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# Technology with meaning: Real Examples of innovations with impact

CIEL- International Congress on Legal Strategy

*Prof. Dr. Christoph Lattemann*

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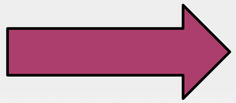
# Change the Perspective

**Product/ technological Perspective**



**Service / Value Perspective**

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# EU penalties for violations of data security


Facebook owner Meta Platforms Inc. has been fined €1.2 billion ($1.3 billion) by the EU for violating data protection laws by transferring personal data to the US – the highest fine in the history of the EU to date.

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# AI Takes Over

## Should Carmakers Be Liable When A Self-Driving Car Crashes?

By Omri Ben-Shahar, Former Contributor. ⓘ I write about law, economics, and consumer markets

Published Sep 22, 2016, 11:36am EDT, Updated Sep 22, 2016, 04:22pm EDT

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# UnitedHealthcare


UnitedHealth knowingly used a faulty artificial intelligence algorithm to deny elderly patients coverage for extended care deemed necessary by their doctors.

*https://www.linkedin.com/news/story/unitedhealth-sued-over-ai-algorithm-5828204/*

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# What is the Effect of Digitalization?

- Hybrid Living-/Working Environments
- New Potentials for Cooperation-/ Collaboration
- Digital coordination, process-driven and/ or data-driven governance
- Influence on human decision making and actions
- Algorithmic-based decisions
- Hybrid Actors (also physical)
- Evolution of ***hybrid service ecosystems***

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# Service-dominant Logic

***Every Business is a Service Business***

Shift from ***a product /technology perspective*** to a ***more service-centered business perspective***:

- **Service** is the fundamental basis of exchange
- The product is not important but rather the **value for the customer** (i.e. **customer-centered perspective**)
- Goods and Services are **not different** from each other
- Value-in-Exchange is replaced by the **Value-in-Use** (i.e. the value of a product or service determined by the customer)

*Vargo, S.L., & Lusch, R.F. (2008)*

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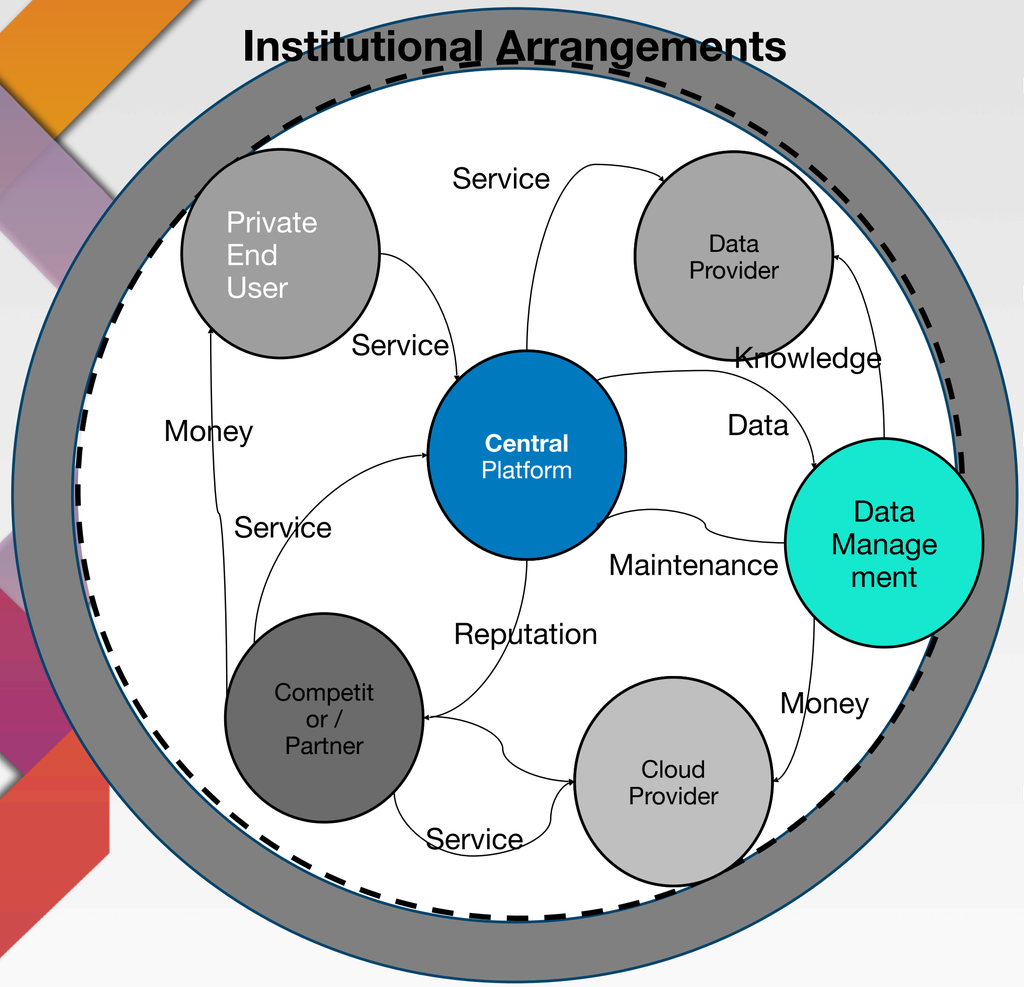
# New Perspective in Service Provision and Innovation Actor-to-Actor Networks – Value for each Actor




***Service Ecosystem***

- Viewing producers and consumers as actors mutually co-creating value
- Value for each actor
- Value for the entire service ecosystem
- Role of the customer and provider changes
- Role of Information Technology (IT) changes

*Lusch, R., Vargo, S.L., & Tanniru, M. (2010)*

*Lusch, R. F. & Nambisan, S. (2015)*

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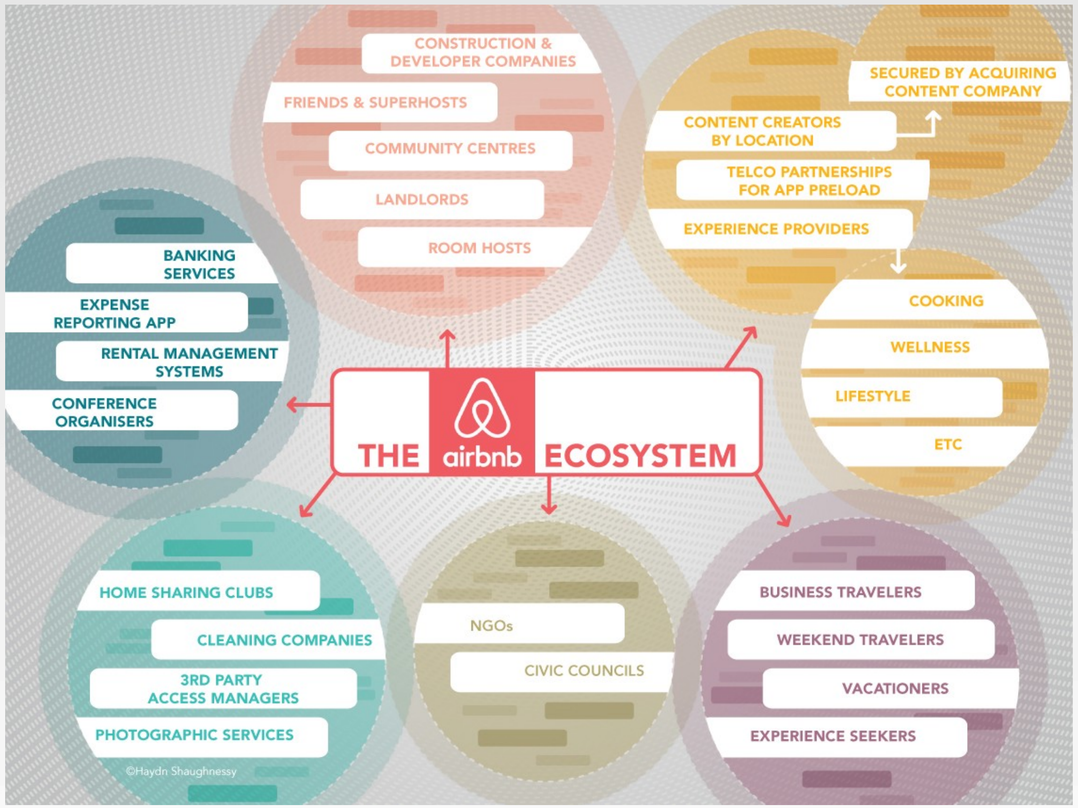
# Example of a Service Ecosystem




