Network Formation

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Agenda

Why do cluster exist?

Successful clusters – some examples

Networks required to establish a cluster: A case study

Why do clusters exist?

The basic concept

- We perceive regional economic strength in comparison to other regions

- Examples
  - Silicon Valley, California
  - Financial Hub, London
  - Financial Hub, Tokyo
  - Automotive Industry, Baden-Württemberg

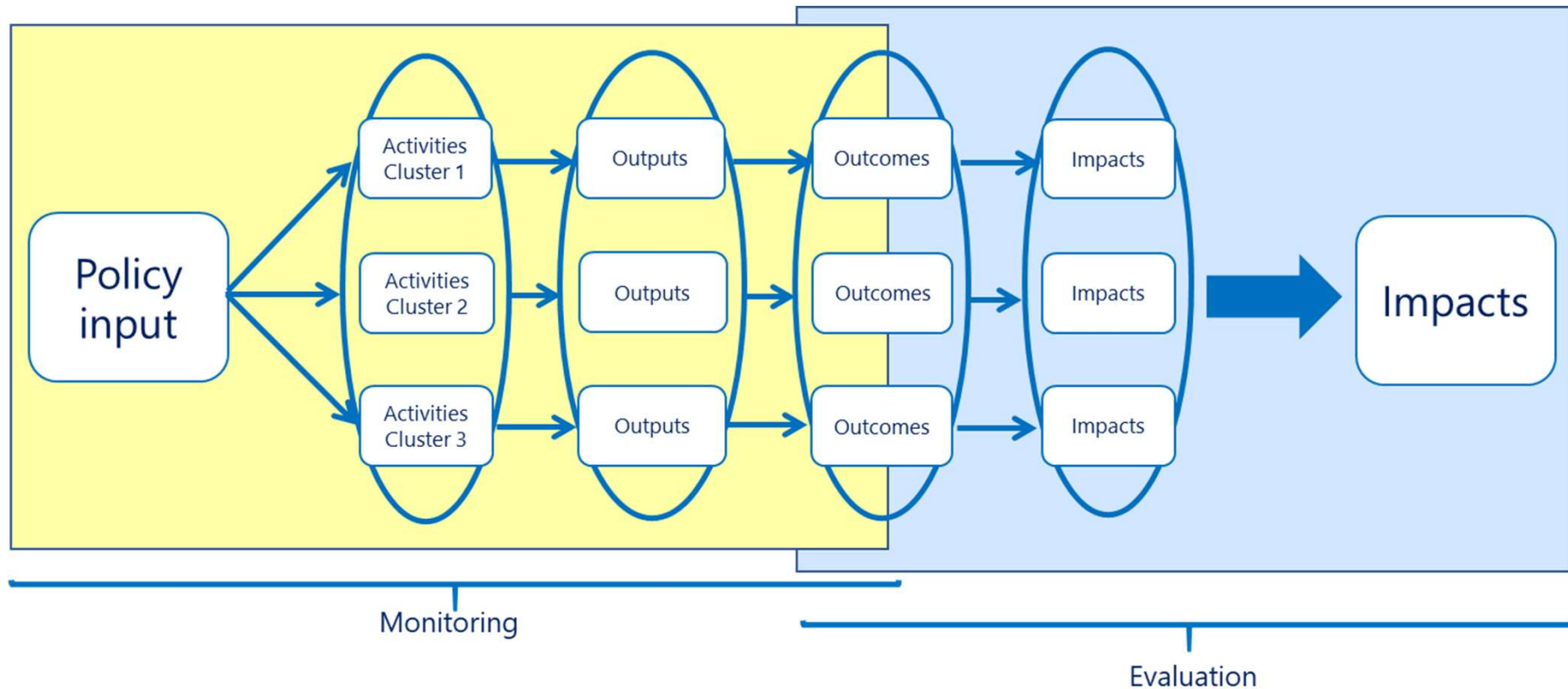➔ Why are these regions economically more successful than others

What happens in clusters regions

- Clear focus on a specific economic objective
  - Silicon Valley: Hardware and consumer software
  - London: Financial services in investment banking and Bonds
  - Tokyo: Financial services on forwards and futures
  - Baden-Württemberg: High-performance automotive

