

# **Introduction to the Core-Edge Story**

**A Core-Edge Working Group Update**

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# Rationale

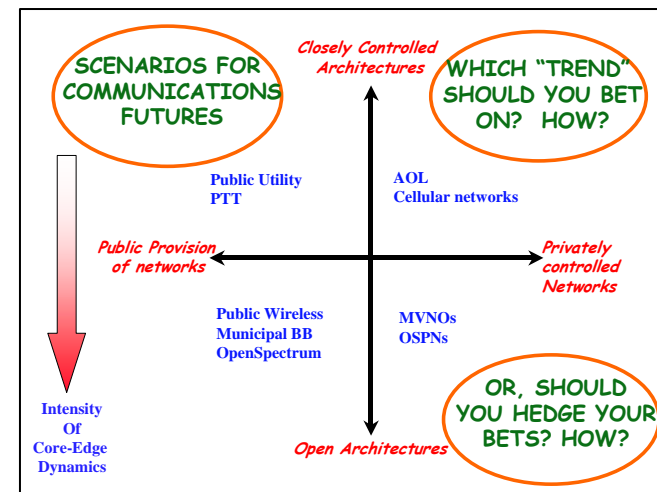
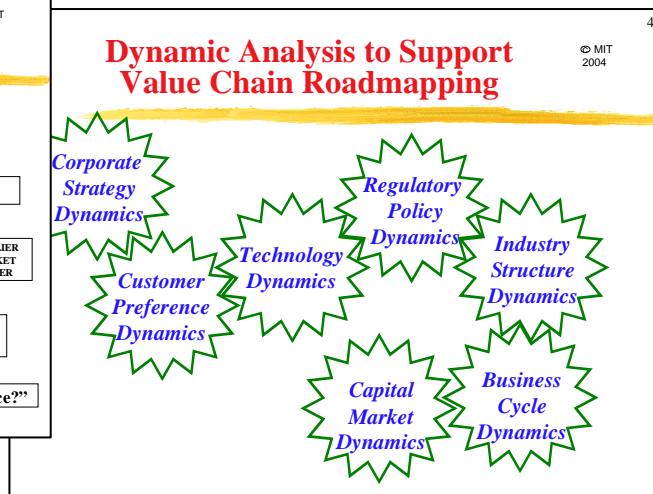
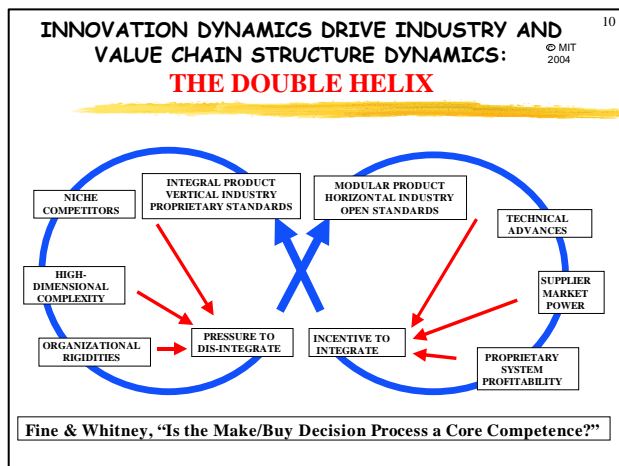
- Present work around a framing story for CEWG
  - Capture the work done so far in a coherent way and point to the future
- Concentrate on main messages
  - References to case studies and other deliverables will be made
- Discuss structure and content of these messages
  - Gather feedback from group to be directly incorporated in final result

## **Final Result: Whitepaper on “Introduction to Core-Edge Story”**

- Attempts to serve as main achievement paper of CEWG, overarching the list of more detailed and specific deliverables we aim to create
- Attempts to be captivating enough to be disseminated within sponsor companies to explain what Core-Edge is about

