

ANTI-RIVAL BUSINESS DESIGN TOOLKIT

V1.0 (September 2022)



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INTRODUCTION

The ATARCA project, funded by the European Commission, investigates how to organize around "anti-rival resources"— that is, resources that do not deplete when shared (e.g., knowledge and digital goods).

This toolkit, produced by ATARCA researchers, contains canvas tools that help design ecosystem businesses based on anti-rivalry. The canvases analyze the members, interactions, governance, and business models of anti-rival ecosystems.

The tools can be used in whatever order, but the best logical order is the one canvases presented in this document.

For some of the more advanced canvases, we use an example of a simple anti-rival mentoring platform – consider a student mentoring program, which has two types of users: mentors and persons who get mentored.

This is version 1.0 (September 2022) of the toolkit. By the end of 2022, ATARCA will also produce a free online course that teaches how to use this toolkit most efficiently.

Please visit atarca.eu for the latest updates!

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ECOSYSTEM MEMBERS

NOTE: ADAPTED FROM SIMONE CICERO'S PLATFORM DESIGN TOOLKIT

*"Ecosystem Members" canvas is used to map
the members of the ecosystem you are
working with.*



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1. WRITE THE ECOSYSTEM'S MISSION TO THE CENTER OF THE CANVAS

2. IDENTIFY THE MEMBERS OF THE ECOSYSTEM

Member roles

- leaders & their key partners
- contributors (members who provide something to the ecosystem)
- users (members who just use the services provided by the ecosystem)
- and other stakeholders (parties which have an interest to the success of the ecosystem, but are not directly involved in it).

Limit the number of members to 8.

