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## Networks: definition, characteristics, classifications, types and examples



## Objectives of this module

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*"Networks are **organizational arrangements** that use resources and/or governance structures from more than one organization ... simultaneously a single organization and a product of sovereign organizations." Borys, Jemison (1989)*

- ... defining what networks are.
- ... positioning networks vis-à-vis markets and hierarchies as hybrid arrangement ("best of both worlds")
- ... classifying types of networks by giving illustrating examples.

# Agenda

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| 1. Definition of networks                   |
| 2. Networks between hierarchies and markets |
| 3. Network classification and examples      |

# Agenda

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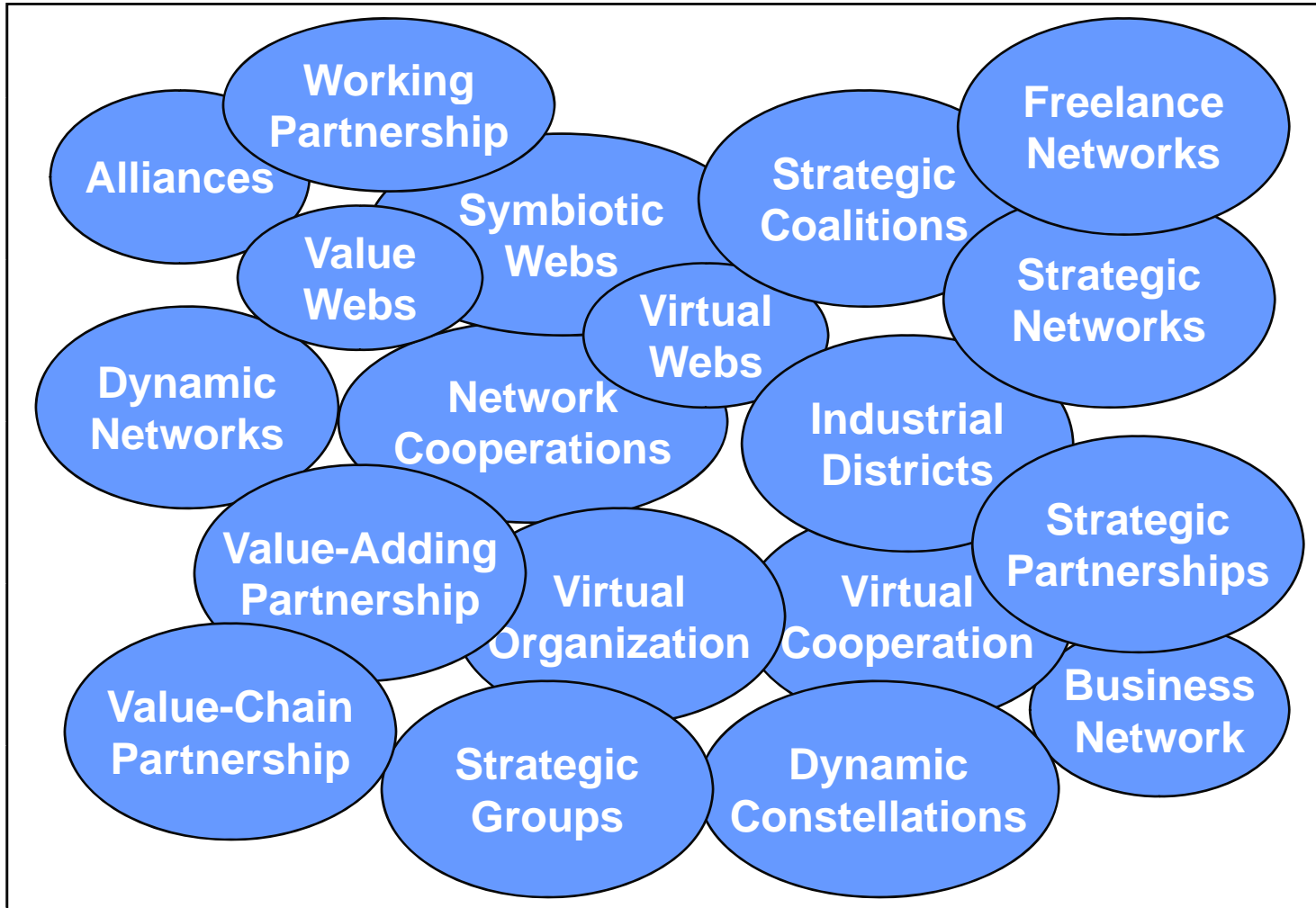
1. Definition of networks

2. Networks between hierarchies and markets

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## Vast variety of network types

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# Definitions for Networks

Author	Definition
Forsgren; Johanson 1992a, 5-6	"... we define business networks as <b>set of connected exchange relationships</b> between actors controlling business activities ... Business networks differ from social networks - and from networks in general - by being coupled to business activities. The business network model is therefore based on some assumptions about business activities. ... The interdependence between activities - in the sense that the outcome of the one is dependent on the performance of the other - becomes stronger."
Grandori; Soda 1993, 4	"... a mode of <b>regulating interdependence</b> between firms ... which is based on a cooperative game with partner-specific communication."
Nohria; Eccles 1992, 289	"... a fluid, flexible, and dense <b>pattern of working relationships</b> that cut across various intra- and interorganizational boundaries. ... The network organization is envisioned as a sprawling and organic electronic network connecting the employees of the firm with one another as well as with their customers, vendors, and strategic partners ..."
Sydow; Windeler 1993, 193	"Corporate networks are a <b>long-term arrangement</b> among distinct but related for-profit organisations. As such, they are an organisational form between <b>markets and hierarchies</b> . Compared to markets, a network has more structure, produces more interaction among the network organisations, provides 'thicker' information channels, demands more loyalty, exhibits more trust, prefers voice to exit, and puts less emphasis on prices. If compared to hierarchies, a network is somewhat underorganised, due to the loose coupling of the network organisations and due to the open boundaries of the network itself."
Webster 1992, 5. 9	"Network organizations are the <b>corporate structures</b> that result from multiple relationships, partnerships, and strategic alliances." "The basic characteristic of a network is <i>confederation</i> , a loose and flexible coalition guided from a hub where the key functions include development and management of the alliances themselves, coordination of financial resources and technology, definition and management of core competence and strategy, developing relationships with customers, and managing information resources that bind the network."

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## A first basic definition: the social network

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A social network is

- “a specific set of **linkages** among a defined set of **actors** (structure/relation)
- with the additional property that the **characteristics of these linkages** as a whole may be used to interpret the social **behaviour** of the actors involved (process/interaction)

(Source: Mitchell (1969), p. 2, cited from Sydow/Windeler (2000), p. 3).

Questions arise:

- Which relations are between which actors in specific single networks (the structure)?
- How do the actors interact under the structure within the single networks (the process)?

