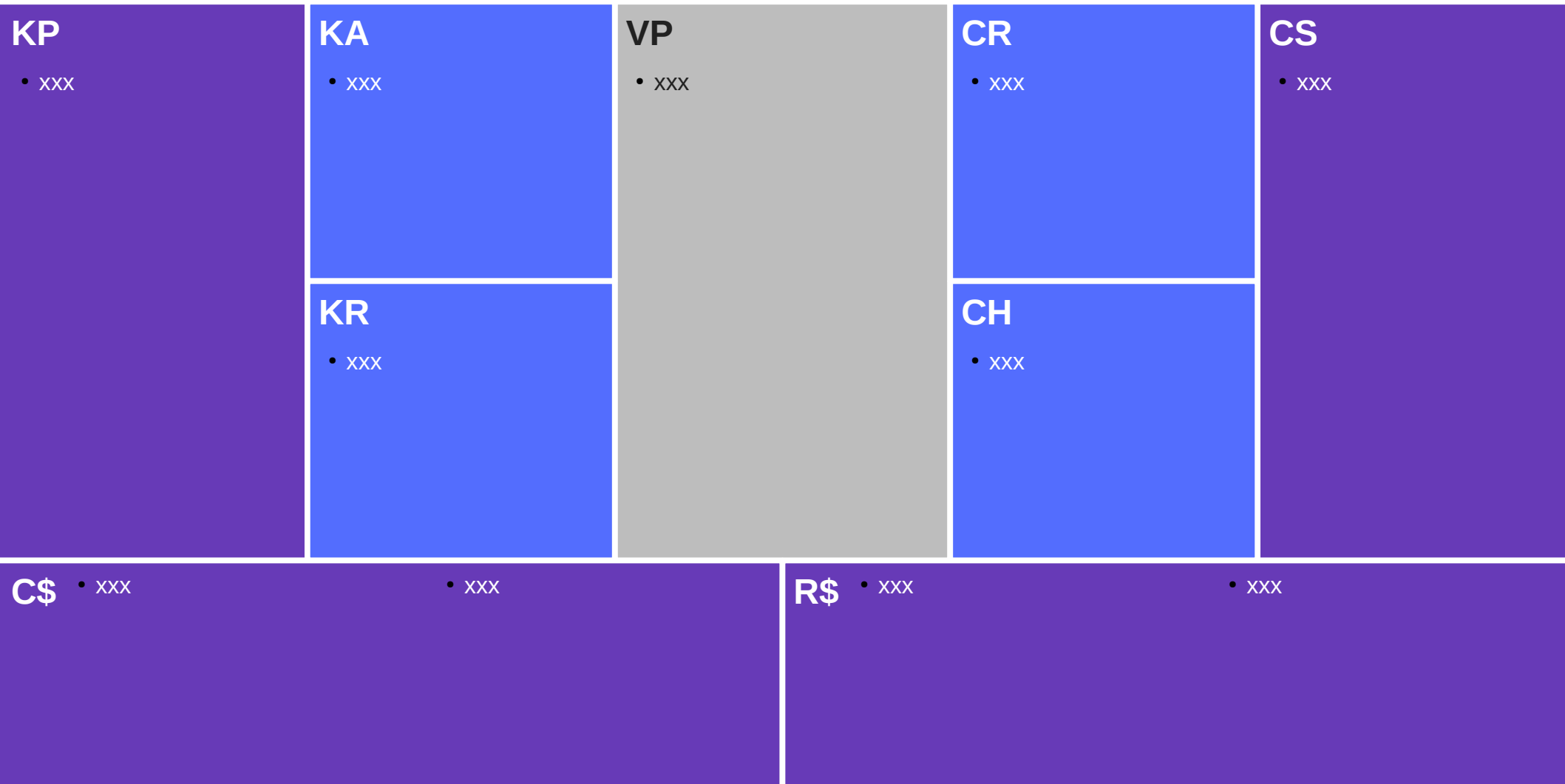
Customer



“User”, i.e. “the product”

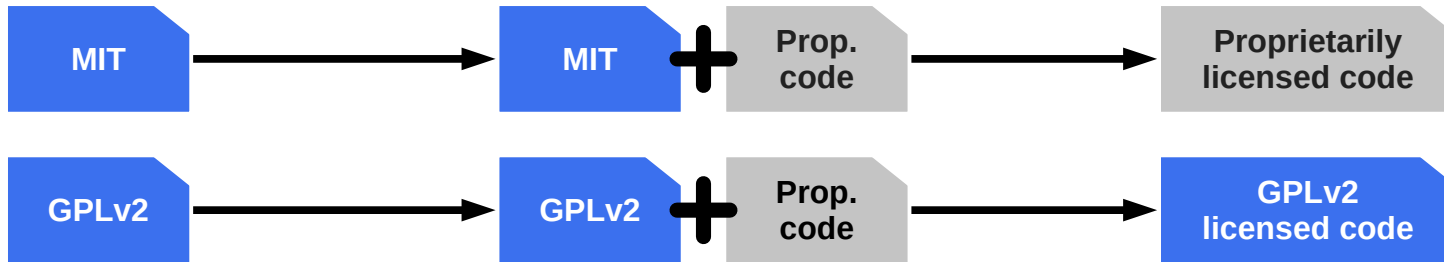


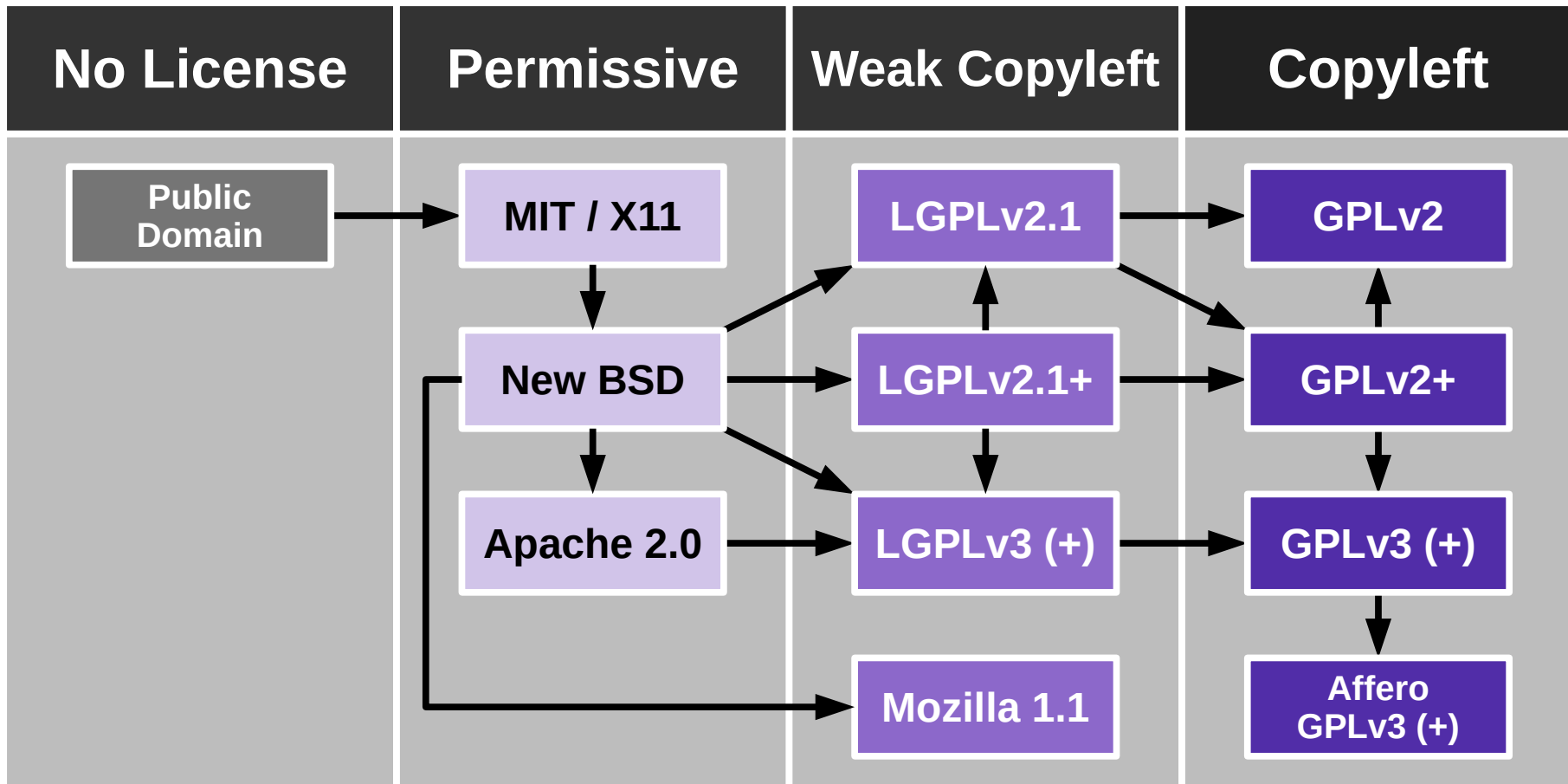




C01

Open Source Software





Software vendor

product

Licensed from supplier

Imported as library

Supplier tier 1

closed source
comp #24

...

open source
proj #5332

...

open source
proj #152

whatever they are up to

who knows

Supplier tier n

open source
comp #897

...

open source
proj #832

...

open source
proj #21632

User-led consortia (foundations)

2005
Kuali Foundation

2009
GenIVI Alliance

Single-vendor open source firms

1995
MySQL

2004
SugarCRM, Jaspersoft, Hyperic, ...

Developer-led foundations (Natural persons and vendors)