https://medium.com/@haydnshaughnessy/business-ecosystems-c5a2f4ad86c

**Principles:**

- Resource *integration*
- *Value Co-Creation*

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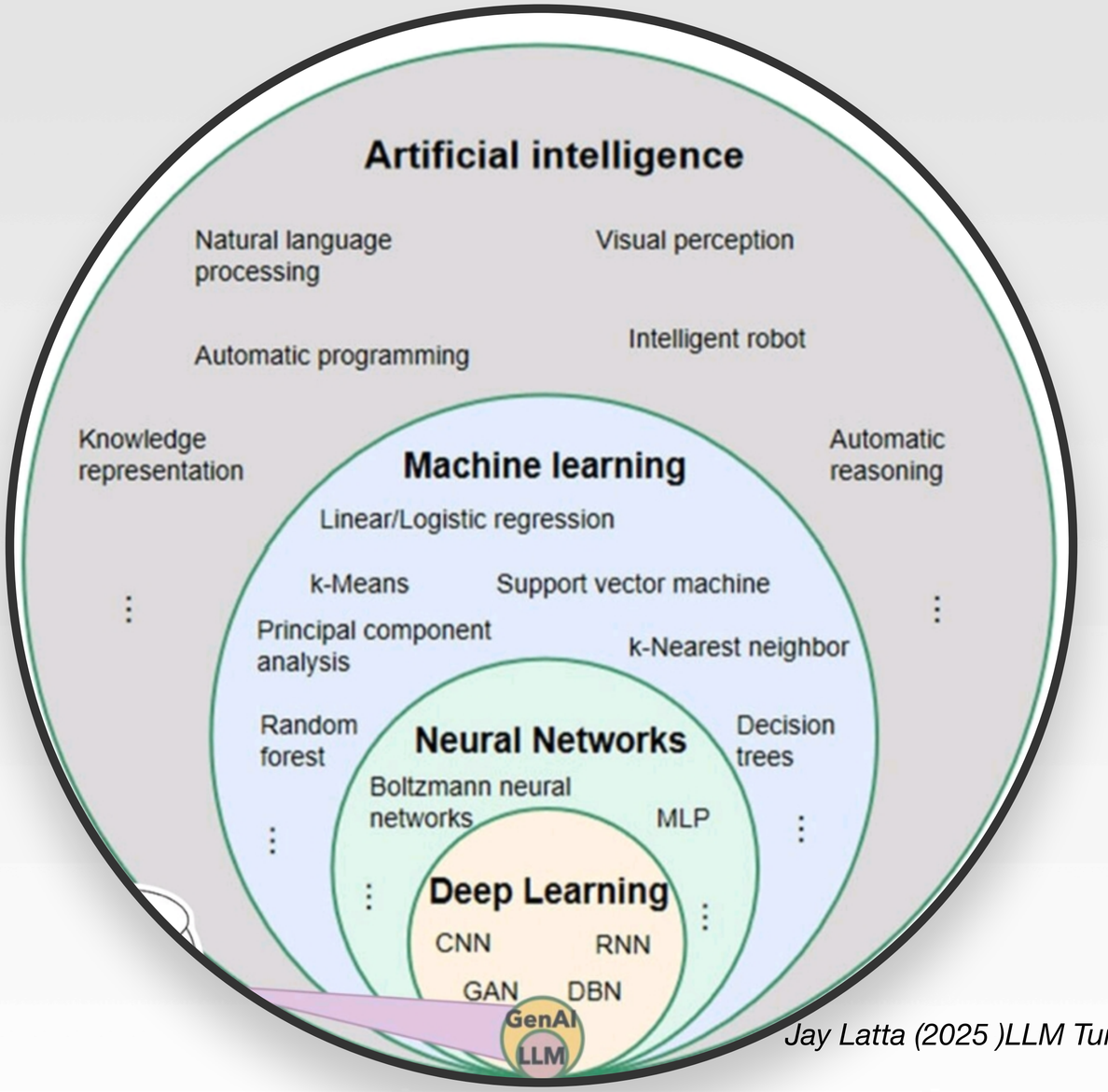
# (Agentic) AI is an Ecosystem not a Product Line




*Jay Latta (2025 )LLM Tunnel Vision*

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# (Agentic) AI in Service-Ecosystems

- **New service models**, e.g., through personalization, autonomy, and new forms of co-creation
- **Changed user experience and roles,** e.g., through human-AI collaboration and task sharing with agentic AI agents
- New questions about **ethics and governance requirements**, e.g., ***transparency, bias control,*** energy consumption of AI models and systems
- **Human-agentic AI collaboration** leads to **hybrid service-ecosystems**
- **Human-agentic AI collaboration** allows to achieve superior outcomes for certain tasks that neither could generate individually (“hybrid intelligence”).