## A more precise definition by Nohria/Eccles:

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- “The most general use of the term ‘network’ is for the **structure of ties among the actors** in a social system.
- These **actors** may be roles, individual persons, organizations, industries, or even nation states.
- Theirs **ties** may be based on conversation, affection, friendship, kinship, authority, economic exchange, information exchange, or anything else that forms the basis of a relation.”

(Nohria/Eccles (1992), p. 288)

## A working definition

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An organizational inter-firm network is defined by

- the **relations** between a defined set of **distinct organizations** (the network structure)
- and their **interactions** (the network process).
- The linkages are based on a **different types of exchange** (e.g. economic goods, money, information or knowledge).
- The network has a **boundary** to its environment
- and pursues a **common goal**,
- at the same time, the participants have different, **specific goals**.
- The network consists of relationships characterized by **mutual investments or interdependencies** (no simple transactional linkages).

## Embeddedness

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- (re-)constructed social context ...

"As in the embeddedness approach, the concept of social context ... is not one of a once-and-for-all influence but of an ongoing process that is **continuously constructed and reconstructed during interaction.**" (Grabher 1993, 5)

- in time ...

"... interfirm cooperation is complex, embedded in various institutional arrangements, and at once **forward-looking** (linked to the shadow of the future) and **backward looking** (linked to the cooperative history of the partners)." (Parkhe 1993, 819)

## Development path and dissolution

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" ...four reasons for the **dissolution of cooperative IORs**:

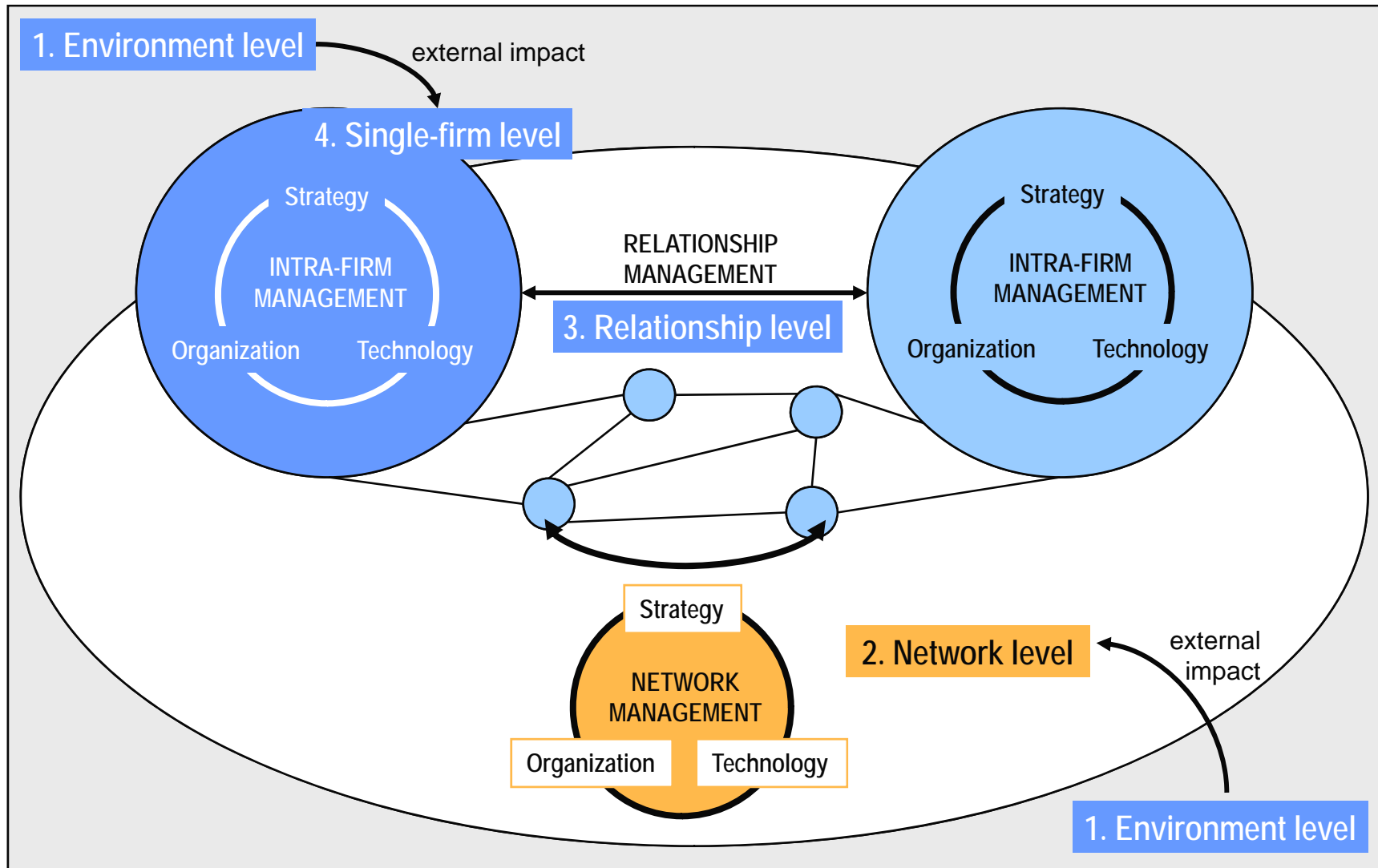
- (a) excessive legal structuring and monitoring of the relationship,
- (b) conflicts between role and interpersonal behaviors of organizational parties,
- (c) conditions for violations of trust, and
- (d) escalating commitments to failing transactions.

... the seeds for disintegration of relationships are contained in the very governance structures, safeguards, and processes that lead to their formation and growth.

... excessive formalization and monitoring of the terms of interorganizational relationships lead to conflict and distrust among parties. Parties strive to maintain their unique identities and autonomy in the face of a growing web of interdependencies that emerge with time

... " (Ring; Van de Ven 1994, 108)

