

Διλήμματα της Τεχνολογικής Στρατηγικής

Τεχνολογική Στρατηγική

▷ ΔΠΜΣ «Επιχειρηματικότητα»

Γεώργιος Σταμπούλης

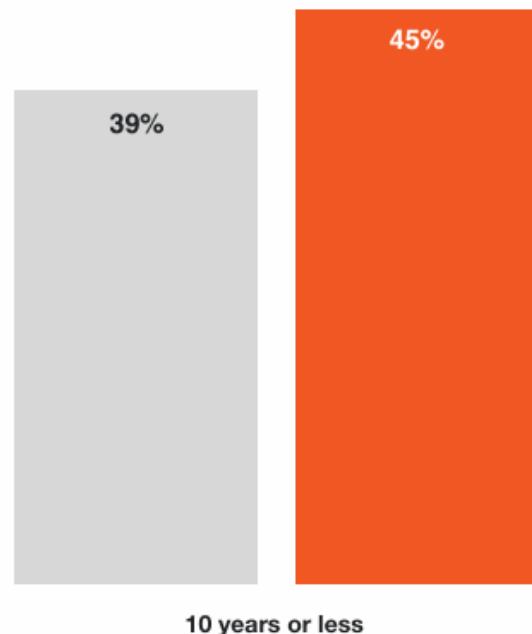
Τμήμα Οικονομικών Επιστημών



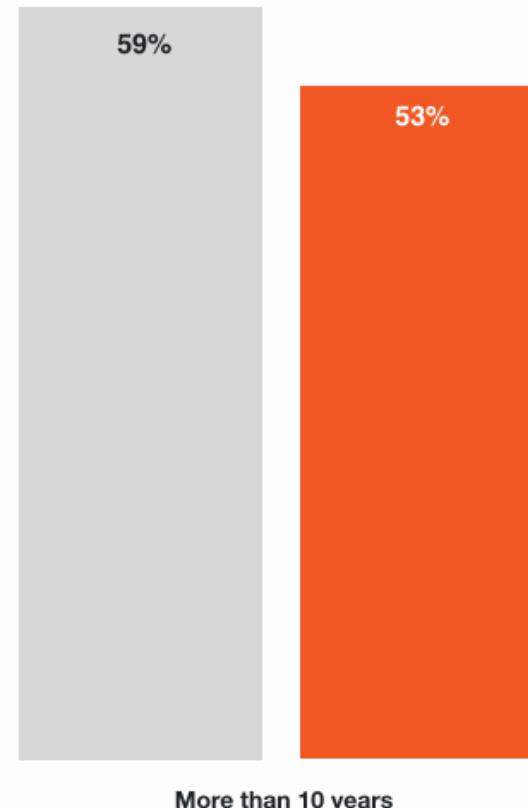
ΠΑΝΕΠΙΣΤΗΜΙΟ
ΘΕΣΣΑΛΙΑΣ

The reinvention imperative appears to be accelerating

2023 2024



Question: If your company continues running on its current path, for how long do you think your business will be economically viable?



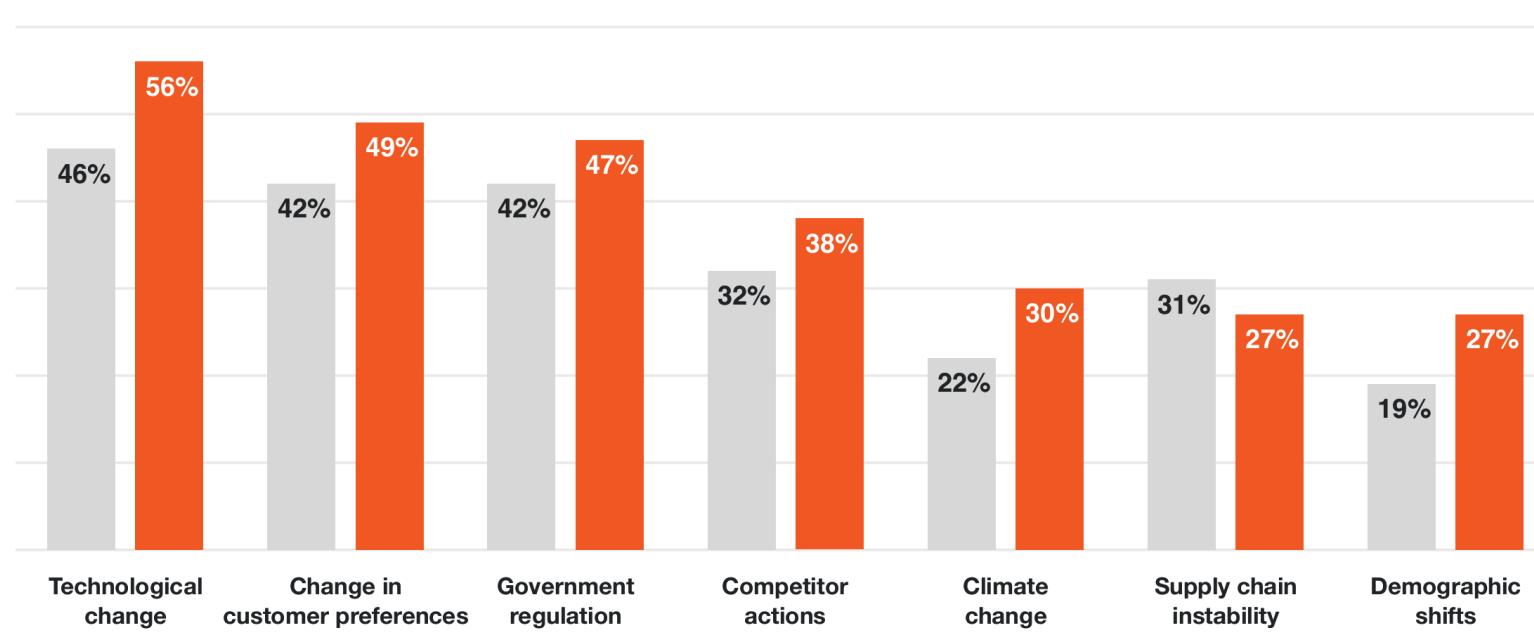
Note: Percentages shown for a given year may not total 100 due to rounding.

The impetus to reinvent is intensifying

Question: Please indicate the extent to which the following factors have driven/will drive changes to the way your company creates, delivers and captures value in the last five years/next three years.

(Showing only 'to a large extent' and 'to a very large extent' responses)

■ Last five years ■ Next three years

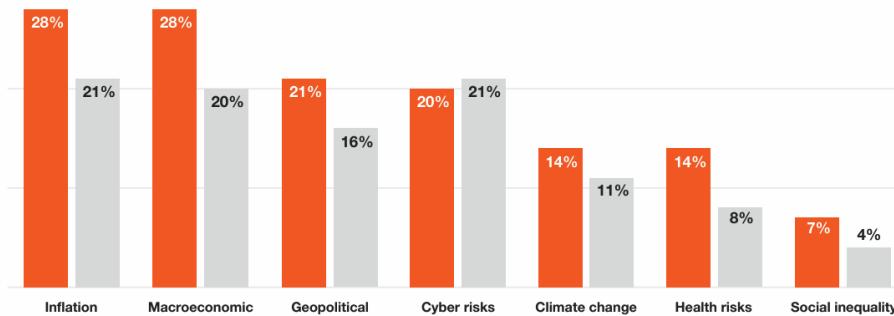


CEOs who are less confident of their company's viability are slightly more conscious of key threats

(Showing only 'highly exposed' and 'extremely exposed' responses by business model viability)

CEOs who perceive their business models to be viable for:

■ 10 years or less ■ More than 10 years



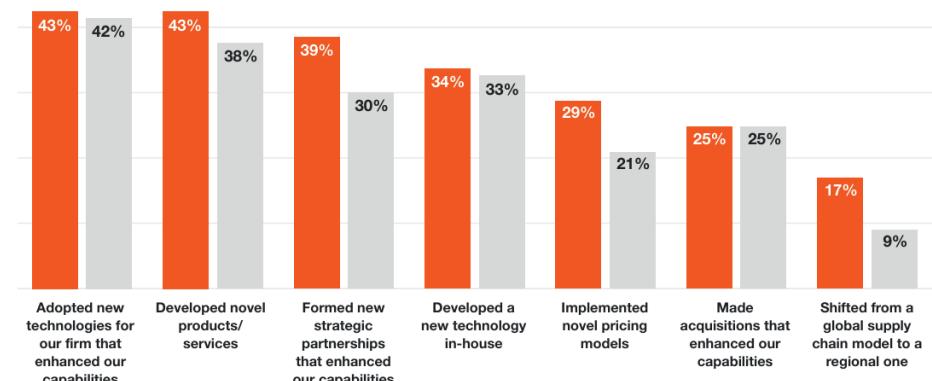
Question: How exposed do you believe your company will be to the following key threats in the next 12 months?