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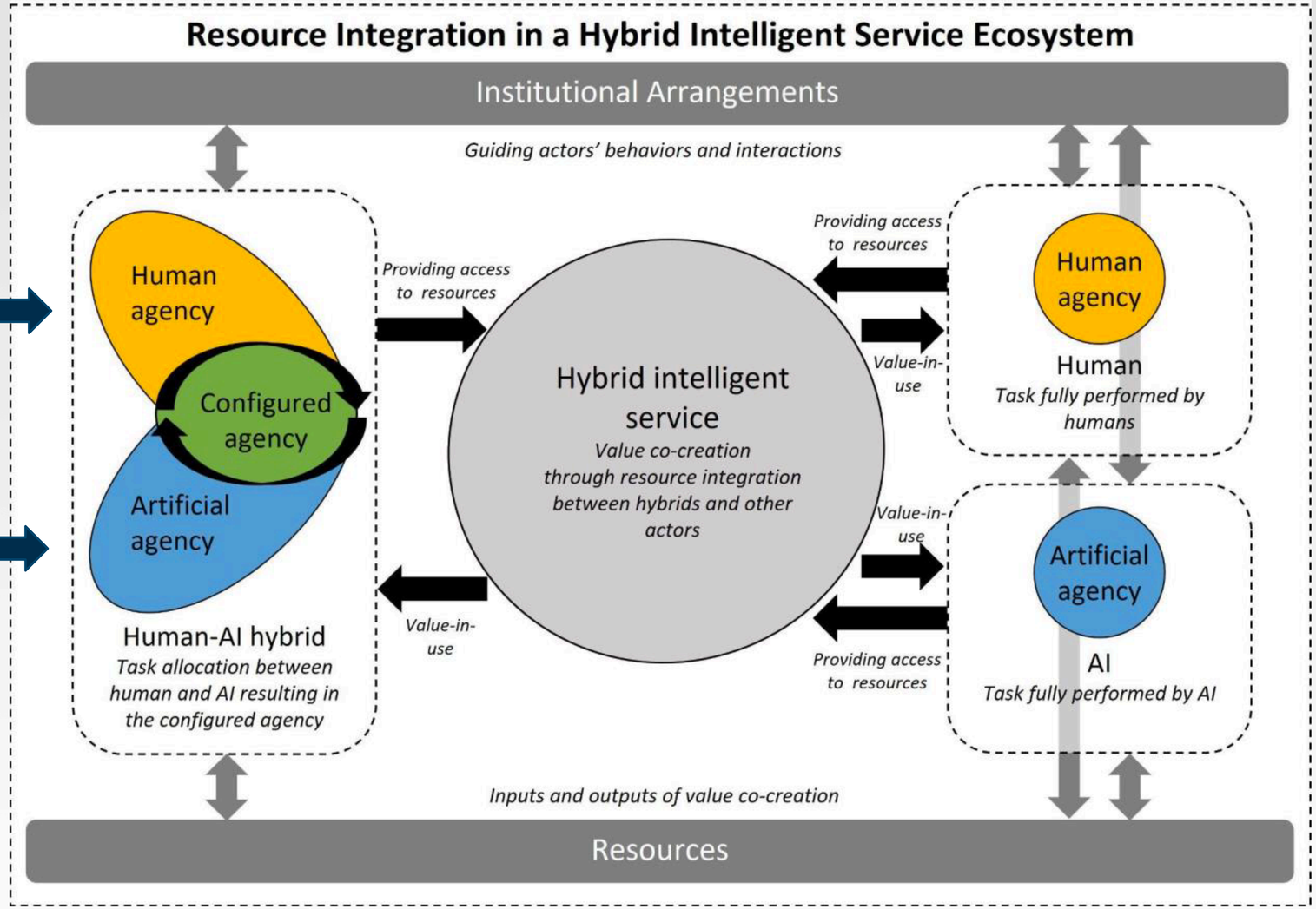
# Hybrid Intelligent Service Ecosystems

**Need to understand Artificial Agency**

**Need to be designed in an ethical way**




*Bartelheimer, et al. (2025) Conceptualizing hybrid intelligent service ecosystems, Electronic Markets, 35:63*

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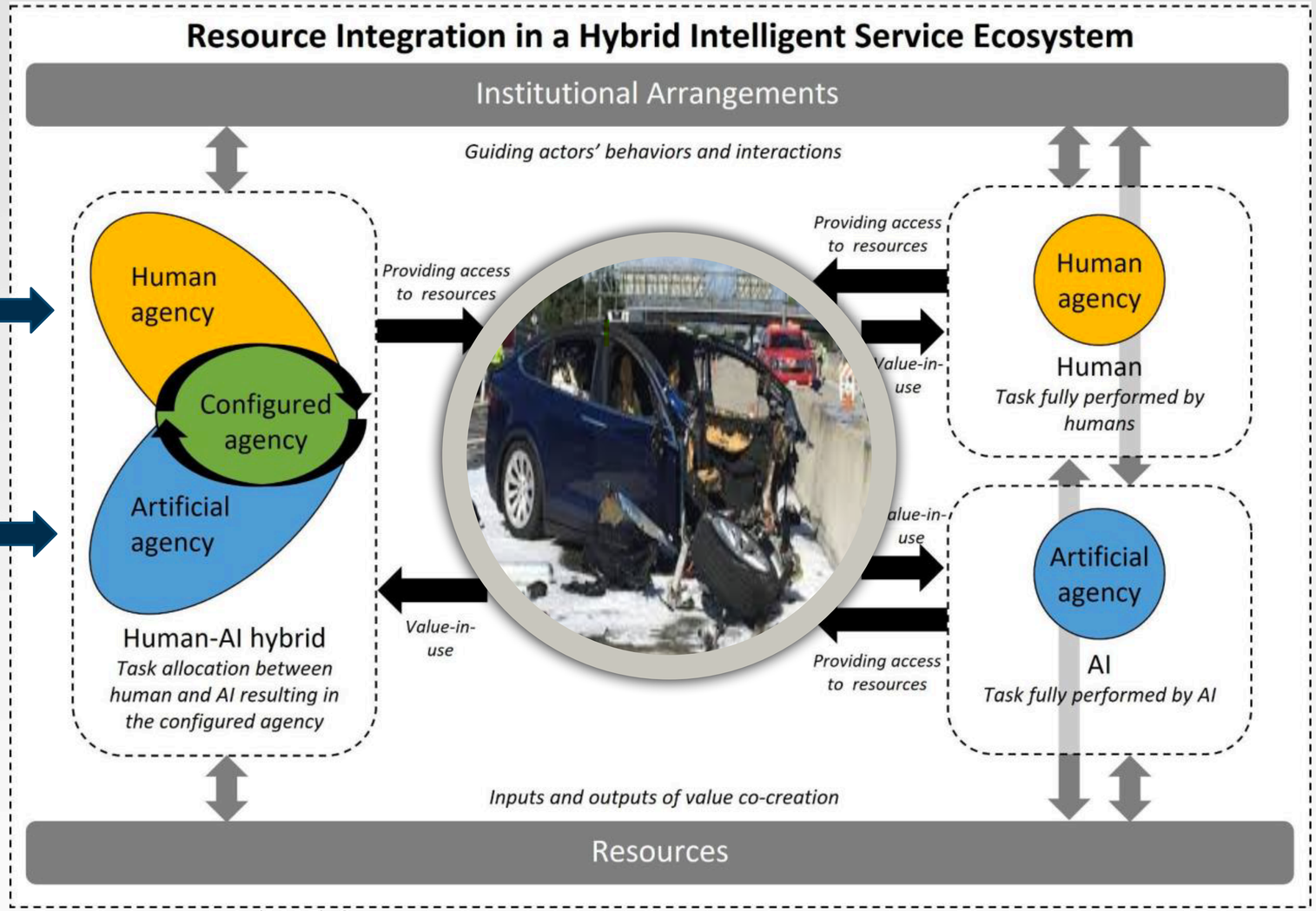