- Coverage of most sections of value chain.
  Example Baden-Württemberg:
  - More than 20 universities with strong focus on automotive industry
  - Component suppliers to automotive manufactures
  - Availability on services (Marketing, finance, etc.) with strong focus on automotive industry

- Strong interaction among the various actors and among the various size classes of the actors' organisations
- Clear cluster management structures

What are cluster effects

- Realised economies of scale
- Realised economies of scope
- Interaction on innovations within the cluster
- Establishment of standards and platform economies
- Momentum on qualification requirements and provision
- Optimising interaction with suppliers and manufacturers

  ➔ Clusters are linked to a certain region – However the region might cover a larger territory

A results-orientated framework for monitoring and evaluating cluster policy

Source: Julie Pellegrin et al., 02/2020,
https://www.clustercollaboration.eu/eu-initiatives/european-cluster-observatory

Level of cluster policy monitoring, and corresponding evidence

Type of evidence	Cluster organisa-tion (management team)	Participants in cluster initiative	Cluster policy support pro-gramme/project (EU, na-tional, regional government)	Cluster as re-gional statistical entity
Qualitative (Tacit knowledge)	Weekly staff meet-ing	Meeting with all involved in a specific activity: e.g. a research project, a new training activity, a part-nership with another cluster	Briefing to government on the subsidised cluster activity; e.g. for setting up a demonstration, acceleration, competence, and/ or financial instrument	S3, entrepreneurial discovery event, discussing current and future trends, challenges
Quantitative (Codified knowledge)	Bronze, silver, gold label in cluster excellence	Collect data, reporting on initiated activities	Collect, reporting pre-defined indicators to government	Regional Cluster scoreboard; re-gional NUTS 3 data, statistical benchmarking

Source: Julie Pellegrin et al., 02/2020,
https://www.clustercollaboration.eu/eu-initiatives/european-cluster-observatory

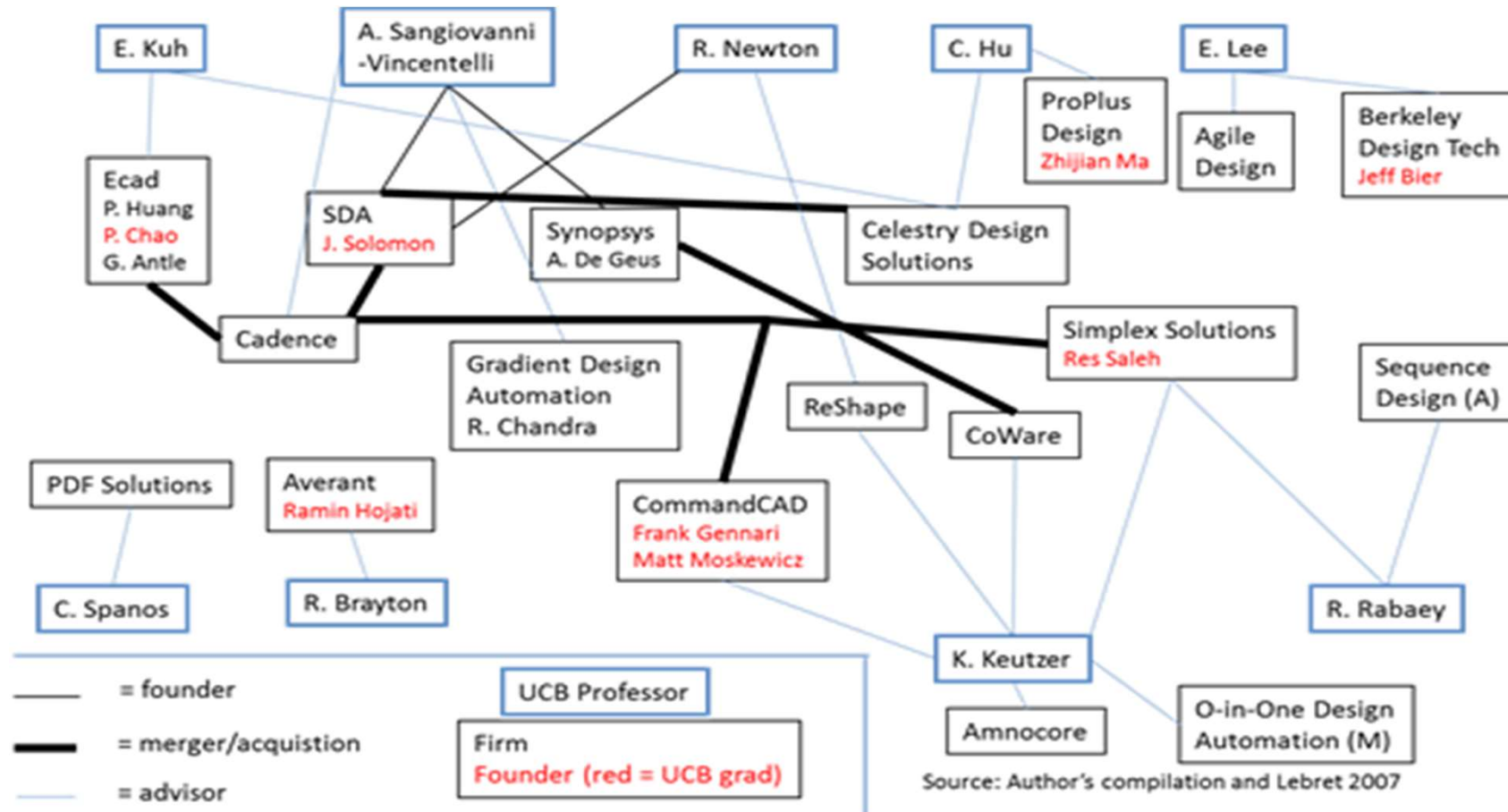# Examples for successful cluster regions