CEOs who are less confident of their company's viability are somewhat more likely to take reinvention actions

(Showing only 'to a large extent' and 'to a very large extent' responses by business model viability)

CEOs who perceive their business models to be viable for:

■ 10 years or less ■ More than 10 years



Question: To what extent have the following actions impacted the way your company creates, delivers and captures value over the last five years?

“It is not the strongest of the species that survive, nor the most intelligent, but the one that is most responsive to change.”

Charles Darwin

- Μπορούν να προσαρμοστούν οι οργανισμοί;
- Πώς;

<u>Company</u>	<u>Founded</u>	<u>Original Product</u>	<u>Current Business</u>
Goodrich	1870	Fire Hose	Aerospace
Nokia	1865	Lumber	Mobile Phones
Harris	1895	Printing Press	Electronics
3M	1902	Mining	Office Supplies
Allied Signal	1920	Chemicals	Aerospace
American Express	1850	Express Delivery	Financial Services
Armstrong	1860	Cork	Floor Coverings
Bally	1931	Pinball Machines	Casinos / Fitness
J&J	1885	Bandages	Pharmaceuticals
Black & Decker	1910	Bottle Cap Mach.	Power Tools
Carlson	1938	Gold Bond Stamp	Travel
W.R. Grace	1854	Bat Guano	Chemicals
Hasbro	1923	Carpet Remnants	Toys
Ingram	1857	Sawmills	Distribution
Sunbeam	1890	Horse Clippers	Appliances
ITT	1920	Phone Companies	Insurance
Xerox	1906	Photog. Paper	Business Equip.
Vivendi	1853	Garbage	Media
Tandy	1899	Leather	Retail Electronics
Marriott	1927	Root Beer	Hotels
Southland	1927	Ice	Retail Stores
Morton Intl	1848	Salt	Air Bags
Nucor	1897	Automobiles	Mini-mill Steel

Fig. 1. Long-lived firms that have changed industries (average age 105 years).

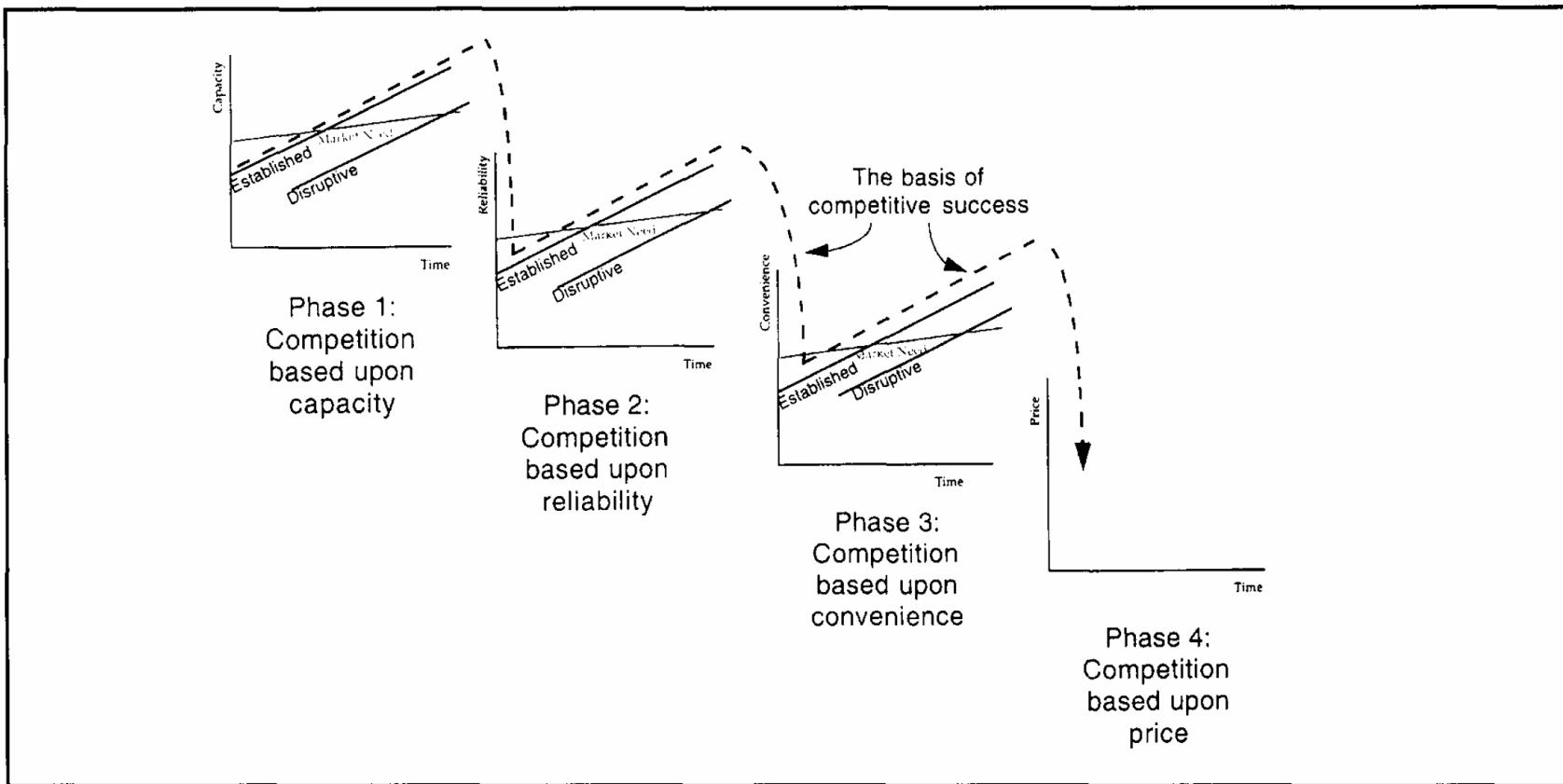
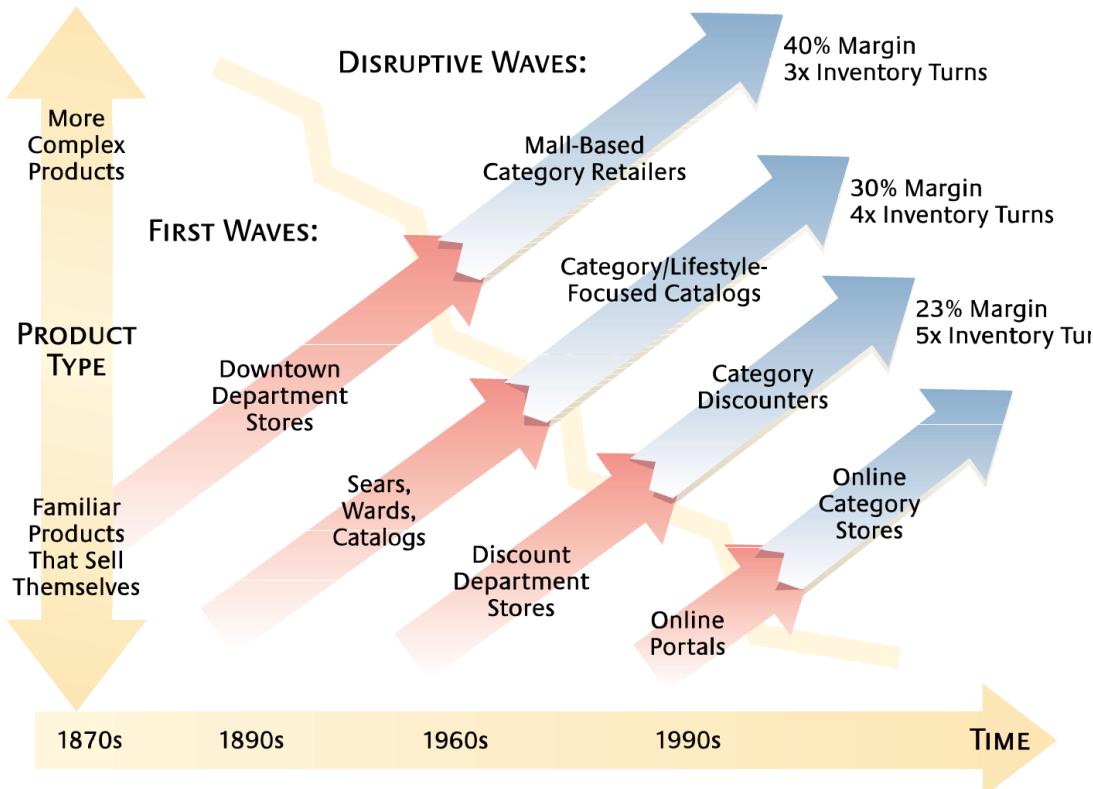
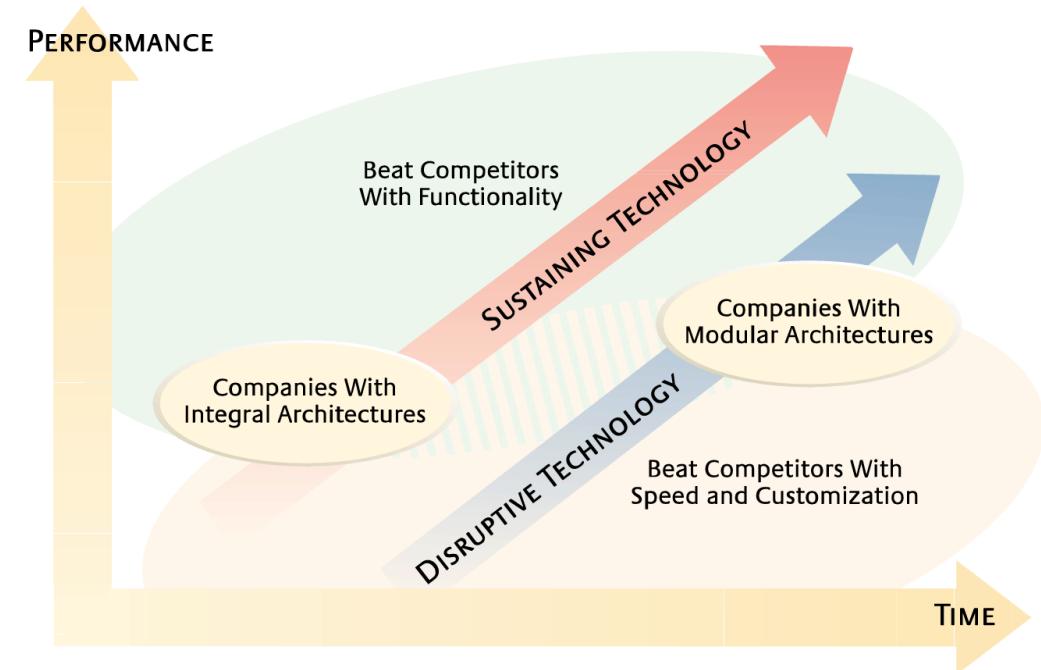