Deadline: ASAP

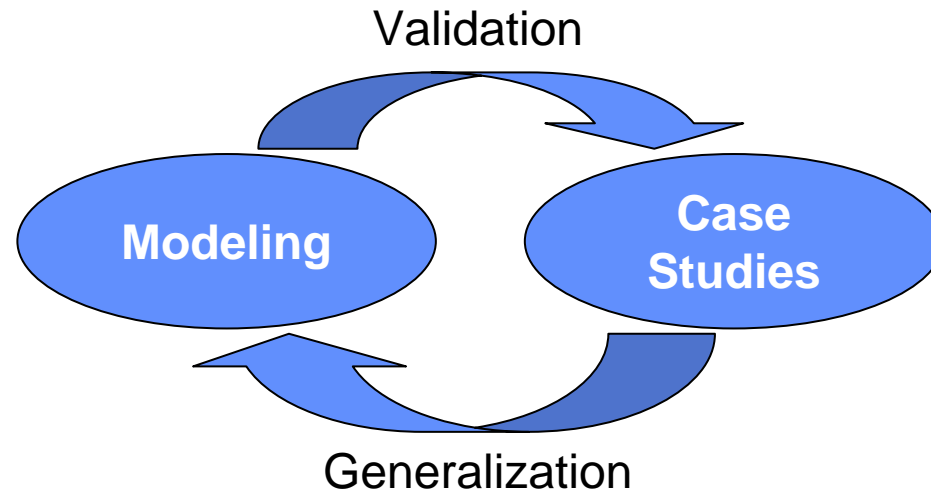
# The Phenomenon: Core-Edge Dynamics



- The communication industry is undergoing major changes in its structure
- A variety of dynamics is causing these changes
- It is crucial to understand these dynamics in order to identify opportunities for future investments

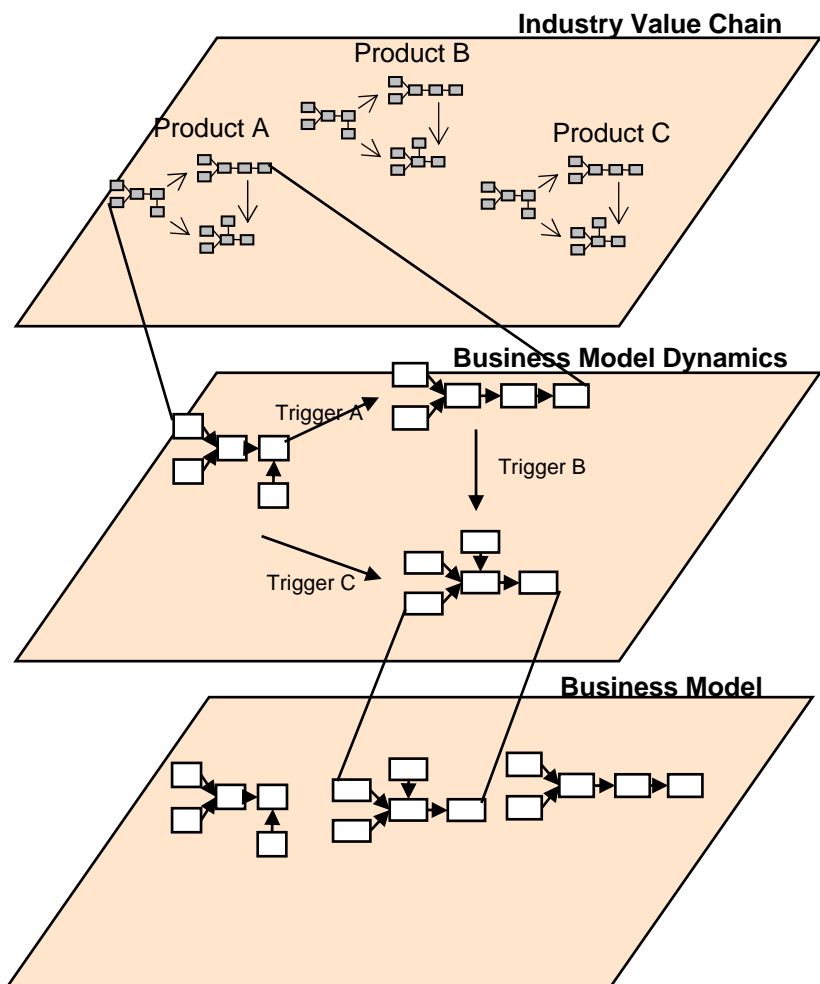
**Goal of CEWG:** Help partners understand these dynamics

# Our approach



- Create a circle of validation and generalization using case studies
- Main criteria for case studies:
  - Presence of some form of core-edge dynamics
  - Observability of past or current dynamics
  - Predictability of possible dynamics in the future
  - Maturity in technology and market desirable but not necessary
- Examples are services/products (online music, VOIP) or concepts/practices (e.g., open source, regulation policies, such as wireless spectrum policies)

# Scope of research



## Value Dimension

How to derive value in the (future) value chain as a whole?