1999
Apache Software Foundation

2004
Eclipse Foundation

2007
Linux Foundation

Open source distributor firms

1992
Suse

1994
Red Hat

2002
Univention

2004
Canonical

Service and support firms

1989
Cygnus Solutions

2005
Automattic

2009
MariaDB

2011
Hortonworks

1984
GNU Emacs

1987
GCC

1991
Linux kernel

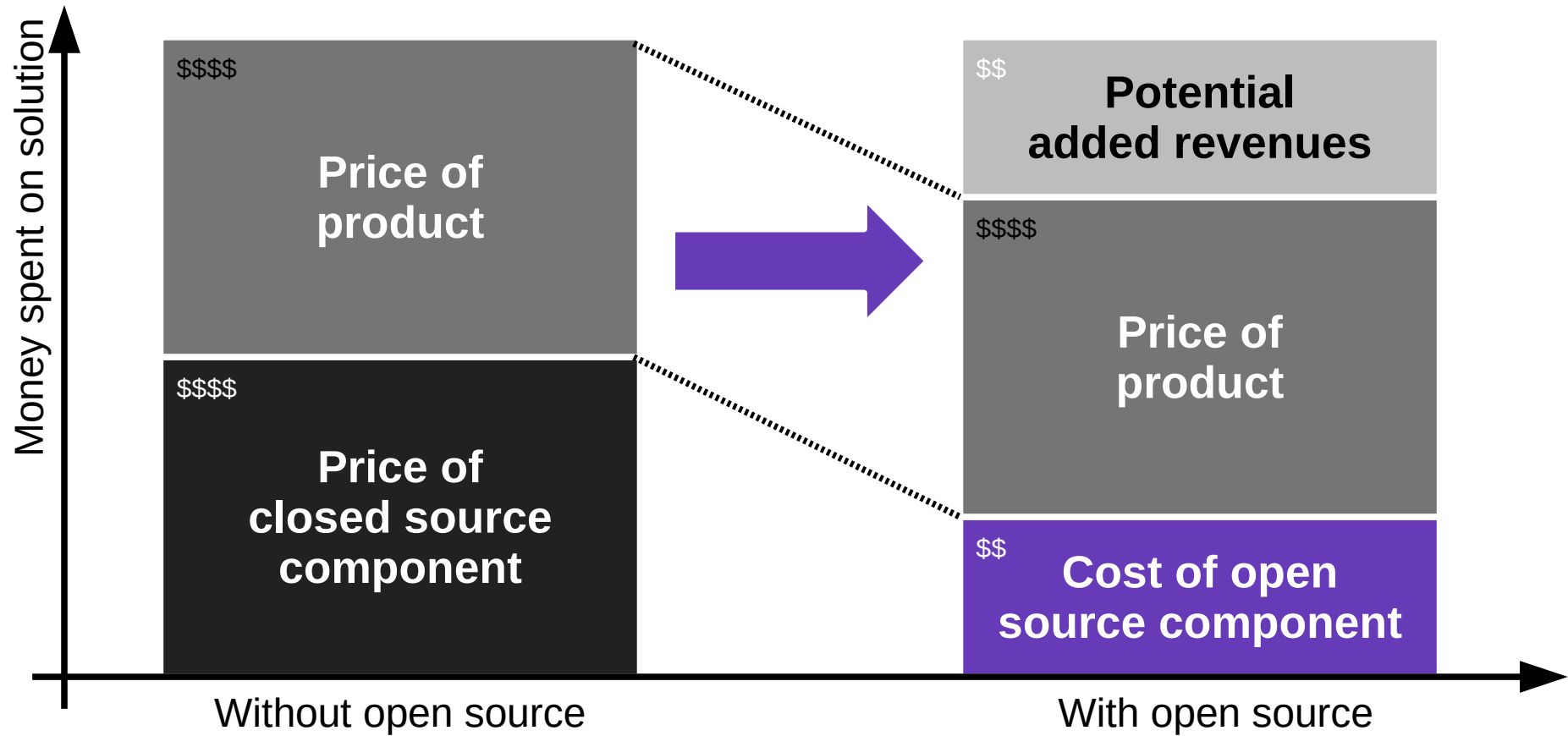
1993
Debian

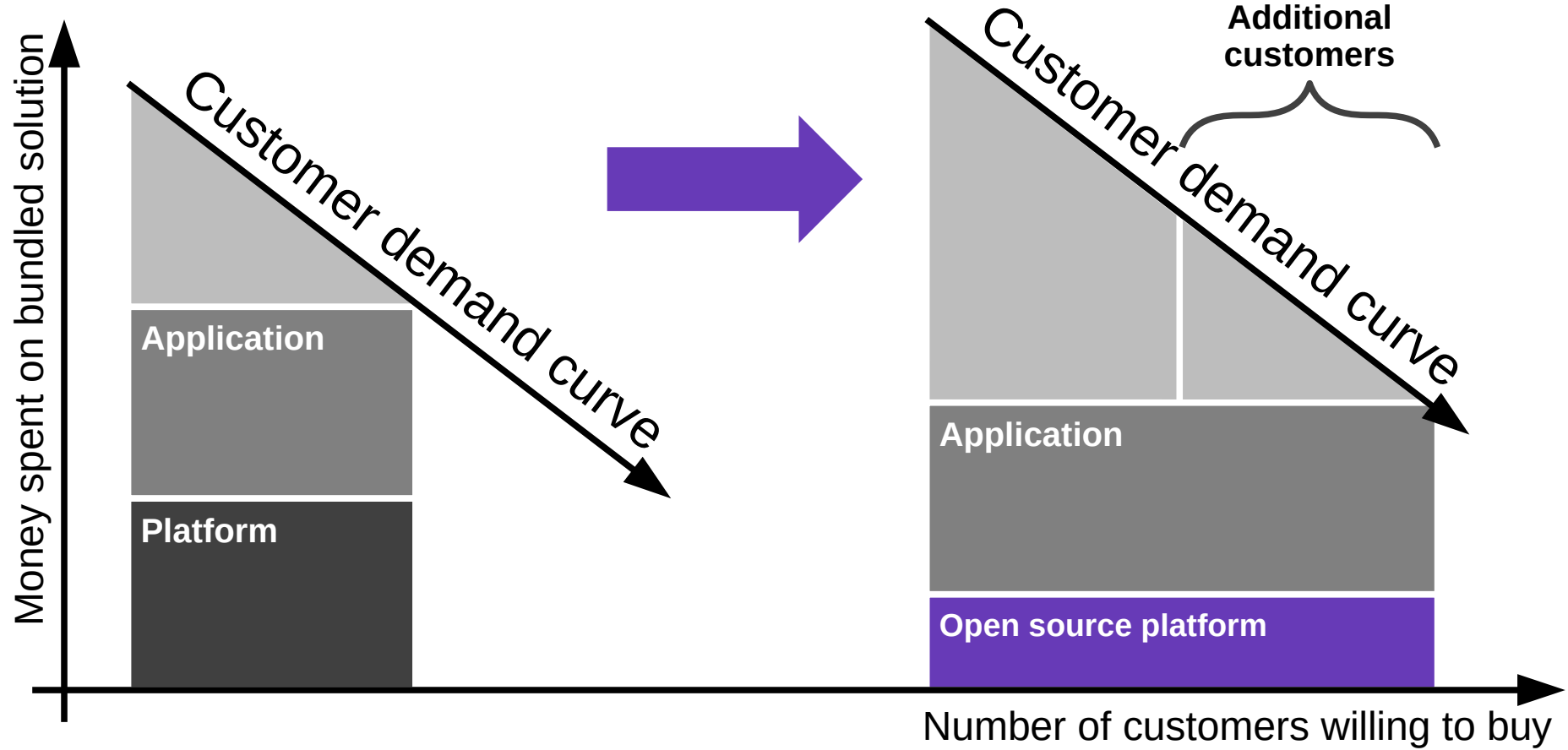
1996
PostgreSQL

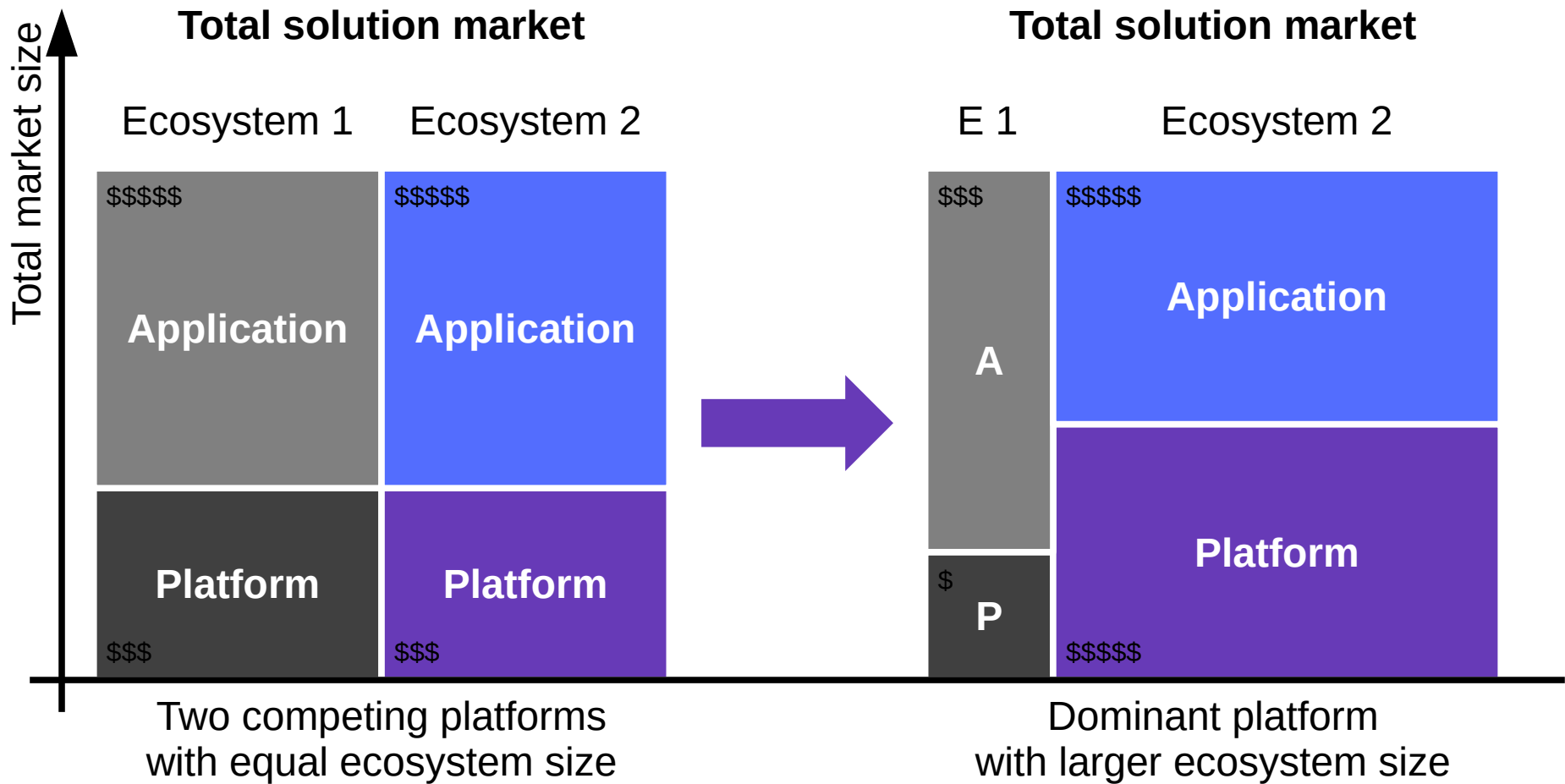
2004
CentOS

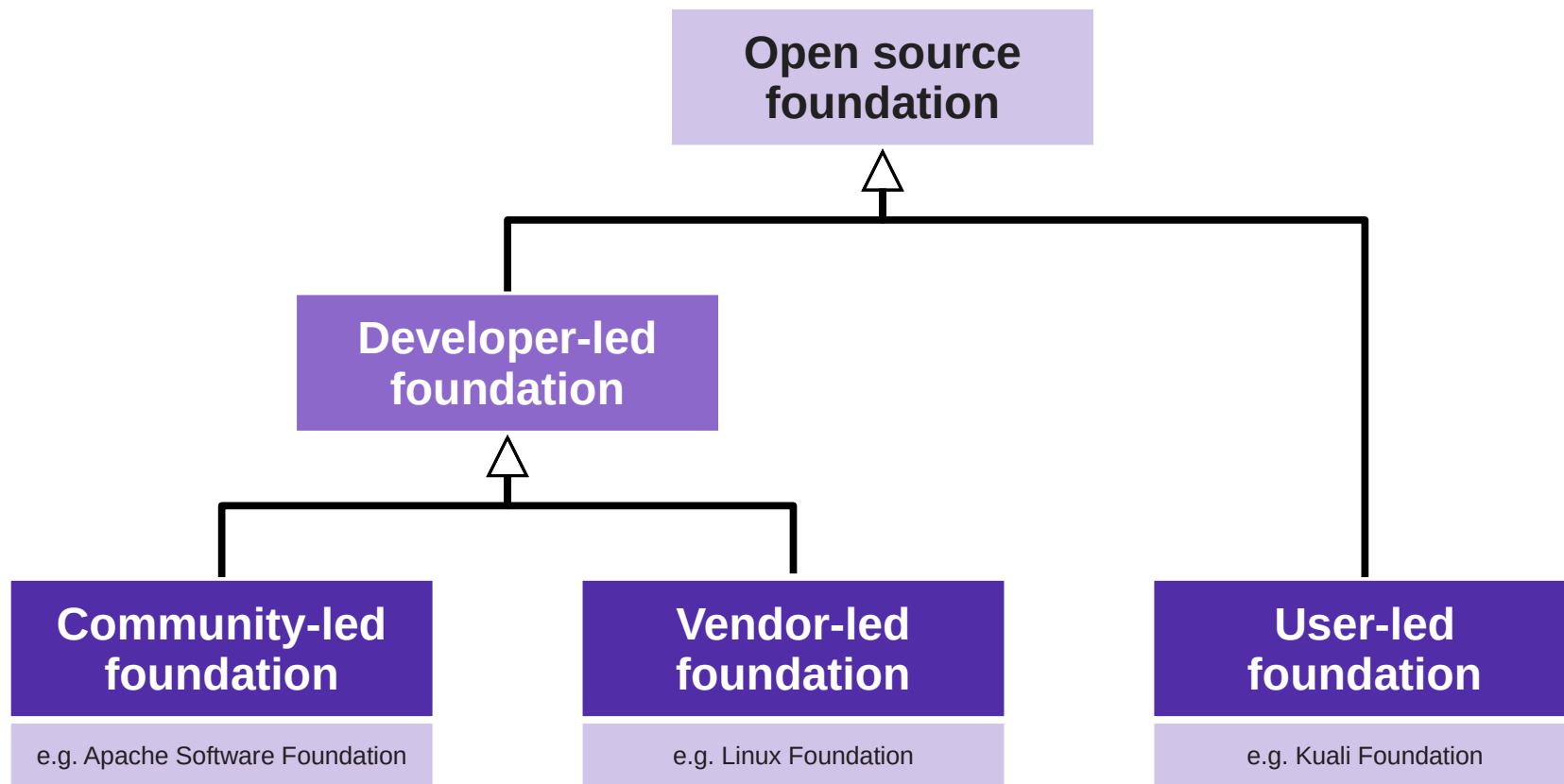
Traditional community projects

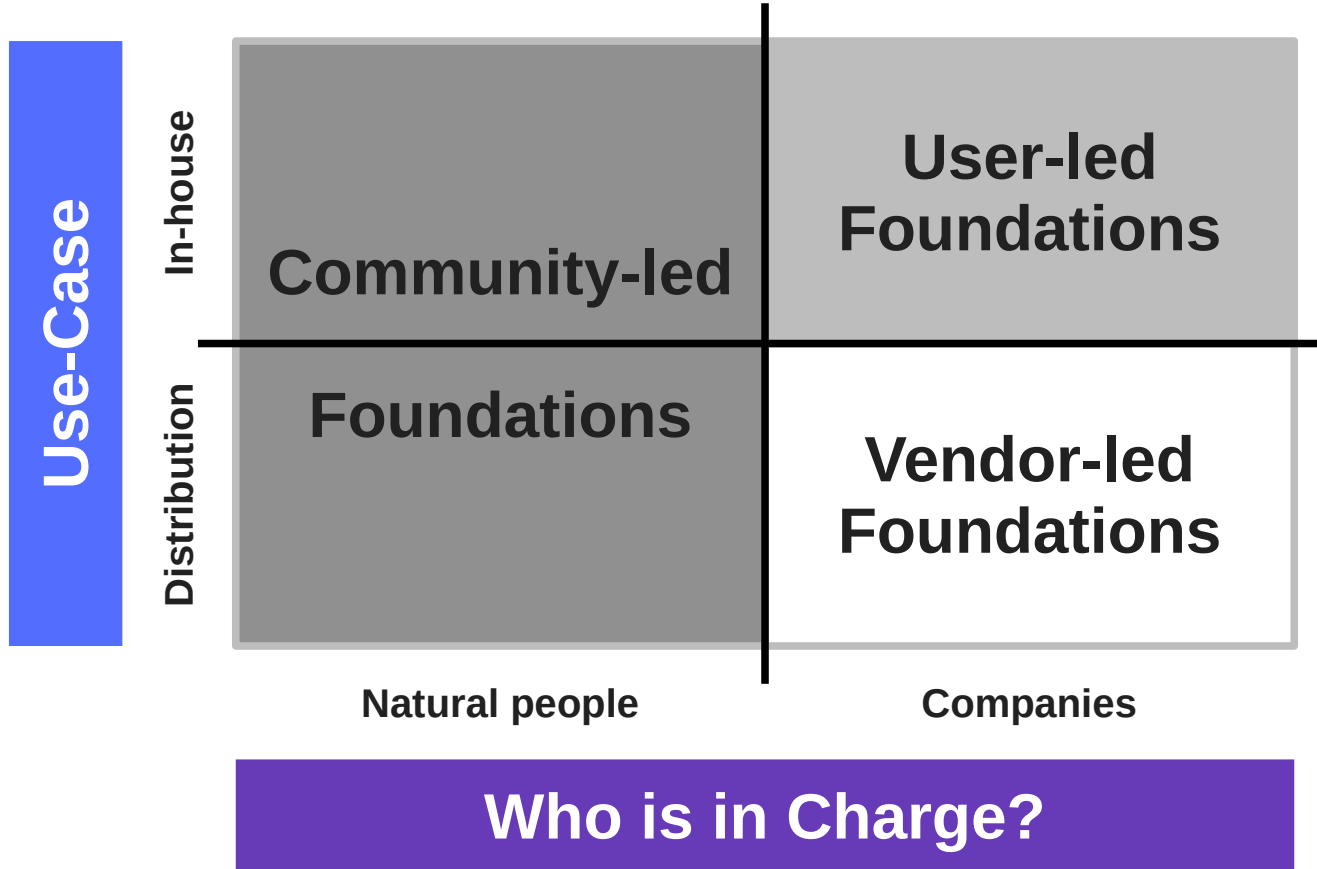
year





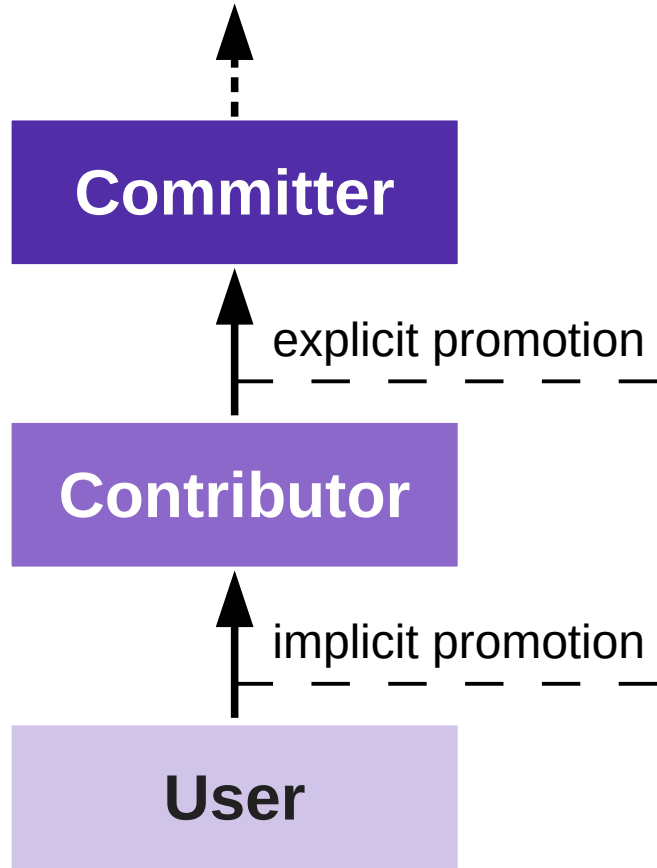


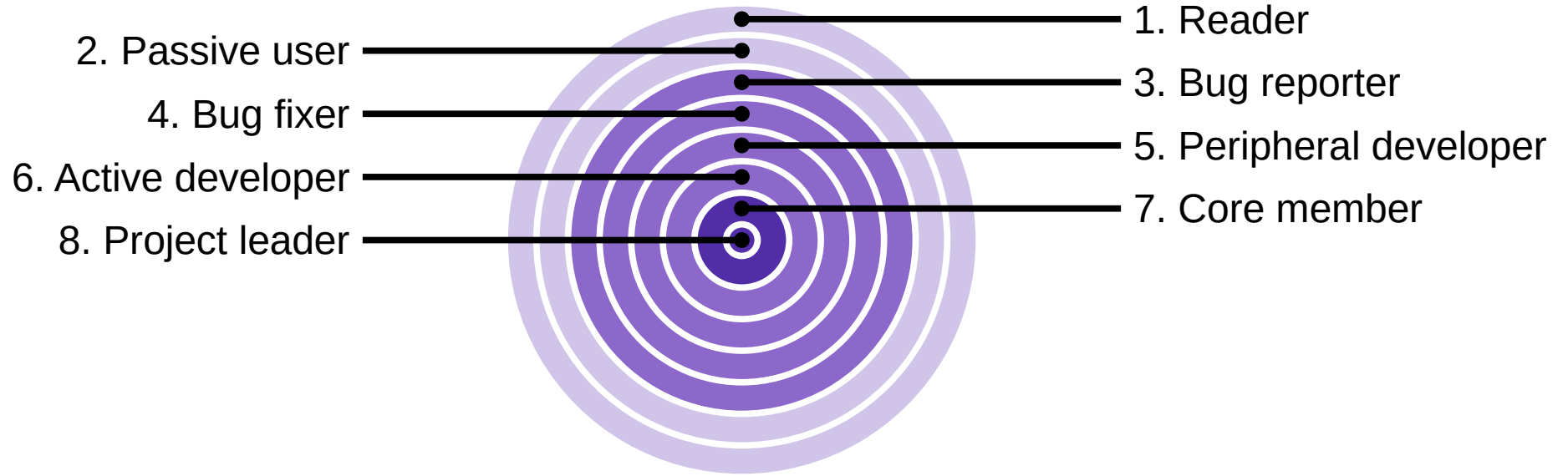




C02

Open Source Projects

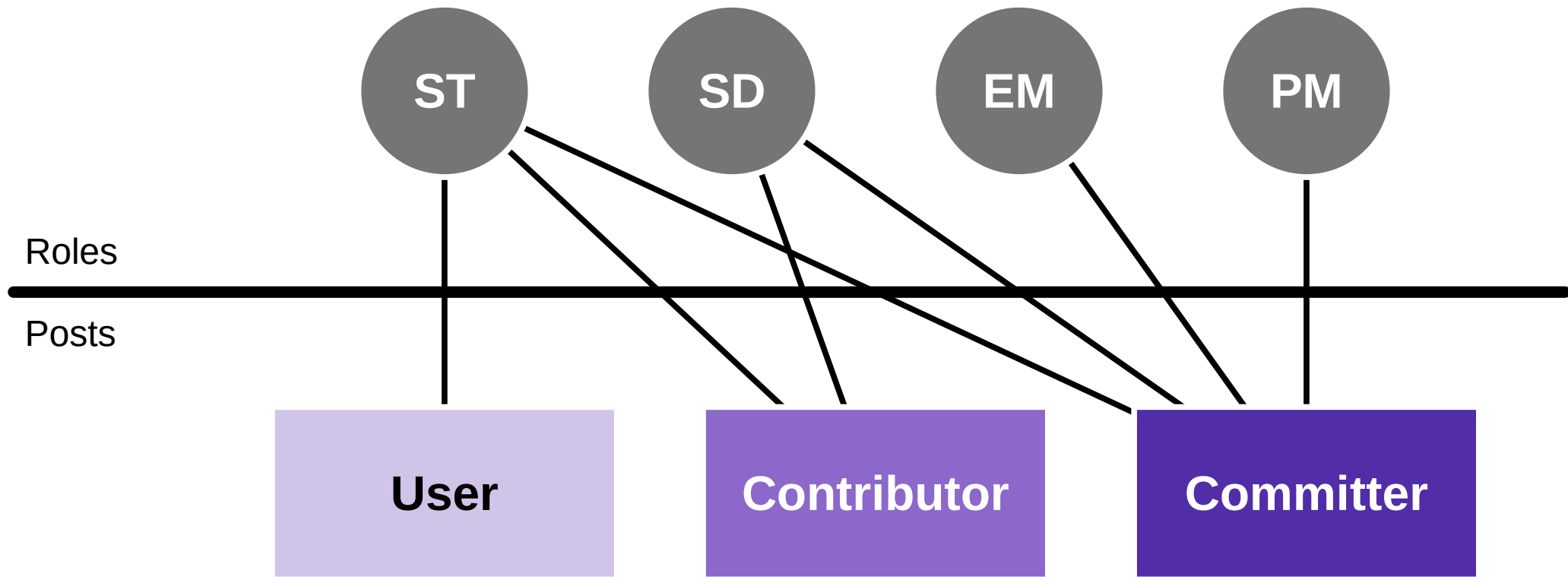




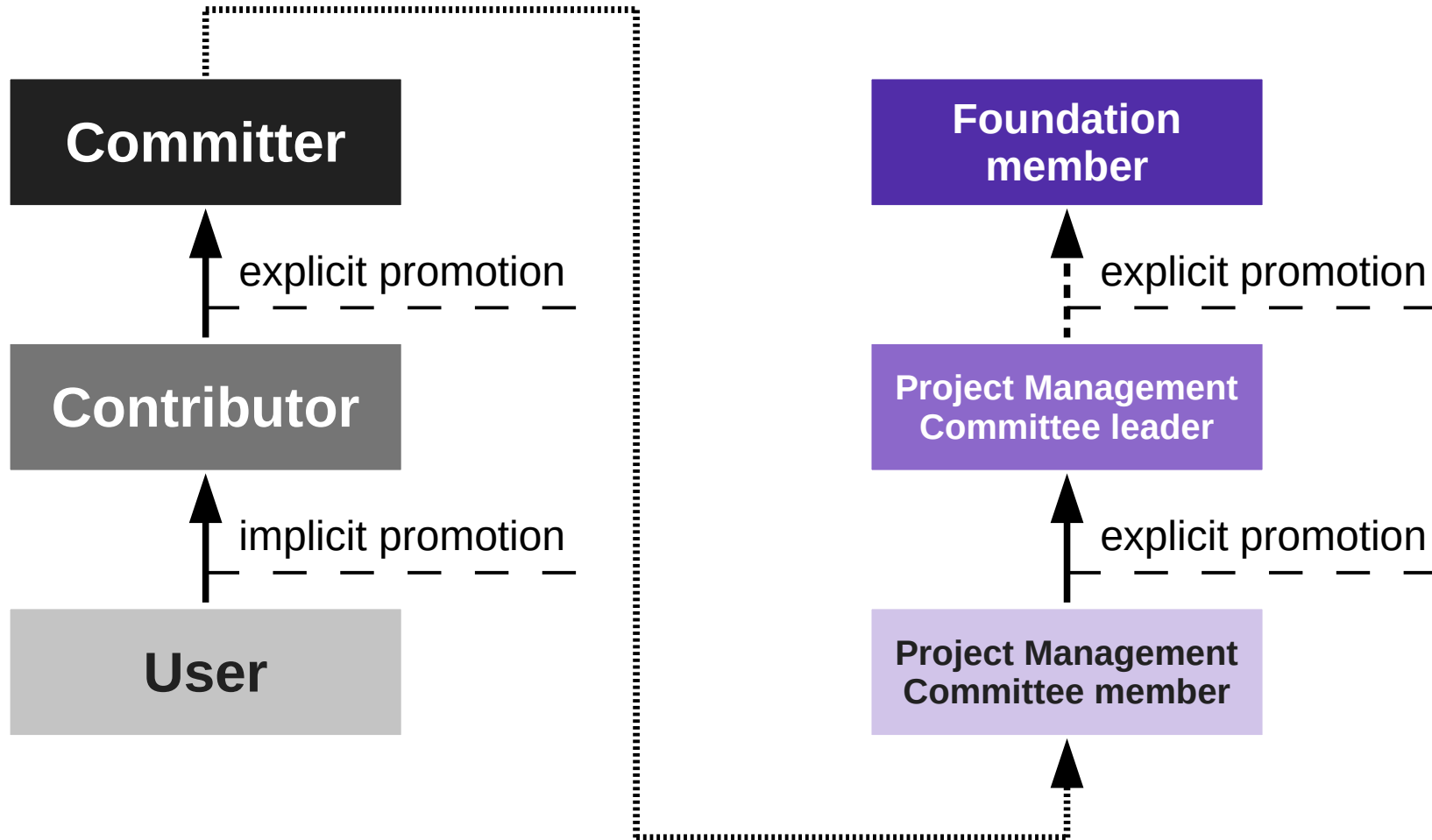
User

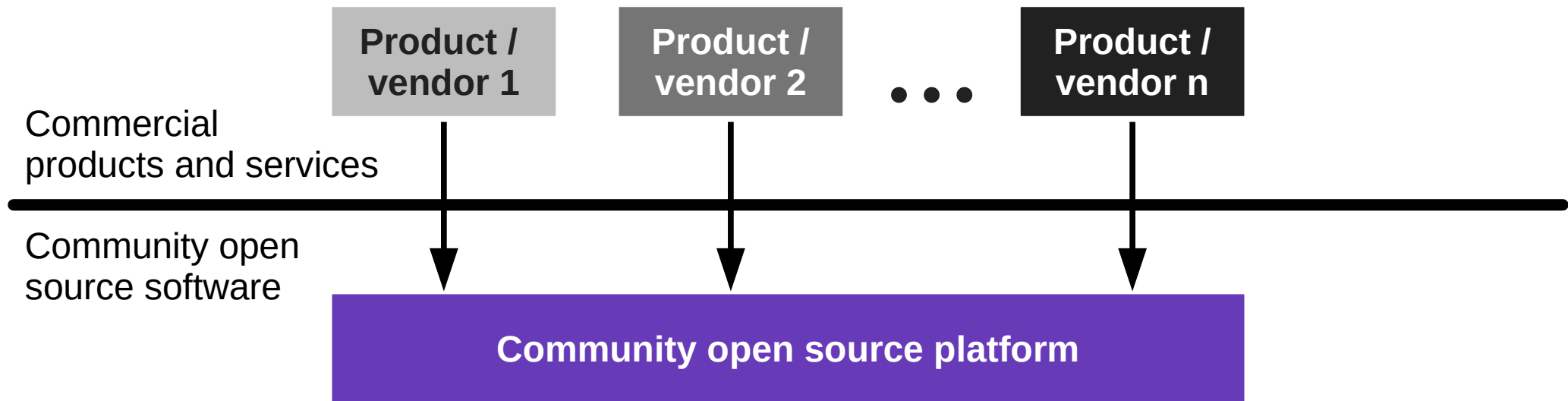
Contributor

Committer



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

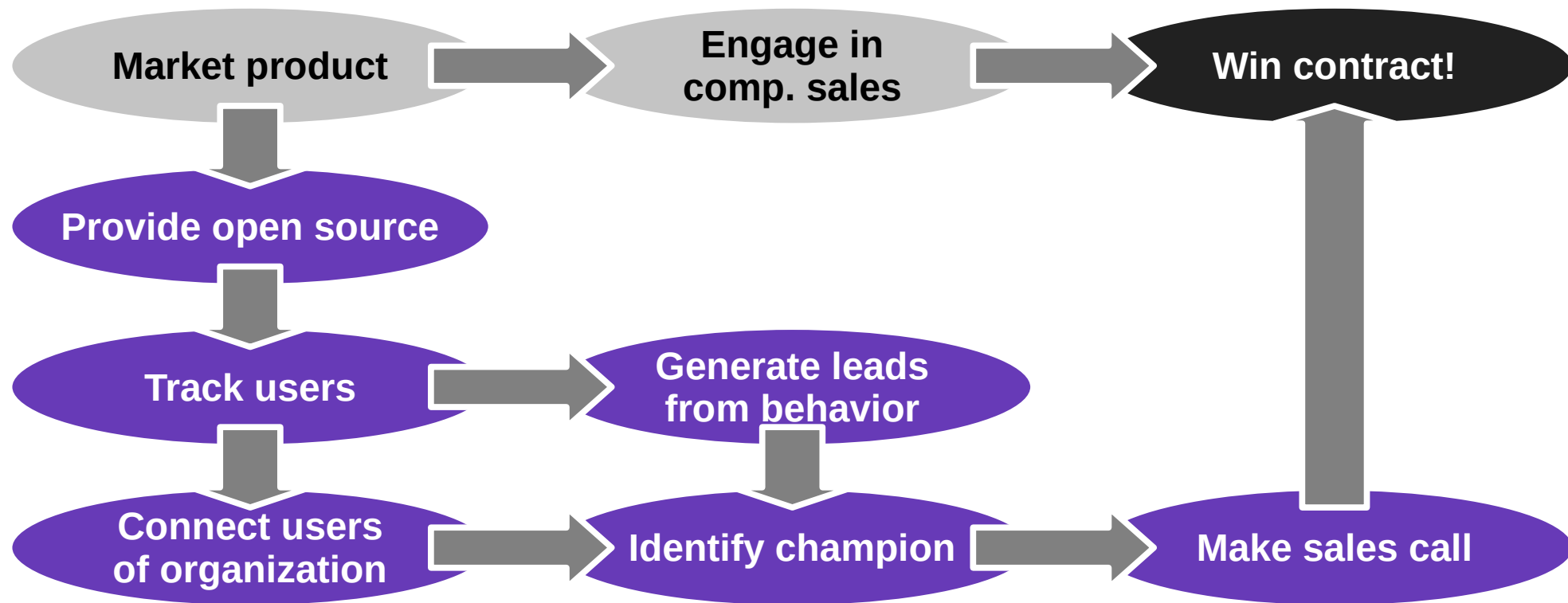




D01

Commercial Open Source

	Web Store	Direct Sales	
Open Source Community	<div>DOC</div> <div>INC</div> <div>UTIL</div>		<div>DOC</div> Documentation
Enterprise Customers		<div>LIC</div> <div>DOC</div> <div>UPD</div> <div>TRN</div> <div>UTIL</div> <div>24x7</div>	<div>INC</div> Incident-based support <div>UTIL</div> Utilities <div>LIC</div> Commercial license <div>UPD</div> Update service
ISV / OEM		<div>LIC</div> <div>DOC</div> <div>UTIL</div> <div>TRN</div> <div>24x7</div>	<div>TRN</div> Training <div>...</div> <div>24x7</div> 24x7 hotline