Figure 3 Evolution in the Basis of Competition in the Disk Drive Industry

Historical Disruptions in Retailing



What Determines Competitive Advantage?



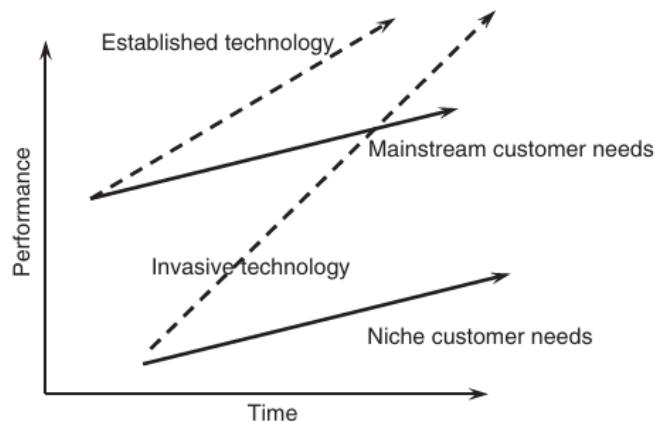


Figure 1. The Progress of Low-End Disruptive Innovations

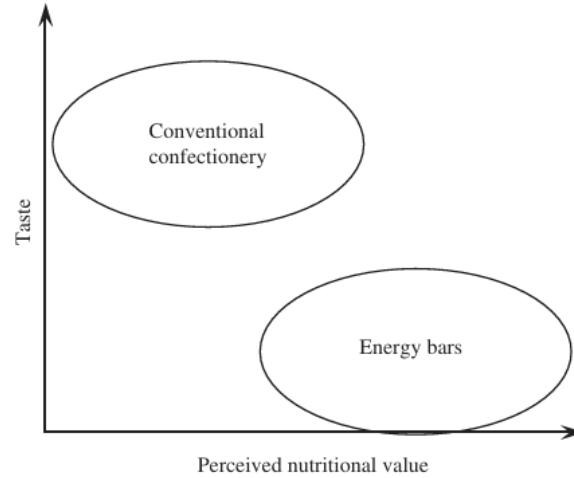


Figure 2. A Simple Market Map for Chocolate Confectionary

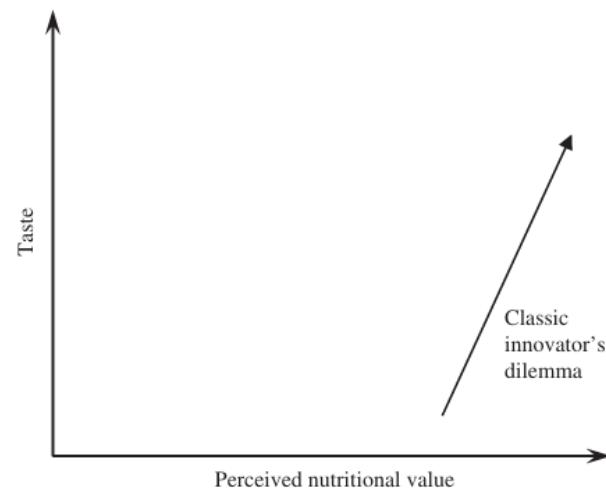


Figure 3. The Classic Innovator's Dilemma

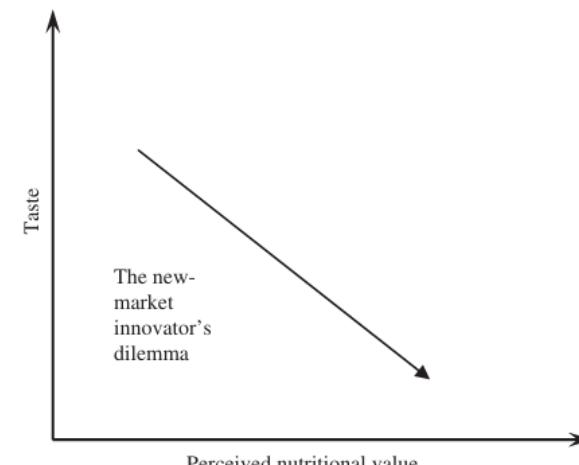


Figure 4. The Innovator's Dilemma for New-Market Disruptions

Reshaping customer preferences

Henderson R. (2006) The Innovator's Dilemma as a Problem of Organizational Competence, Journal of Product Innovation Management, Vol. 23, 1