**Sustainable success** of a particular business model over time

**Competitive position** of a particular business mode compared to other ones

**Value that can be captured** with a **particular control point**

## Strategy Dimension

Devise strategies that **cross entire value chains**, e.g., VOIP subsidizing to capture value in SIP services

Devise **strategies for particular products**, e.g., how to position in presence of particular trigger(s)

Devise **strategies for certain business models** and control points

## CFP Dimension

Feed core-edge dynamics into Internet Architecture, Viral Communication, PrivSec & Broadband across all these tiers but also vice versa

**Connect to concepts** in other CFP WGs, i.e., viral and liquid systems

**Use CE methodology** within other working groups

# The disappearance of the core: Core-Edge taxonomy

- Taxonomy is based on *identification* of
  - service transactions as well as providers & consumers,
  - control structure in the implementation of the service transactions
- Taxonomy is *grounded in infrastructure* aspects for delivery, service provisioning and management
  - Centralized vs. distributed
  - Parties holding control point rooted in these infrastructures
- Taxonomy is used to derive *possible business models* for particular products (control point constellations)

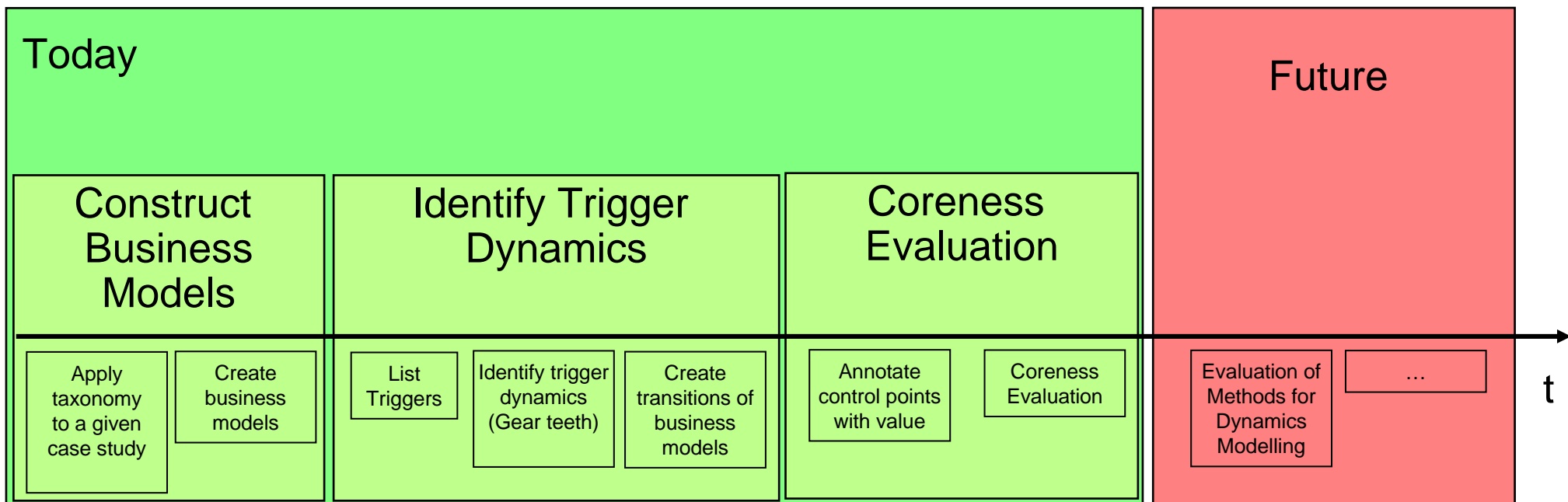
**Note:** Taxonomy is NOT based on topological constructs for core & edge

**Reason:** Value creation does not depend on these topological constructs, i.e., **value can be created anywhere at anytime by anybody**

# The appearance of “coreness”: Evaluate the success of business models

- Introduced “Coreness” as a measure for the likelihood of a dominant and successful business model
  - Based on our methodology
    - **Construct possible business models** -> building control point constellations based on our taxonomy
    - **Identify possible triggers and their dynamics** causing business transformations -> trigger sheet and gear teeth model
    - **Classify control points** (and entire offerings) by scarcity and demand for service transactions -> **coreness**
    - Evaluate evolution over time to devise strategies to position along the value chain -> the **coreness tunnel**
- Relation to the “old” notion of “core” (as a topological construct)
  - “core” in the past guaranteed a certain likelihood for a dominant and successful business model
  - In today’s time, topological “core” does not warrant business success
    - Introduced “coreness” as such measure