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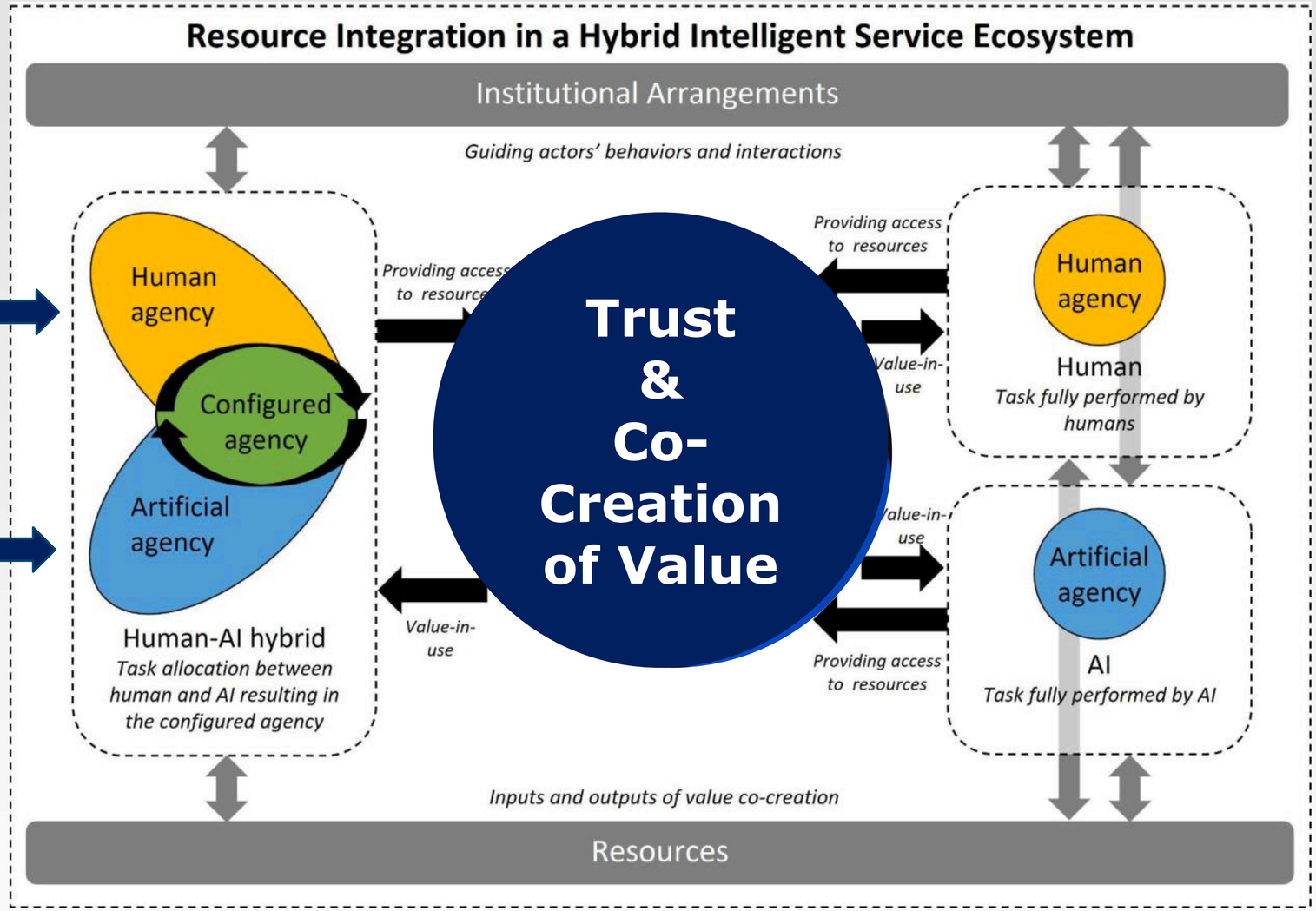


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# Designing Service Ecosystems in the agentic AI Era

**Sustainability** ↕ **Governance**

*How are AI tools changing roles, interactions, and rules throughout the service ecosystem?*

**Tools** ↕ **Ecosystems**

*How do AI tools change roles, interactions, and rules throughout the service ecosystem* ***in the design process?***

**Opportunities** ↕ **Resources**

*What to do when technological promises collide with limited data quality, budgets, and* ***skills in organizations and society****?*

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# Digital Sovereignty

For innovative companies and economies, digital sovereignty is becoming a decisive development factor for the future.

The *ability to use* digital technologies *independently* and to *maintain decision-making sovereignty* is key.

*Digitale Souveränitat: Wittpahl (HRSG) 2017*
*Bogenstahl/Zinke (2017) Digitale Souveränitat – ein mehrdimensionales Arbeitskonzept für die deutsche Wirtschaft*

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# The surveillance nightmare: systematic spying and infringement on privacy rights.

Palantir

Palantir has been accused of helping build a **vast database of personal information** on U.S. citizens, allegedly merging private data from agencies like the IRS.

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# Global Internet-companies as digital Conquerors

Digital freedom of action is more than just technological knowledge. It includes knowledge about the application of technologies and their consequences and enables their free design.

- Functioning of digital systems and infrastructures can be used, but often only inadequately understood.
- Potential opportunities and risks associated with the use of digital systems can no longer be assessed on a sound basis.
- Inexperienced users surrender their personal data treasure and their rights in the new digital frontier to the conquerors

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# We need *Digital Enlightenment to* achieve digital sovereignty

***"Digital enlightenment is person's emergence from his self-imposed digital immaturity."***

*Freely translated from Immanuel Kant*

**Education first**

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# Privacy by Design

***"Data protection through technology"*** **can be considered the most effective method of implementing applicable *data protection principles*, as these are directly *embedded in the technical systems*.**