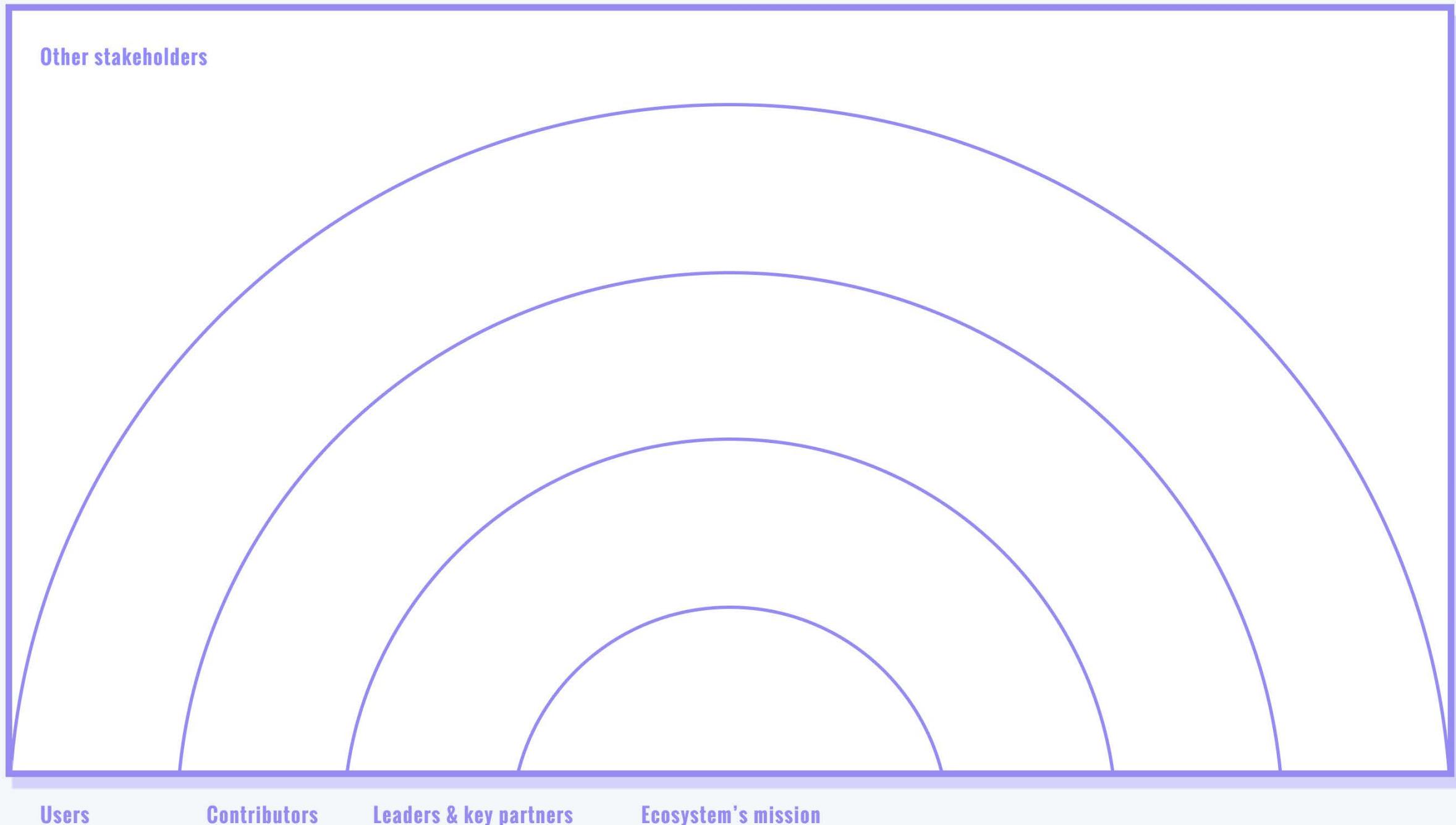
3. OPTIONAL: CONSIDER ECOSYSTEM DEVELOPMENT

If you want to increase your challenge level, you can create many versions of this canvas: one for the initial stages of the ecosystem, one for the upscaling stage, and one for the mature ecosystem.



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Ecosystem Members



ECOSYSTEM MEMBER PROFILE

By using many copies of "The Ecosystem's Member Profile", you will explore all the members in detail, and identify the anti-rival value potential (valuable assets and capabilities) the members provide to your ecosystem.



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1. IDENTIFY AND ILLUSTRATE EACH ECOSYSTEM MEMBER

Illustrate each identified ecosystem member with some details (e.g., personal details, and the reasons why they would participate in the ecosystem). This helps you to understand the member's characteristics better.

2. IDENTIFY MEMBER*'S POTENTIAL VALUE FOR THE ECOSYSTEM

For each member, identify which assets (e.g., financial resources, physical resources, infrastructure) and capabilities (e.g., knowledge, skills, experience) the member has, which could be usable with regards to the ecosystem's mission.



Ecosystem Member Profile

Member name

Characteristics

Valuable assets (e.g. financial resources, physical resources, infrastructure)

Valuable capabilities (e.g., knowledge, skills, experience)



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Inspired by of Simone Cicero (PDT)

ECOSYSTEM MOTIVATION MATRIX

NOTE: ADAPTED FROM SIMONE CICERO'S PLATFORM DESIGN TOOLKIT

*By using "The Ecosystem's Motivation Matrix"
you will identify what each ecosystem
member has potentially to give to the other
members.*



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1. LIST THE ECOSYSTEM MEMBERS TO THE ROW AND COLUMN HEADINGS

List the ecosystem members to the rows and columns of the matrix (so that both row and column headings have the same entries in the same order)

2. ANALYZE THE MOTIVATIONS TO INTERACT

For all cells of the matrix (all the connections between members) – identify what is the potential value the member can provide to another member (if there is something). Remember, money is also valuable.

3. OPTIONAL: CONSIDER ECOSYSTEM DEVELOPMENT

In a similar way as with the ecosystem member canvas, if you want to increase your challenge level, you can create many versions of this matrix: one for the initial stages of the ecosystem, one for upscaling stage, and one for the mature ecosystem.



Ecosystem Motivation Matrix

Case



ECOSYSTEM ACTIVITIES & INTERACTIONS MAP

With this canvas, you identify the actions that take place in the ecosystem. Instead of who does something (like in the "Motivation Matrix"), the focus here is on what is being done.



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1. IDENTIFY THE ESSENTIAL ACTIVITY

To start, focus on the most essential activity that is needed to fulfill the ecosystem's mission (you can use "Motivation Matrix" canvas to help). Mark that action as a circle (like the shaded one in the example).

2. IDENTIFY SUBACTIVITIES

Next, mark also the subactivities that are needed for the essential activity. Mark the subactivities with circles and the linkages between all the activities with arrows (again, you can refer to the "Motivations matrix" if needed to find the linkages).