# The Core-Edge methodology





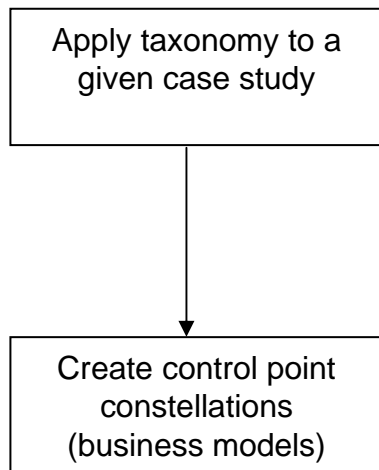
# The Core-Edge methodology

## Construct business models

### OBJECTIVE

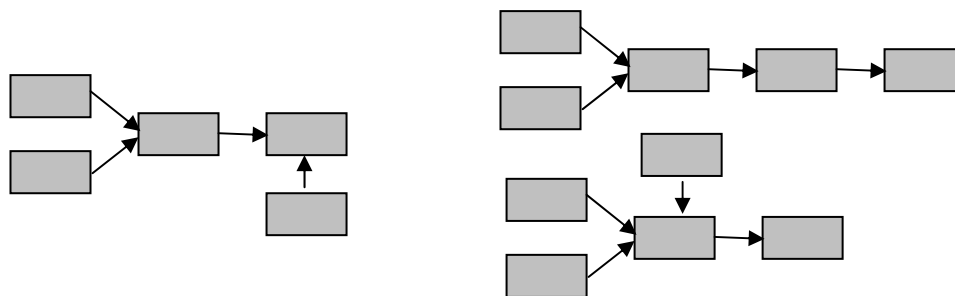
1. Enumerate possible control points for a given service
2. Enumerate varying business models

### METHOD



### OUTCOME

	Offering A	Offering B	Offering C
Service transactions	...	...	...
Control points	...	...	...
Delivery infrastructure	...	...	...
Service infrastructure	...	...	...
Management infrastructure	...	...	...
...	...	...	...



# The Core-Edge methodology

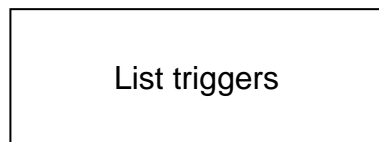
## Identify trigger dynamics

### OBJECTIVE

### METHOD

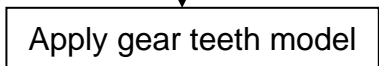
### OUTCOME

- Identify triggers causing change of business



Technological	Regulatory	Social	Business
...	...	...	...
...	...	...	...

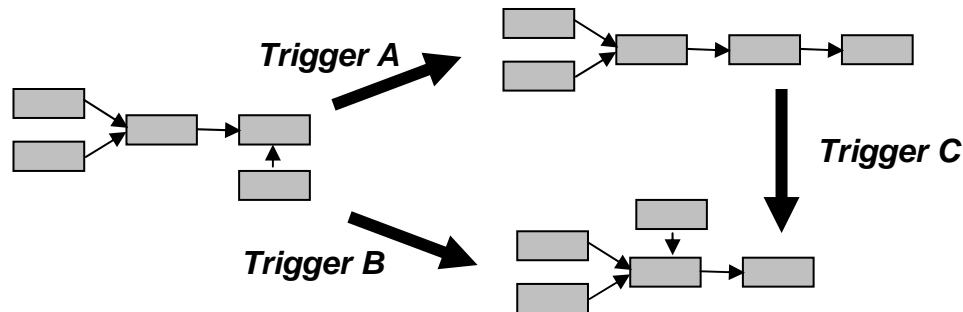
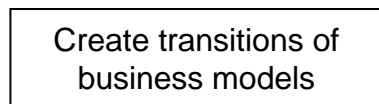
- Identify Trigger Dynamics



Let us take the following Gear Teeth Dynamics (from CH Fine Presentation)