**Ethical design is required**

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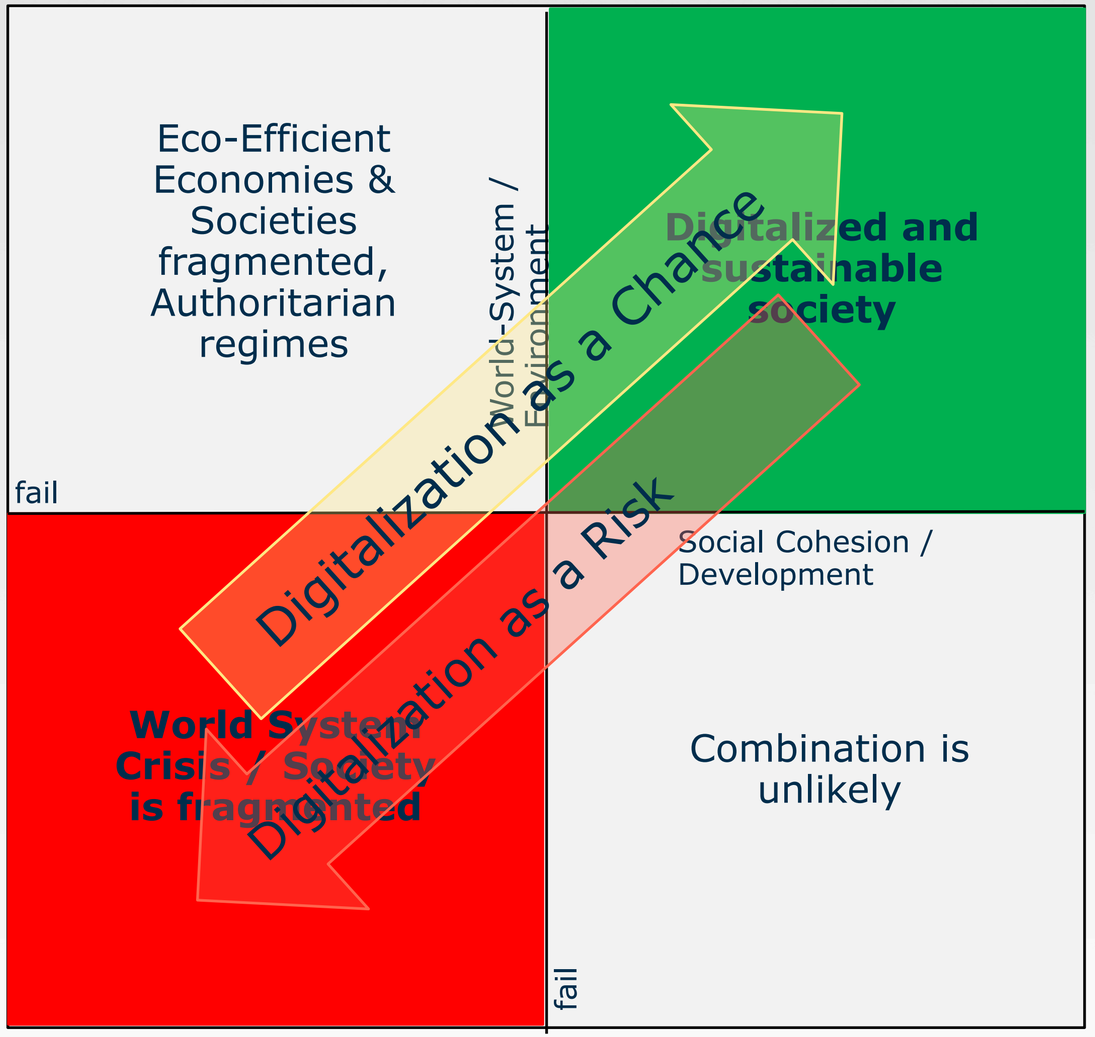
# Visions for the Future of Digitalization




The digital transformation is taking place at a time when crucial decisions must be made and undesirable path dependencies broken down in order for the transition to sustainability to succeed.

„**Digitalization, and ecological and social sustainability** must be systematically considered together, and digitalization must be actively shaped and systematically used for the transformation to sustainability.“

*WBGU 2019: WBGU – Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (2019):Unsere gemeinsame* digitale Zukunft. Berlin: WBGU

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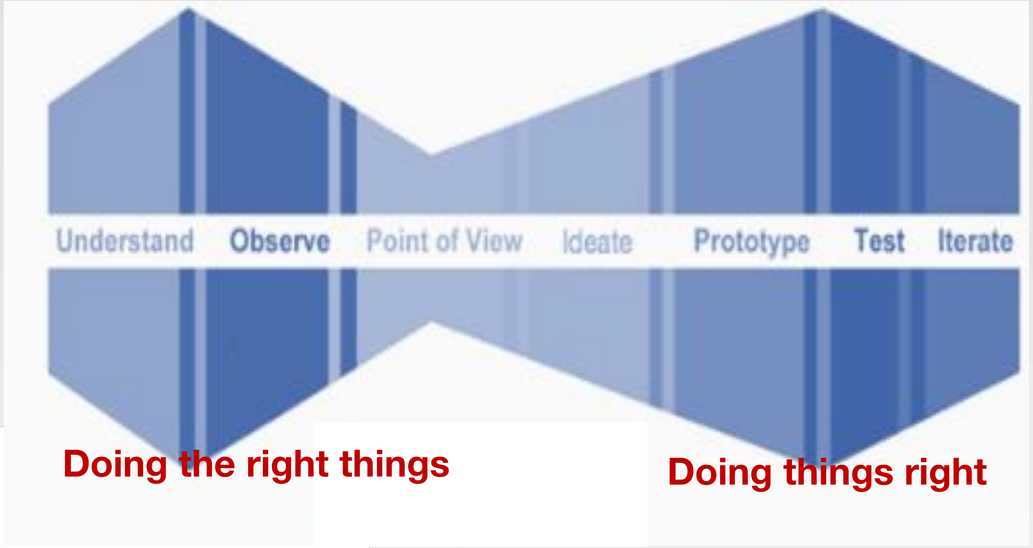
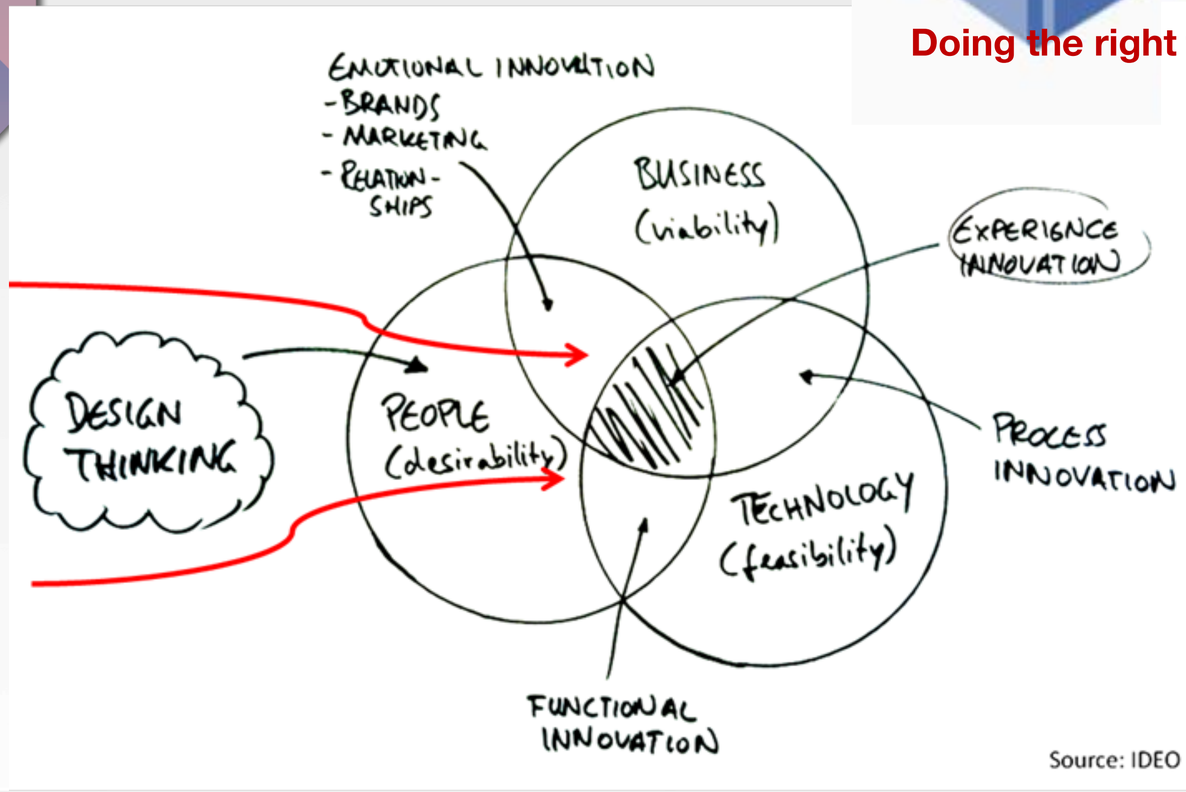
# How to Design the Future: Design Thinking