# Views on networks (EU-IST project DOMINO)



## Agenda [2]

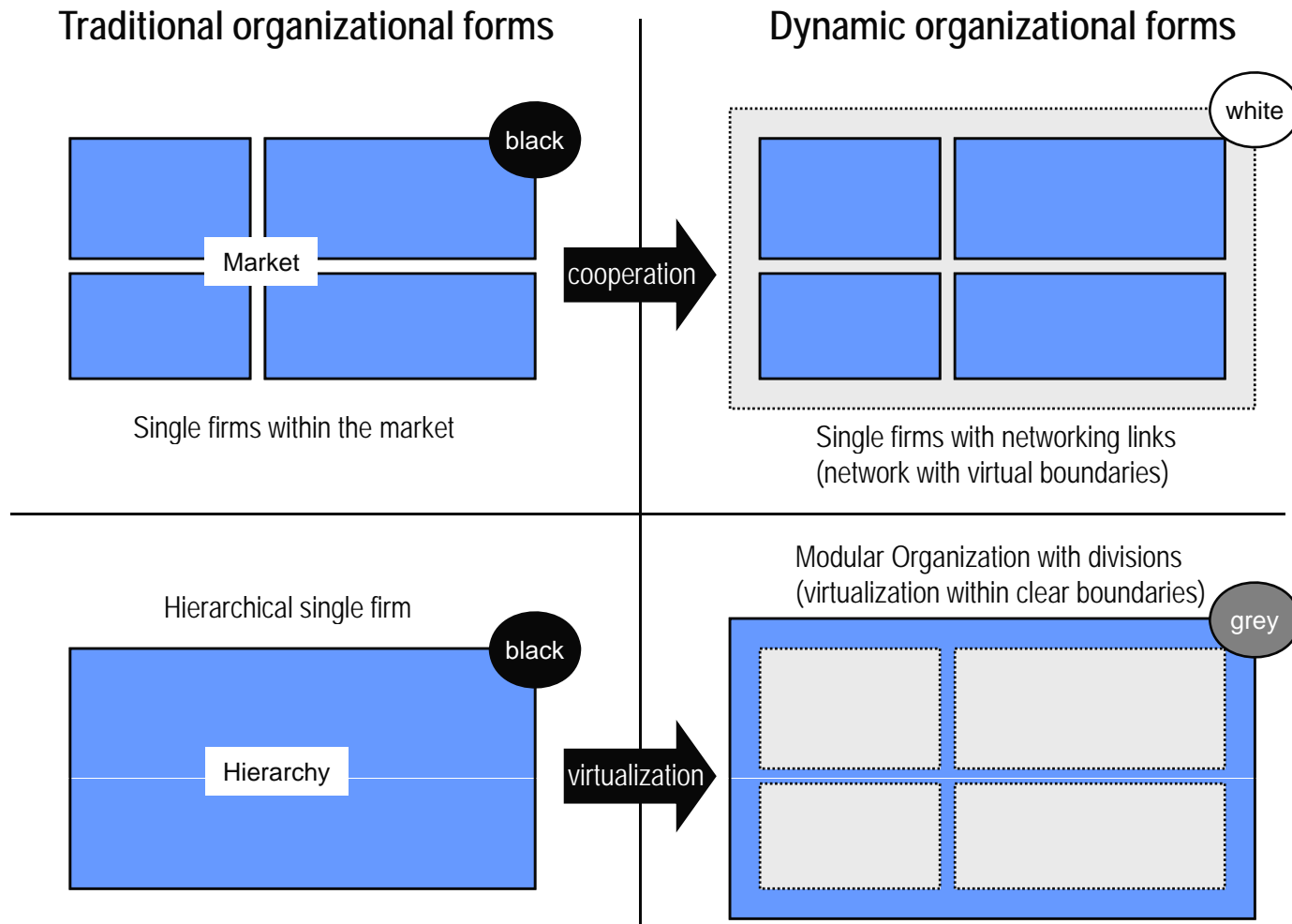
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1. Definition of networks

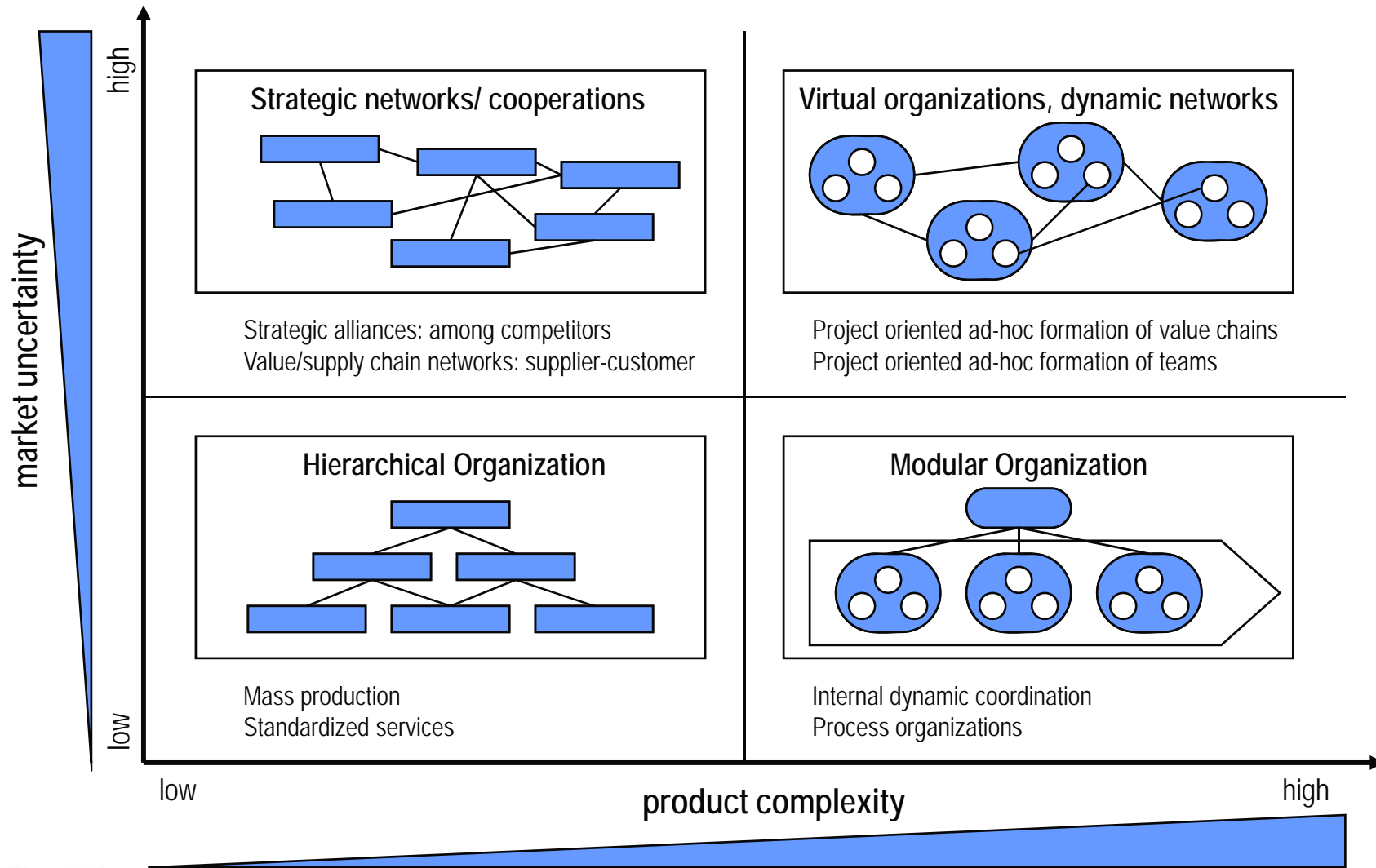
2. Networks between hierarchies and markets