Exploration vs Exploitation

Dilemma between the exploration of new possibilities and the exploitation of old certainties (March, 1991)

- “established organizations will always specialize in exploitation, in becoming more efficient in using what they already know. Such organizations will become dominant in the short-run, but will gradually become obsolescent and fail.” (March, 2003)
- “The basic problem confronting an organization is to engage in sufficient exploitation to ensure its current viability and, at the same time, devote enough energy to exploration to exploration to ensure its future viability (March, 1991)

- **Exploitation** is about efficiency, increasing productivity, control, certainty, and variance reduction.
- **Exploration** is about search, discovery, autonomy, innovation and embracing variation.
- **Ambidexterity** is about doing both.

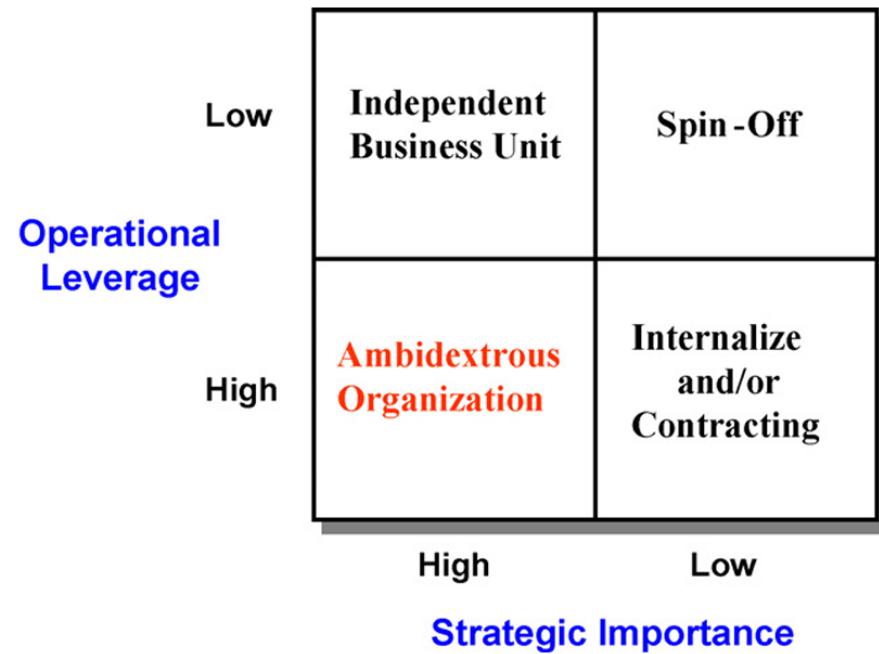


Fig. 3. When should ambidexterity be considered?

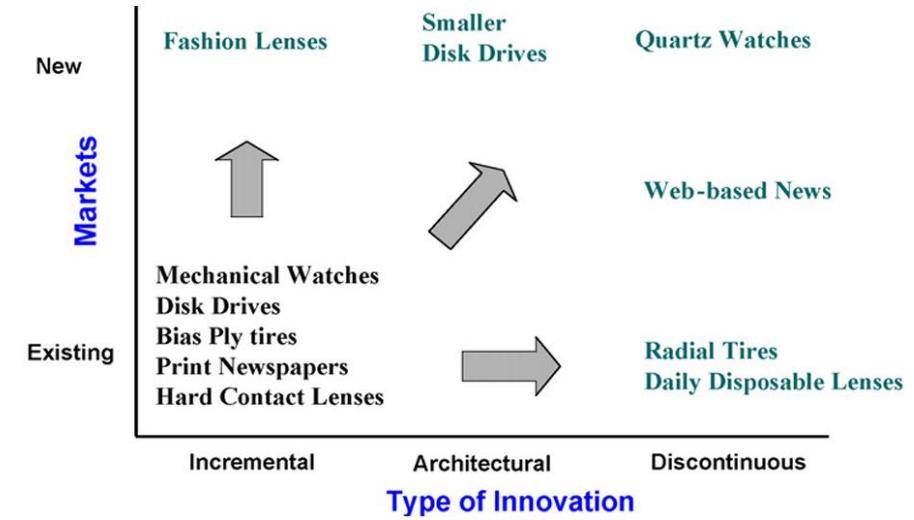


Fig. 2. Innovation streams.

Mapping Innovation

	Incremental innovations small improvements in existing products and operations	Architectural innovations technological or process advances to fundamentally change a component or element of the business	Discontinuous innovations radical advances that may profoundly alter the basis for competition in an industry
New customers			
Existing customers			

Dynamic capabilities

“achieving long-term success requires that firms possess not only the operational capabilities and competencies to compete in existing markets, but also the ability to recombine and reconfigure assets and organizational structures to adapt to emerging markets and technologies” (O'Reilly III and Tushman, 2008)

Dynamic capabilities: the distinct skills, processes, procedures, organizational structures, decision rules and disciplines that enable the senior leaders of a firm to identify threats and opportunities and to reconfigure assets to meet these (Teece, 2006)

Sensing, opportunities and threats

- Scanning, Searching, Exploration
- managers are more sensitive to threats than opportunities (Jackson and Dutton, 1988)
- learning from early errors rather than avoiding them (Bingham, 2005) – H-P ink-jet printer experiments (Flemming, 2002)
- a balance in centralization and decentralization to encourage feedback from market-facing units,
- a culture of openness that encourages debate,
- commitment of resources by senior leaders (financial and time) to encourage long-term thinking, and
- a senior management team that fosters a long-term mindset and promotes exploration