Focus on Human Needs

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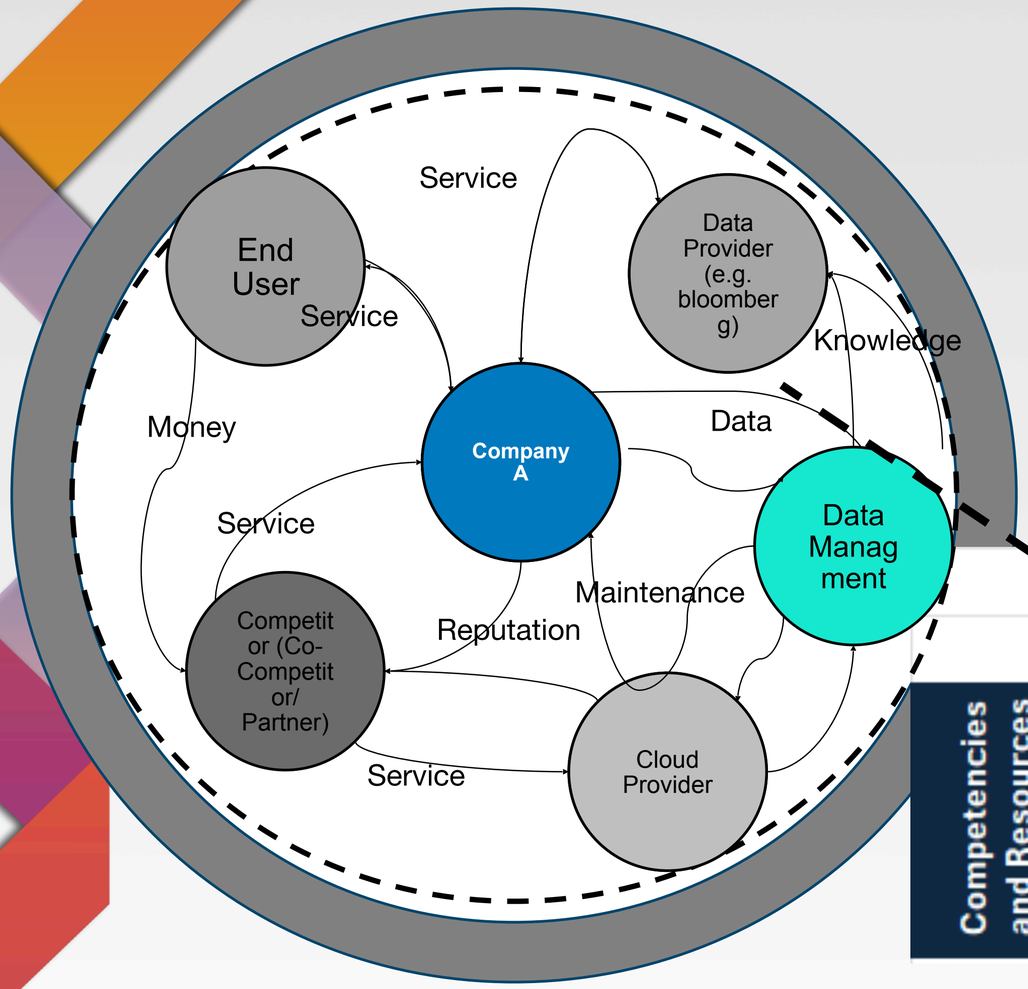
# Service Ecosystems Mapping




## Value Competence Matrix

| | | Co-creation of values | | | |
|---|---|---|---|---|---|
| | | Actor A | Actor B | Actor C | Actor X |
| Competencies and Resources | Actor A | | Service | Knowedge | |
| | Actor B | Reputation | | | Money |
| | Actor C | Money | Information | | Service |
| | Actor X | | Service | | |

*Robra-Bissantz, Lattemann. (2023)*

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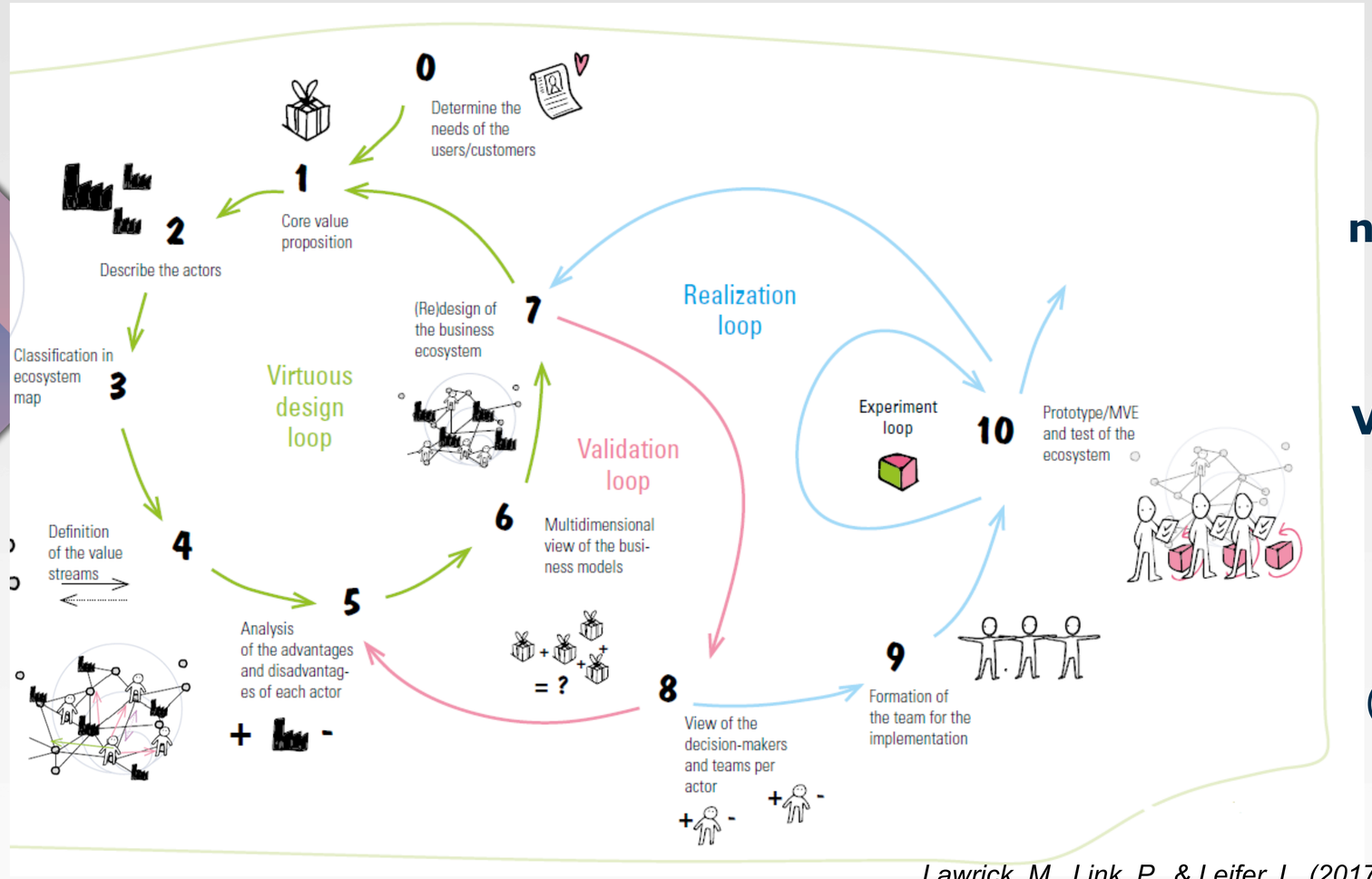
# Designing Service Ecosystems