3. Network classification and examples

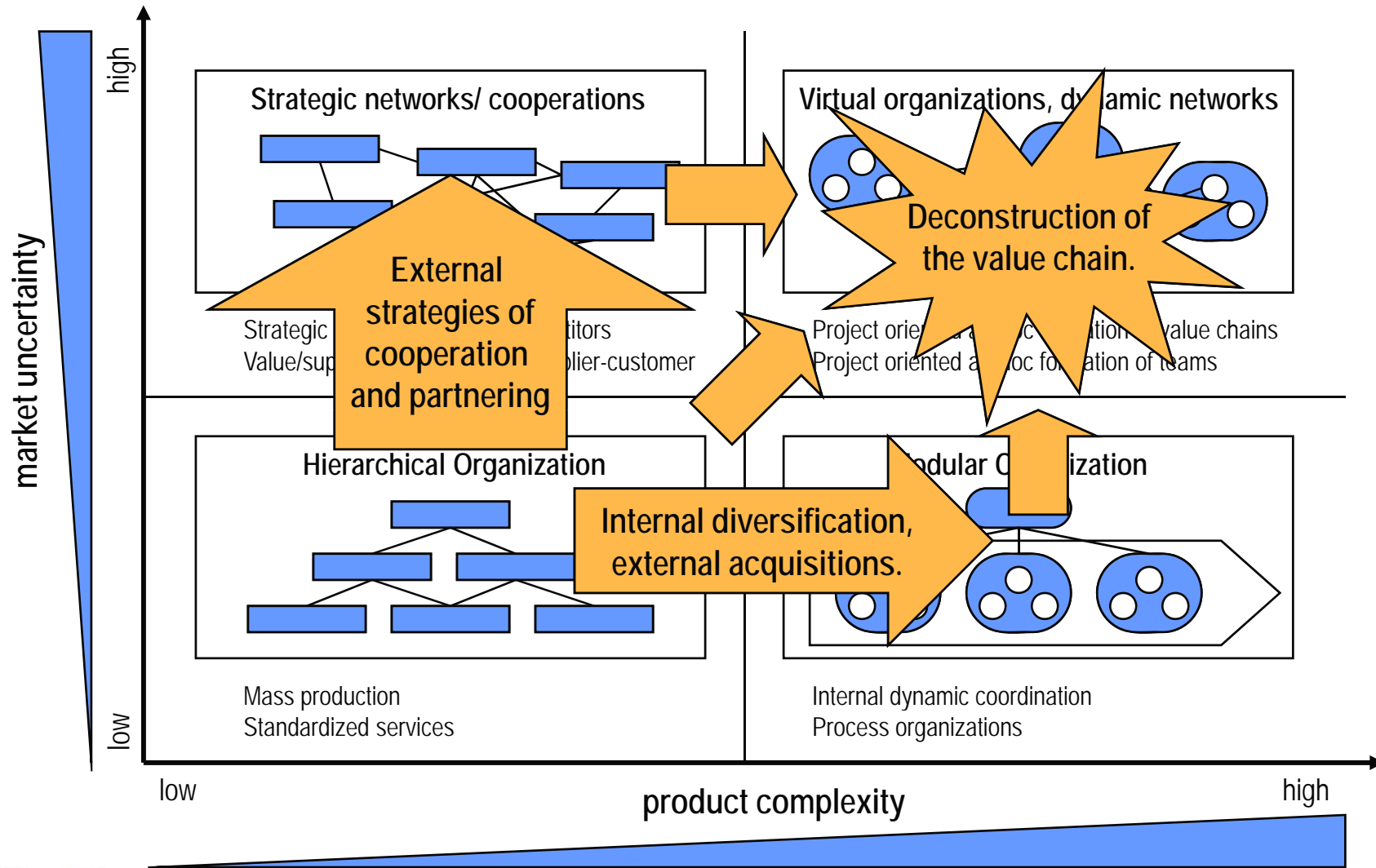
# New forms of organizing



# Networks as a result of organizational virtualization



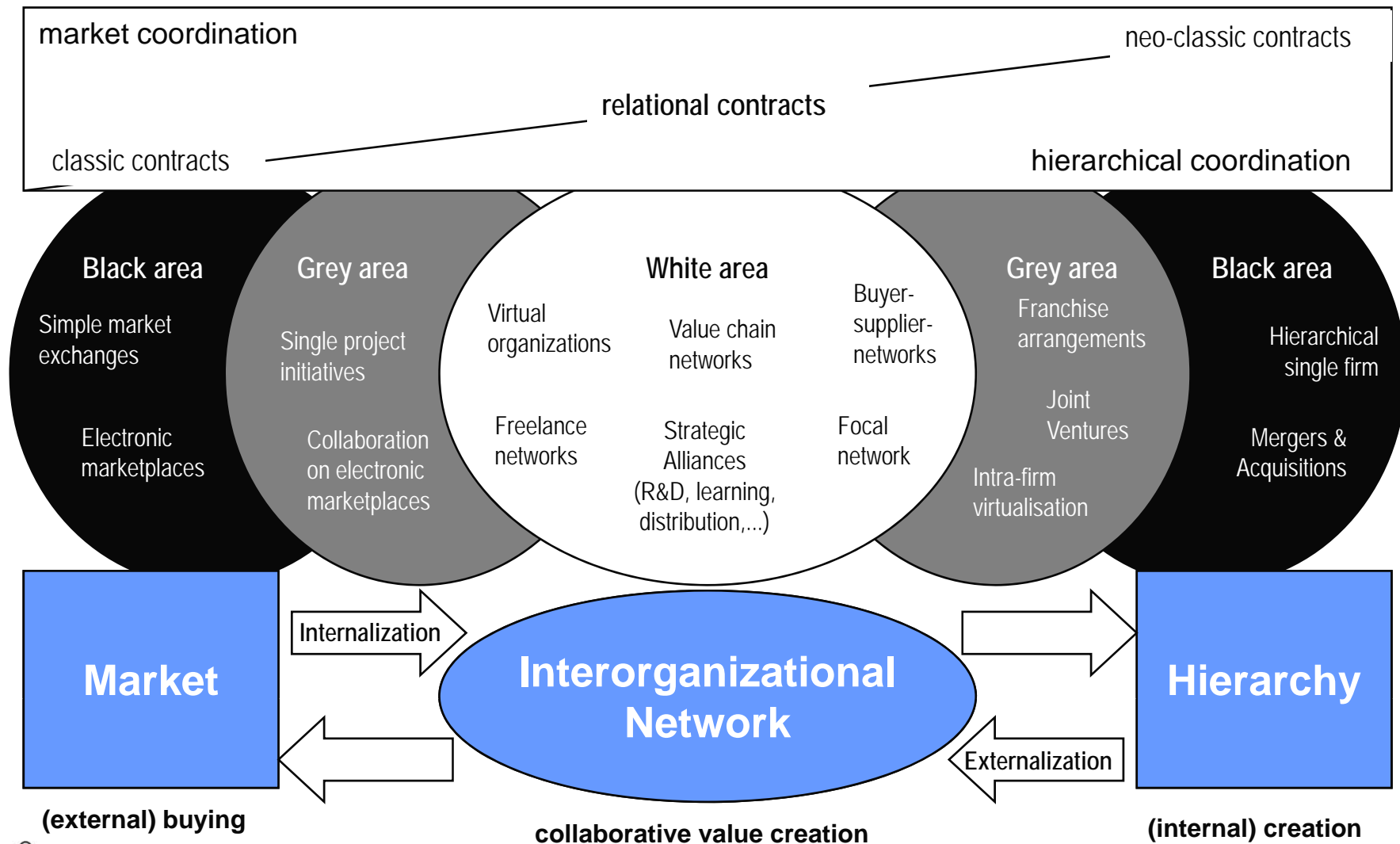
# Networks as a result of organizational virtualization