Actors in Silicon Valley Cluster

Cluster shows a variety of involved actors

Frequently R&D Labs as well as universities play a crucial role

Start-Ups have been crucial in the cluster

Silicon Valley: UC Berkeley Professors and Their Relationships to the Semiconductor Design Soft- ware Industry
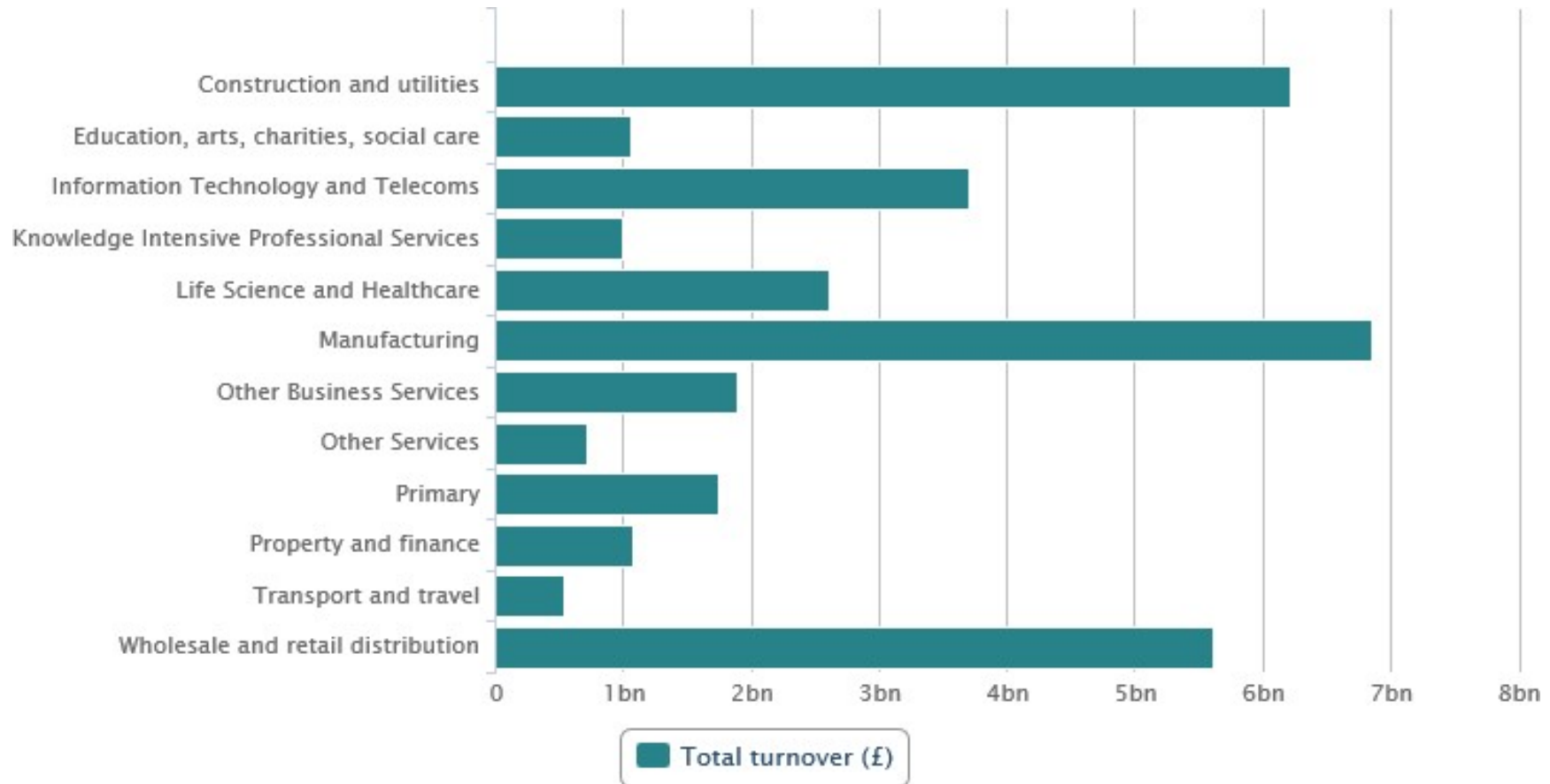