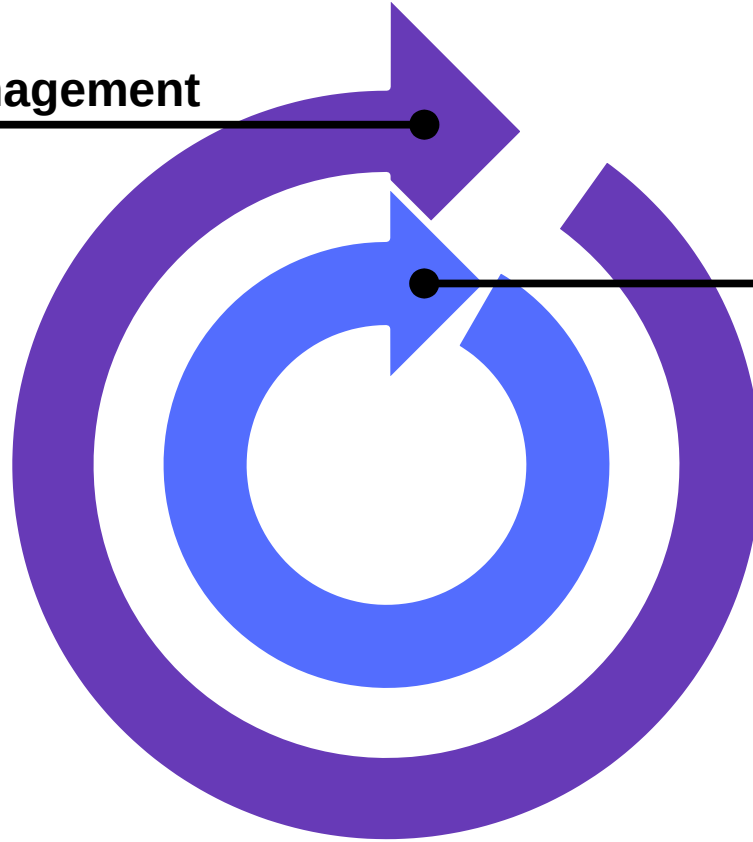


D02

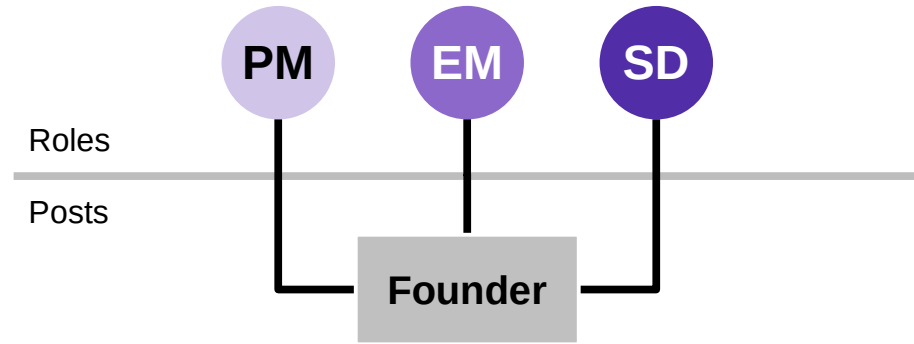
Product Strategies

Strategic product management

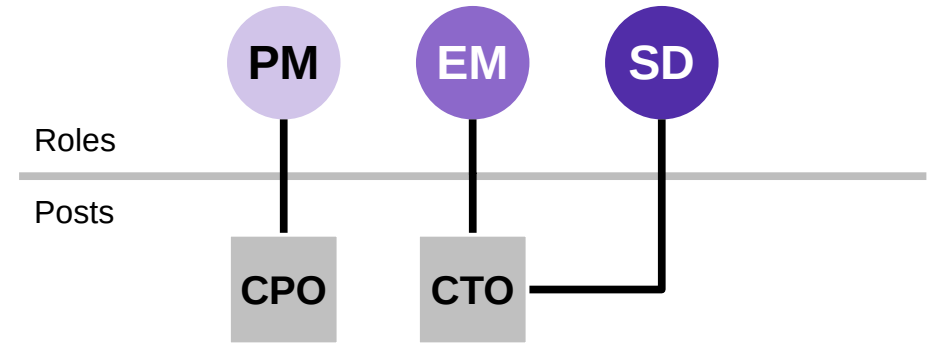
**Technical
product management**



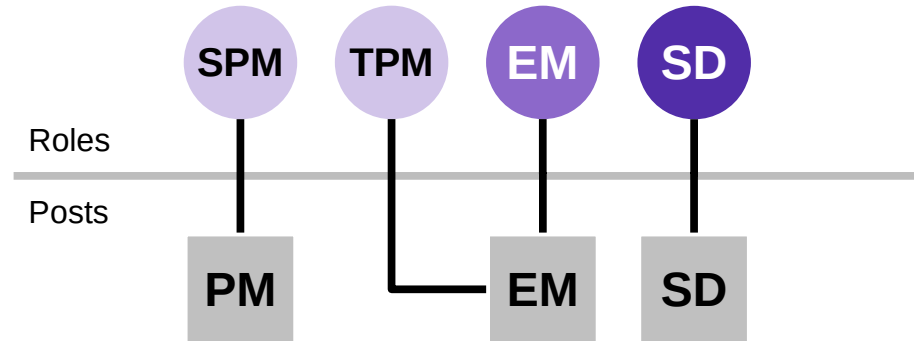
Solo entrepreneur



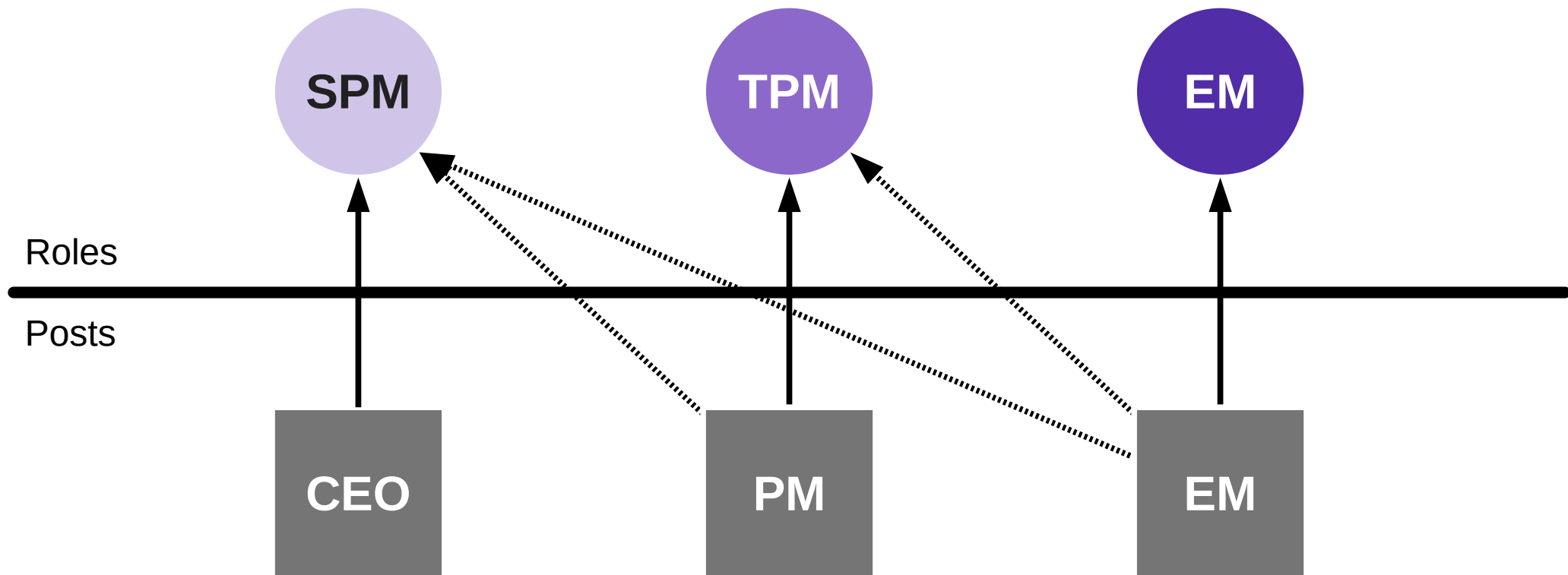
Team-based startup

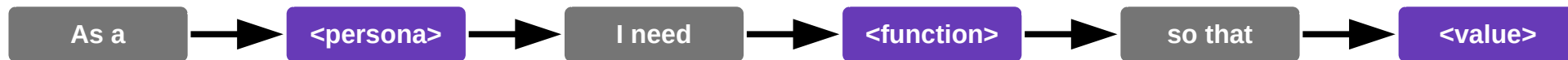
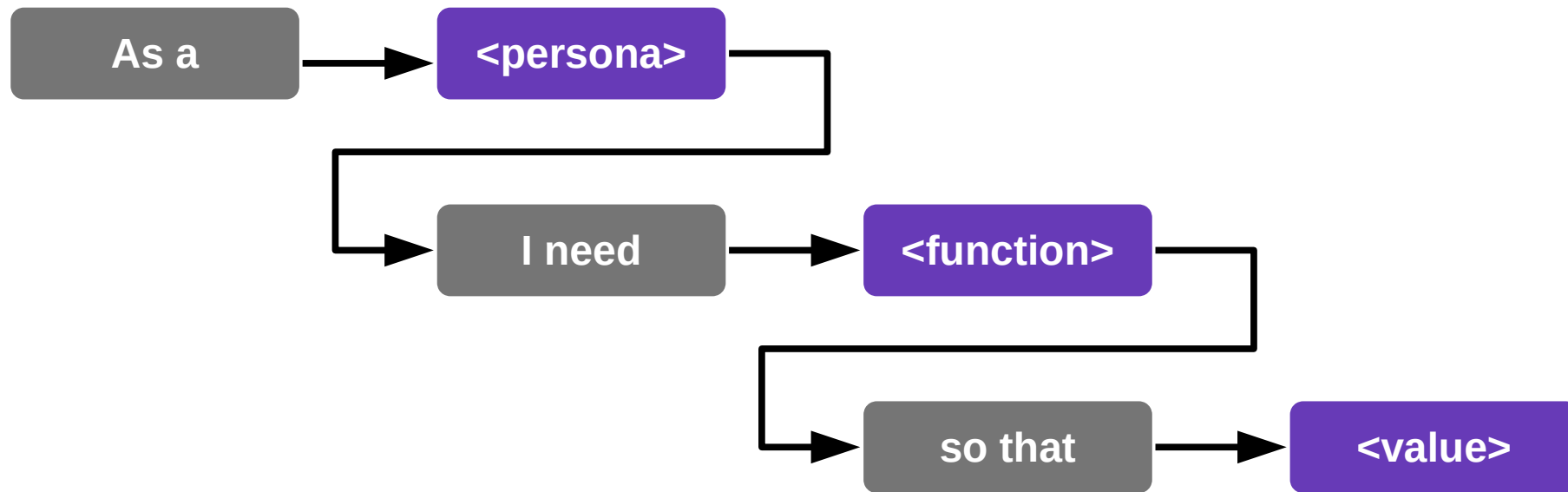


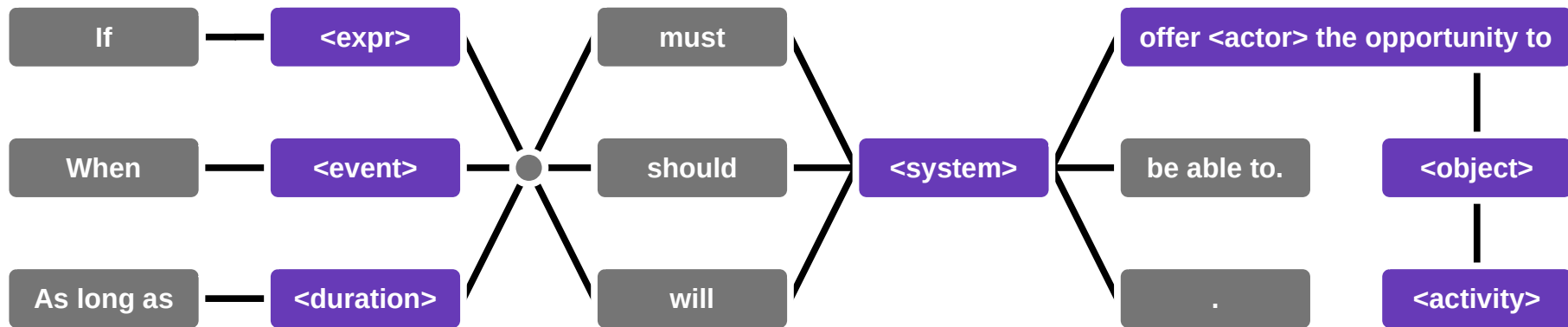
Mature vendor

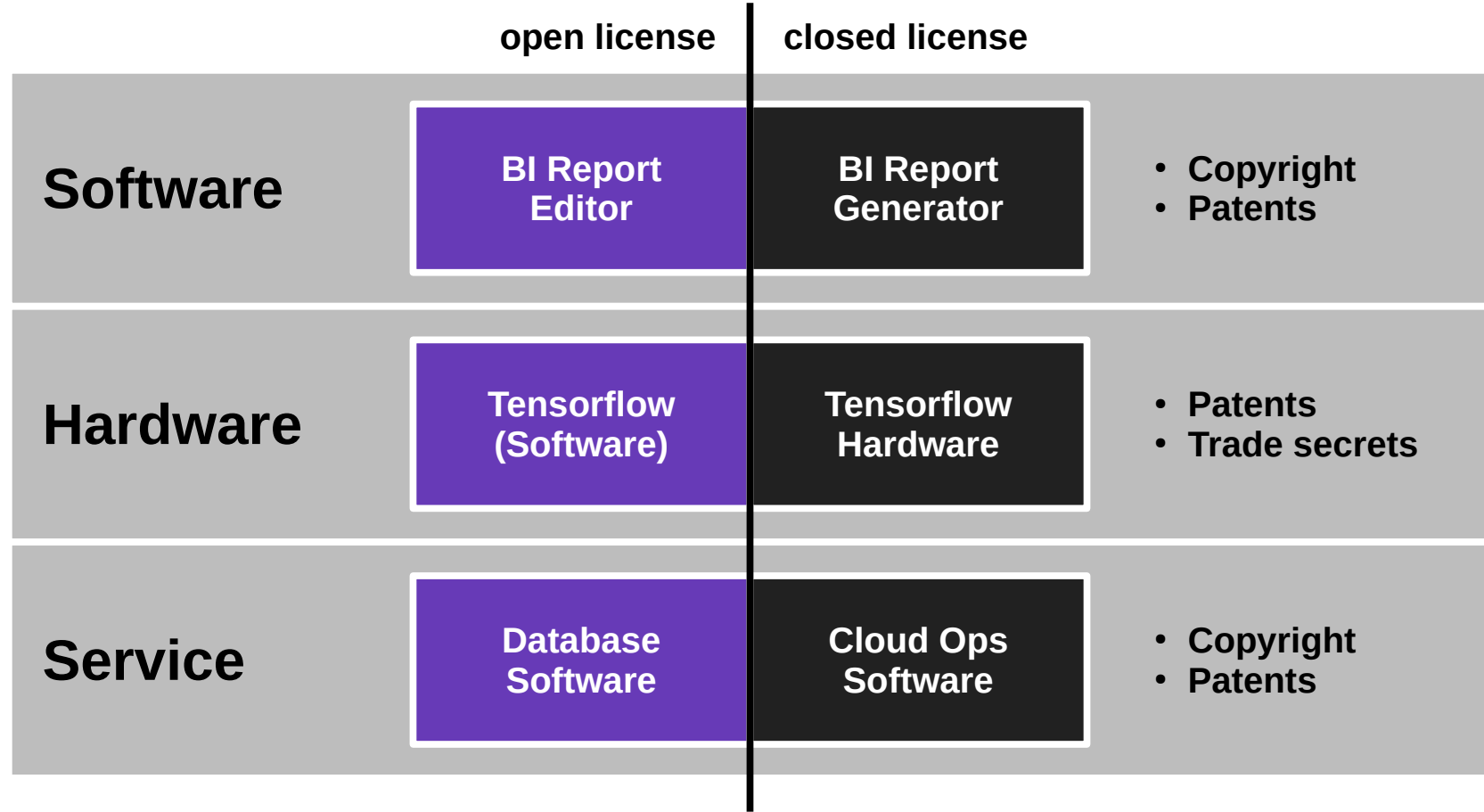


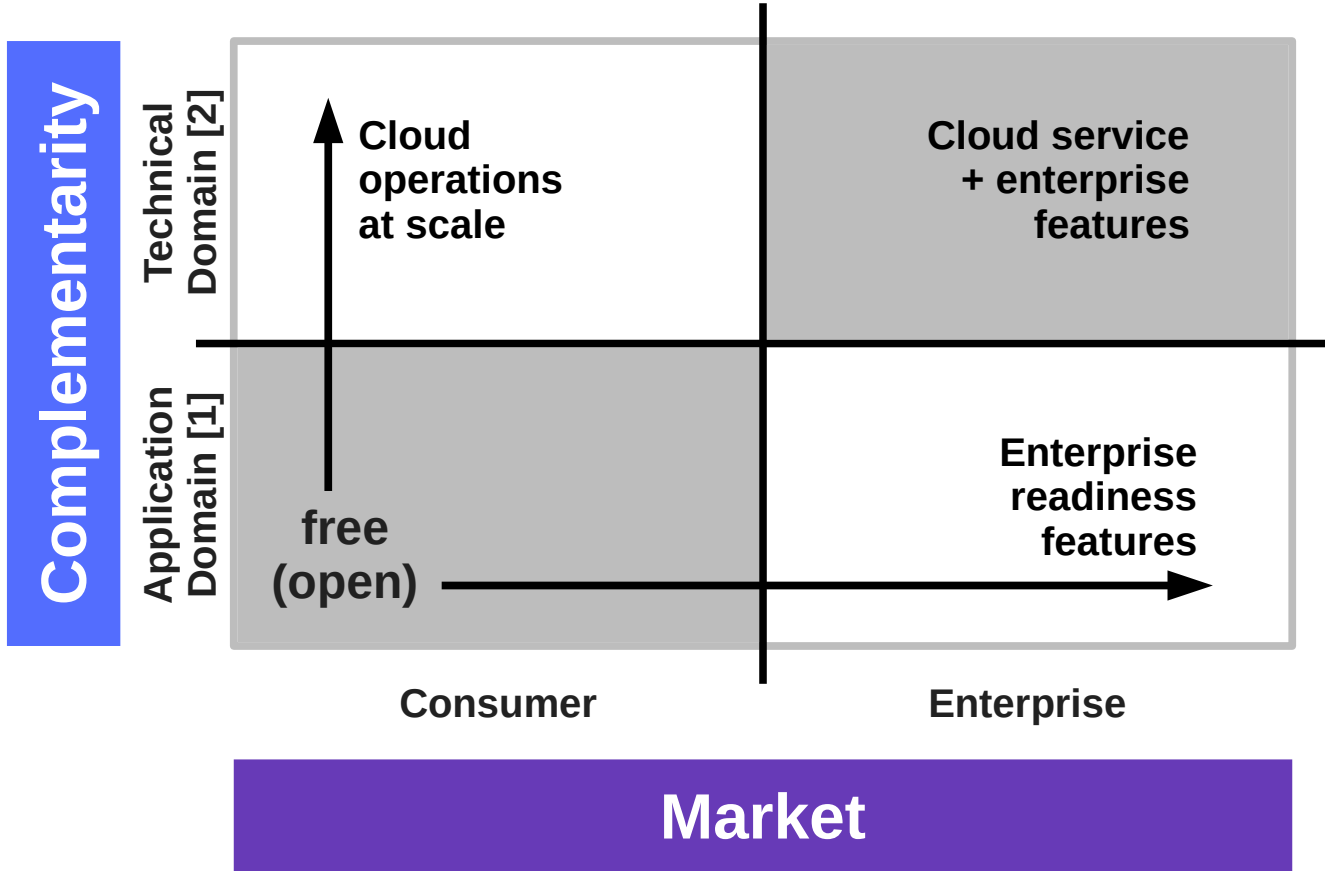
PM = Product manager (strategic + technical)
SPM = Strategic product manager
TPM = Technical product manager
CPO = Chief Product Officer
EM = Engineering manager
VPE = VP of engineering
CTO = Chief Technology Officer
SD = Software developer