# Stylized comparison of forms of economic organization

	Forms		
Key features	Market	Network	Hierarchy
Normative basis	Contracts – property rights	Complementary strengths	Employment relationship
Means of communication	Prices	Relational	Routines
Methods of conflict resolution	Haggling – Resort to courts for enforcement	Norm of reciprocity – reputational concerns	Administrative fiat – supervision
Degree of flexibility	High	Medium	Low
Amount of commitment among the parties	Low	Medium to high	Medium to high
Tone or climate	Precision and/or suspicion	Open-ended, mutual benefits	Formal, bureaucratic
Actors preferences or choices	Independent	Interdependent	Dependent
Mixing forms	Repeat transactions Contracts as hierarchical documents	Multiple partners Formal rules	Market-like features: profit centers, transfer pricing

# Definition and demarcation of organizational networks



## Agenda [3]

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1. Definition of Networks

2. Networks between hierarchies and markets

3. Network classification and examples

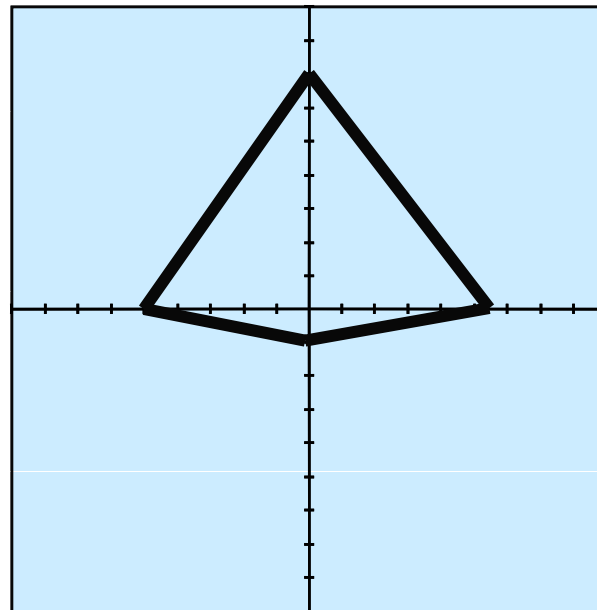
## Remember ... Profiling networking motives

### Enhance:

Quality, Services,  
Add Value, Scope,  
Knowledge

### Share/Manage Risks

Market, financial,  
legal, operational,  
investment risks



### Improve:

Efficiency,  
reduce costs,  
enhance scale.

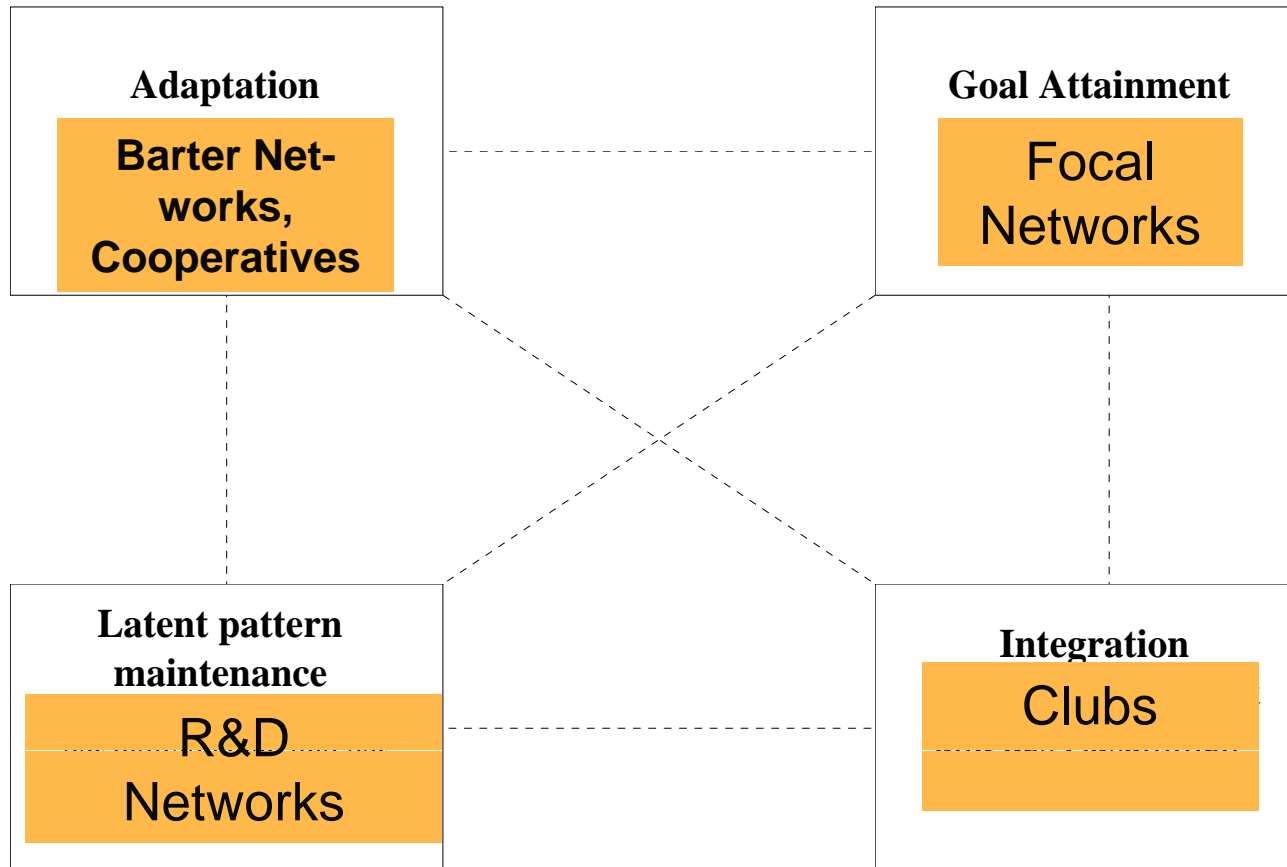
### Redefine/innovate:

