



Value network and its life-cycle:

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Research framework

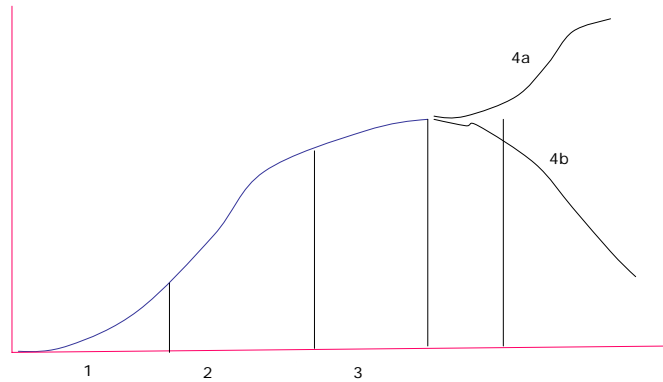
Theoretical frameworks

Life-cycle & evolutionary perspective

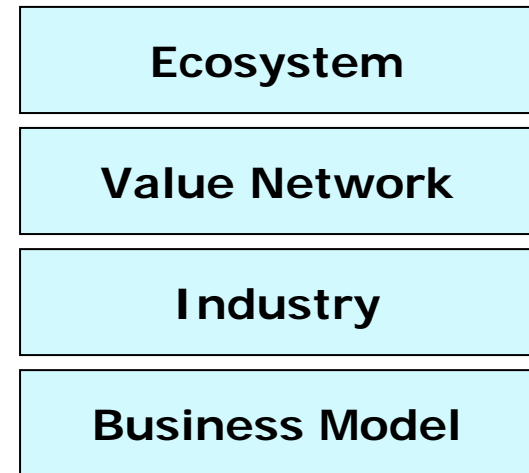
Network Research



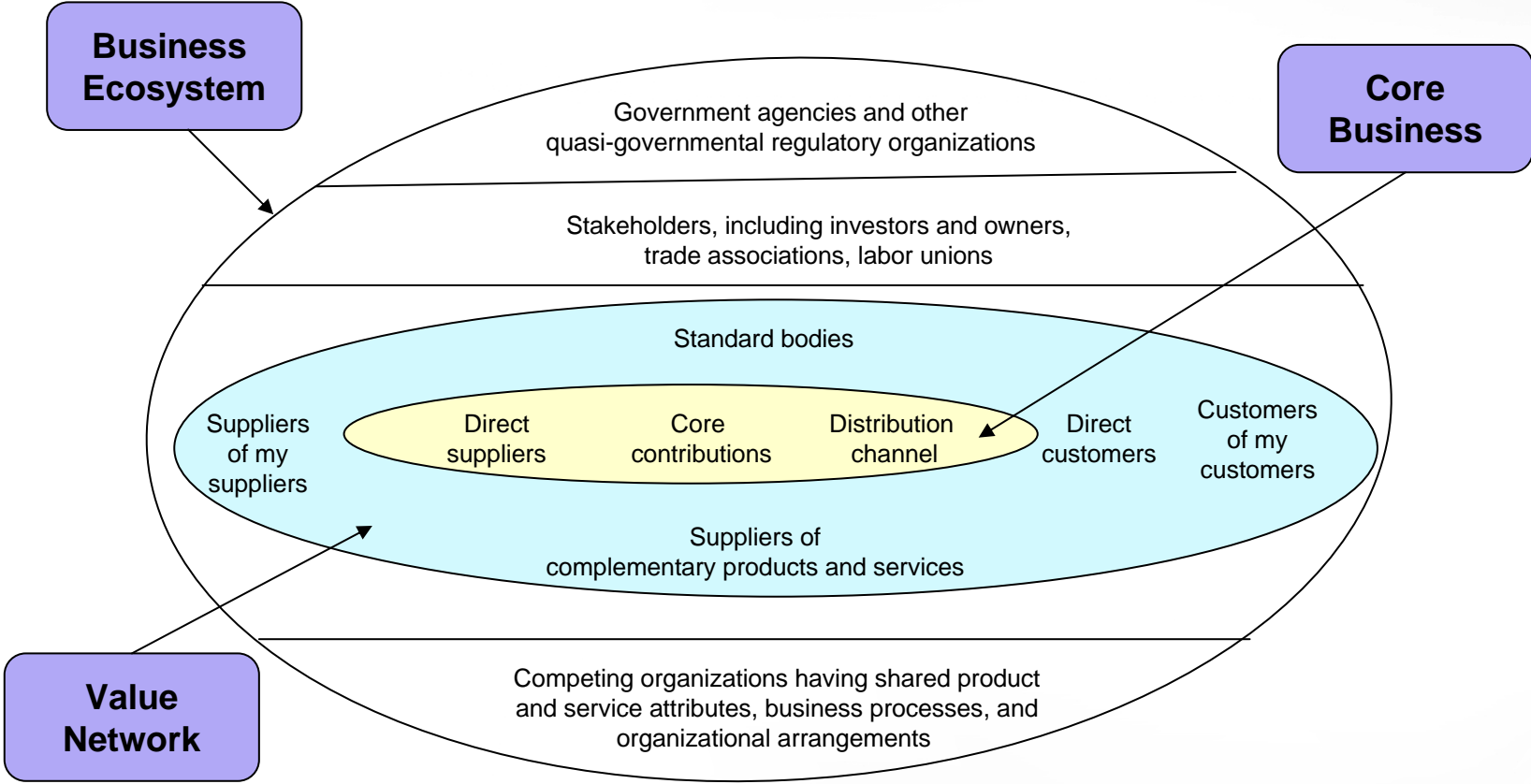
Change factors
Change impacts
Success factors