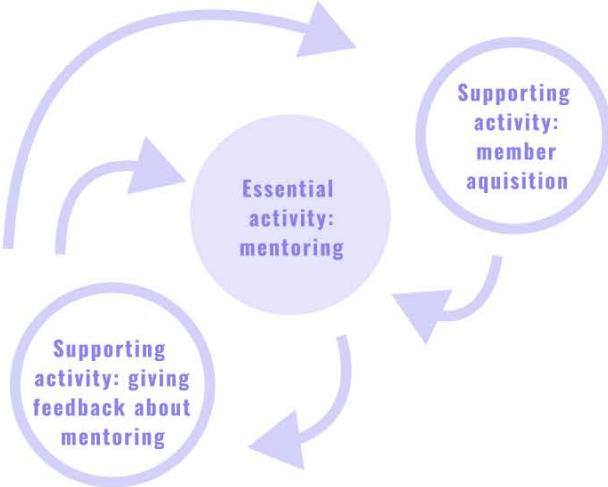
3. IDENTIFY VIRTUOUS CYCLES

Continue the exercise, until you have listed all activities that are needed for a self-sustaining ecosystem. You will see virtuous activity cycles emerging.



Ecosystem Activities And Interactions Map

EXAMPLE:



ECOSYSTEM GOVERNANCE

This canvas is for ecosystems that want to explore non-centralized governance models. You can see whether the ecosystem needs a strong central coordinator, or whether more decentralized ways of organizing could be possible (some level of decentralization is usually needed for anti-rival systems).



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1. ANALYZE ECOSYSTEM GOVERNANCE

Answer the questions of the first column and write them to the second column. The shaded texts provide you inspiration and help.

2. COMPARE YOUR ANALYSIS WITH THE ADVICE FROM THE THEORY

Compare your answers in column two and the theory in column three*. Is your answer aligned with the theory? If it is, your case has the potential to maintain decentralized governance. If not, then your case most likely needs a centralized coordinator.

** The theory is based on Elinor Ostrom's work on commons-based governance. Ostrom identified eight conditions that must be met to commons-based governance to work. More info: Ostrom, E. (2005). Understanding institutional diversity. Princeton university press.*



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Ecosystem Governance

Question	Your ecosystem	Theory-based check: Decentralized governance is possible if...
How (precisely) it is defined who is ecosystem's member and who is not?	Relatively vs. strictly? How, why?	Group boundaries are clearly defined.
How generic or localized / customized are the rules governing the actions in the ecosystem?	Very customized vs. very generic? How? Why?	Rules governing the use of community resources are matched to local needs and conditions.
Who can participate in modifying the rules?	Only one member vs. all members? Who? How?	It is ensured that those affected by the rules can participate in modifying the rules.
What is the ecosystems legitimacy / authority toward external stakeholders/ regulators?	Not respected vs. very respected? By whom, how, why?	It can be made sure that the rule-making rights of community members are respected by outside authorities.
How ecosystem member behavior and rule compliance is monitored?	By whom? How?	Community members can sustain a system for monitoring member's behavior.
How are member misbehaviors sanctioned?	By whom? How?	There are graduated sanctions for rule violators
How are disputes (misbehaviors, sanctions) resolved in the ecosystem?	By whom? How?	There are low-cost means for dispute resolution.
What kind of (community resource) governance layers there are in the ecosystem?	Who are operating in which layers? Why? what is the interplay of the layers?	The ecosystem can maintain responsibilities for governing common resources in nested tiers from the lowest level up the entire interconnected system.



CORE INTERACTION ANALYSIS

In this canvas, you will analyze the core interactions of your ecosystem, and verify that the ecosystem favors mutually collaborative actions (requirement for anti-rival value creation and sharing).



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NOTE: YOU CAN PERFORM THIS ANALYSIS TO AS MANY CORE INTERACTIONS AS YOU WANT.

STEP 1: IDENTIFY STAKEHOLDERS AND INTERACTIONS

- Select the key interaction of your ecosystem for analysis (e.g., *"mentoring a person and giving feedback for mentoring"*). You can use here, for example, the essential activity and its most important subactivity identified in the "Ecosystem activities & interactions map" canvas
- Identify who the stakeholders are in that interaction (e.g., *mentor and a person who is mentored*)
- Identify what is the concrete action each stakeholders do when they
 - act collaboratively (e.g., *mentor gives high quality mentoring, mentored person gives honest feedback*); and
 - ii) act noncollaboratively (e.g., *mentor gives suboptimal mentoring, mentored person gives dishonest feedback*).

STEP 2: ANALYZE INTERACTION SCENARIOS

- There are four interaction scenarios:
 - a) both stakeholder collaborate
 - b) and c) only one stakeholder collaborates and
 - d) neither of the stakeholders collaborate.