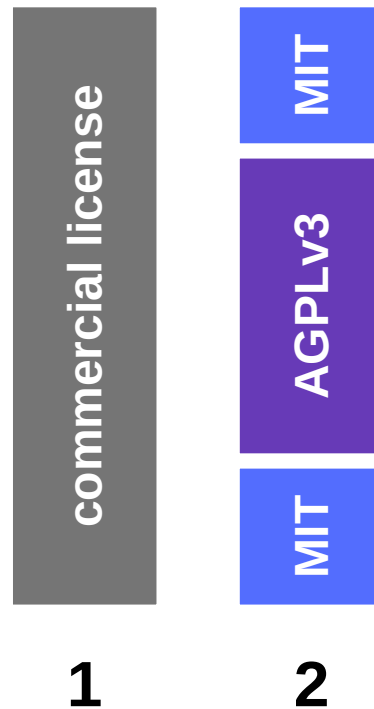


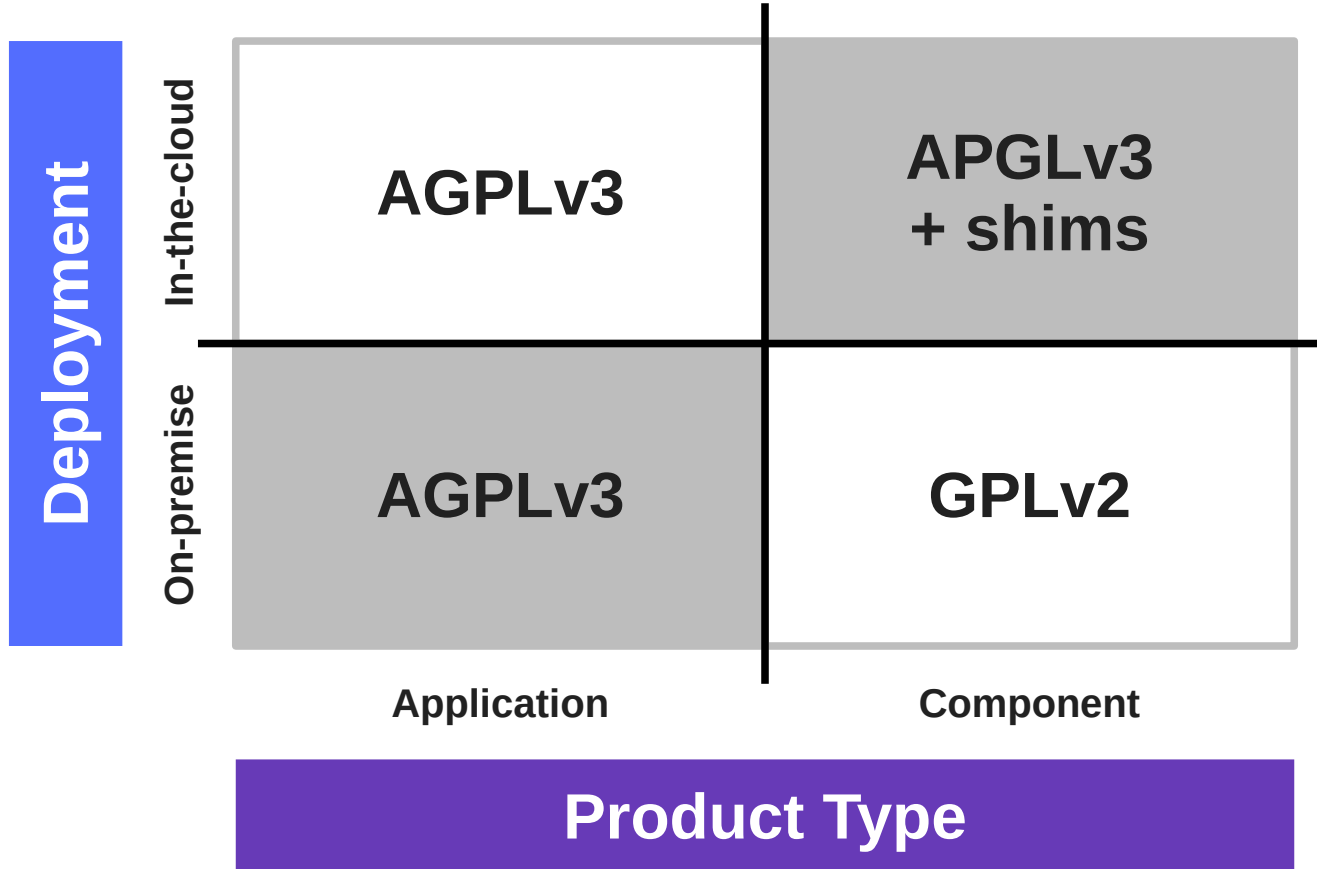


Application

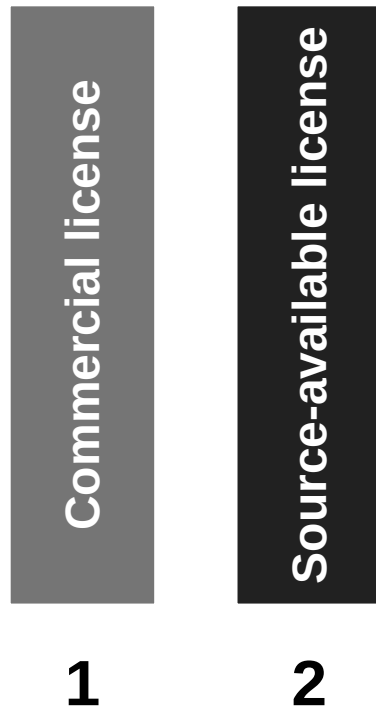


Component



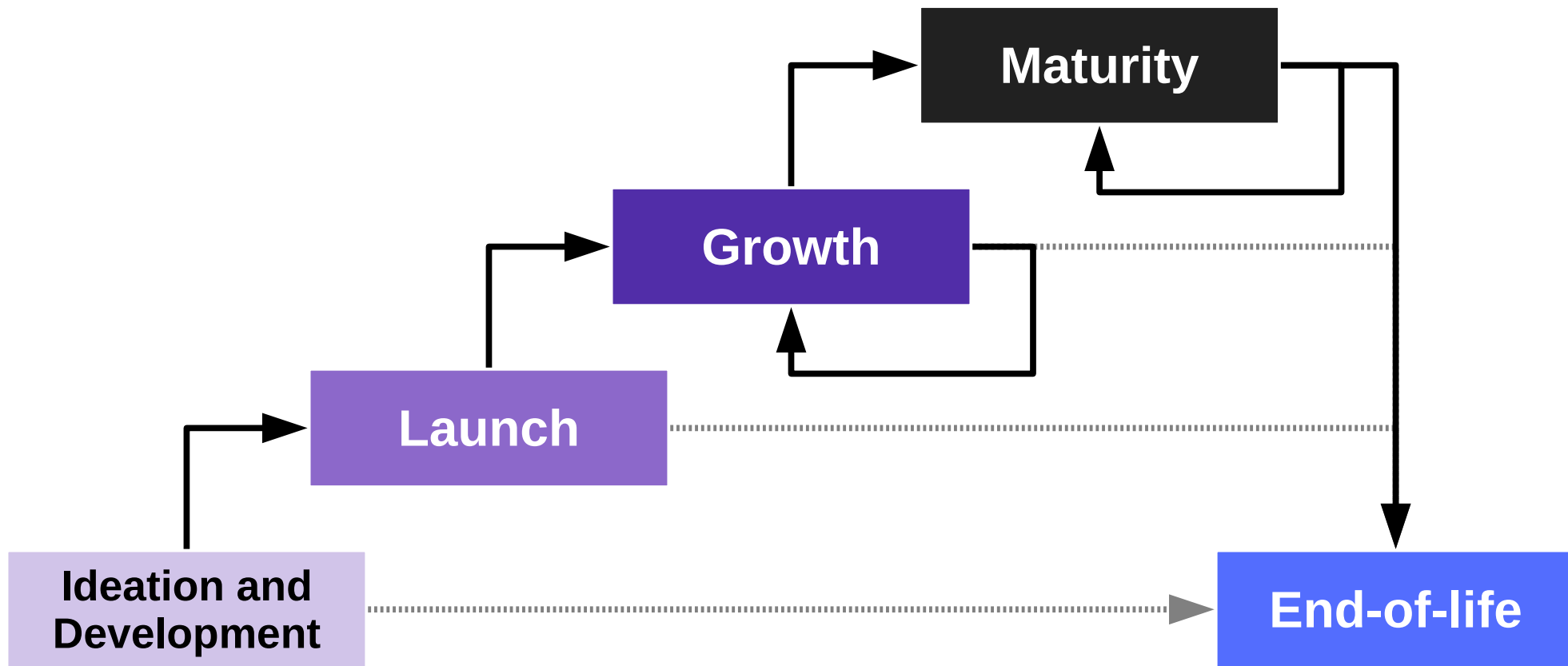


Dual-Licensing



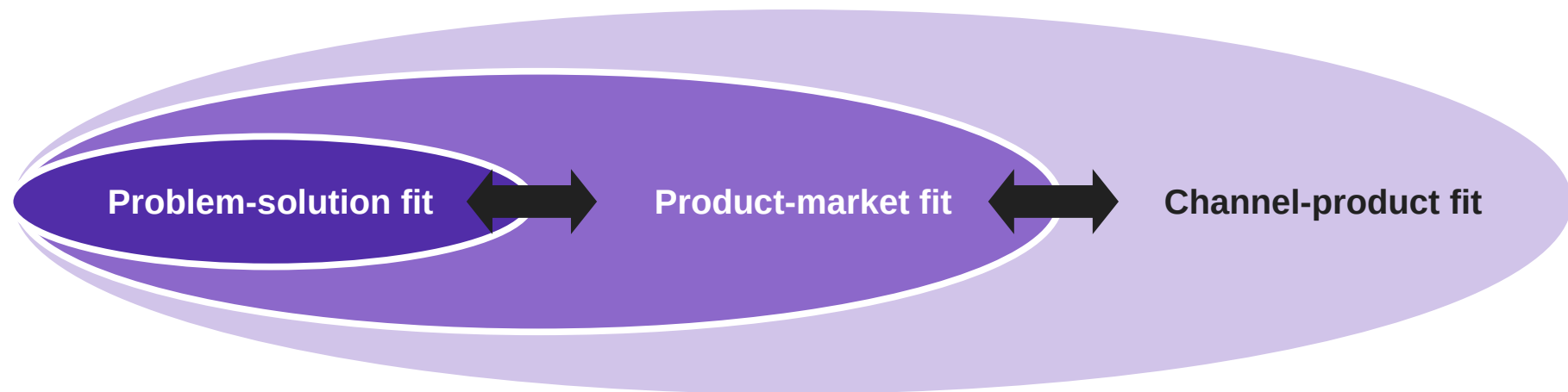
Triple-Licensing

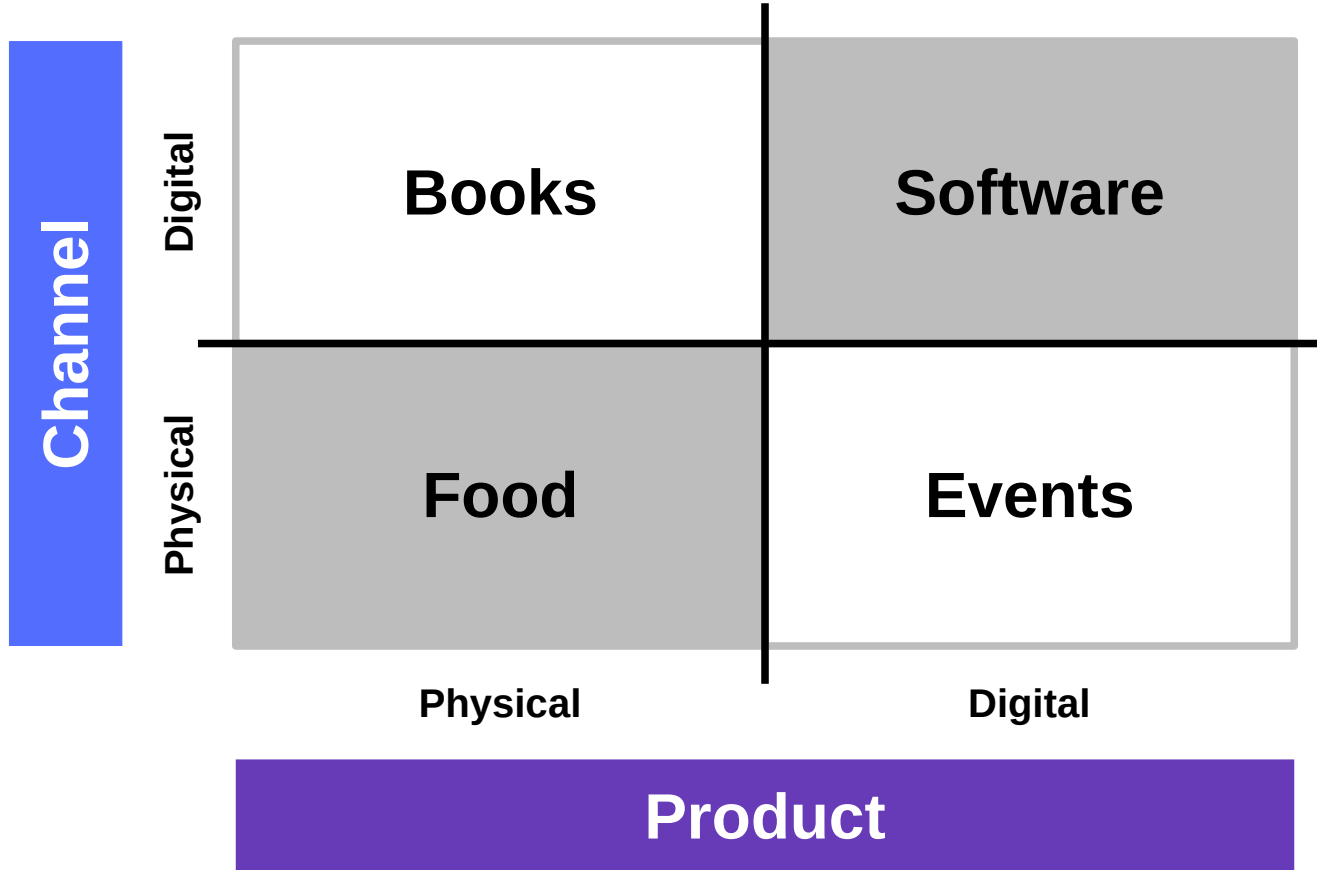


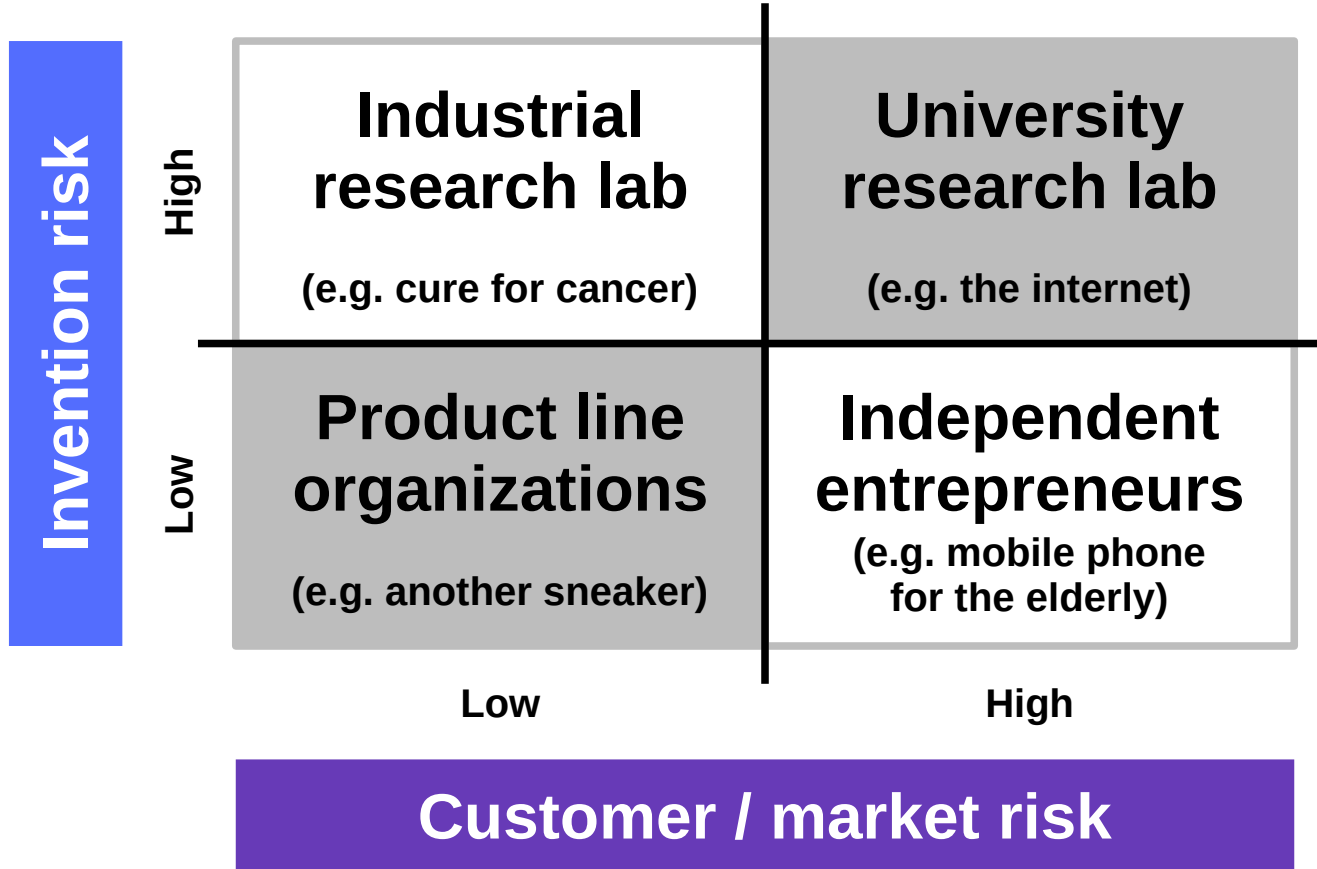


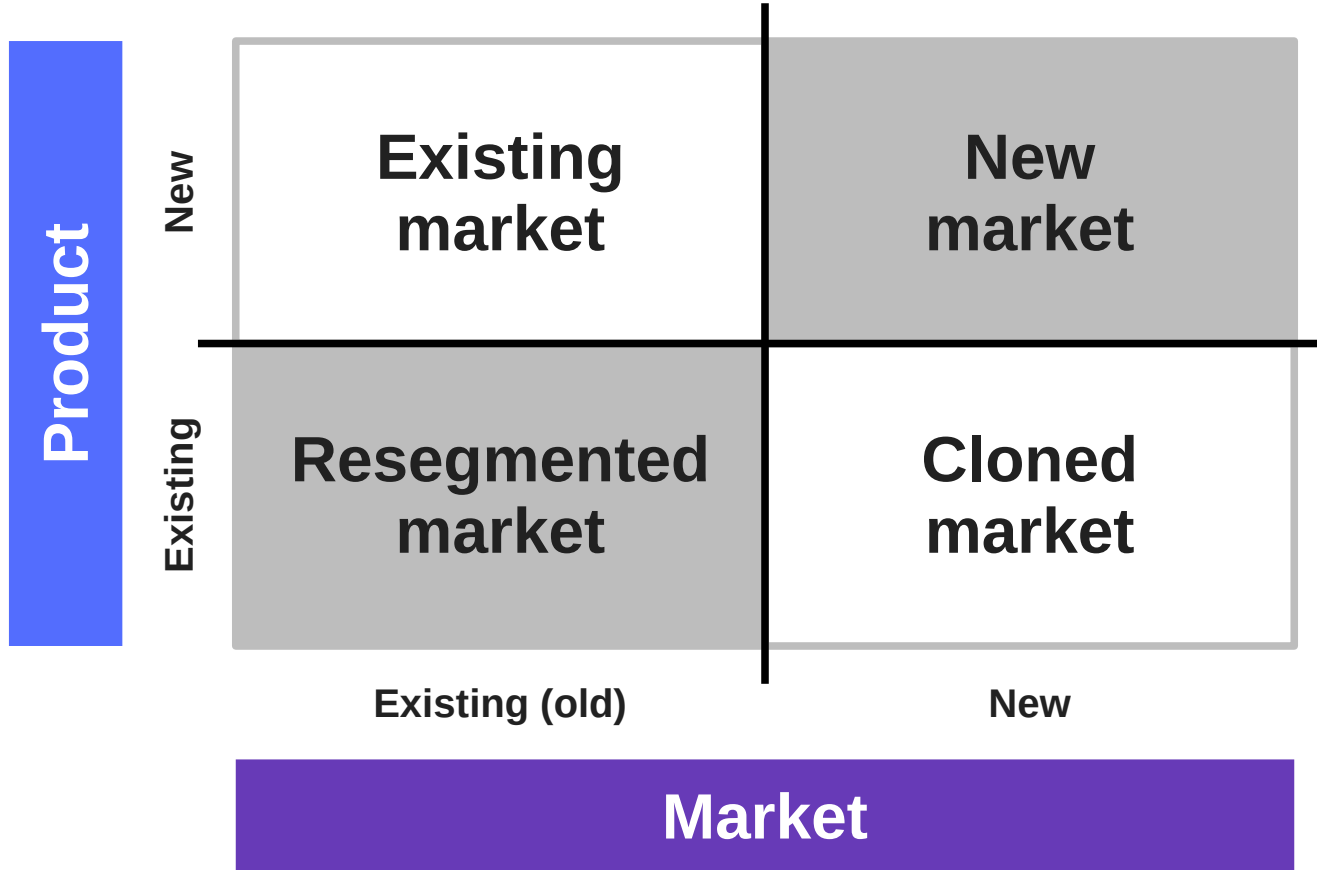
D01

Software Startups









Search

**Customer
discovery**

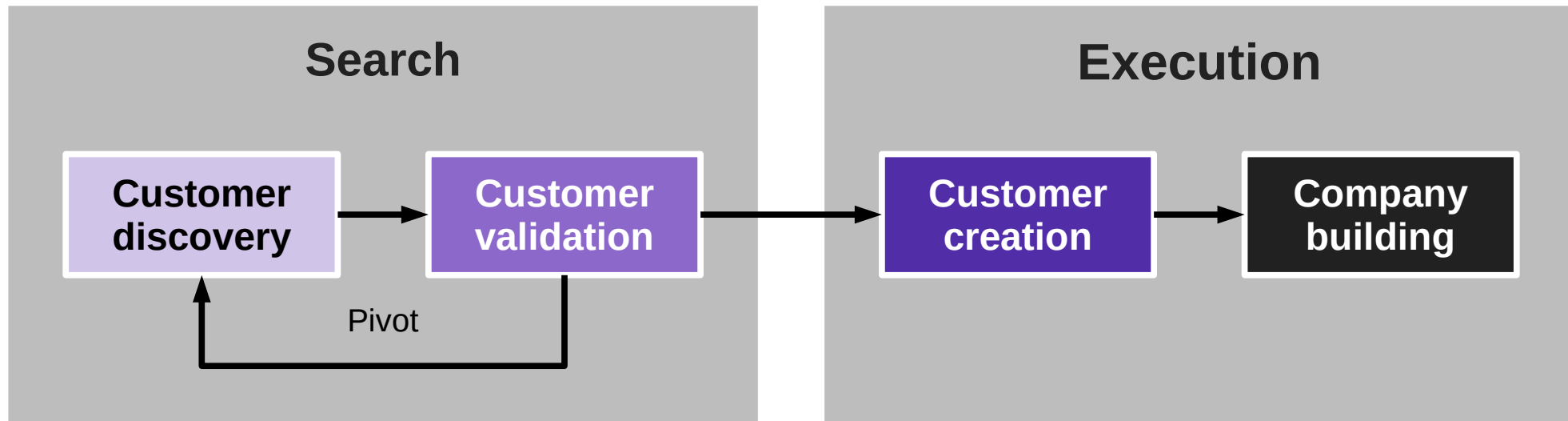