New products,  
new services,  
new processes,  
new business ideas

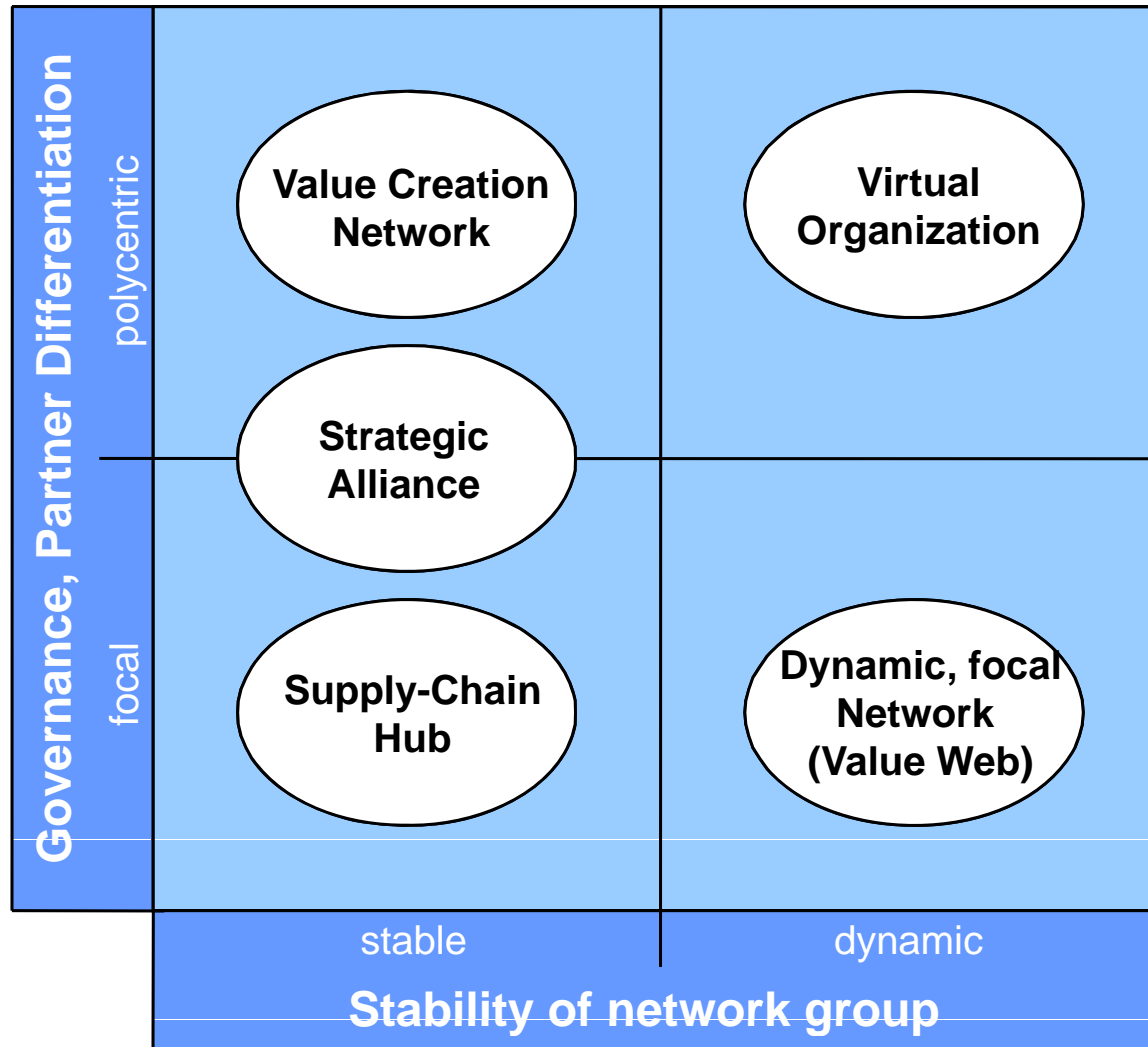
Acc. to: Merchand, Donald A., Hard IM choices for senior managers, Financial Times Supplement Mastering Information Management, April 5, 1999, S. 4