For each scenario: identify what are the benefits and sacrifices
i) for each stakeholder individually and ii) for the whole ecosystem

STEP 3: ANALYZE SCENARIO PRIORITIES

- By looking at your analysis: which of the scenarios is most likely to happen?
- To facilitate sustainable anti-rival value creation and sharing, verify that
 - outcome A is always more attractive for both stakeholders than C*
 - outcome B is always more attractive for both stakeholders than D**

If that is not the case in your ecosystem, consider what kinds of rewards and sanctions in individual level are needed to get into the desired scenario priority. Here, try to make the community benefits and sacrifices "visible" for the individuals.

Write notes about our analysis.

* Opportunistic "gambling" strategy is disincentivized

** Risk averse "holding back" strategy is disincentivized



Interaction Analyzis

Core Interaction	Stakeholder 1 name (e.g., mentor)	Stakeholder 2 name (e.g., a person mentored)
	Stakeholder 1 collaborative action (e.g., <i>high quality mentoring</i>)	Stakeholder 2 collaborative action (e.g., <i>honest feedback</i>)
	Stakeholder 1 noncollaborative action (e.g., <i>suboptimal mentoring</i>)	Stakeholder 2 noncollaborative action (e.g., <i>dishonest mentoring</i>)



Interaction Scenario Identification

Outcome A Both stakeholders collaborate (e.g. mentor gives quality mentoring and the mentored person gives honest feedback)

Benefits for stakeholder 1	Benefits for the ecosystem:	Sacrifices for stakeholder 1	Sacrifices for the ecosystem:
Benefits for stakeholder 2		Sacrifices for stakeholder 2	

Outcome B Stakeholder 1 collaborates, but 2 does not (e.g. mentor gives quality mentoring, but the mentored one gives dishonest feedback)

Benefits for stakeholder 1	Benefits for the ecosystem:	Sacrifices for stakeholder 1	Sacrifices for the ecosystem:
Benefits for stakeholder 2		Sacrifices for stakeholder 2	

Outcome C Stakeholder 1 does not collaborate, but 2 collaborates (e.g., mentor gives suboptimal mentoring, but mentored person gives honest feedback)

Benefits for stakeholder 1	Benefits for the ecosystem:	Sacrifices for stakeholder 1	Sacrifices for the ecosystem:
Benefits for stakeholder 2		Sacrifices for stakeholder 2	

Outcome D Neither of the stakeholders collaborate (e.g., mentor gives suboptimal mentoring and mentored one gives dishonest feedback)

Benefits for stakeholder 1	Benefits for the ecosystem:	Sacrifices for stakeholder 1	Sacrifices for the ecosystem:
Benefits for stakeholder 2		Sacrifices for stakeholder 2	

Scenario Priority Analysis

How to prevent "gambling"?

Why scenario A (*both collaborate*) would be more attractive than C (*stakeholder 1 does not collaborate, but 2 does not*)?

A > C

How to prevent "holding back"?

Why scenario B (*stakeholder 1 collaborates but 2 does not*) would be more attractive than D (*neither of the stakeholders collaborate*)?

B > D



SUSTAINABILITY DRIVERS

With this canvas, you will addresses the prevalent dilemma of eventually declining user engagement and overall activity in open source, digital commons, and P2P networks—that is, in most of the anti-rival systems.



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1. ANSWER THE SUSTAINABILITY-RELATED QUESTIONS

Fill in your answers to all questions regarding

- sustainability drivers,
- collective-action threat mitigation, and
- polycentric governance.

2. IDENTIFY THE DEVELOPMENT AREAS

Consider the areas that are challenging—how to enhance the performance there?

The model is adapted from on Mindel et al.'s (2018) work on sustainable polycentric commons. More info: Mindel, V., Mathiassen, L. and Rai, A. (2018). The sustainability of polycentric information commons. MIS Quarterly, 42(2), 607-632.



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Sustainability Drivers

Provision

How to ensure that providers continuously contribute to the system

Appropriation

How to ensure that appropriators continuously consume the system's output

Revitalization

How to make sure there is a constant stream of new contributors (to offset the disengaging ones)

Equitability

How to distribute provision activities across a base of providers

Collective-Action Threat Mitigation

Free-riding How to reduce appropriators' free resource usage	Congestion How to avoid appropriators clogging the system	Pollution How to avoid contribution misalignment with the system's purpose	Violation How to avoid the situations in which the stakeholders purposefully break internal and external morals, rules, and laws
Rebellion How to avoid stakeholder disengagement due to dissatisfaction with producer actions	Negligibility Negligibility: How to avoid stakeholders' disengagement due to the feeling that their impact is negligible		



Polycentric Governance Drivers

Boundary regulation

How do the rules and infrastructure features afford contributions and appropriation consistent with the system's purpose

Incremental adaptation

How are the changes in the infrastructure and rules gradually introduced, and providers and appropriators are actively involved in shaping them

Shared accountability

How do the rules and features afford peer-monitoring and gradual sanctioning to support appropriate behavior and dispute resolution in the system

Provider recognition

How do peers, appropriators and producers acknowledge the providers

ANTI-RIVAL “BUSINESS MODEL PATTERNS”

With this canvas, you will use pattern cards to define (and simplify) your ecosystem's value creation and sharing model.