Identify and describe **Actors**

Determine the **needs** of the users/ customers

Determine **Core Value Proposition**

Definition of the **Value Streams** (competences and skills)

*Lawrick, M., Link, P., & Leifer, L. (2017)*

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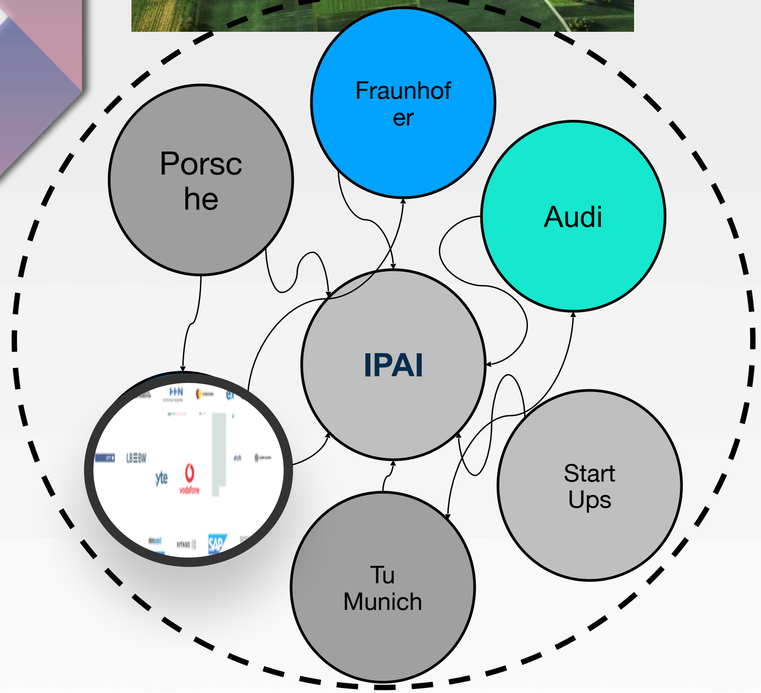
# Digital Sovereignty - IPAI Global Home of Human AI – Example High Tech




**“For us, the focus is on people.“**

AI Ecosystem that drives technological developments forward on the basis of ***European values, digital responsibility, traceability, and transparency***.

“IPAI goes beyond pure economic value creation. We are aware of the ***importance of sustainability and ethical responsibility*** in AI development.”

https://ip.ai/en/about-us/

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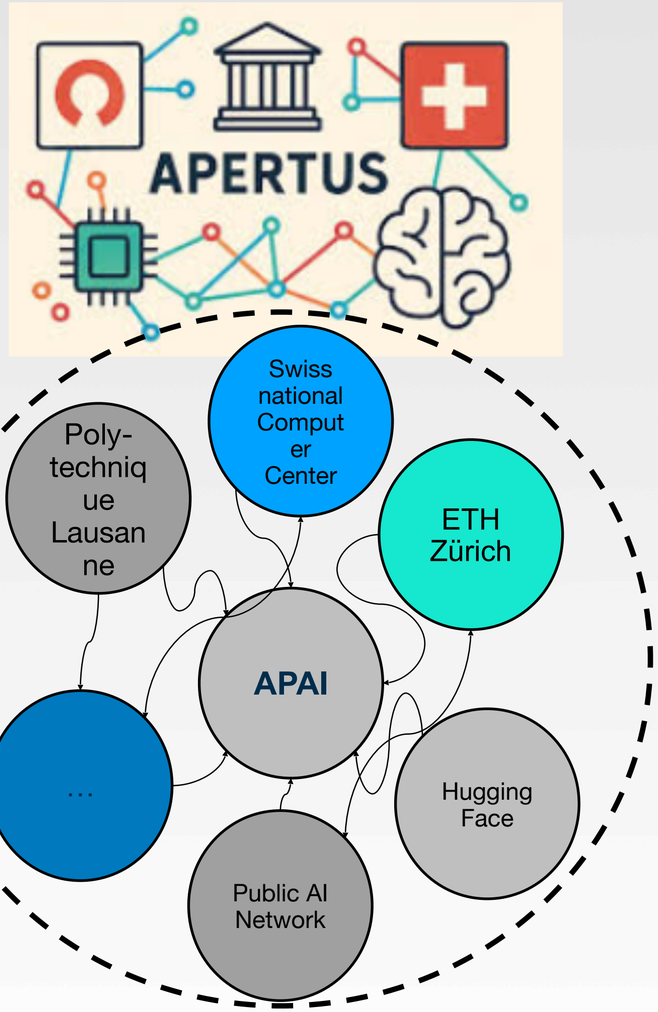
# Apertus: a fully open, transparent, AI -multilingual language model – Example High Tech




"Apertus embodies **transparency and compliance as foundational design principles"**

*https://ethz.ch/en/news-and-events/eth-news/news/2025/09/press-release-apertus-a-fully-open-transparent-multilingual-language-model.html*