# Typology based on the AGIL schema

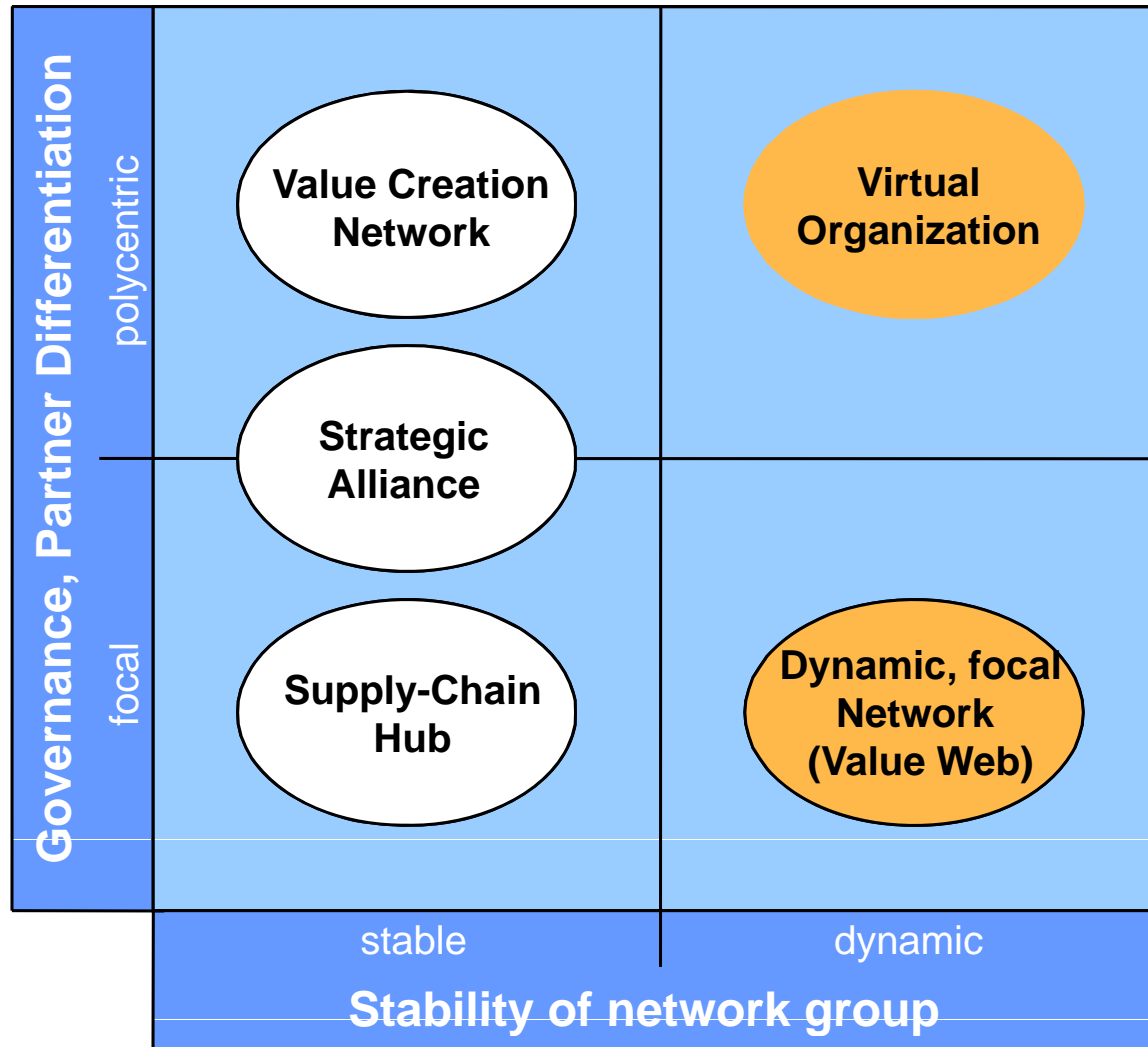
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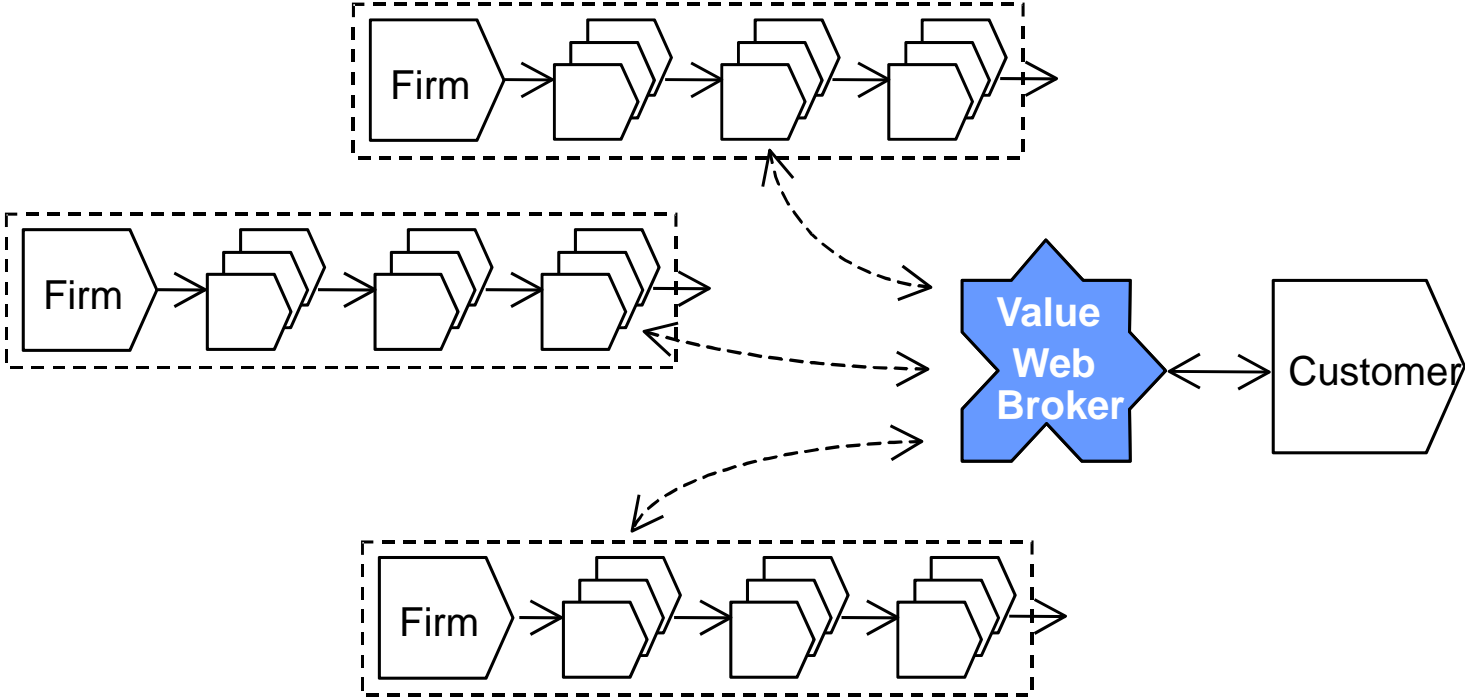
# Classification of generic network types