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1. SKIM THROUGH THE CARDS

Go through the anti-rival value creation and sharing patterns – they are identified from the case studies conducted in various anti-rival contexts[1]. The set of patterns is carefully composed to contain only ones that are compatible with anti-rival system's core logic of leveraging positive externalities through resource sharing.

2. EITHER: SELECT A FEW SUITABLE PATTERNS AND FORM A COMBINATION THAT DESCRIBES YOUR ECOSYSTEM

Select a few patterns that resonate with your ecosystem's value creation idea and try to "say" your ecosystem's value creation and capture logic with them (it is like composing a formula). Add descriptive text if needed. You can create many alternative combinations.

3. OR: TAKE ONE CARD AT A TIME AND THINK WHAT IT WOULD MEAN IN YOUR ECOSYSTEM

If you find the previous task hard, take just one card at the time and think what that pattern would mean in the case of your ecosystem – then repeat. After that, you can revisit the previous task.



Anti-Rival Business Model Patterns

Pattern Combination 1.

Pattern Combination 2.

Pattern Combination 3.

Pattern Combination 4.



ANTI-RIVAL COMPATIBLE PATTERNS

COST AVOIDANCE

PATTERN DESCRIPTION

Minimizing the costs of producing and delivering the good.

Based on Zeleti et al. (2016)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

Supports anti-rivalry if the generated value of sharing the good exceeds the minimized costs of producing and delivering it.

ANTI-RIVAL COMPATIBLE PATTERNS

EXPERTISE BROKER

PATTERN DESCRIPTION

Context-specific expertise and know-how is accumulated and shared for community purposes.

Based on Lüdeke-Freud et al. (2018)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

Enhancing the allocative efficiency of knowledge goods through sharing them among the ones who need them.

ANTI-RIVAL COMPATIBLE PATTERNS

FLAT RATE

PATTERN DESCRIPTION

A single fixed fee is charged for a good without connection to its actual usage.

Based on Gassmann et al. (2013)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

Does not limit sharing of the good as one fixed price covers all use.



ANTI-RIVAL COMPATIBLE PATTERNS

FREE AS BRANDED ADVERTISING

PATTERN DESCRIPTION

Offers free goods to the users. The costs are covered by advertisers who get increased demand for their offerings through branding.

Based on Zeleti et al. (2016)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

Does not limit sharing of the good (up to the amount of costs being covered). The party covering the costs gains benefits from increased good use.

ANTI-RIVAL COMPATIBLE PATTERNS

HIDDEN REVENUE

PATTERN DESCRIPTION

Abandons the logic that the user is responsible for the business income. Revenue comes from a third party, covering the goods' production and delivery costs.

Based on Gassmann et al. (2013)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

Does not limit sharing of the good as the production and delivery costs are covered by non-good related sources.

ANTI-RIVAL COMPATIBLE PATTERNS

INCREASED QUALITY THROUGH PARTICIPATION

PATTERN DESCRIPTION

The quality of the goods increases through increased participation.

Based on Zeleti et al. (2016)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

The use of the good is perceived as net positive to the extent that the vendor does not want to limit the usage.



ANTI-RIVAL COMPATIBLE PATTERNS

MAKE-MORE-OF-IT

PATTERN DESCRIPTION

An actor uses resources not just for one's own use, but offers them to other actors. Thus, slack resources potentially gain new affordances.

Based on Gassmann et al. (2013)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

Increased generativity opens new ways to create value.

ANTI-RIVAL COMPATIBLE PATTERNS

OPEN BUSINESS MODEL

PATTERN DESCRIPTION

Extensive collaboration among the ecosystem partners is the central source of value creation.

Based on Gassmann et al. (2013)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

Does not limit the number of value creators; instead, increased value is an asset through intensified contribution.