**Customer
validation**

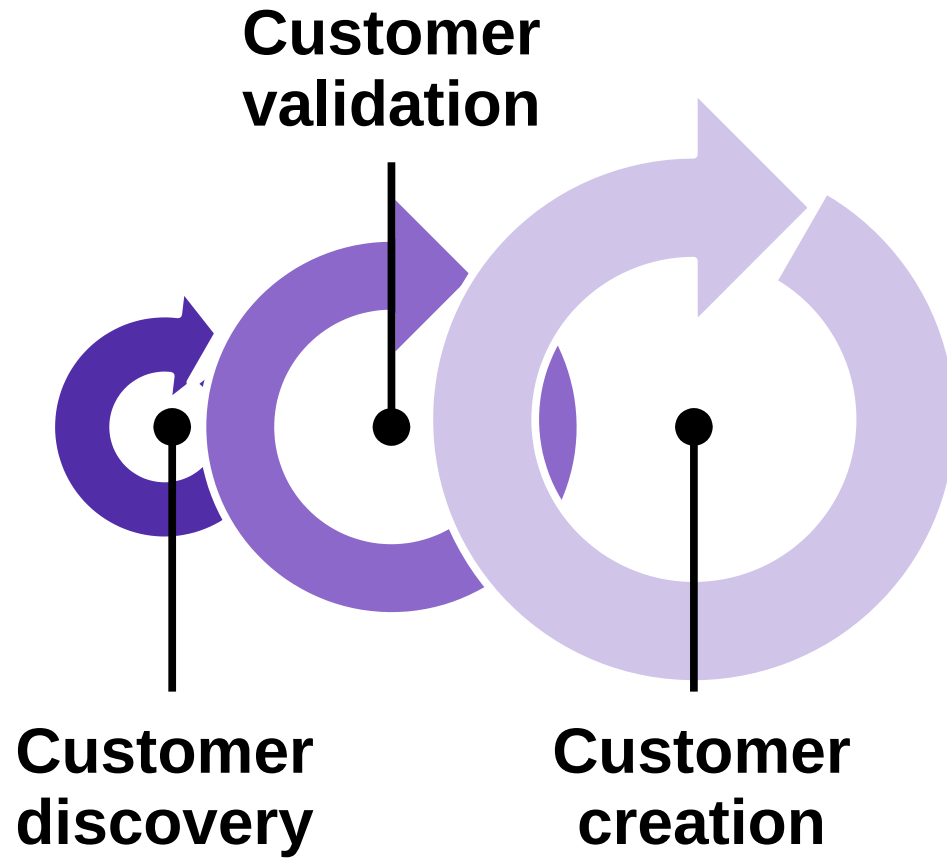
Pivot

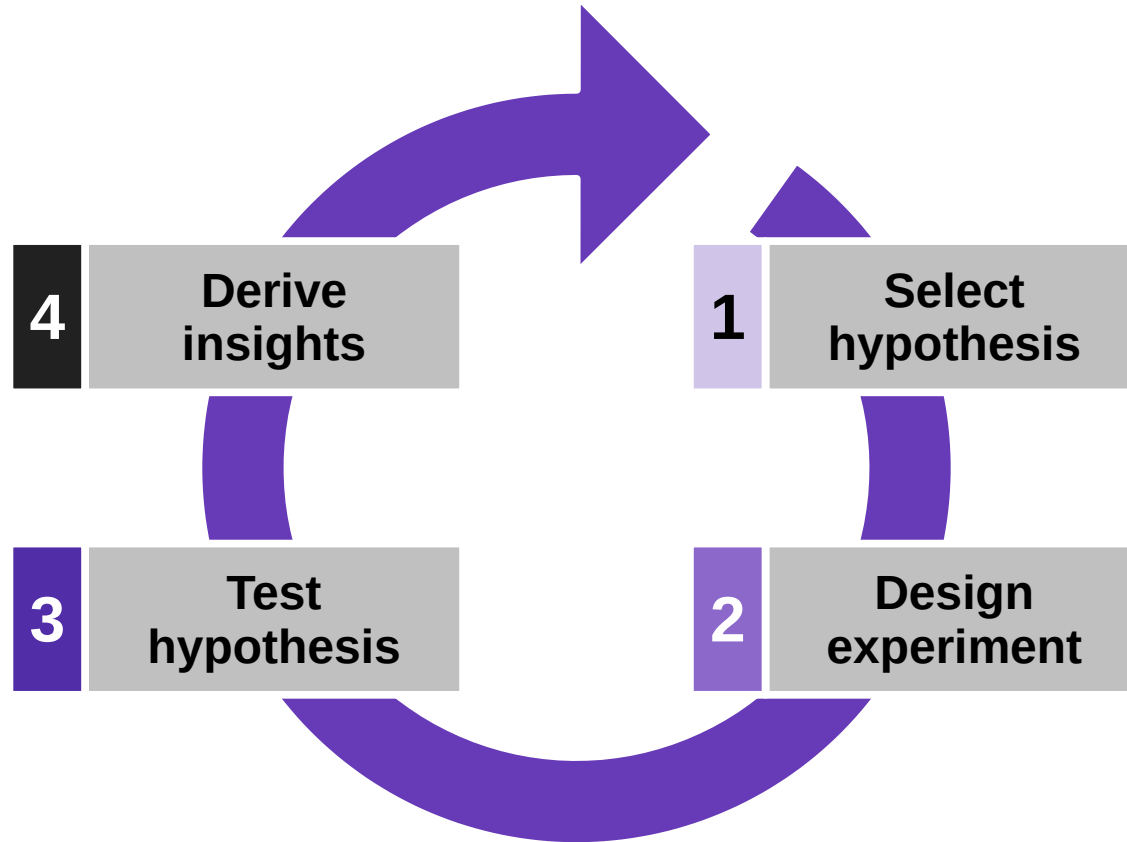
Execution

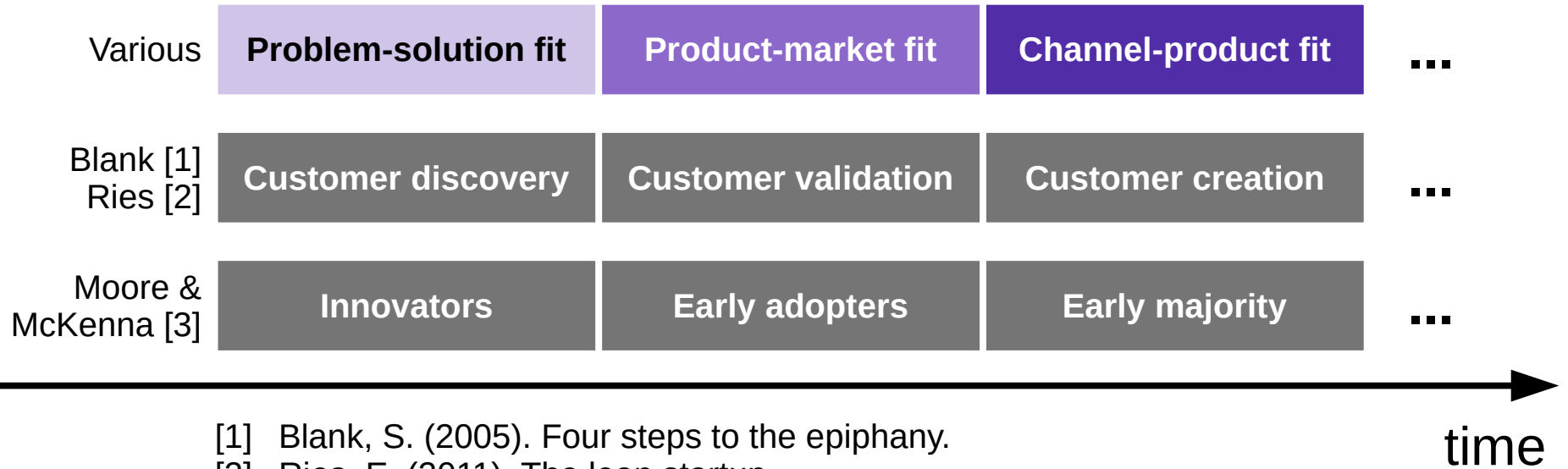
**Customer
creation**

**Company
building**









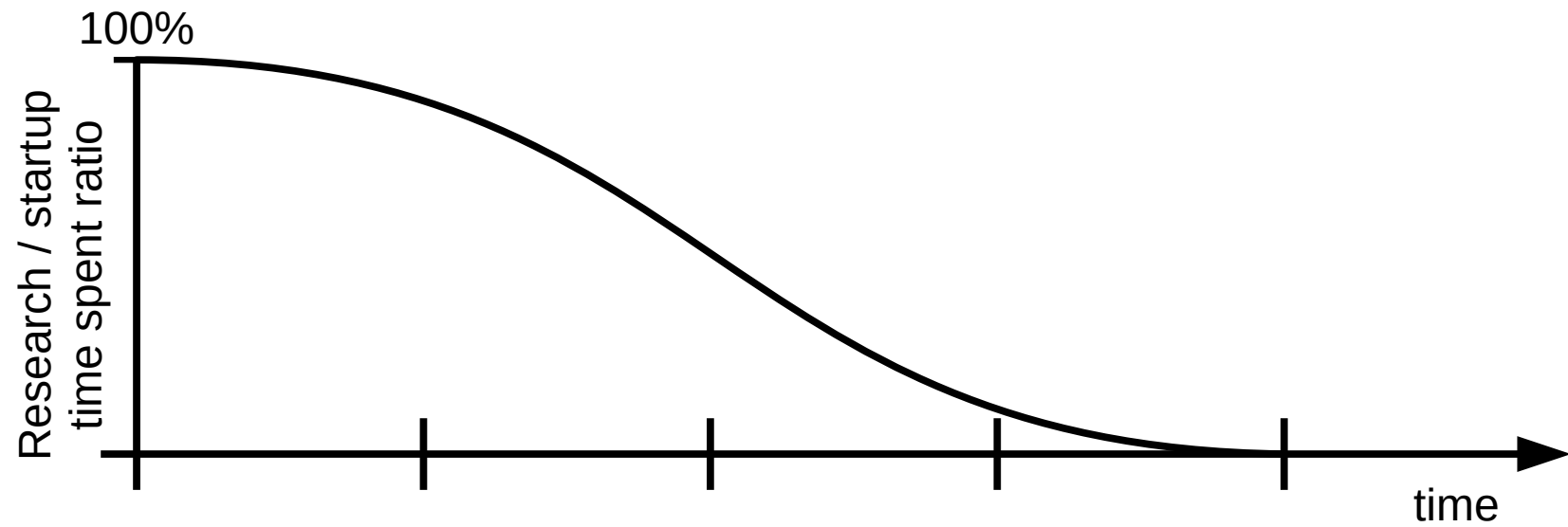
[1] Blank, S. (2005). Four steps to the epiphany.

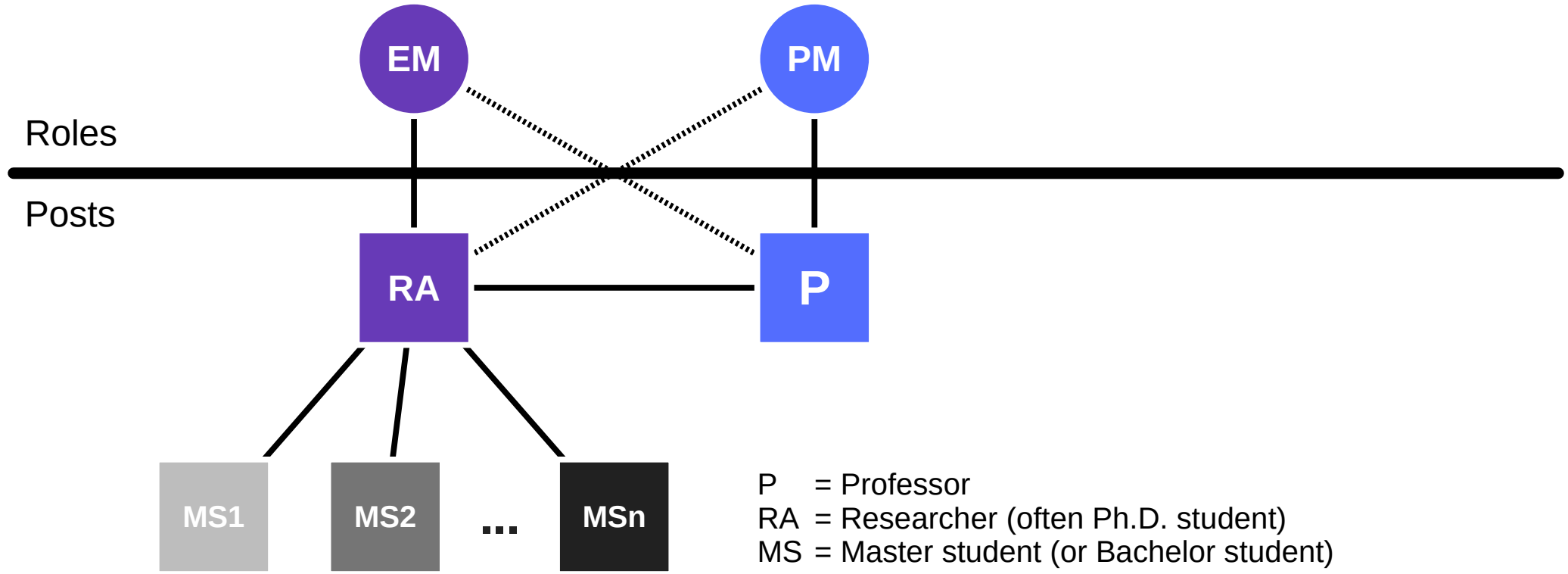
[2] Ries, E. (2011). The lean startup.

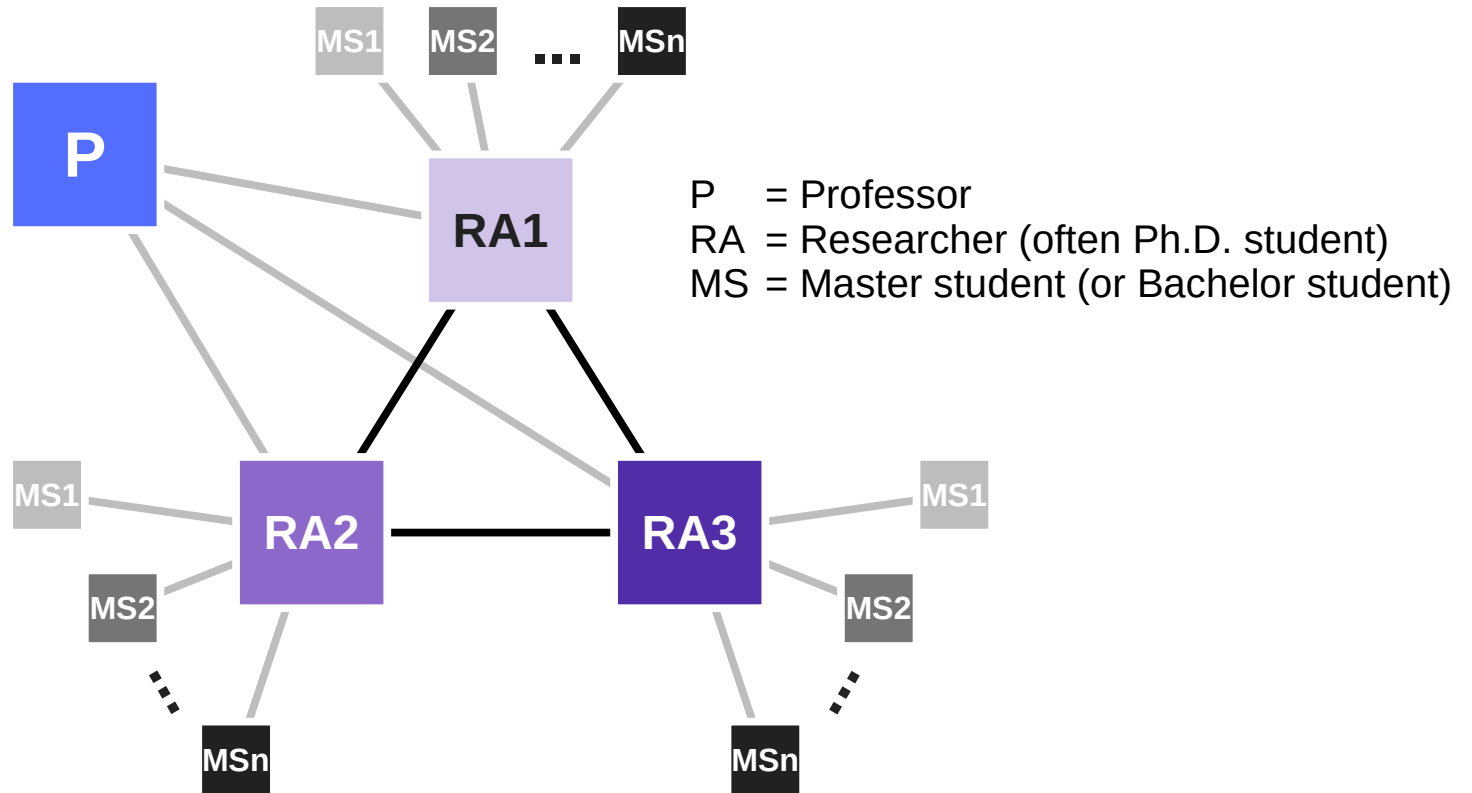
[3] Moore, G. A., & McKenna, R. (1999). Crossing the chasm.