Source: Kenney et al. 2014

Cambridge Clusters

Cambridge University in the centre of the cluster development in Cambridge
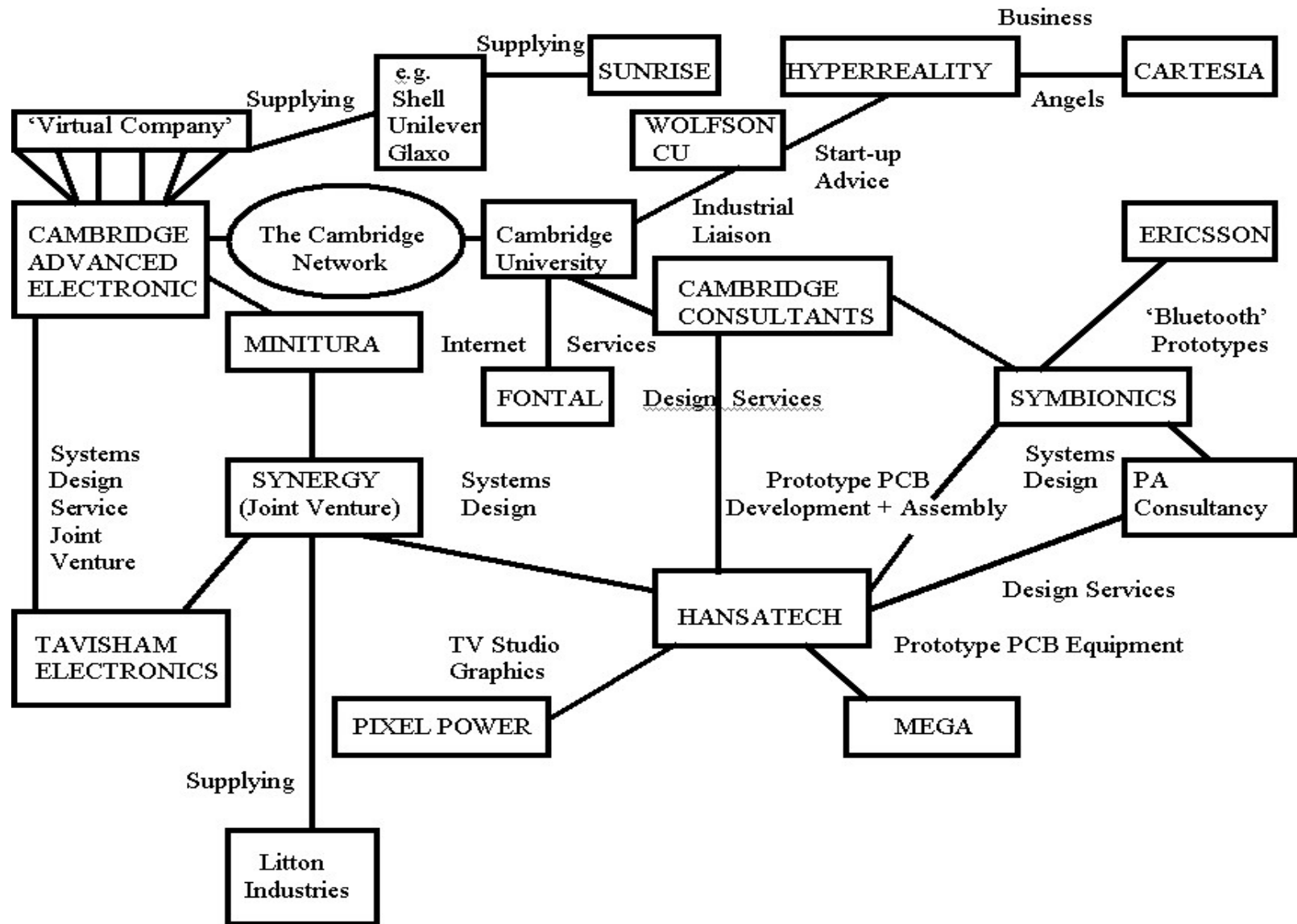
Large variety of actors involved