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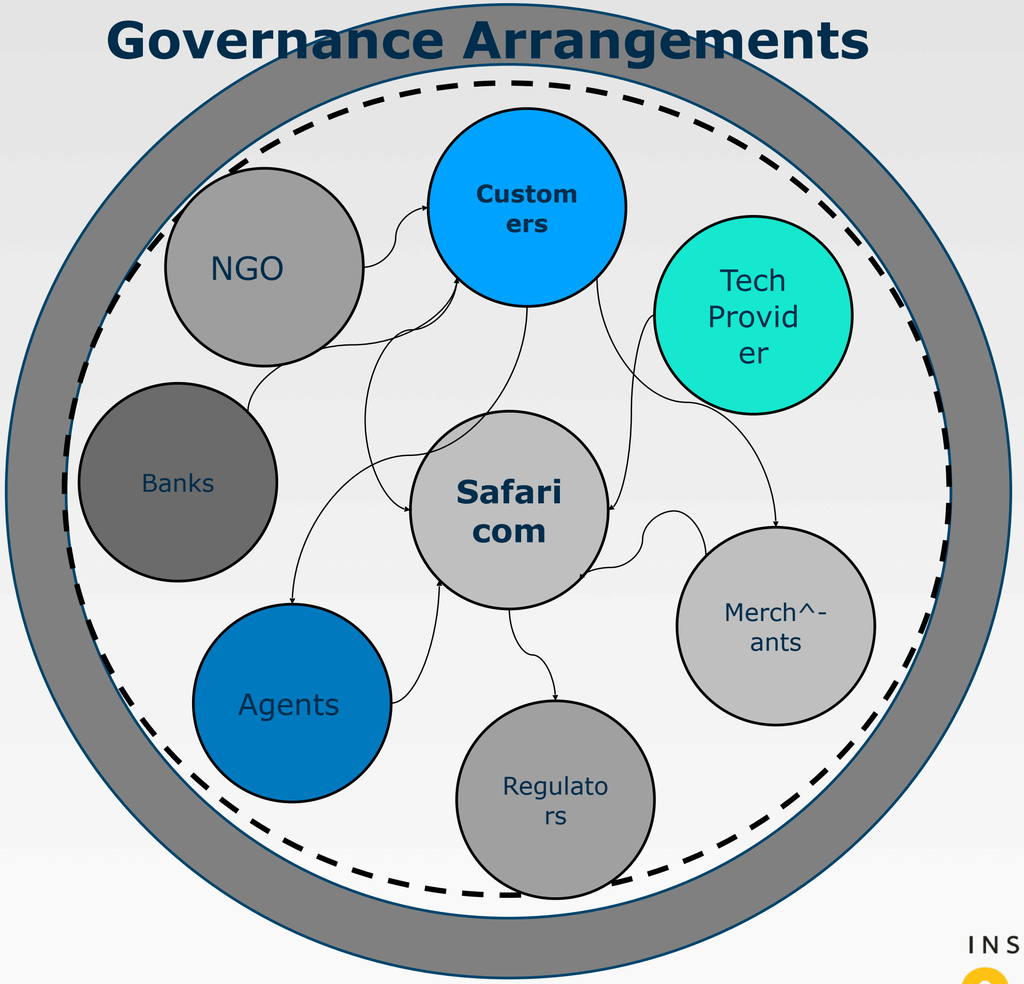
# Ethical Design: M-Pesa, a mobile money platform for Kenya – Example Low Tech

## Governance Arrangements

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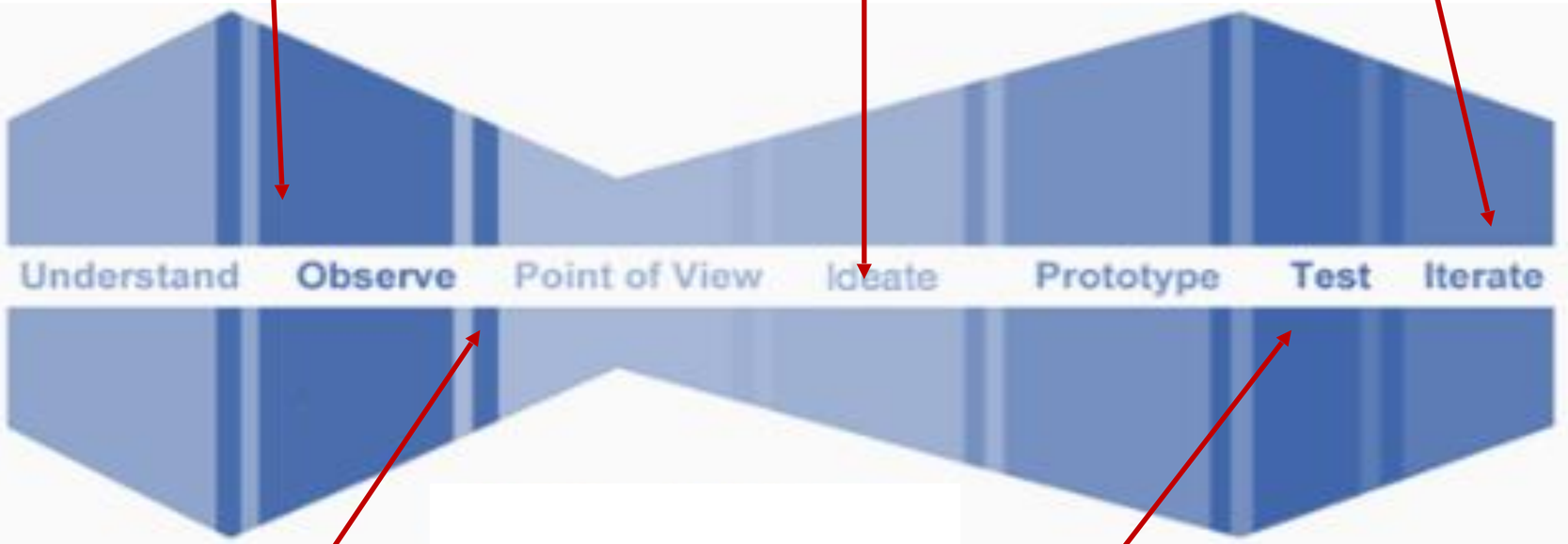
# Impact of Design Thinking - User-Centered: M-Pesa was designed around the real needs of users, not assumptions.

**Goal**: Understand the needs of underserved populations in Kenya.

**Ideas Explored**

**Outcome**: Iterative improvements led to a scalable, user-friendly platform




**Goal**: Frame the core problem.
**Problem Statement**: "How might we enable secure, accessible financial transactions for people without bank accounts?"

**User Feedback**:

- High demand for simplicity and reliability.
- Need for agent support and clear transaction records.

# 5 Key Aspects for the Design of Digitalization

## 1. Understand

- *… new agentic AI Era from a Service and Service Ecosystem perspective*
- *… the value for the user when designing an Ecosystem*
- *… that data sovereignty is important*

## 2. Actors & Roles

- *Who are the key actors in the ecosystem?*
- *Which new roles are emerging as a result of AI, and which are disappearing?*
- *How is the power or dependency structure shifting?*

## 3. Technology & Infrastructure

- *Which AI technologies are shaping the service ecosystem?*
- *To what extent are AI technologies tools vs. autonomous actors?*
- *Who owns the data, platforms, and infrastructure?*

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# 5 Key Aspects for the Design of Digitalization

## 4. Everyday life & User experience

- *How do citizens, customers, and employees experience the services in everyday life?*
- *Which needs are better met, which remain unsatisfied?*
- *Which emotions (trust, alienation, enthusiasm, fear) shape the use?*

## 5. Society & Sustainability

- *What are the social, environmental, and economic impacts?*
- *Does the ecosystem contribute to greater justice, inclusion, and sustainability – or does it exacerbate inequalities and crises?*
- *What ethical conflicts arise and why?*

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# Thank you

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# Lessons learned - Data and Service Sovereignty

***Sovereignty belongs to those who have the power of choice:*** **That means providers and users can communicate on equal terms—and freely decide whether and how to continue the exchange relationship.**

***Sovereignty is relational:*** **It arises from a network of control and dependencies – and corresponds closely with trust (or growing mistrust).**

***Dependency is not inherently negative:*** **In functionally differentiated modern societies, we are generally not sovereign in our everyday lives—e.g., in healthcare, in government agencies, or at work. The decisive factor is how dependencies are structured and whether rules and trust prevail.**

***When it becomes critical:*** **Service sovereignty is becoming central in the wake of geopolitical shifts toward realpolitik—especially when there is plausible reason to fear that a provider is not acting in my best interests and that this could result in considerable damage.**

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