Levels of analysis



View of Business Environment



Moore 1996

Research gaps in current research

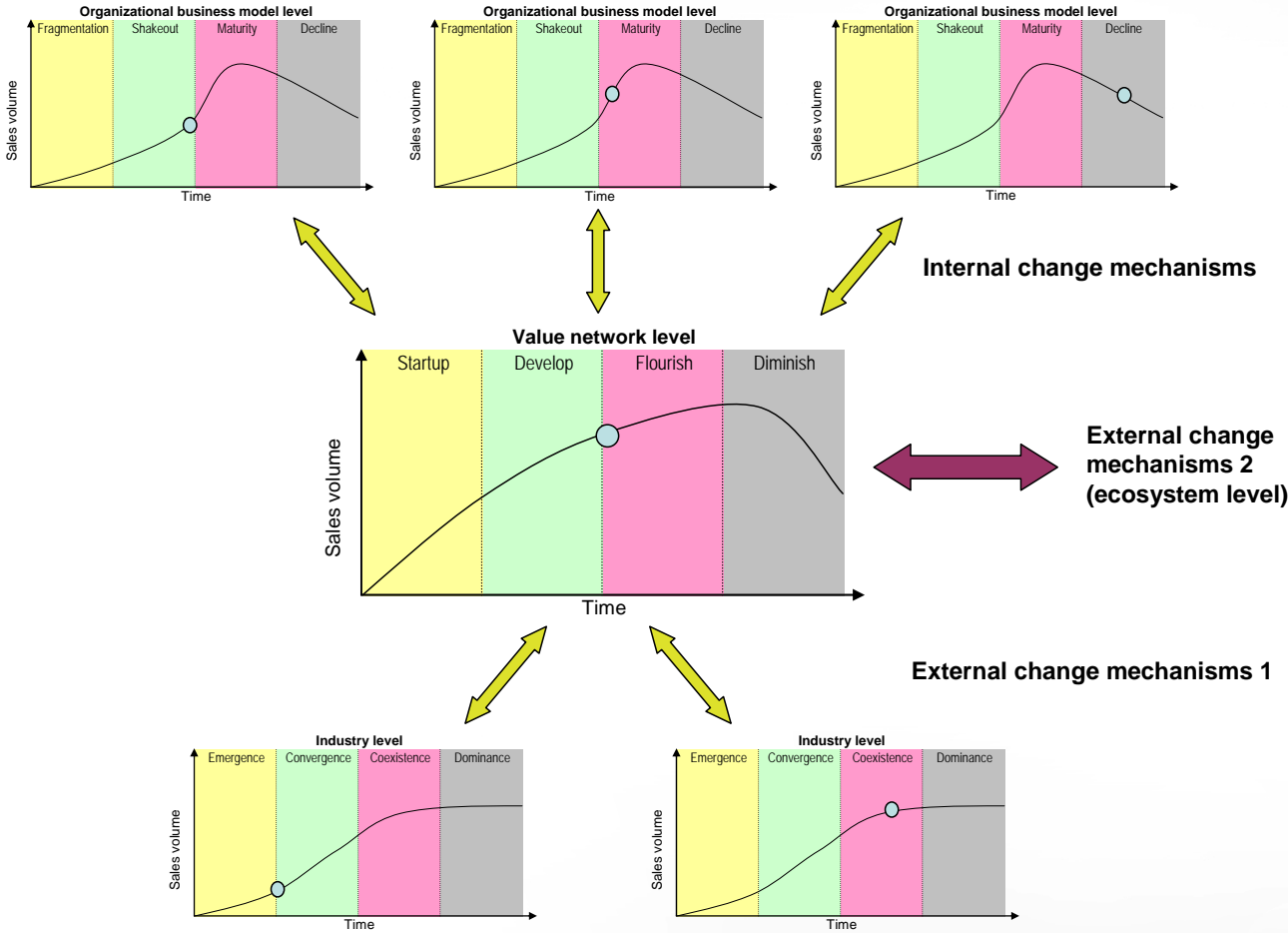
- a) Evolution of network structures
- b) Analysis placed on networks instead of dyadic relationships
- c) Dynamics of networks instead of cross-sectional studies
- d) Relationship between radical dyadic change and radical change at the network level
- e) The processes through which critical events lead to changes and network structures
- f) Effects of radical changes in network structures on the performance of networks and its members