	Business cycles	Industry Organization Structure	Regulatory Policy	Technology	Consumer Preferences	Corporate Strategy	Clockspeed
Business Cycles		Downturns trigger disintegration		downturns stifle R&D investment		Downturn triggers outsourcing: Search for smoothness	
Industry Organization Structure	Integration buffers downturns	integrable/steirintegration	regulation slows incumbent innovation		Wrap services around commodities		Integrity slows clockspeed
Regulatory Policy							deregulation speeds innovation
Technology		Innovation Attacks Incumbents & supports integration	innovation can obsolete regulations	technology disintegration	innovation slowdowns drive brand investment		technology innov drives clockspeed
Consumer Preferences							branding slows disintegration
Corporate Strategy		branding slows disintegration					project frequency drives Capab. life
Clockspeed	fast innovation moderates downturns			customer power drives clockspeed		capability str. drives project frequency	

- Capture cause-and-effect of triggers



# The Core-Edge methodology

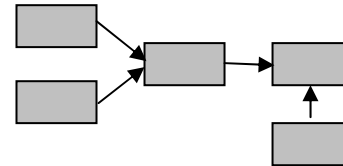
## Value annotation and coreness path

### OBJECTIVE

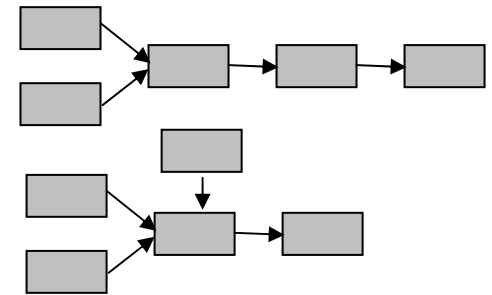
6. Annotate Control Points with Value

### METHOD

Create value networks

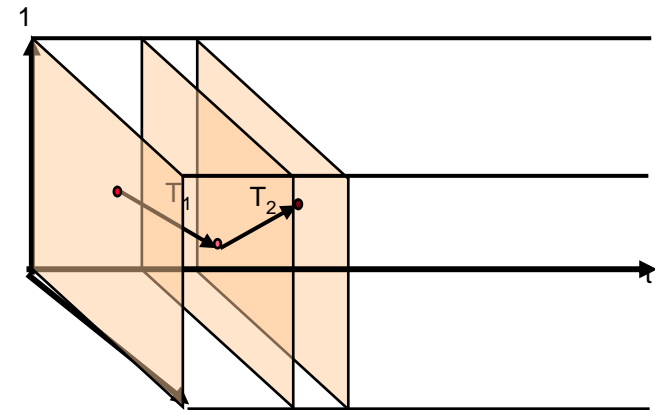


### OUTCOME



7. Coreness Evaluation

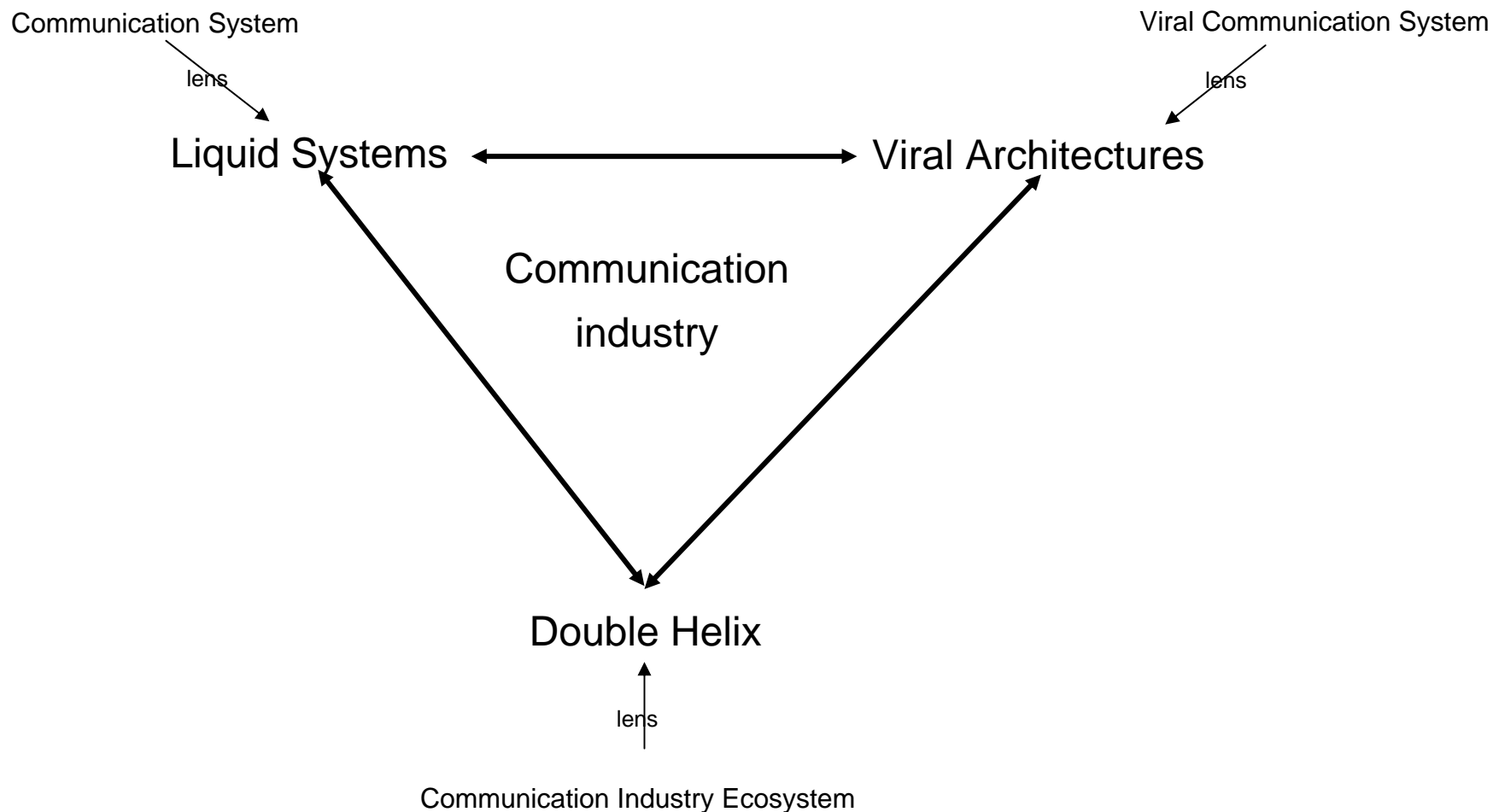
Classify control points & offerings on scarcity and demand plane -> coreness



# Core-Edge fall/winter research agenda

- Toolkit
  - **Idea:** give a clear template for applying the tools given in our methodology -> enable sponsors to “walk through” their own case studies
  - **Result:** description of such toolkit as deliverable
- Dynamic modeling of coreness
  - **Idea:** study application of system dynamics for modeling the dynamic evolution of coreness over time -> “walk the coreness tunnel”
  - **Result:** SD model for coreness as deliverable, applied for a particular case study albeit generic enough for any case study