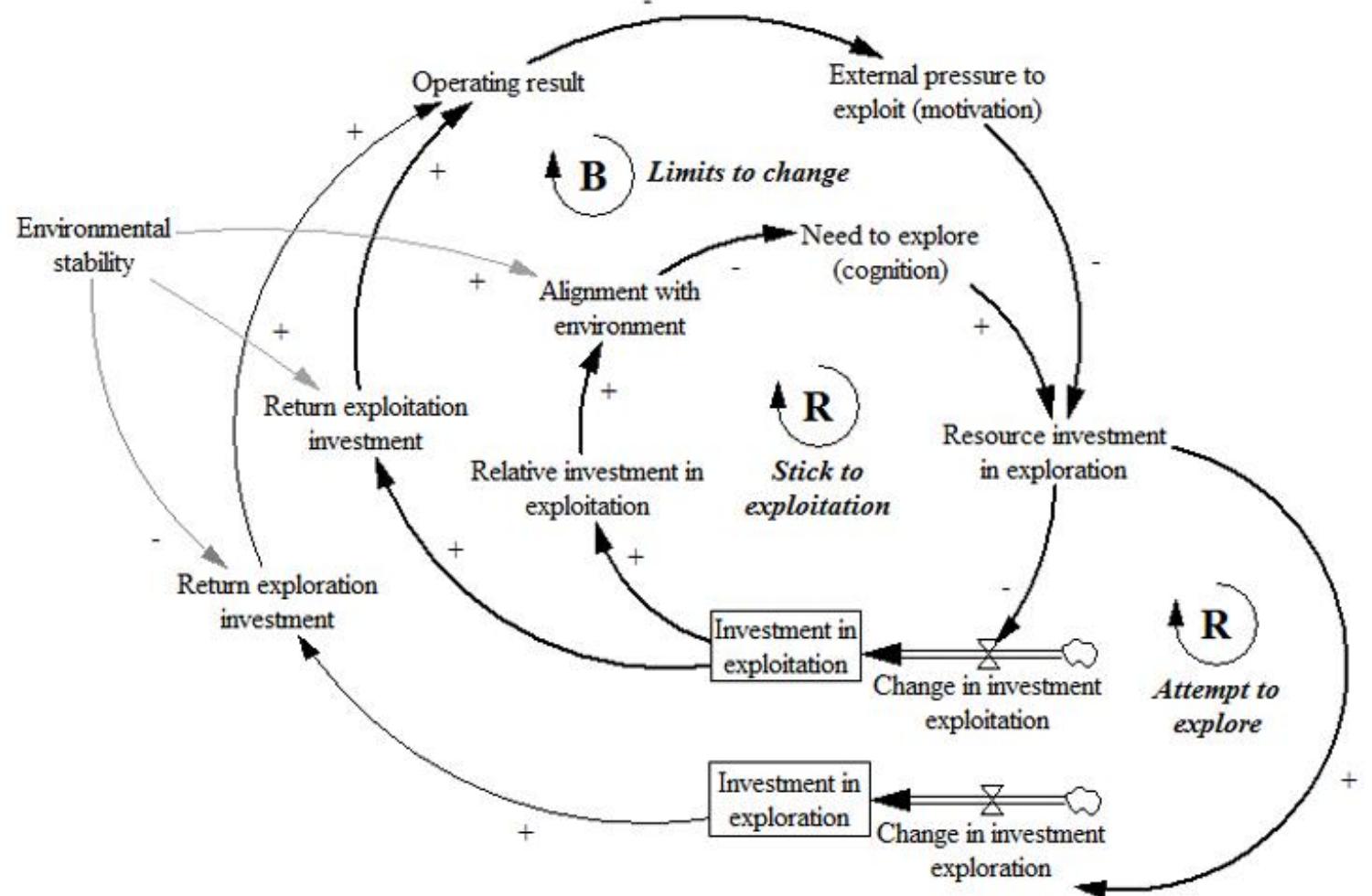
Seizing opportunities

- Making the right decisions and executing, with strategic insight
- Firestone, unable to adjust to radial tire technology (Sull, 1999)
- Automobile industry green transition: rapid diffusion of new competencies

Reconfiguring assets and organizational structures

- The ability to recombine and reconfigure assets and organizational structures as markets and technologies change (Teece, 2006)
- Senior leaders' willingness to commit resources to long-term projects (Danneels, 2002),
- Design organizational systems, incentives and structures that permit targeted integration across organizational units to capture the advantages of co-specialized assets (Helfat & Peteraf, 2003),
- Avoid inertia and lock-in

Ambidexterity and getting trapped in the suppression of exploration

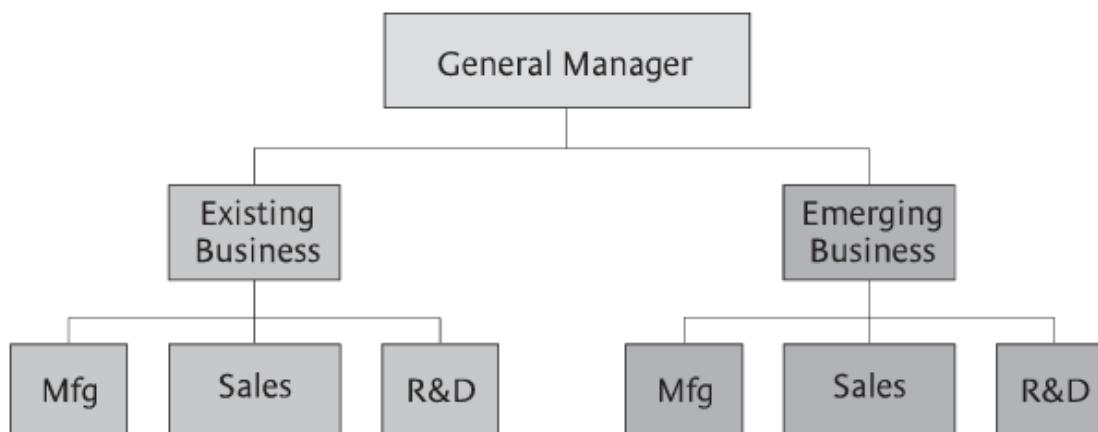


Conditions for successful ambidexterity

1. The presence of a compelling **strategic intent** that justifies the importance of both exploitation and exploration increases the likelihood of ambidexterity.
2. The articulation of a **common vision** and values that provide for a common identity increase the likelihood of ambidexterity
3. A clear **consensus** among the senior team about the unit's **strategy**, relentless communication of this strategy, and a common-fate incentive system increases the likelihood of ambidexterity.
4. Separate **aligned organizational architectures** (business models, competencies, incentives, metrics, and cultures) for explore and exploit subunits and targeted integration increase the likelihood of successful ambidexterity.
5. Senior leadership that **tolerates the contradictions** of multiple alignments and is able to **resolve the tensions** that ensue increases the likelihood of ambidexterity.

Ambidextrous organizations

establish project teams that are structurally independent units, each having its own processes, structures, and cultures, but are integrated into the existing management hierarchy.



Alignment of:	Exploitative Business	Exploratory Business
Strategic intent	cost, profit	innovation, growth
Critical tasks	operations, efficiency, incremental innovation	adaptability, new products, breakthrough innovation
Competencies	operational	entrepreneurial
Structure	formal, mechanistic	adaptive, loose
Controls, rewards	margins, productivity	milestones, growth
Culture	efficiency, low risk, quality, customers	risk taking, speed, flexibility, experimentation
Leadership role	authoritative, top down	visionary, involved

Ambidextrous Leadership
Different alignments held together through senior-team integration, common vision and values, and common senior-team rewards.

Ανοικτή Καινοτομία

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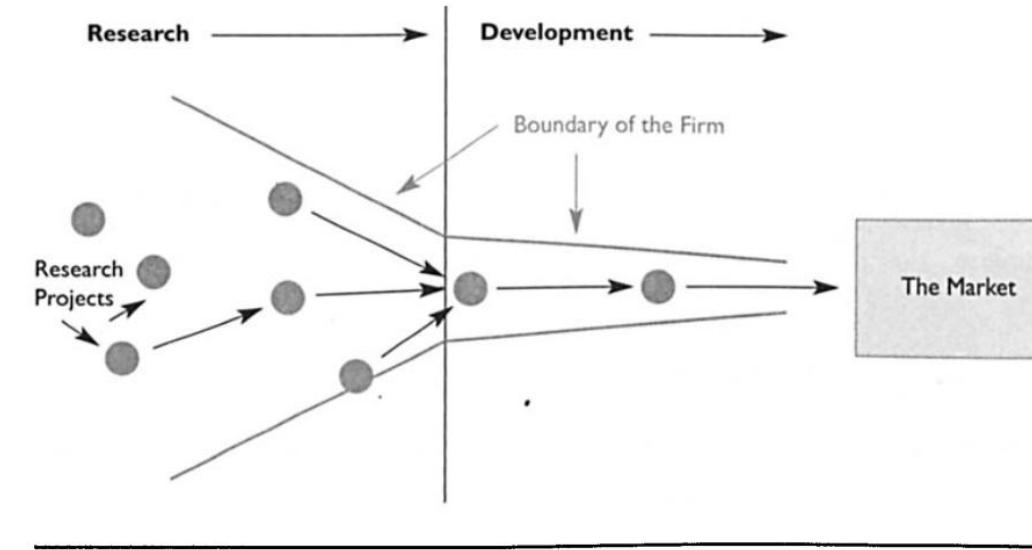
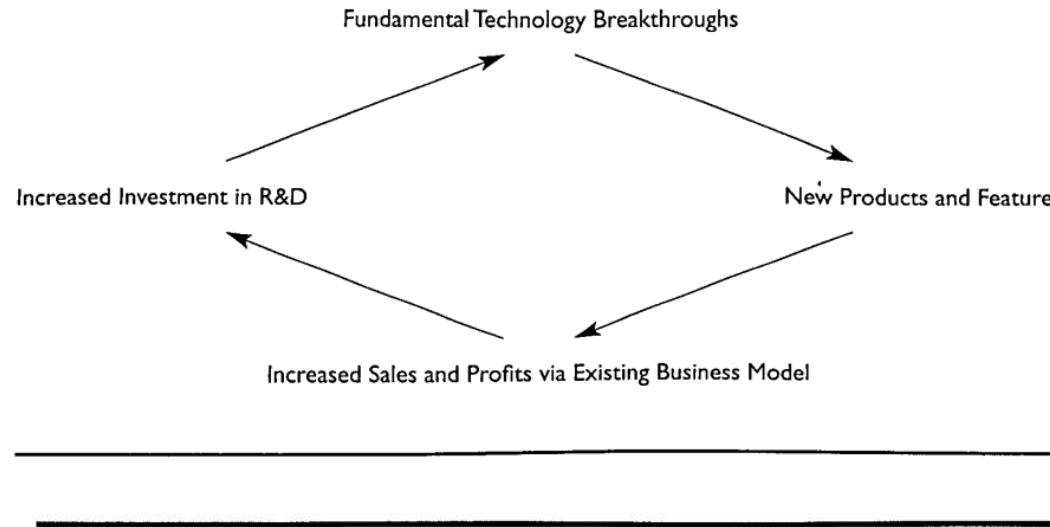