ANTI-RIVAL COMPATIBLE PATTERNS

OPEN SOURCE

PATTERN DESCRIPTION

Ecosystem members contribute to the good and can also use it for free. Exclusive services, such as consulting and support, can be provided in return for monetary investment.

Based on Gassmann et al. (2013)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

Does not limit the number of value creators or value appropriators (there might be some restrictions based on the licensing scheme used). Increased use and contributions are perceived as assets.



ANTI-RIVAL COMPATIBLE PATTERNS

SPONSORSHIP

PATTERN DESCRIPTION

Offers free goods to the users. Costs are covered by sponsors who get benefits in return for increased good use.

Based on Zeleti et al. (2016)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

Does not limit sharing of the good (up to the amount of costs being covered). The party covering the costs gains benefits from increased good use.

ANTI-RIVAL COMPATIBLE PATTERNS

SUBSTITUTE WITH RENEWABLES

PATTERN DESCRIPTION

Finite and non-renewable resources are substituted with renewable ones. Using nature-inspired principles in production processes.

Based on Lüdeke-Freud et al. (2018)

ANALYSIS FROM ANTRIVAL PERSPECTIVE

The regeneration processes must be efficient enough to supply the use of the produced and shared goods.

PATTERNS ENABLING ANTI-RIVALRY

COMMUNITY GOVERNANCE

PATTERN DESCRIPTION

Users are involved in daily operations and strategic decisions related to goods production and delivery.

Based on Curtis (2021)

NOTES RELATED TO ANTI-RIVAL POTENTIAL

Collaborative decision-making makes it possible to customize the anti-rival system features to local needs.



PATTERNS ENABLING ANTI-RIVALRY

CROWDSOURCING

PATTERN DESCRIPTION

Ecosystem members are used on a large scale to perform a task or solve a problem. A small reward is offered to the contributors.

Based on Gassmann et al. (2013)

NOTES RELATED TO ANTI-RIVAL POTENTIAL

Distributing the efforts to a large community with the potential to keep the marginal costs minimal. Anti-rival potential depends on the reward scheme and community size.

PATTERNS ENABLING ANTI-RIVALRY

DIGITALIZATION

PATTERN DESCRIPTION

Existing goods are turned into digital variants, offering benefits (e.g., efficiency, duplicability) that do not reduce the perceived customer value.

Based on Gassmann et al. (2013)

NOTES RELATED TO ANTI-RIVAL POTENTIAL

By offering the potential for zero-marginal costs, digitalization enables anti-rivalry if no artificial scarcity is created in the process.

PATTERNS ENABLING ANTI-RIVALRY

FRACTIONAL OWNERSHIP

PATTERN DESCRIPTION

Collective stewardship of an asset among a group of stakeholders.

Based on Curtis (2021)

NOTES RELATED TO ANTI-RIVAL POTENTIAL

Collective action should be used to facilitate resource sharing.



PATTERNS ENABLING ANTI-RIVALRY

PEER-TO-PEER

PATTERN DESCRIPTION

Mediating cooperation between individuals belonging to a group that aims for the same purpose.

Based on Gassmann et al. (2013)

NOTES RELATED TO ANTI-RIVAL POTENTIAL

Makes decentralized collaboration efficient, facilitating the creation of positive externalities.

PATTERNS ENABLING ANTI-RIVALRY

REVIEW SYSTEM

PATTERN DESCRIPTION

Feedback gathering and analysis about the quality of the goods or the related social interactions.

Based on Curtis (2021)

NOTES RELATED TO ANTI-RIVAL POTENTIAL

The curation mechanism makes it possible to better organize community collaboration, and the capturing of positive externalities.

PATTERNS ENABLING ANTI-RIVALRY

REWARD TOKENIZATION

PATTERN DESCRIPTION

Individuals (or organizations) that provide the key contributions are rewarded with tokens. (identified in our empirical study)

NOTES RELATED TO ANTI-RIVAL POTENTIAL

Tokens must be sharable and not impose rival logic.



PATTERNS ENABLING ANTI-RIVALRY

SHARING BUSINESS

PATTERN DESCRIPTION

A good is shared among the users based on the usage needs.

Based on Lüdeke-Freud et al. (2018)

NOTES RELATED TO ANTI-RIVAL POTENTIAL

The pattern supports anti-rivalry if no artificial scarcity is created in the implementation.

PATTERNS ENABLING ANTI-RIVALRY

ZERO-TRUST

PATTERN DESCRIPTION

Creation of systems where none of the actors within the network must trust each other as a default.

(identified in our empirical study)

NOTES RELATED TO ANTI-RIVAL POTENTIAL

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