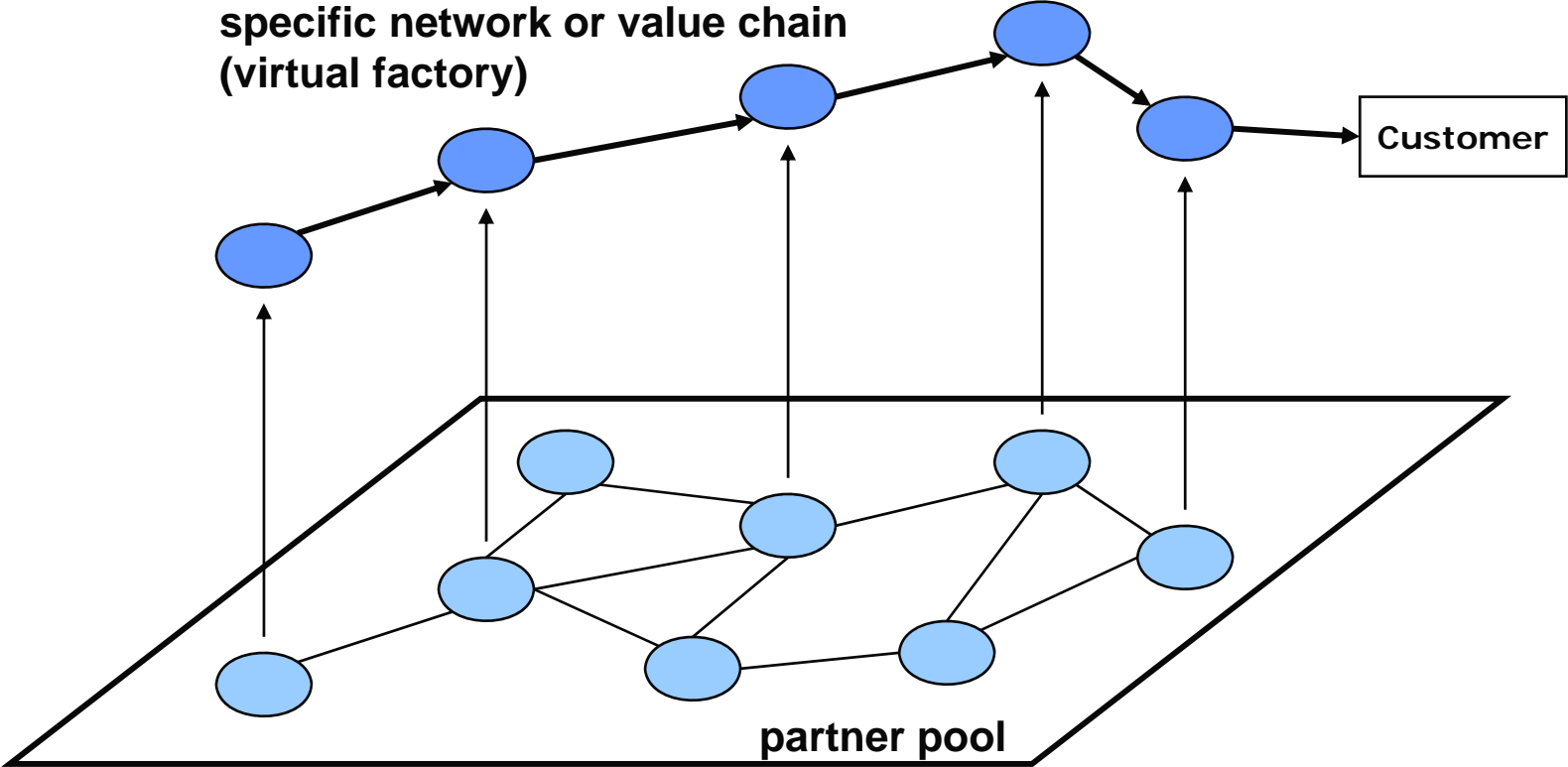
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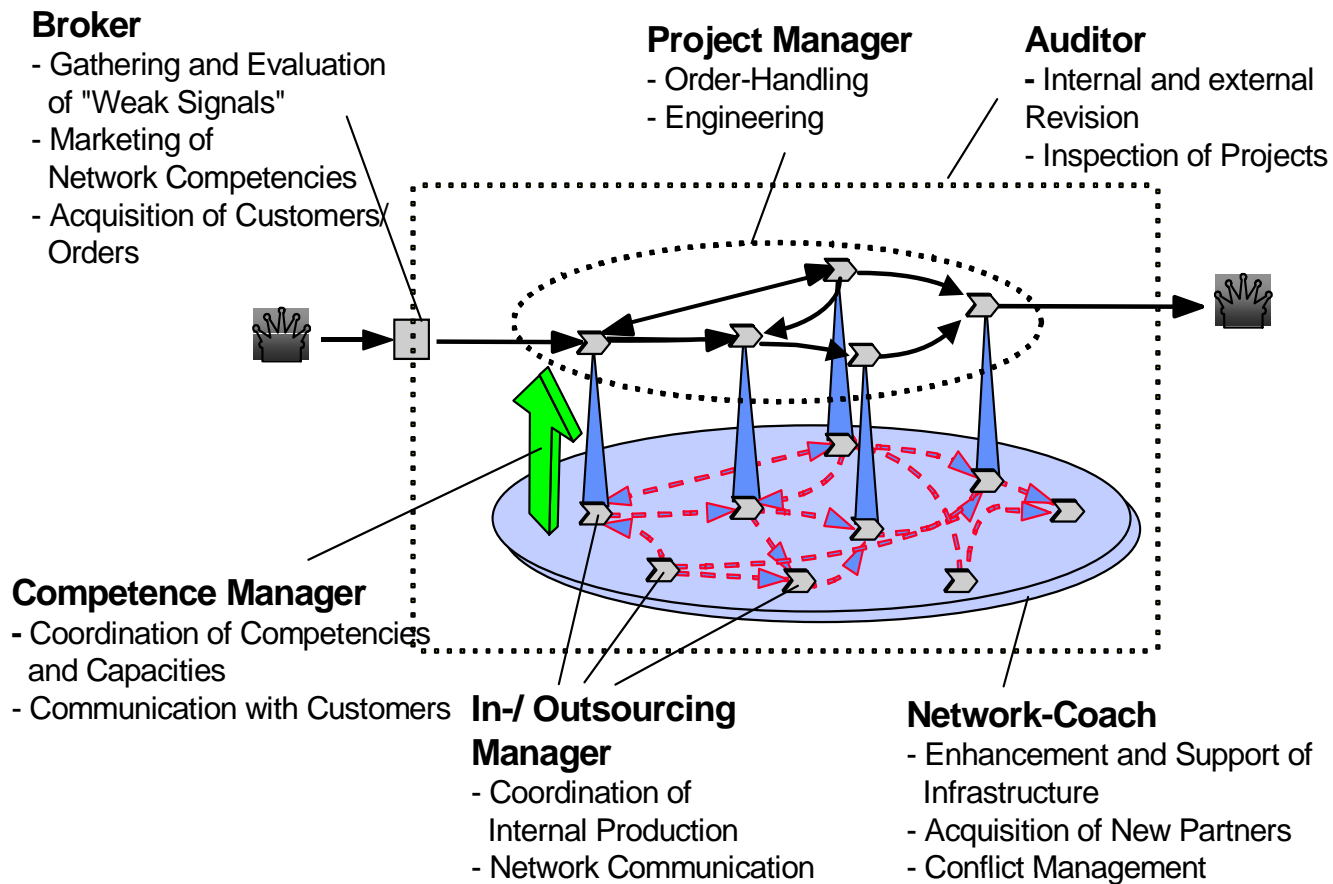
# Value Web Model



# Virtual Organization Model



# Roles in the Virtual Factory Network



## Summary

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- Definition: ... relations matter! The diversity of networks is difficult to capture in a definition, hence it may be helpful (easier?) to position network arrangements.
- Between hierarchies and markets: networks are hybrid arrangements trying to combine the benefits of the ideal types hierarchies and markets
- The diversity of networks and network characteristics calls for classification. Classifications can only represent subsets of network properties.