

Calculating an Ecosystem's Success: A Positive-Sum-Based Development Blueprint

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Research Motivation & Problem

Why Ecosystem Success Is Hard to Achieve

- Incumbents face challenges in developing viable platform ecosystems under resource and risk constraints.
- Prior research (Adner, Jacobides, Gawer, Kapoor) offers conceptual insights but limited empirical or calculative guidance.

→ Research Question: How can incumbents efficiently develop successful platform ecosystems while minimizing risk and resource investment?

Methodology

Research Design & Empirical Setting

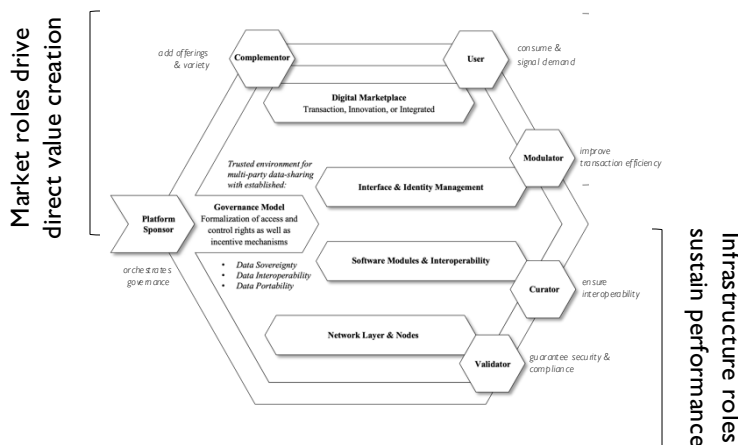
- Our study examines how firms developing ecosystems can mitigate risks, optimize value distribution, and enhance overall ecosystem success based on three cases in the industrial context.
- Method: Inductive multi-case study (May 2022 - Sep 2024) (Eisenhardt, 1989; Yin, 2018)
- Context: Multinational industrial incumbent (Germany)
- Data: 56 semi-structured interviews, workshops, internal documents
- Outcome: A practical, calculative framework for ecosystem development.

Table 1 Cases overview

Case	Duration	Topic	Actors & roles	Incumbent/New-Entrant Ratio	Number of Interviews	Average Interview Duration (min)
1	05/2022 – 03/2024	Data Sharing in IoT Context for Digital Services	- Sample company (Curator, Initiator, Validator) - Machine Builders (Modulator) - Insurance Companies (Complementers) - Manufacturers (Users) - Sample company (Curator, Initiator, Validator)	80%	19	54
2	07/2023 – 09/2024	Sharing and Securing Simulation Models for Virtual Commissioning	- Component Providers (Complementers) - Automotive Manufacturers (Users) - Simulation SW Vendors (Modulators) - Sample company (Curator, Initiator, Validator)	100%	23	45
3	08/2023 – 08/2024	App-Store for IoT Applications	- Solution Providers (Complementers) - Component & Machine Providers (Modulator) - Industrial Producers (Users)	70%	14	65

Findings

Stakeholder Architecture



Success factors for the initial consortium design

As **complementary** as possible: non-competitive, easy-going
As **prominent** as possible: credible, high market share for adoption
As **few** as possible: organic mgmt., scale once governance matures

Framework

Calculating Ecosystem Viability

$$\text{Positive Sum}_M = \sum_{n=1}^3 (\text{Incentive}_{c,n} - \text{Contribution}_{c,n}) > 0$$

Five-Step Development Blueprint

1. Positive-Sum Test – check market-side viability
2. Minimal Viable Ecosystem (Ex-Ante) – add infrastructure roles
3. Governance Alignment (Ex-Post) – rebalance incentives
4. Ecosystem Profitability – scale through network effects
5. Value Capture – distribute returns via control points

→ A calculative, stage-gated roadmap turning risk into sustainable growth.

Discussion

Managerial Takeaways

- Quantify partner contributions and incentives early.
- Start lean; prioritize complementarity and flexibility.
- Monitor Positive-Sum value as an indicator of ecosystem health.
- Secure strategic control points for long-term profitability.

Key Insight

Ecosystem success can be calculated, if total incentives exceed total contributions.