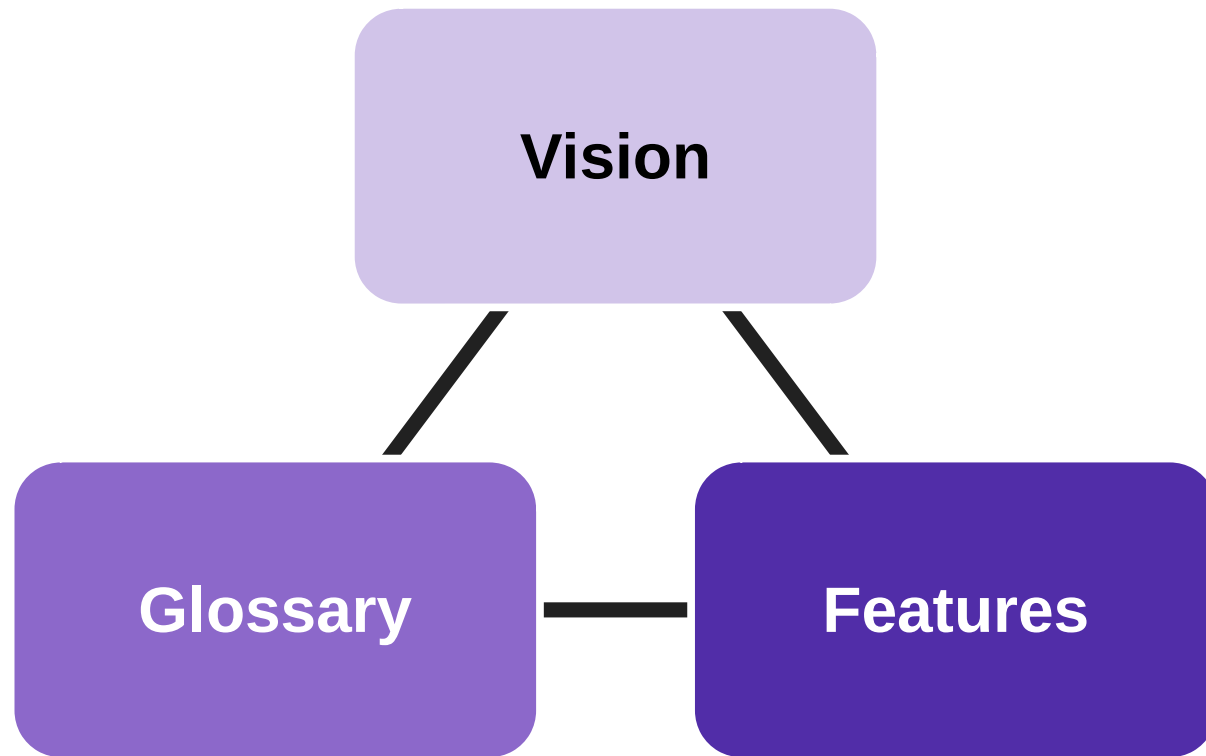
D02

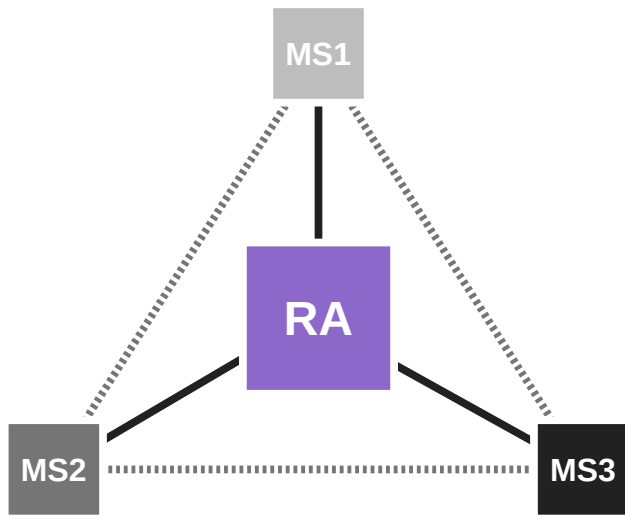
Research vs. Startup

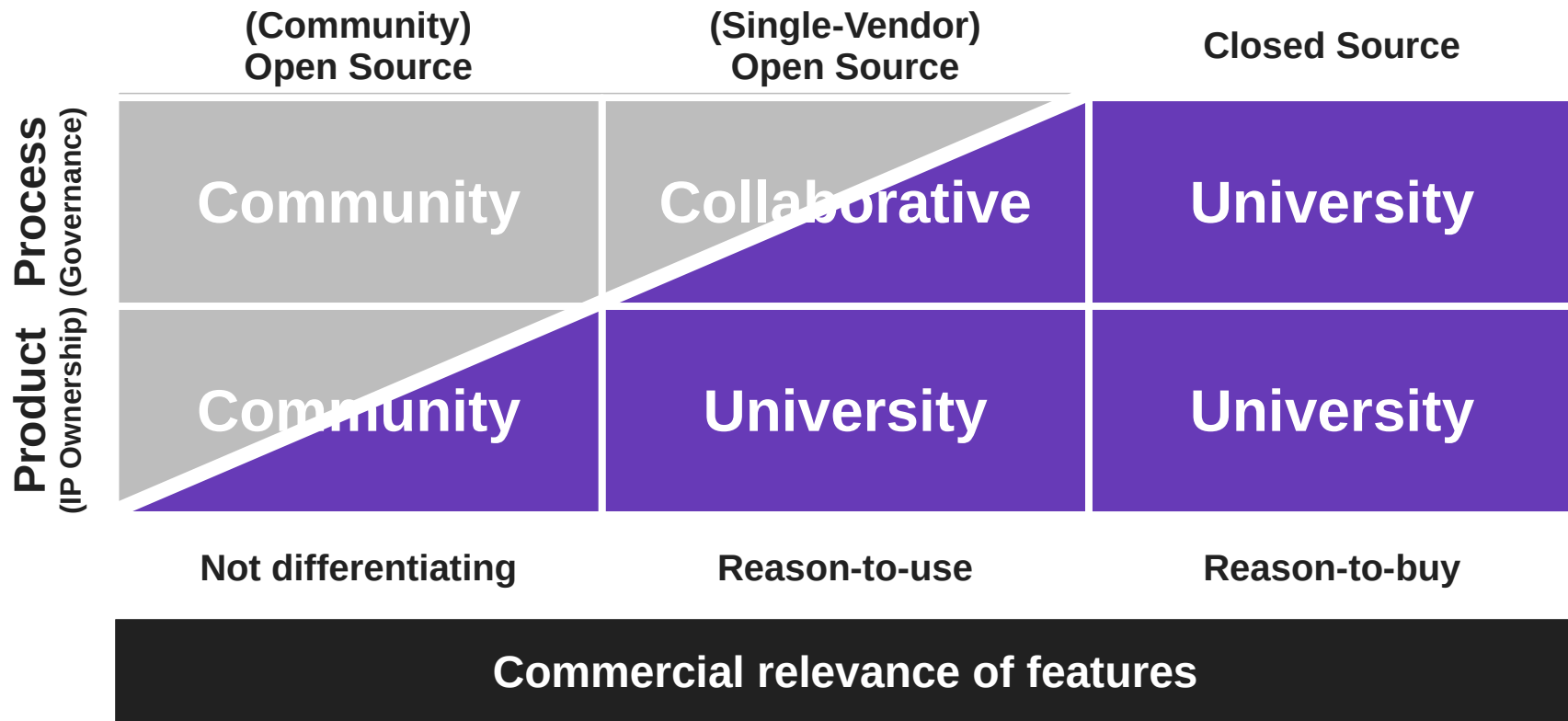


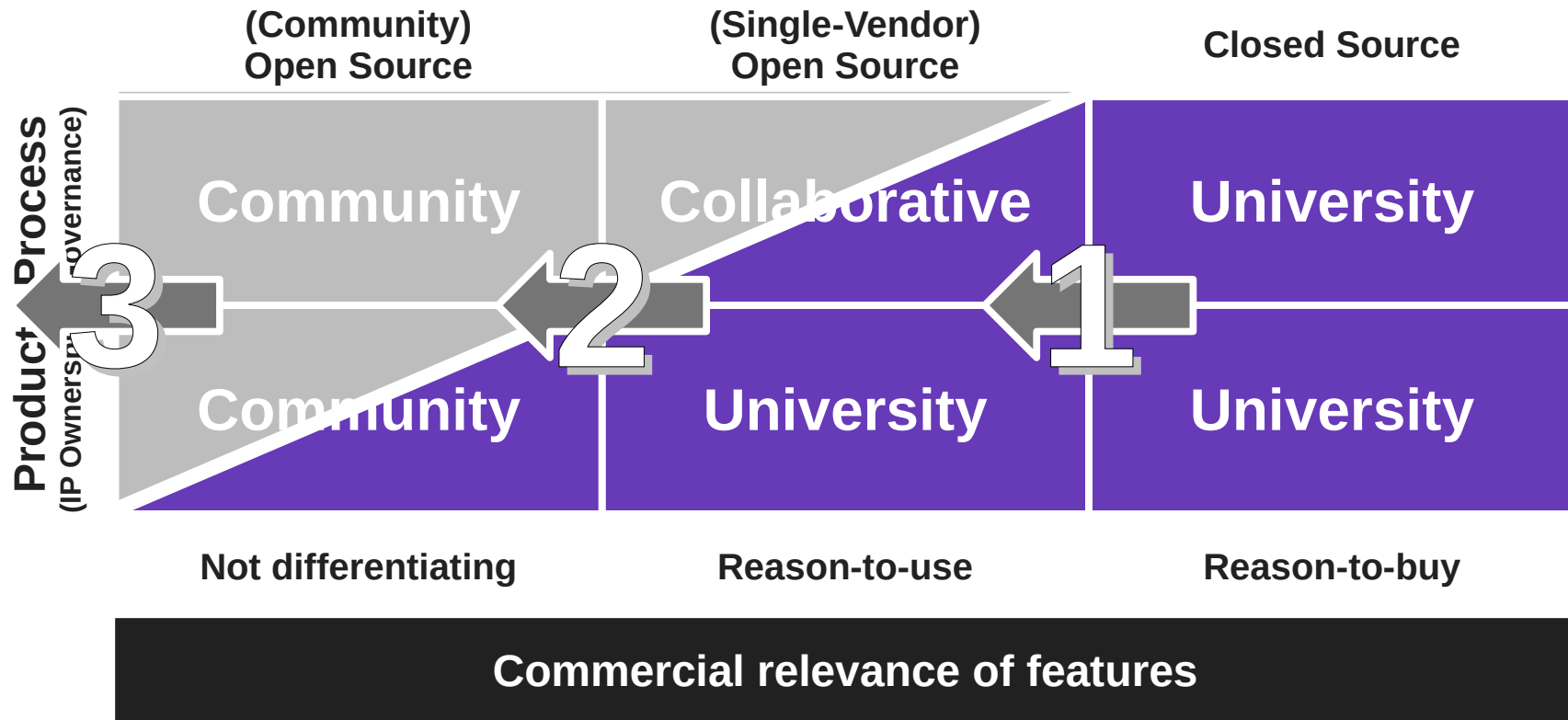


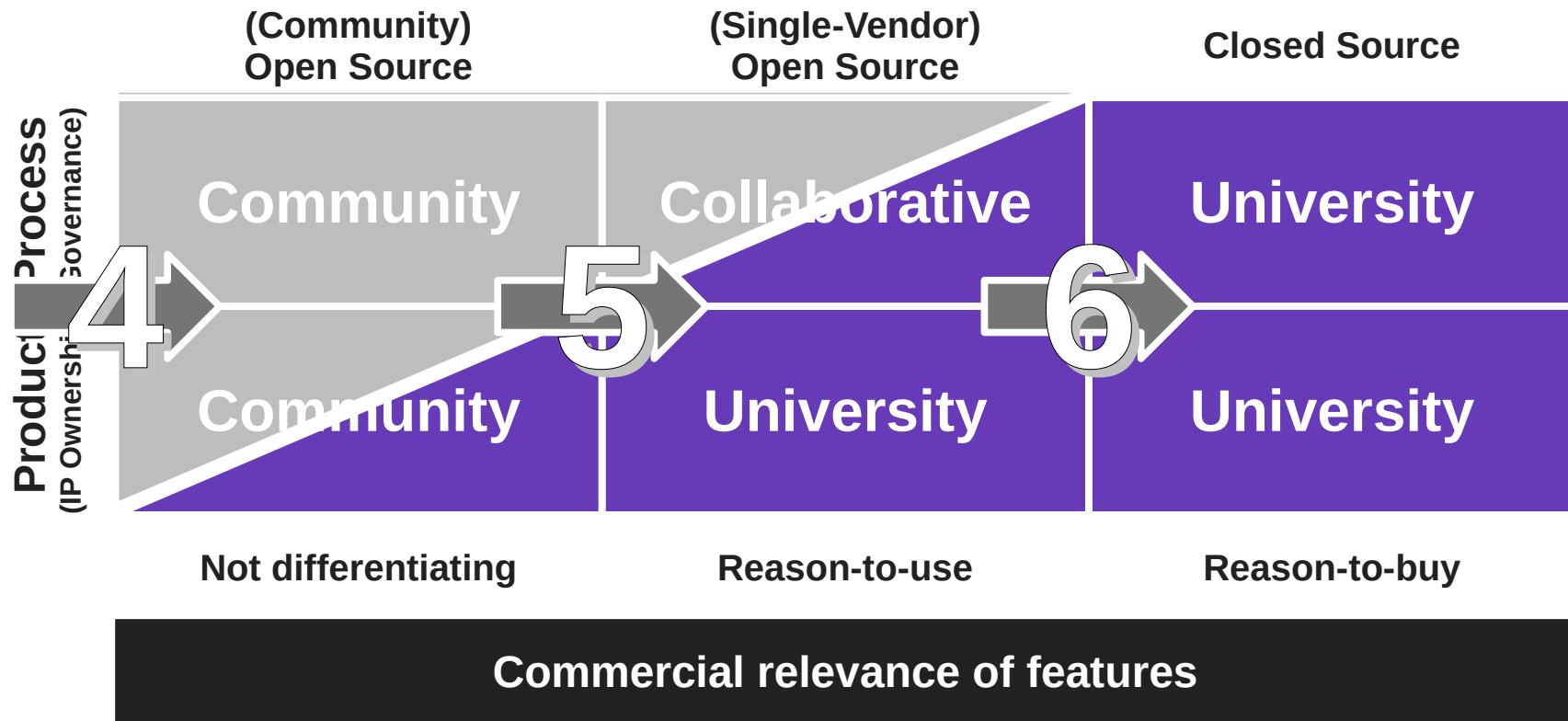






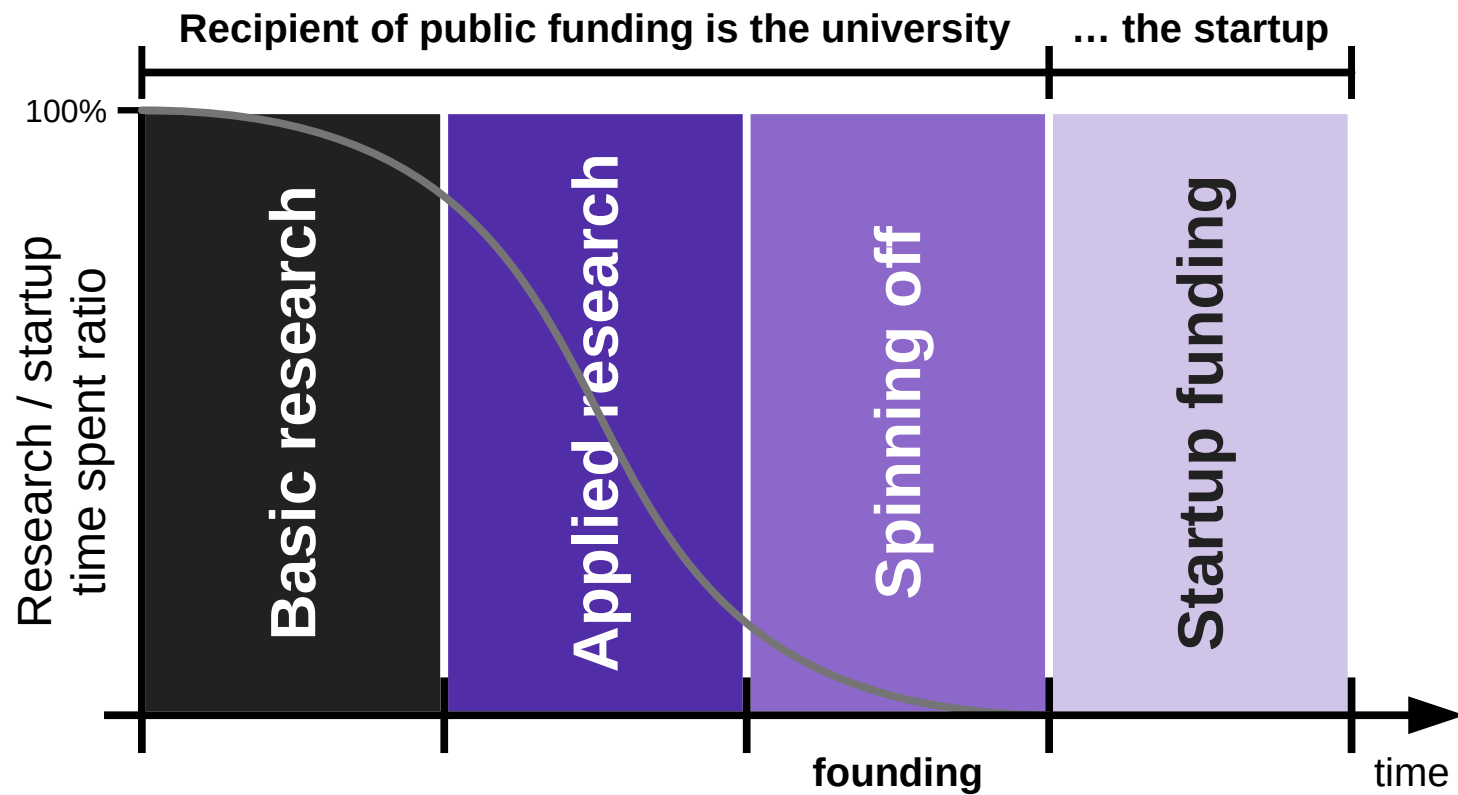


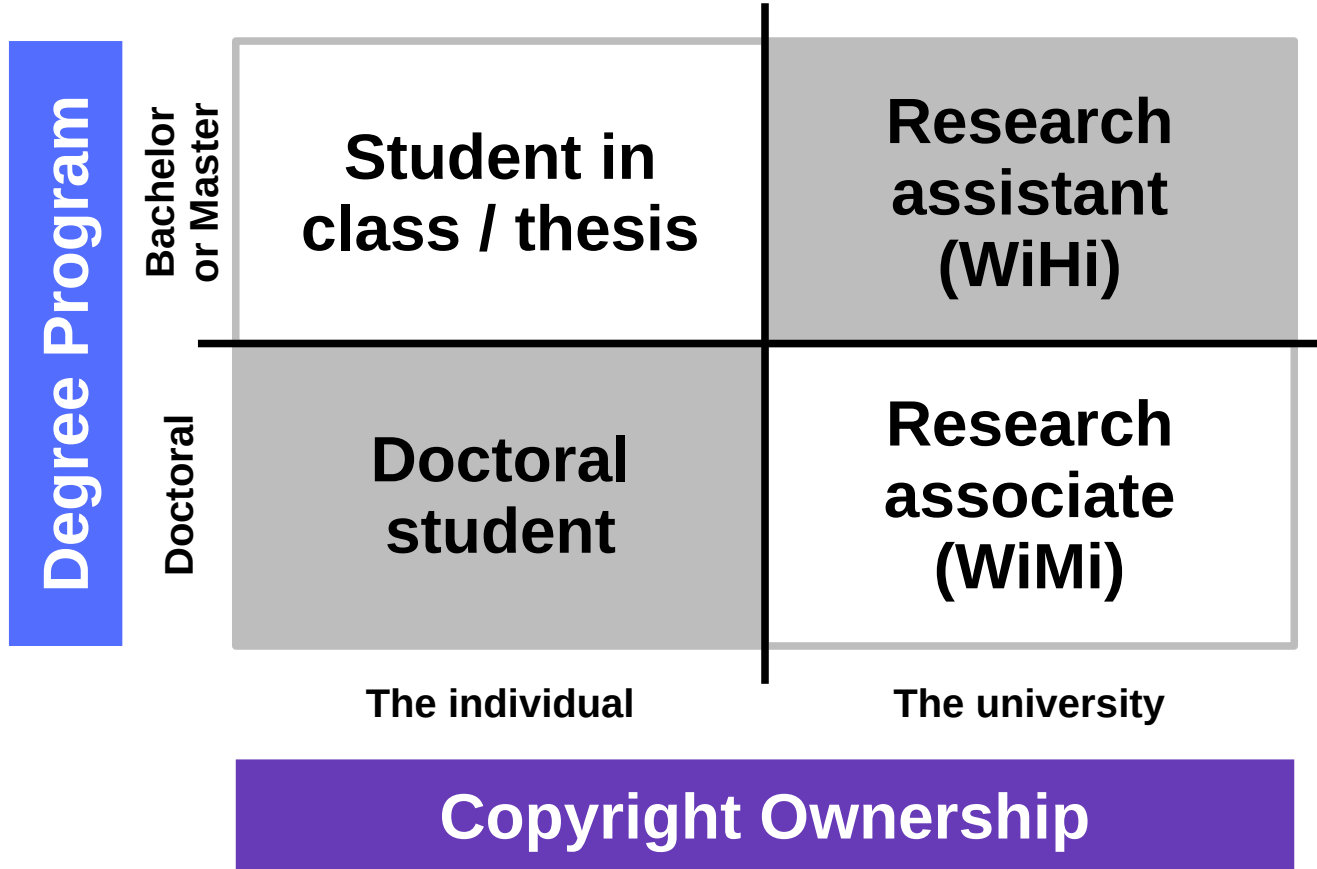




D03

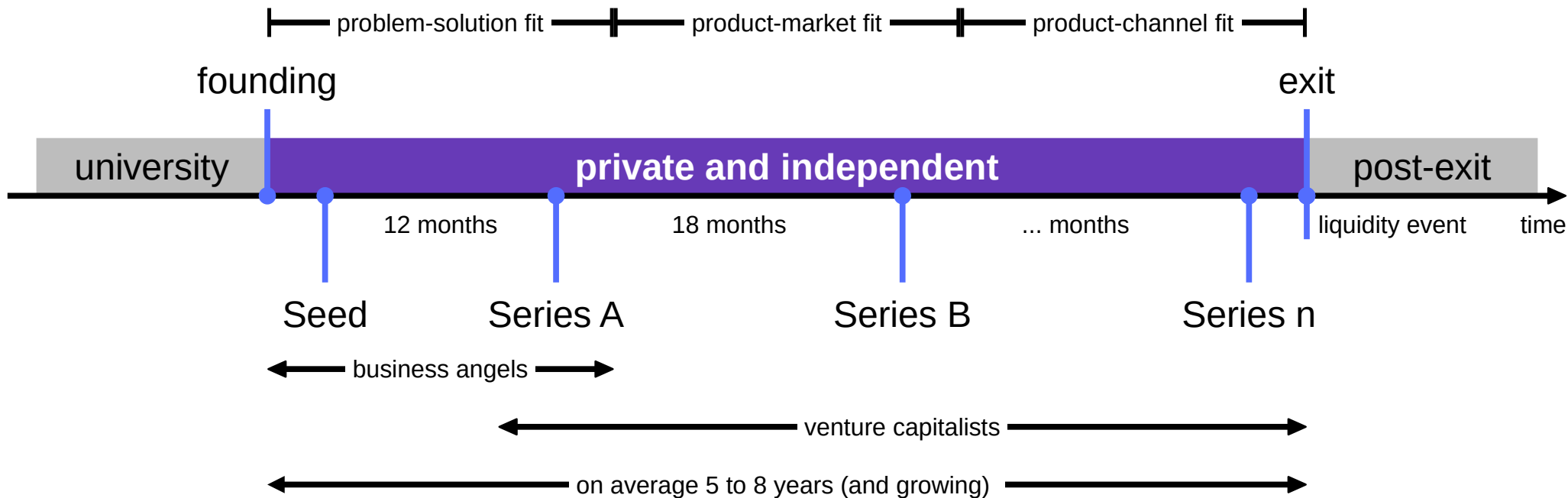
University Spin-offs

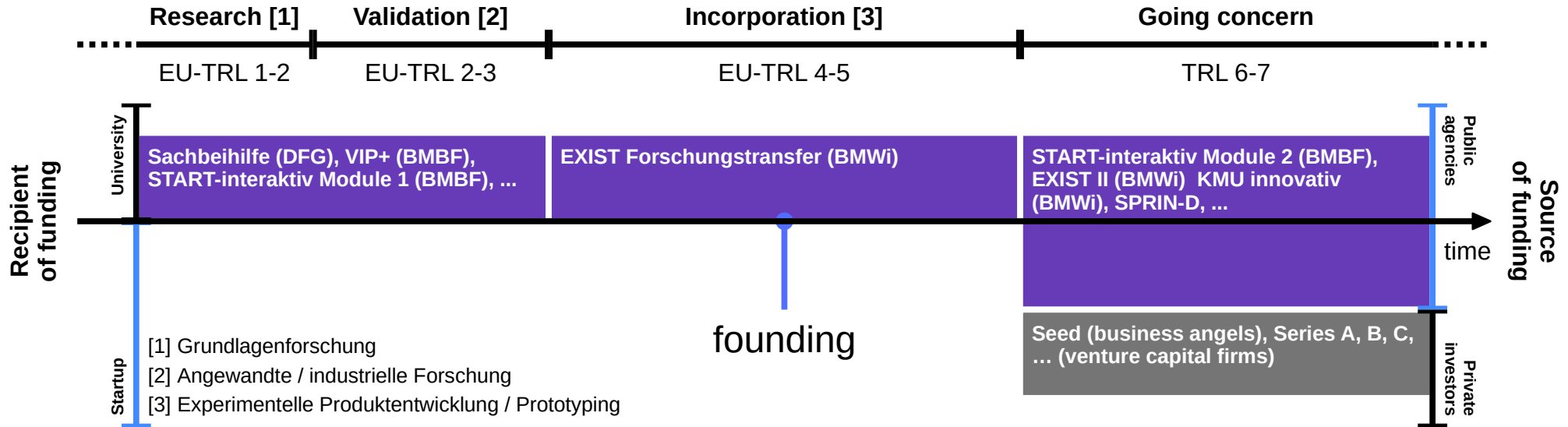