Strong networks including merger activities.

Cambridge Clusters in Biotech and ICT

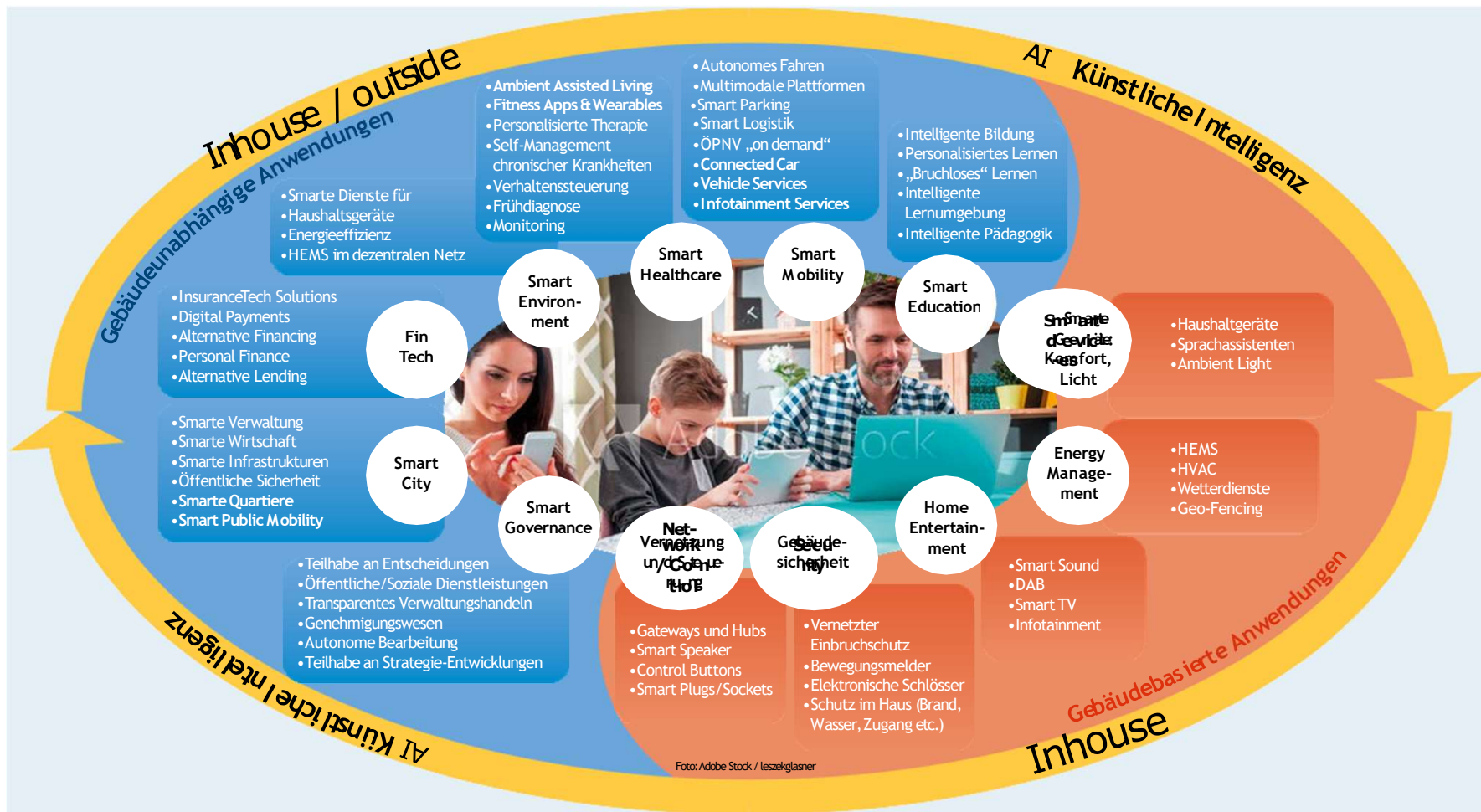Source: Philip Cooke, Centre for Innovation, Bergen University College , 2017