Knoben et al. (2005)

Change factors

- Internal change factors
 - Motives (technology access, risk sharing etc.)
 - Interaction in dyad (mergers, changes in strategies, personal changes, switching costs etc.)
- External change factors
 - PEST factors (Political, Economical, Societal, Technological)
 - Changes in industry structure and demand (see e.g Porter)

Value Network Change Mechanism



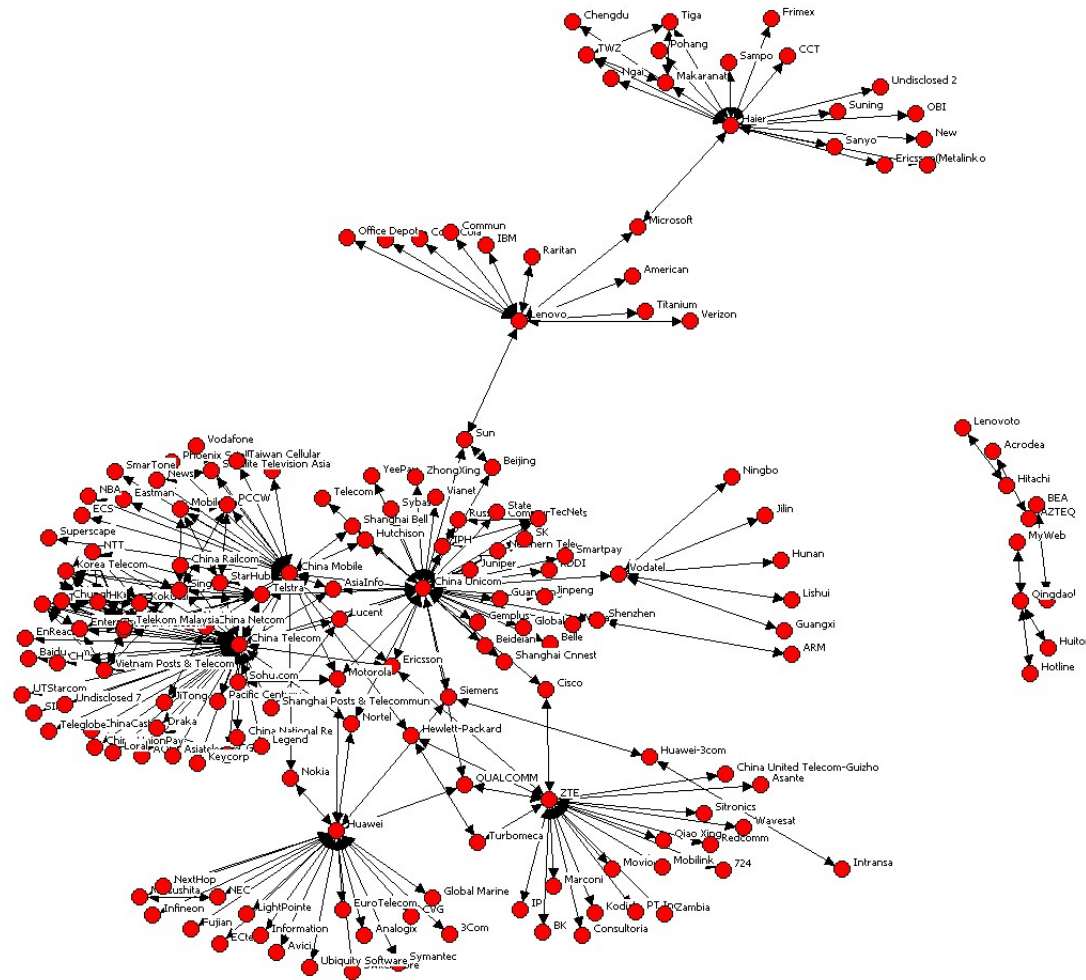
Change factors and value network life-cycle