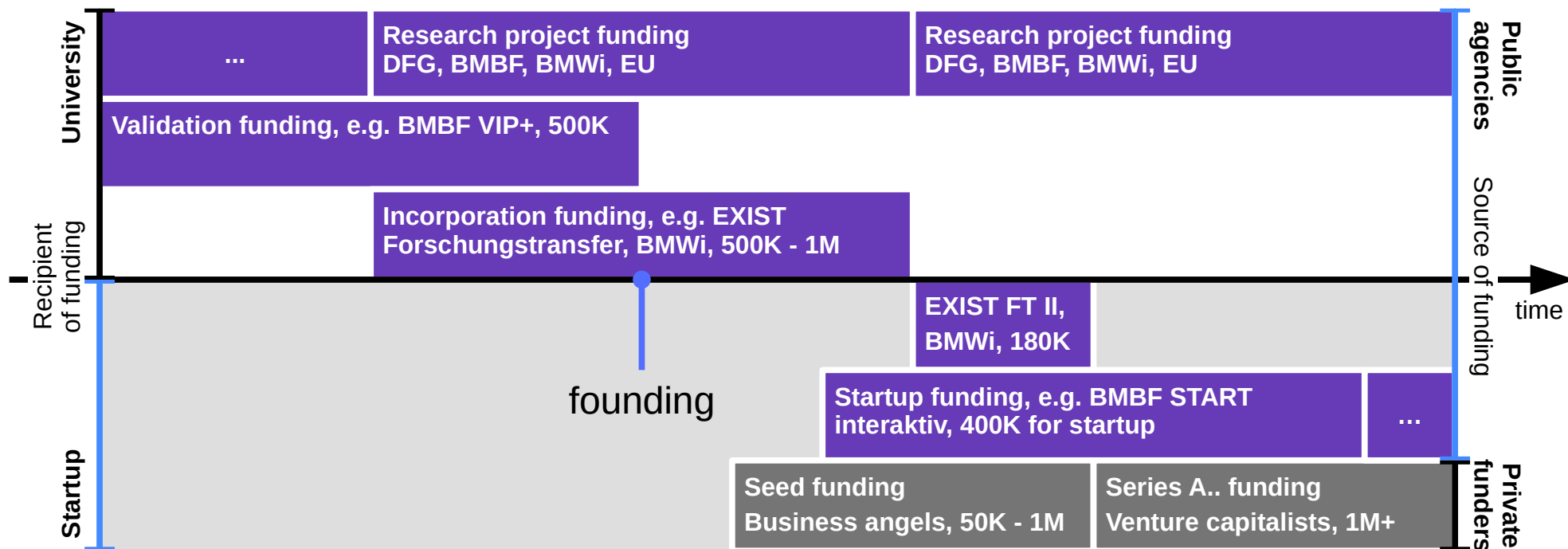


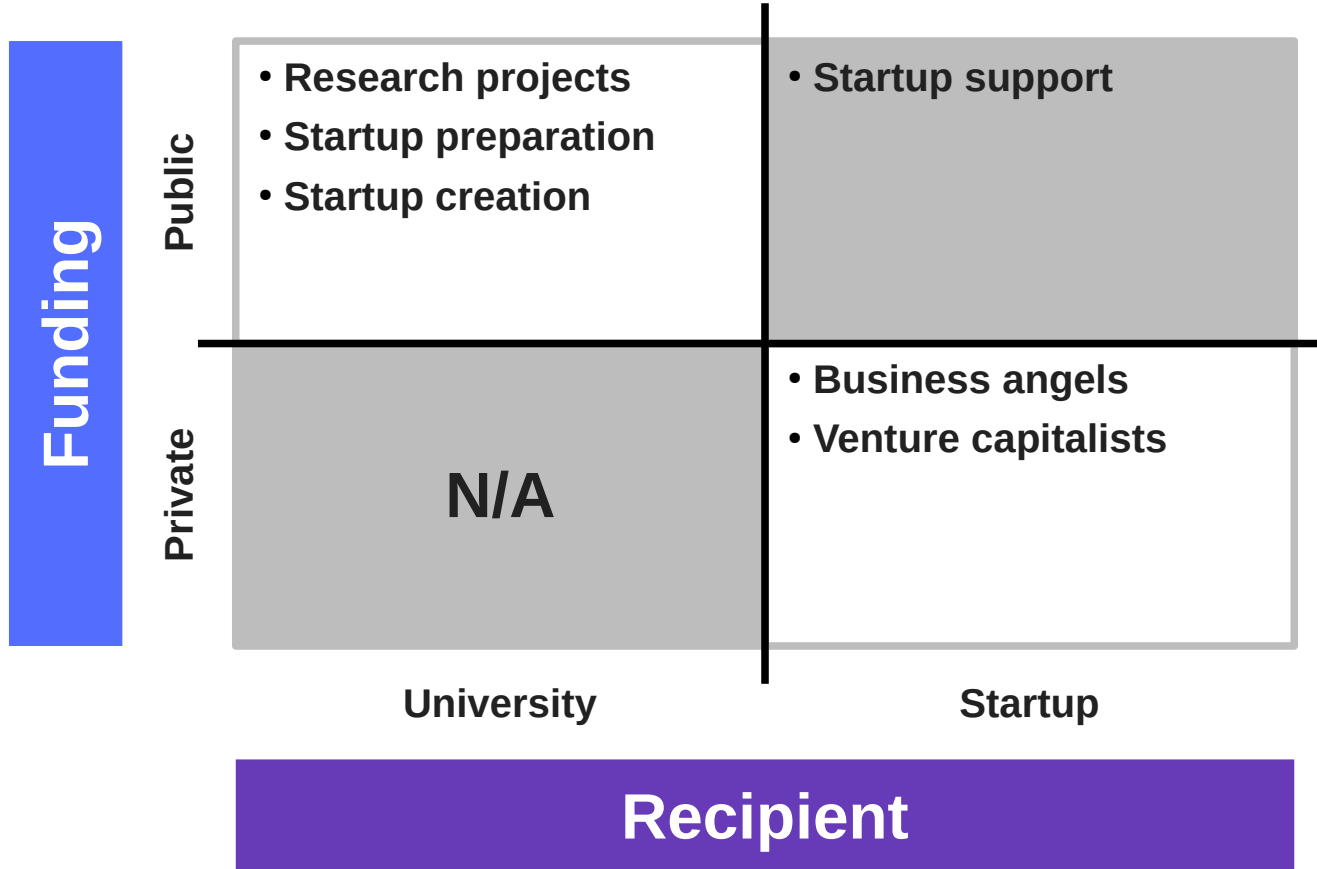
D04

Fundraising









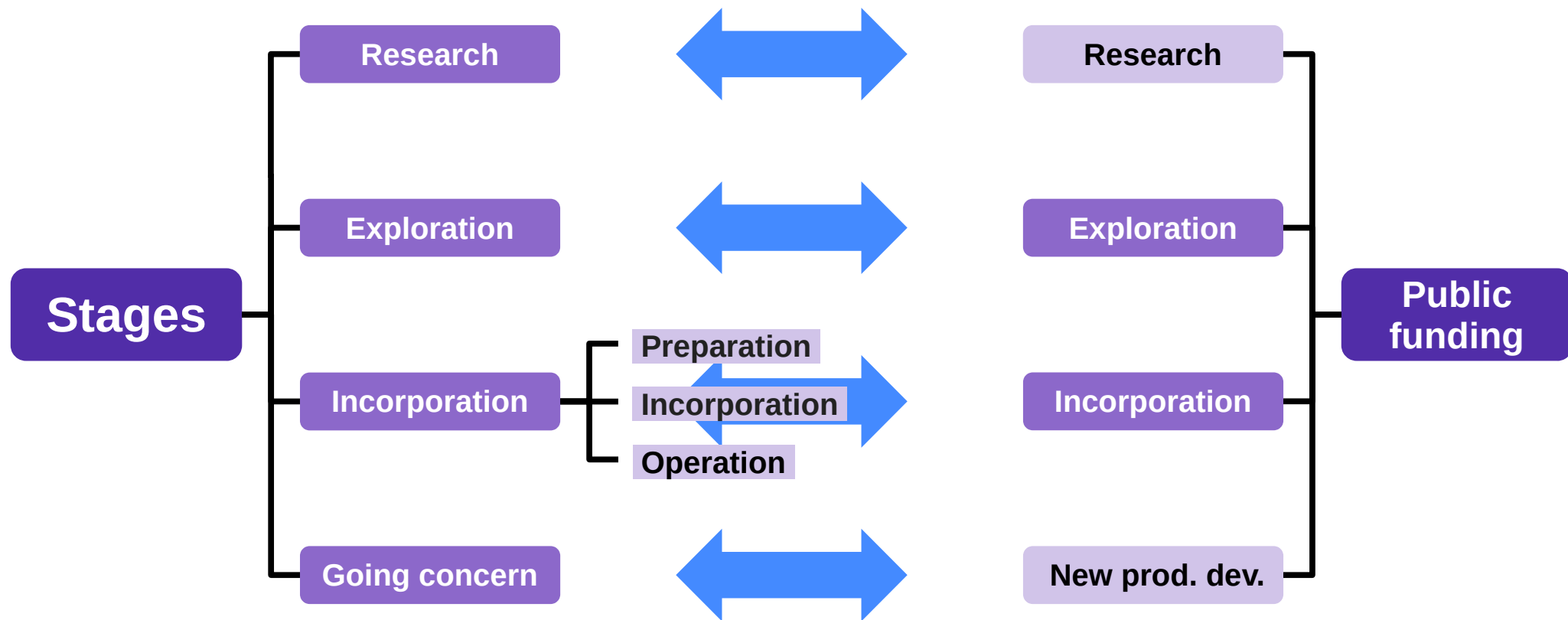
Funder

Program

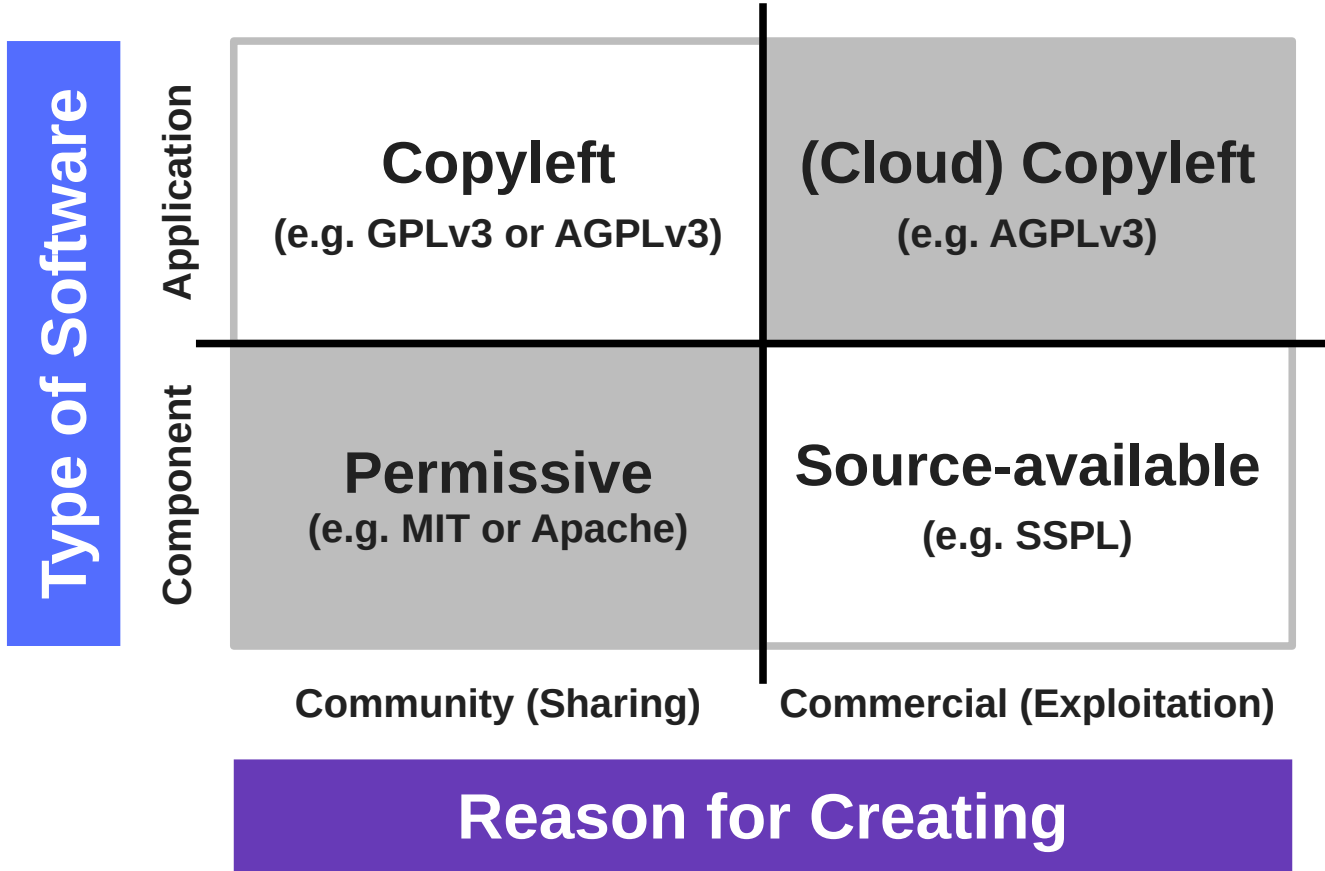
**Program
manager**

**Grant
proposal**

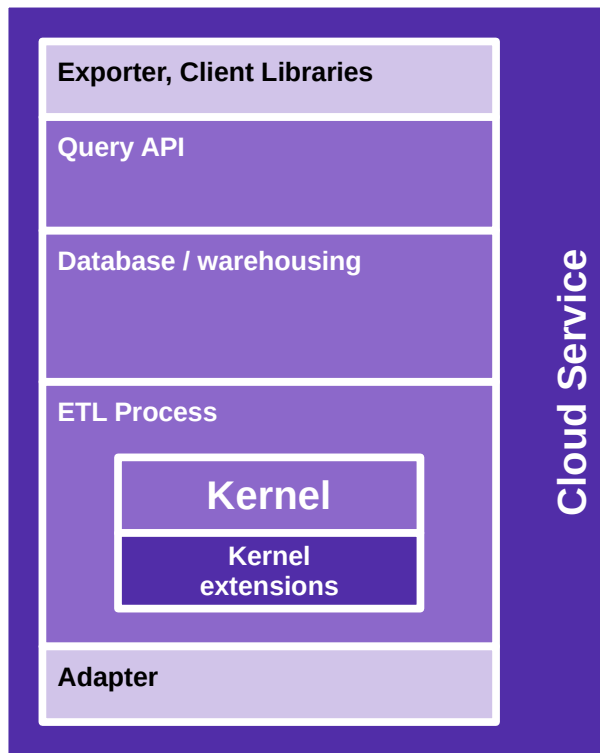
Proposer



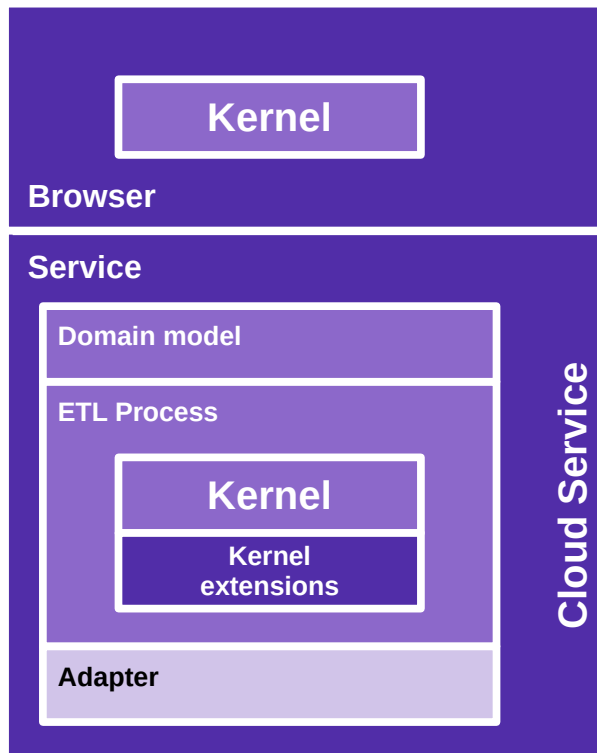
Unused



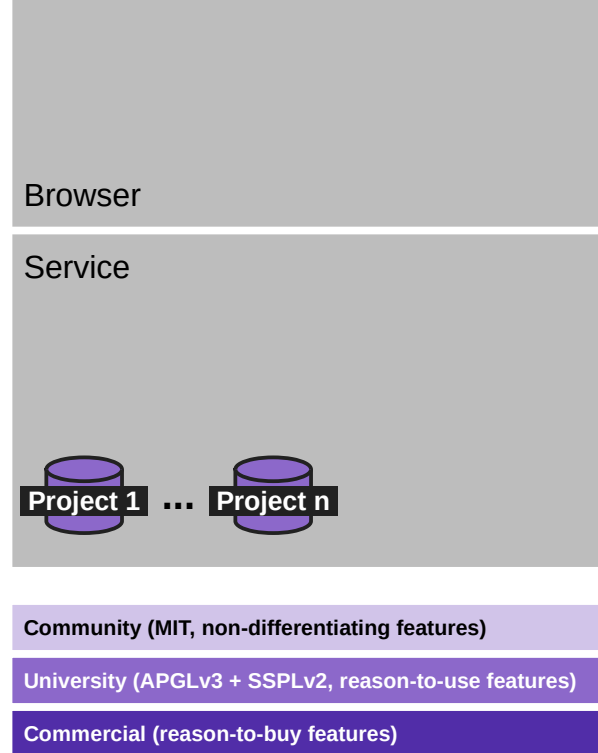
Open Data Service (runtime)