Actors in the Cambridge IT cluster

Requirements to networks to generate a cluster?

A case study on smart living technologies

What is Smart Living about?

Foto: Adobe Stock / leszekglasner

Variety at the Outset

Smart Living covers all applications that connect devices and service in a home and the link between home and home environment

Large number of actors from various domains:
- Industry as white goods industry, HVAC, brown goods
- Utilities as energy suppliers, telecoms
- Housing companies as Vonovia, and others
- Associations as ZVEI, ZVEH
- Others as legal companies
- Ministries

Why the market didn't work out?

Heterogenous **interests** by actors

Interoperability has not been generated

Strong demand on **data security and privacy**

Technological **interrelatedness**

New **collaborations** required amoung actors who in the past never worked together

A shift from **traditional to digital markets** including the shift from **hardware to added value services** is challenging

Qualification requirements have to be adjusted

Actor network approach as a mean to explain network building
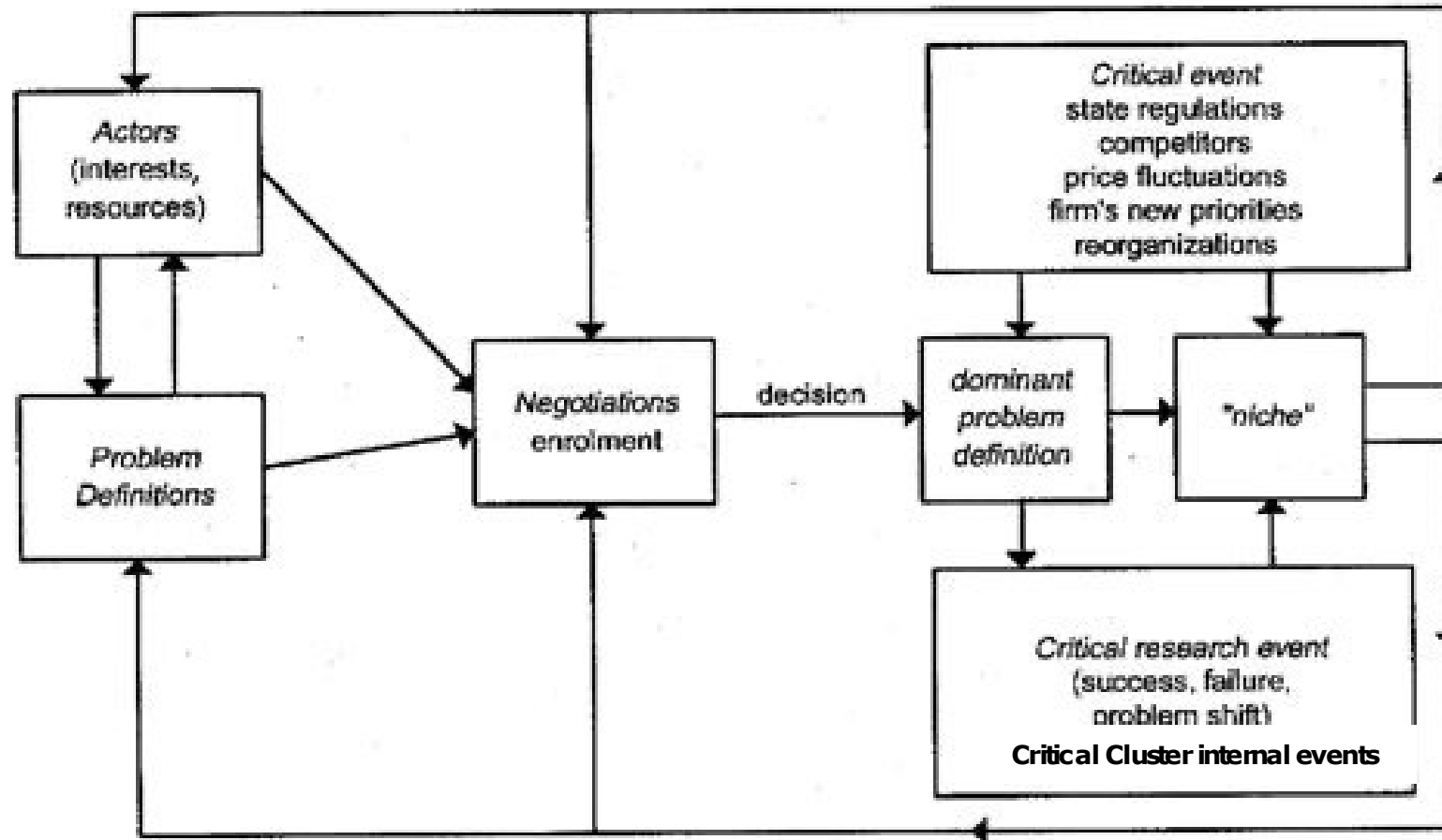
Vergragt 1989