# Connecting to CFP frameworks



**Goal of CFP:** Develop frameworks, concepts and proof-of-concept technologies, enabling system view through the different lenses

# Viral architectures

- Main concepts:
  - Definition of a host-virus architecture
  - Immunity and cascading elements used for dynamics within each architecture
    - Can be used to create dynamics between architectures
- Dynamics:
  - Based on host-virus relation
    - A host can adopt viruses and prepare therefore a host for future viruses
      - Example: IBM-PC -> PC+DOS -> PC+Windows -> PC+Windows+3<sup>rd</sup> party apps
  - Form of immunity and cascading elements defines also possible dynamics between host-virus combinations

# Liquid systems

- Main concepts:
  - Definition of communication systems as phases of solid and liquid states
  - Definition of design principles for liquid states
- Dynamics:
  - Phase transitions between solid and liquid and vice versa

# The Double Helix

- Main concepts:
  - Functional components taxonomy
  - Control points and mapping to business models
  - Triggers to define dynamics between control point constellations
  - Coreness to evaluate dynamics among constellations
  - Double helix of commoditization and innovation
- Dynamics:
  - Triggers to move between control point constellations
  - Dynamics of triggers
  - Cycle of commoditization and innovation (double helix)



# Relating the different concepts

- Liquid  $\leftrightarrow$  Double helix
  - Phase transitions can be described via triggers
  - Triggers can initiate phase transitions, but do not need to (more fine granular)
- Viral  $\leftrightarrow$  Double helix
  - Adoption of virus (immunization) and preparation of new host system can be described via triggers
  - Triggers can initiate immunization but do not need to (more fine granular)
- Liquid  $\leftrightarrow$  Viral
  - Comes via relation above

Desired: Description of these concepts and their relation in common CFP paper