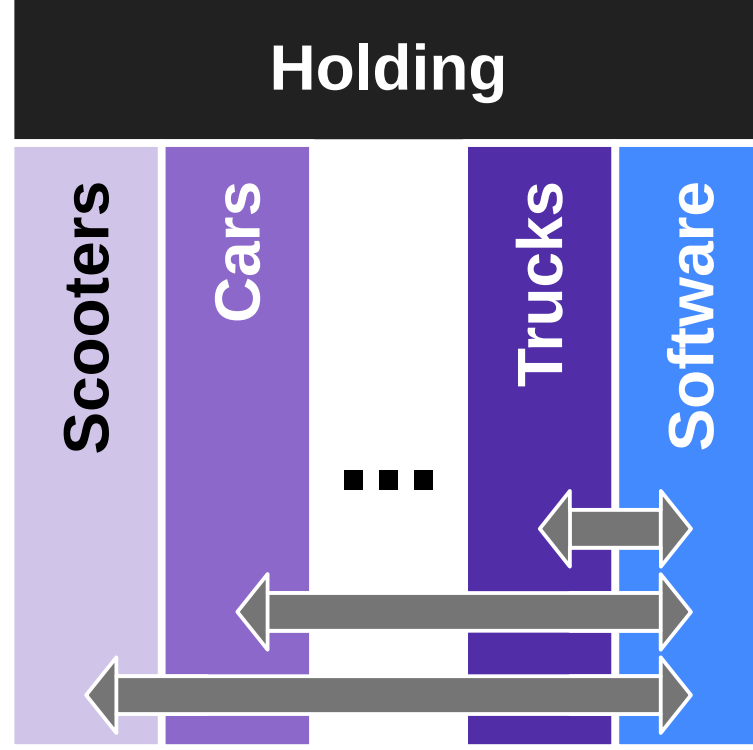
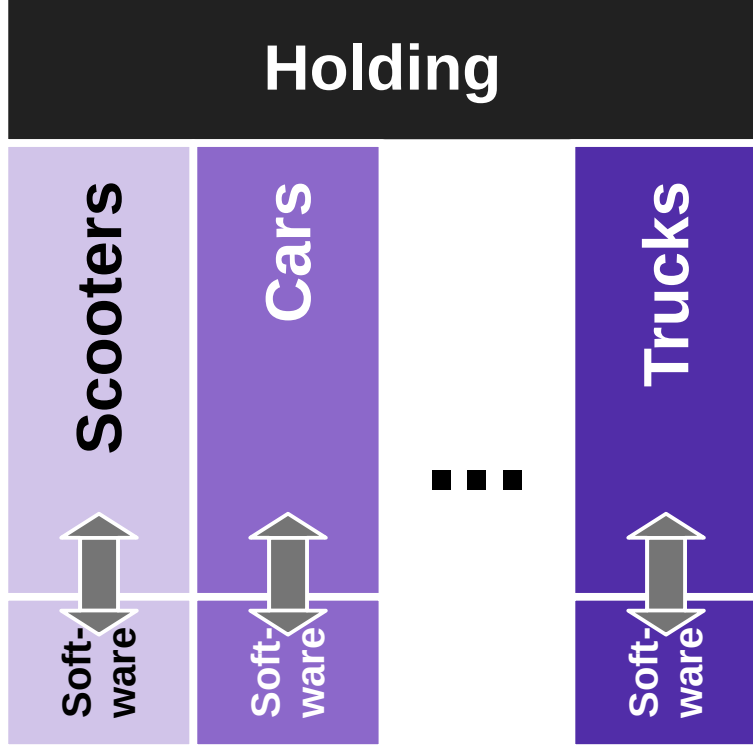


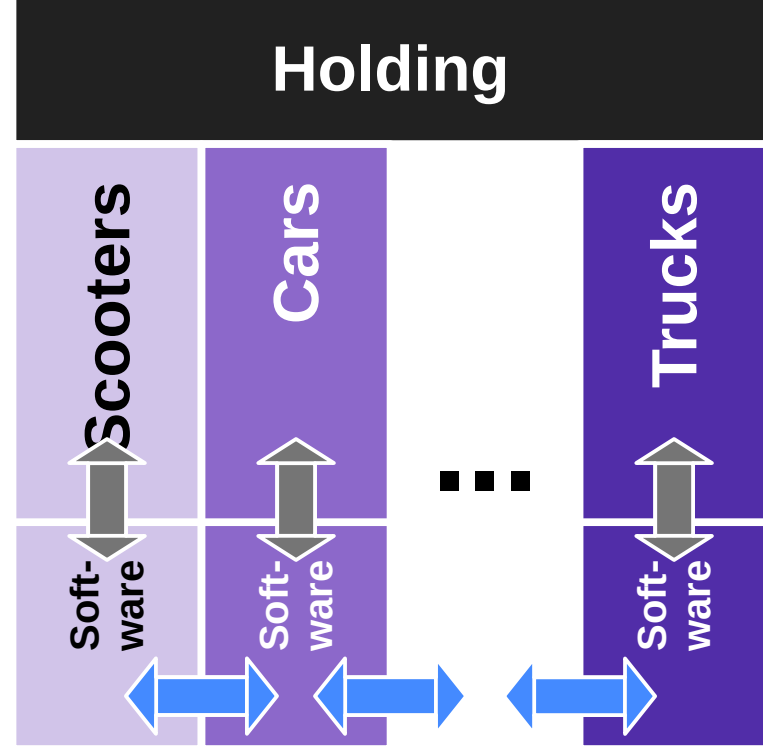
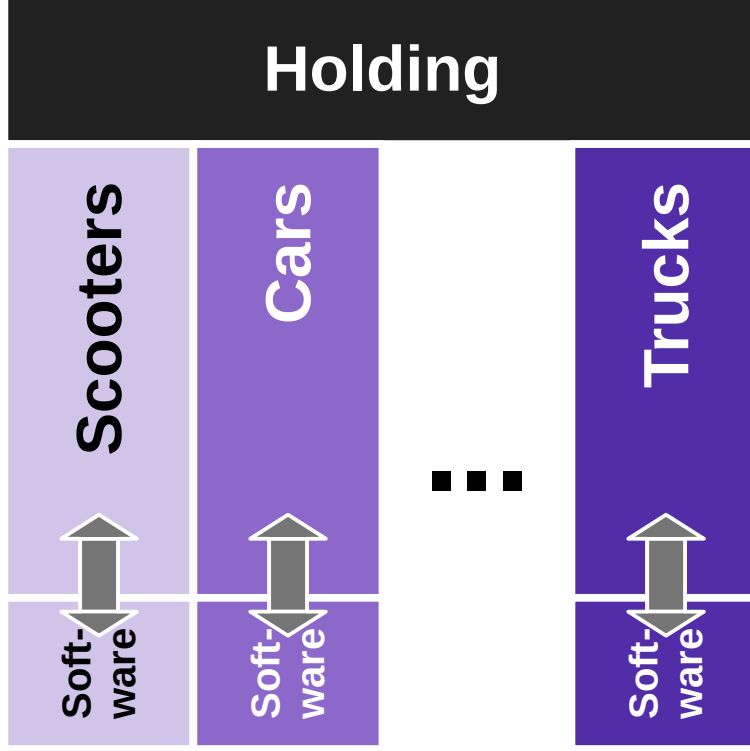
Data Engineering Workbench (modeling)

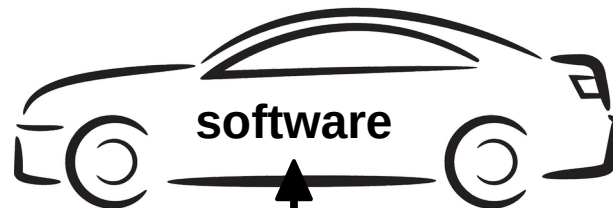


Project Hub (libraries)

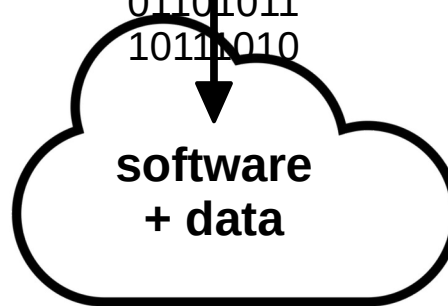








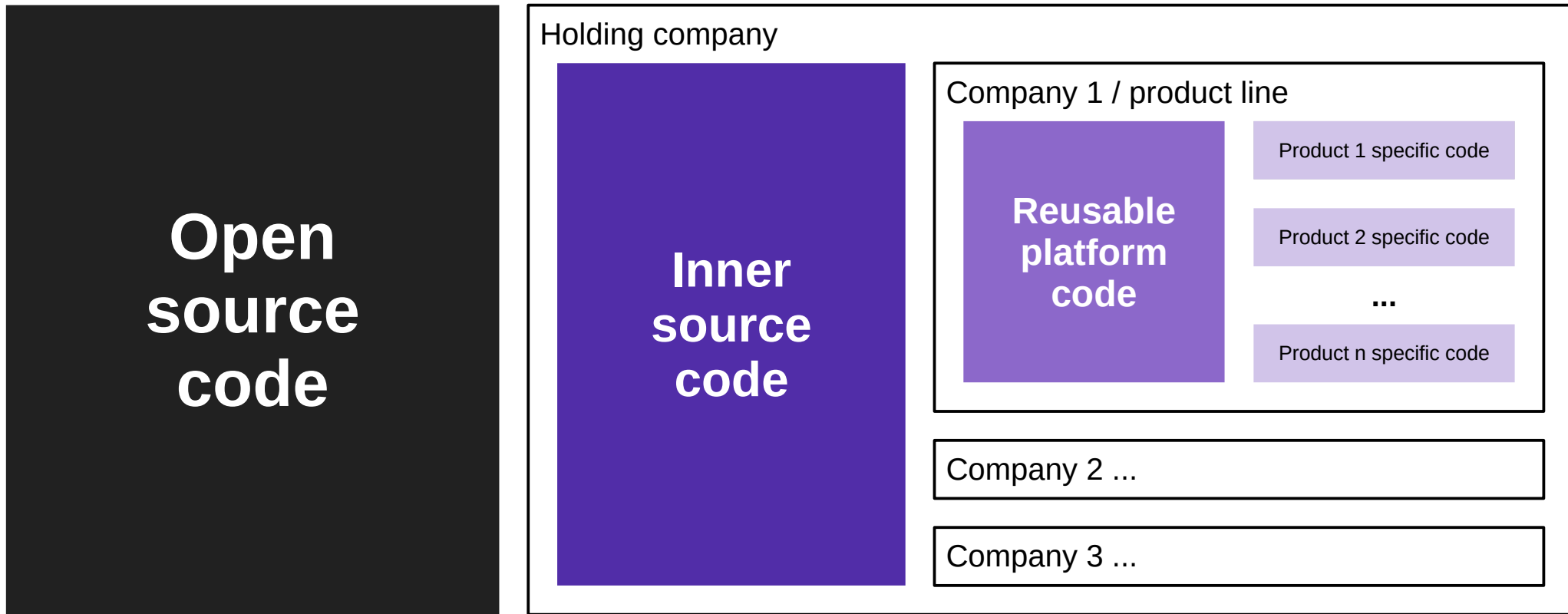
10010101
11010010
01101011
10111010



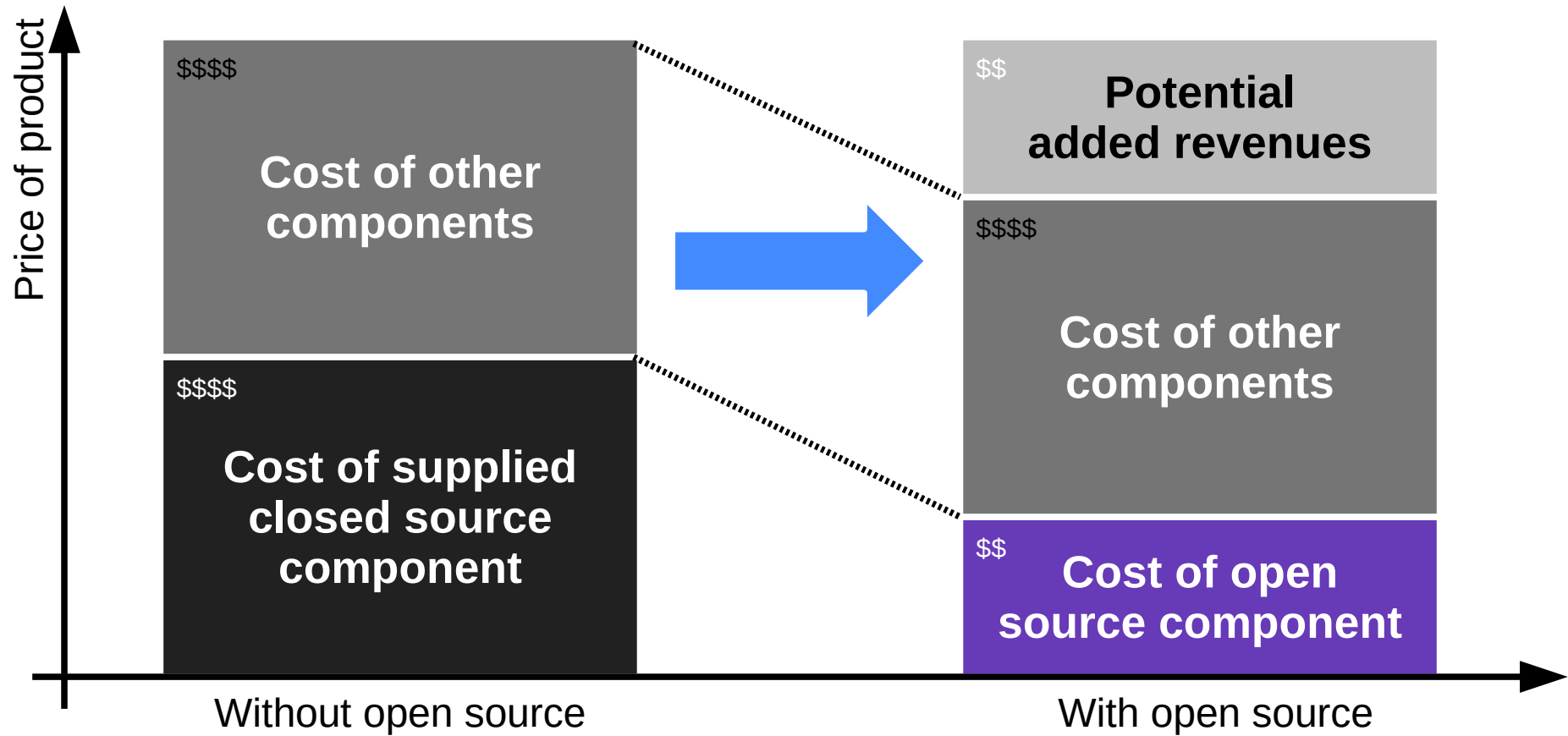
Every
year

Every
minute

← Openness / reusability →

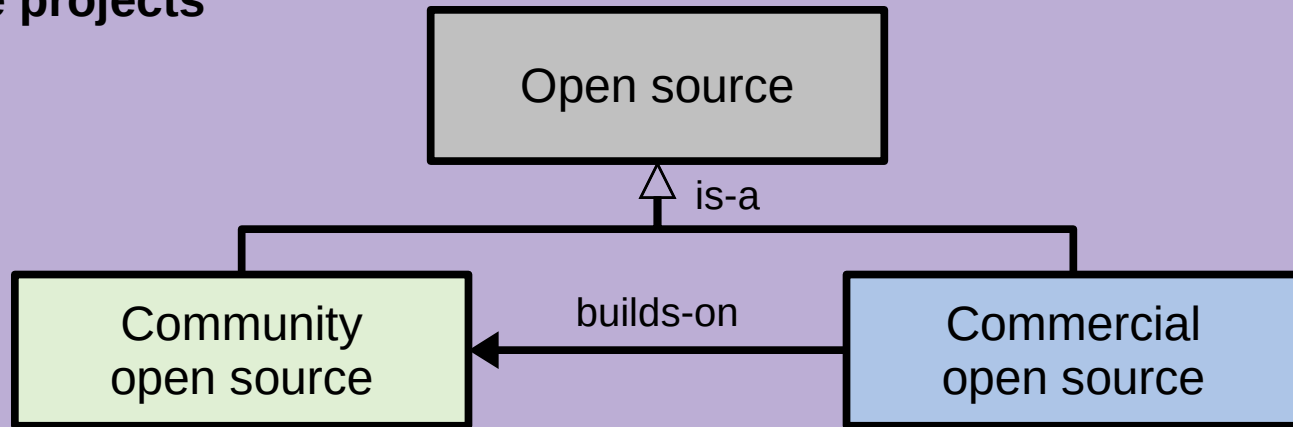


Not differentiating Competitively differentiating →

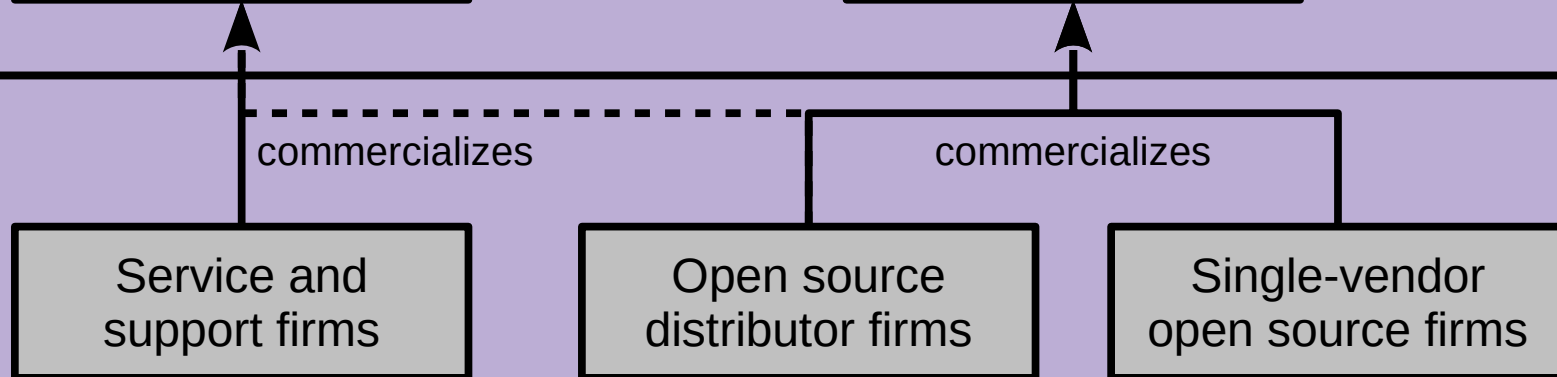


	Hardware	Software	(Human labor) Services
Business functions	e.g. TPUs	closed source features	e.g. hotline support
Quality of service	e.g. load balancers	cloud control plane + ops	e.g. pen testing

Open source projects



Companies



Early

Growth

Mature

Start

Complex product (that is not a commercial distribution)

Commercial distribution

Non-commercial distribution