ΠΑΝΕΠΙΣΤΗΜΙΟ
ΘΕΣΣΑΛΙΑΣ

The logic of Closed Innovation thinking

Internally focused logic:

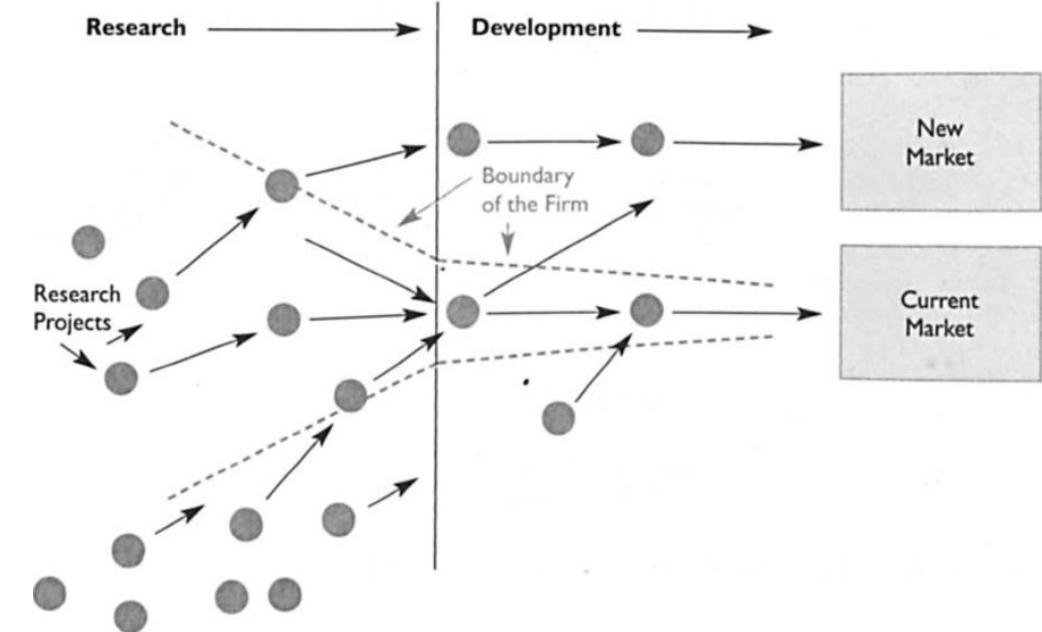
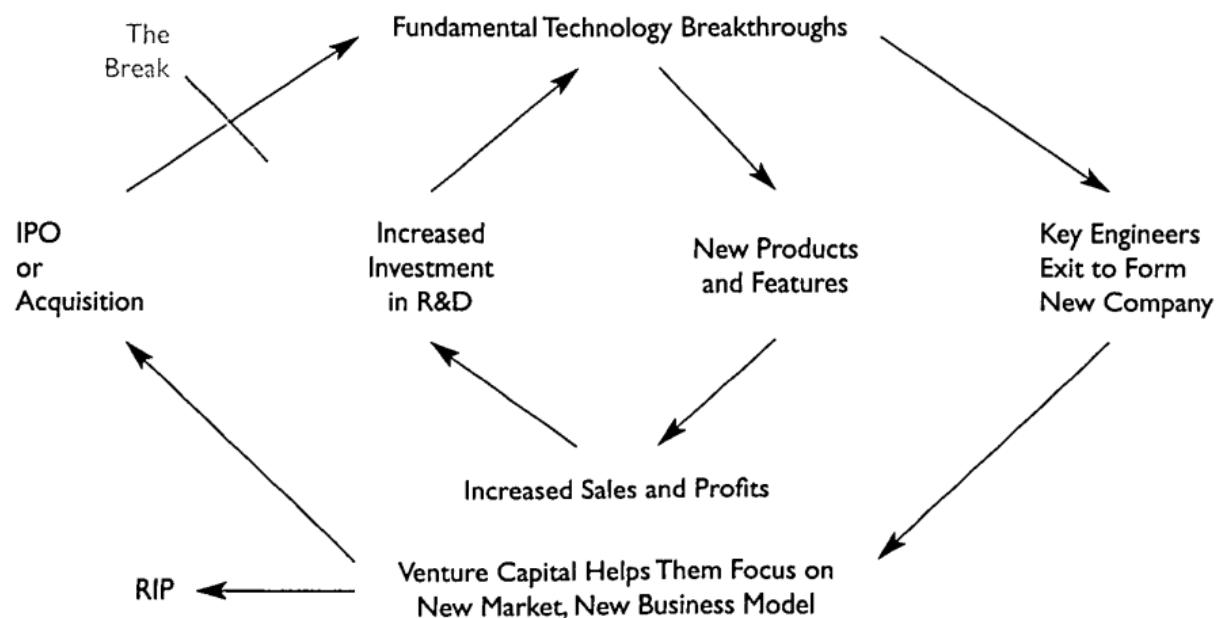
- “We should hire the best and the brightest people, so that the smartest people in our industry work for us.
- In order to bring new products and services to the market, we must discover and develop them ourselves.
- If we discover it ourselves, we will get it to market first
- The company that gets an innovation to market first will usually win.
- If we lead the industry in making investments in R&D, we will discover the best and the most ideas and will come to lead the market as well.
- We should control our intellectual property, so that our competitors don’t profit from our ideas.”