	Formation	Development/Growth	Flourishment	Decline/renewal
Collaboration/ alliance formation	Define the infrastructure and new value proposition with few customers, suppliers, and regulator	Development of standards Establishing distribution channels	Development of complementary process and service innovations	Mergers, Joint ventures, consolidation Designing new value network structure New players emerge
Market characteristics	Highly sophisticated niche markets with high margins	Increasing market penetration Growth-markets	Mass markets with low-margins	Market consolidation Emergence of new markets
Product	Variety of products Concepts become stable	Emergence of dominant design	Lesser differentiation opportunities Modularity of product	Commoditization of product Emergence of new innovations
Technology	Development competing proprietary solutions	Emergence of standardized technologies	Implement standard interfaces and modularity of technologies	Convergence of technologies Emergence of new technologies
Manufacturing	Short production runs and adjustment of manufacturing capacity	Outsourcing of capacity Modularity design for manufacture Packaging of services	Emergence of overcapacity Search of low-cost manufacturing options	Modification of manufacturing assets Divestment of assets
Competition	Few companies Cooperation activities	Competition for growth and with standard technologies	Increasing price competition Competition for producing effectively	Competition for services and complementary value offerings Cooperation activities
Regulation	Low regulation due to novelty of value network	Focus on infrastructure regulation	Focus on service regulation	Lowering the intensity of regulation

EXAMPLES



Structure of network: Case Chinese ICT



1999-2007

EXAMPLES



Change in network structure and firm position

FREEMAN BETWEENNESS CENTRALITIES IN THE NETWORK			
Alliance network (1999-2001); number of nodes = 2016		Alliance network (2003-2005); number of nodes = 722	
Firm	nBetweenness	Firm	nBetweenness
Microsoft Corp	19,4	Microsoft Corp	16,9
IBM Corp	15,0	IBM Corp	12,9
America Online Inc	7,5	Motorola Inc	10,4
Nokia Oyj	6,0	Samsung Electronics Co Ltd	9,9
Motorola Inc	6,0	Intel Corp	8,6
Sony Corp	5,4	Cisco Systems Inc	7,1
Oracle Corp	5,2	Nokia Oyj	5,3
Cisco Systems Inc	5,0	Sony Corp	4,8
LM Ericsson Telefon AB	4,9	Openwave Systems Inc	4,3
Siemens AG	3,9	Microsoft Network LLC	4,3
Intel Corp	3,6	SAP AG	3,7
Samsung Electronics Co Ltd	3,2	EMC Corp	3,5
Yahoo! Inc	2,5	Oracle Corp	3,4
NEC Corp	2,4	NTT DoCoMo Inc	3,1
Sony Music Entertainment	2,0	Siemens AG	3,0
Hewlett-Packard Co	2,0	Toshiba Corp	2,4
IBM Japan Ltd	1,9	LM Ericsson Telefon AB	2,2
AOL Time Warner Inc	1,8	Fujitsu Ltd	2,0
Hitachi Ltd	1,7	Yahoo! Inc	1,7
Yahoo Japan Corp	1,7	Hewlett-Packard Co	1,7
Toshiba Corp	1,6	Comcast Corp	1,6
Compaq Computer Corp	1,4	CareerBuilder Inc	1,4
NTT DoCoMo Inc	1,2	AOL Time Warner Inc	1,3
LG Electronics Inc	1,2	Google Inc	1,3
Motorola Corp	1,2	Apple Computer Inc	1,2
Fujitsu Ltd	1,2	Avaya Inc	1,2
Deutsche Telekom AG	1,0	LG Electronics Inc	0,7
Telia AB	0,8	Time Warner Inc	0,6
Sonera Oyj	0,6	Vodafone Group PLC	0,5
Telenor AS	0,6	SBC Communications Inc	0,5
Vodafone Group PLC	0,4	Deutsche Telekom AG	0,4
		TeliaSonera AB	0,2

Conclusions

- Current network approaches are best suited for the static analysis of interorganizational behavior mainly from the focal company's and dyadic relationship perspective
 - ⇒ Mainly insufficient for analyzing the dynamics of the value network development and structure
- Value networks often comprise bits and pieces of several industries, many of which are in constant change. These changes are likely to cause considerable pressure also to the emergence and development of value networks
- The following *hypotheses* are formulated:
 1. The development of value network is dependent on the survival of its actors and their capability to do business in the network.
 2. The emergence and death of value network is dependent on the changes and life-cycles of business models inside the network.