Main problems identified

- housing industry expected lack of economic return by cluster
- HVAC industry did not collaborate with other domains and started its own smart living systems
- Electrical industry created an open standard that was not accepted by other domains
- Utilities did not see any advantage in participating A rivalry

  between DIY und non-DIY actors existed Among

  craftsmen associations strong competition
- Legal rules adjusted to Smart Living did not exist even so GDPR was already on its way

Actions taken to establish the cluster (1/2)

housing industry expected lack of economic return by cluster
➔ Workshops has been given to advantage to industry

HVAC industry did not collaborate with other domains and started its own smart living systems
➔Working groups started debate on application that can be connected to HVAC applications

Electrical industry created an open standard that was not accepted by other domains
➔ Interoperability is a constant topic

Actions taken to establish the cluster (2/2)

Utilities did not see any advantage in participating
➔ Workshops on digital ecosystems has been started

A rivalry between DIY und non-DIY actors existed
➔ still a big issue wit potential to destroy cluster

Among craftsmen associations strong competition
➔ a joint dual education curriculum was generated

Legal rules adjusted to Smart Living did not exist even so GDPR
was already on its way
➔ legal expertise was included to the cluster

How did the cluster organisation has been generated

In 2013 the ministry of economies established a working group. Members of the working group had been associations linked to smart living

The working group has not been efficient

The ministry and private industry started actions to establish an initiative in 2017.
➔ Smart Living Germany initiative was established in 2018.

In early 2018 cluster members and the ministry established a cluster management

In 2021 the cluster registered as an association

Status quo

More than 60 industrial partners in cluster (incl. ABB, Siemens, Vonovia and all major companies)

More than 40 Business Association are included

First international links to similar organisation in other European states have been established.

Main tasks for cluster managements

Centrifugal forces are very strong in clusters.
➔ Main task is to establish a collaborative atmosphere

Clusters actors hardly ever generate clear objectives for the cluster
➔ Cluster management has to organise a topic finding process

There is a free-rider problem in clusters.
➔ Cluster managements have to prevent free-riders

To say it simple: CM is mother, father, concubine and dictator at the same time. Most important: Be neutral!!!!!!

Next steps since early 2021

When association was registered quite some formal issues started

Government is likely to reduce funding.

A clear management has to be established that is no more paid by governmental funds

Keeping all together depends on the abilty to maintain a success story for all groups included.

Some conclusion

- There is no cluster network organisational setting that is better than others

➜ Identify the organisational setting that meets your needs

- Cluster live on a commonly joint narrativ
➜ Develop a story that shows the benefit to you partners and their advantage to take part

- Clusters need a transparent and effective management

➜ Design a management structure at the outset

- Financial support for clusters is helpful but also a restriction

➜ Don't start you cluster for money but for its purpose