Chesbrough (2003)

The Virtuous Circle Broken

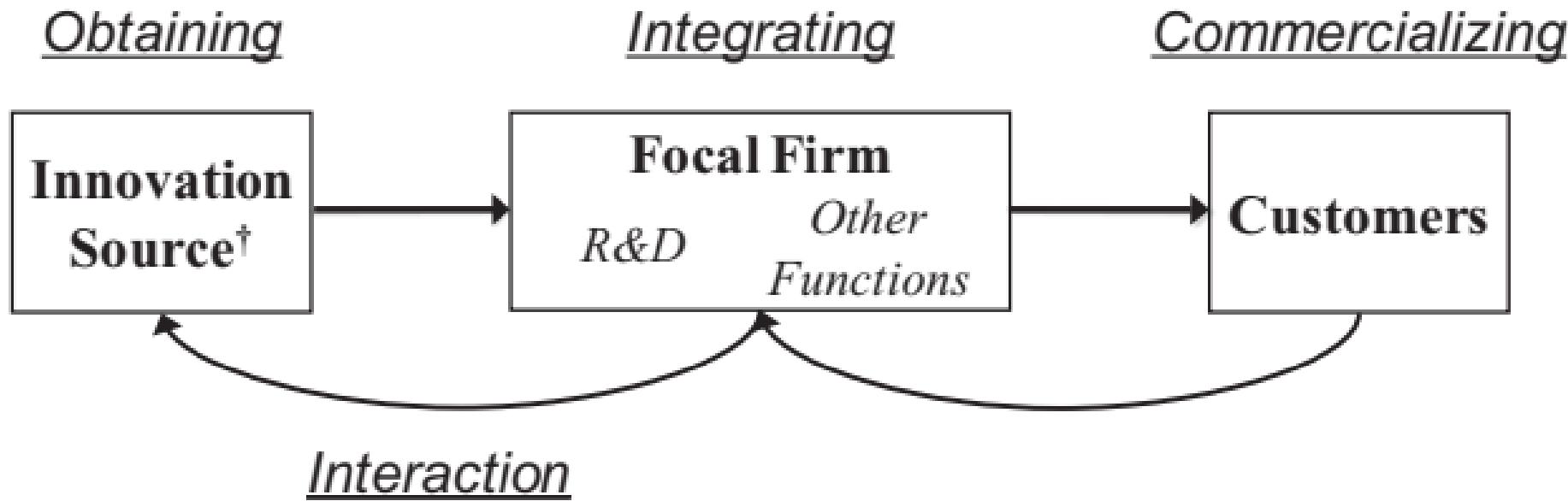
Chesbrough (2003)



Closed Innovation Principles	Open Innovation Principles
The smart people in our field work for us.	Not all the smart people work for us. We need to work with smart people inside and outside our company.
To profit from R&D, we must discover it, develop it, and ship it ourselves.	External R&D can create significant value; internal R&D is needed to claim some portion of that value.
If we discover it ourselves, we will get it to market first.	We don't have to originate the research to profit from it.
The company that gets an innovation to market first will win.	Building a better business model is better than getting to market first.
If we create the most and the best ideas in the industry, we will win.	If we make the best use of internal and external ideas, we will win.
We should control our IP, so that our competitors don't profit from our ideas.	We should profit from others' use of our IP, and we should buy others' IP whenever it advances our own business model.

Closed Innovation	Open Innovation
• Examples of industries: nuclear reactors, mainframe computers	• Examples of industries: PCs, movies
• Largely internal ideas	• Many external ideas
• Low labor mobility	• High labor mobility
• Little VC	• Active VC
• Few, weak start-ups	• Numerous start-ups
• Universities unimportant	• Universities important

A Four-phase Process Model for Leveraging External Sources of Innovation



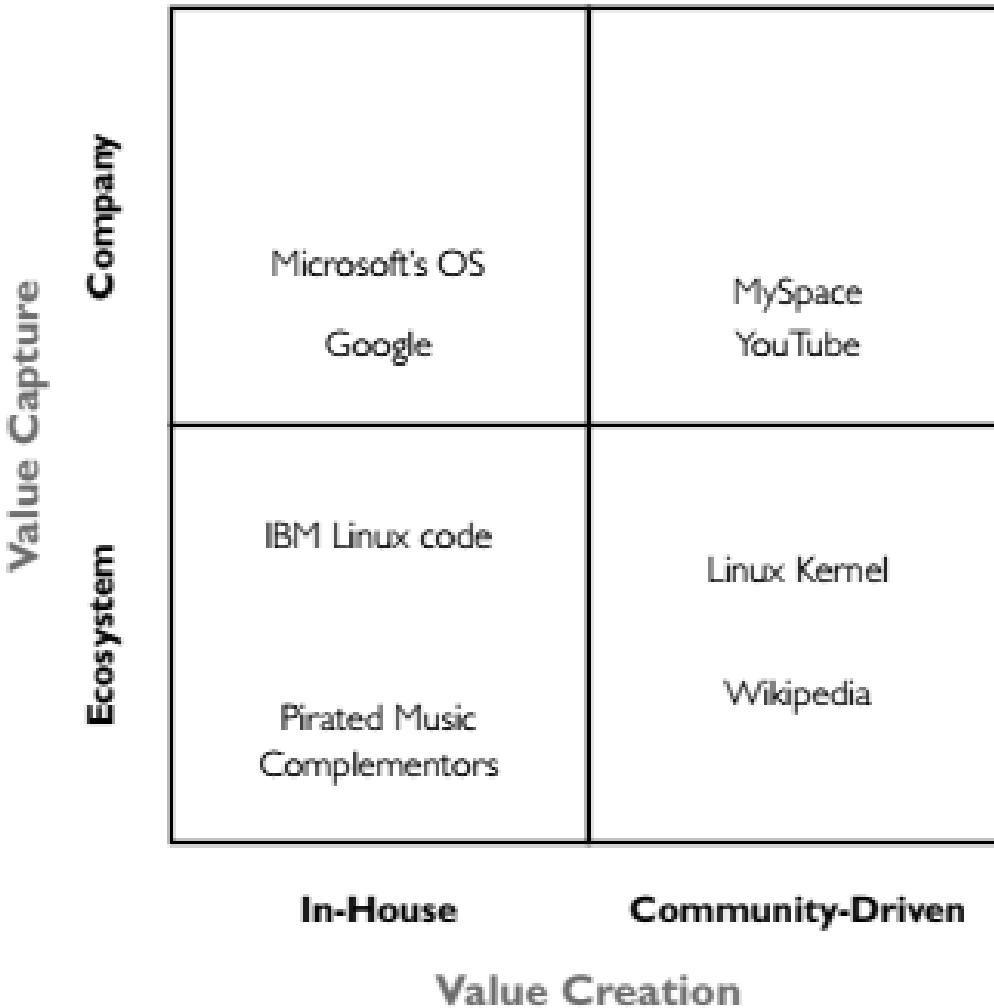
[†]Sources may include suppliers, rivals, complementors, and customers.

Key Categories for Research on Leveraging External Sources of Innovation

Phase	Category	Open Innovation Topic	Representative Articles
1. Obtaining	Searching	<ul style="list-style-type: none">• Sourcing• Technology scouts• Limits	Dodgson et al. (2006); Laursen and Salter (2006)
	Enabling/ Filtering	<ul style="list-style-type: none">• Brokerage• Contests• Intermediaries• Toolkits• Platforms• Gatekeepers	Jeppesen and Lakhani (2010); Piller and Walcher (2006); Whelan et al. (2010)
	Acquiring	<ul style="list-style-type: none">• Incentives to share• Contracting• Nature of the innovation	Ceccagnoli et al. (2010); Dushnitsky and Shaver (2009)
2. Integrating		<ul style="list-style-type: none">• Absorptive capacity• Culture and “Not Invented Here”• Incentives to cooperate• Competencies	Du Chatenier et al. (2010); Emden et al. (2006); Herzog and Leker (2010)
3. Commercializing		<ul style="list-style-type: none">• Commercialization process• Value creation• Value capture	Belderbos et al. (2010); Lau et al. (2010); Rothaermel and Alexandre (2009)
4. Interaction	Feedback	<ul style="list-style-type: none">• R&D feedback• Customer/market feedback	Berkhout et al. (2006); Hughes and Wareham (2010)
	Reciprocal	<ul style="list-style-type: none">• Cocreation• Communities• Value networks	Dittrich and Duysters (2007); Faems et al. (2010)

West and Bogers (2014)

Open and Closed Innovation



Chesbrough & Appleyard (2007)

Open Source Software Business Models

Category	Model	Description	Example
Deployment	Support	Revenue derived from sale of customer support contracts.	JBoss
	Subscription	Revenue derived from annual service agreements bundling open source software, customer support and certified software updates delivered via Internet.	Red Hat Enterprise Linux
	Professional Services/ Consulting	Revenue derived from professional services, training, consulting, or customization of open source software.	IBM
Hybridization	Proprietary Extensions	Firms broadly proliferate open source application and monetize through sale of proprietary versions or product line extensions. Variants include mixed open source/proprietary technologies or services with free trial or "community" versions.	SugarCRM
	Dual License	Vendor licenses software under different licenses (free "Public" or "Community" license vs. paid "Commercial" license) based on customer intent to redistribute.	MySQL
Complements	Device	Vendor sells and supports hardware device or appliance incorporating open source software.	Mazu Networks
Self-Service	Community Source	Consortia of end user organizations or institutions jointly develops application to be used by all.	The Sakai project

Source: Adapted from Jon Perr, Patrick Sullivan, and Melissa M. Appleyard, "Open for Business: Emerging Business Models for Open Source Software Companies," working paper, Lab2Market, Portland State University, 2006.

WHEN IP DISABLES, OR ENABLES, OPEN INNOVATION

Companies that know how to play the IP game can use it, with considerable success, to foster and facilitate their open innovation strategy.

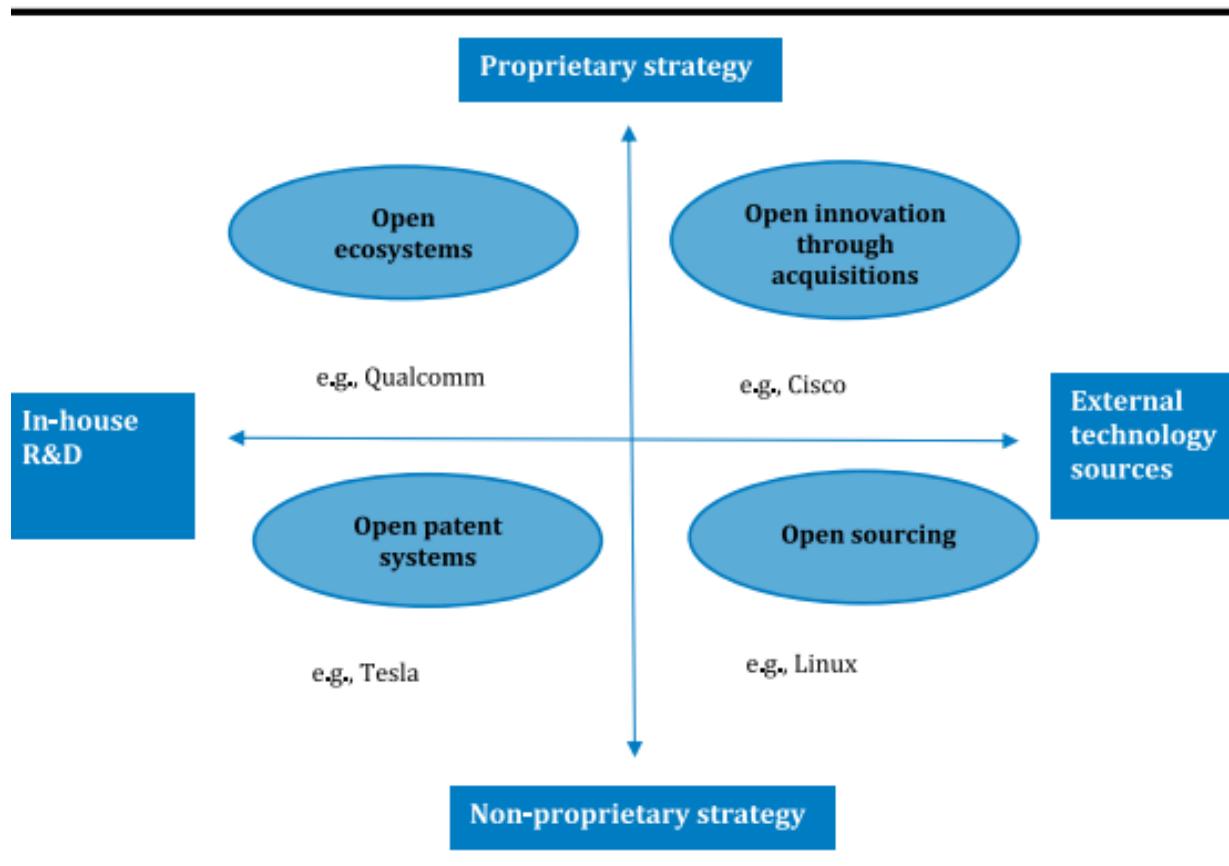
IP DISABLES OPEN INNOVATION WHEN:	IP ENABLES OPEN INNOVATION WHEN:
One-size-fits-all approaches, such as “no patents no talk,” predominate	IP management is adaptable
IP and OI strategies are disconnected	IP and OI strategies are integrated
Lawyers are a roadblock to OI, dictating the who, when and how	Lawyers help pave the way for cooperation
There is a “patent everything” outlook	Smart patenting — which involves only valuable inventions — prevails
IP is treated as an end in itself	IP is seen as an opportunity for value creation and the building of ecosystems
IP builds fences through the hoarding of patents and excessive secrecy	IP is available to others and, through licensing and cooperation, is likely to be profitable

IP STRATEGIES IN DIFFERENT OPEN-INNOVATION ENVIRONMENTS

The two critical determinants of a company's most appropriate IP/OI strategy are its technological environment (which can be either calm or turbulent) and the knowledge distribution (either extensive — in "oceans" — or modest, in "puddles") among would-be partners. Thus, for the purposes of this article's analysis, there are four possible circumstances facing the company.



Different forms of open innovation by technology development business model and IP strategy



Note: IP = intellectual property; R&D = research and development.

Bogers et al (2019)

The Interrelation of Dynamic Capabilities and Open Innovation

Cluster of Dynamic Capabilities	Sensing	Seizing	Transforming
Related open innovation strategy	Discover licensing out opportunities	Invest in internal R&D	Do not let R&D fall victim to cost reduction
Examples of related activities	Identify and evaluate valuable external knowledge	Put processes into place to commercialize ideas Set good governance mechanisms Establish cross-boundary collaboration outside the business	Realign the organization to integrate external knowledge Develop a culture that promotes collaboration Adjust the mix of internally developed and externally developed technologies to reflect changing needs and opportunities

Note: R&D = research and development.

Bogers et al (2019)

Levels of analysis and research objects for OI research

Bogers et al. (2017)

Level of analysis	Possible research object	Exemplary topics researched in extant studies	Exemplary references	Contributors
Intra-organisational	Individual Group/Team Project Functional area Business unit	Individual-level challenges and coping strategies for OI OI at the functional and project level	Salter, Criscuolo, and Ter Wal (2014), Antons and Piller (2015), Salter et al. (2015), Dahlander, O'Mahony, and Gann (2016) Bogers and Lhuillery (2011), Salge et al. (2013), Du, Leten, and Vanhaverbeke (2014), Lopez-Vega, Tell, and Vanhaverbeke (2016)	Linus Dahlander Lars Frederiksen Ann Majchrzak Anne Ter Wal
Organisational	Firm Other (non-firm) organisation Strategy Business model	Organisational design, practices, and processes for integrating external sources of innovation	Foss and Foss (2005), Chiaroni, Chiesa, and Frattini (2011), Foss, Laursen, and Pedersen (2011), Robertson, Casali, and Jacobson (2012), Foss, Lyngsie, and Zahra (2013)	Marc Gruber Stefan Haefliger Satish Nambisan
Extra-organisational	External stakeholders Individual Community Organisation	OI in the context of new entrants, SMEs and entrepreneurs	Gruber, MacMillan, and Thompson (2013), Brunswicker and van de Vrande (2014), Eftekhari and Bogers (2015), Zobel, Balsmeier, and Chesbrough (2016).	
Inter-organisational	Alliances Network Ecosystem	The role of users and communities for OI	Bogers, Afuah, and Bastian (2010), Autio, Dahlander, and Frederiksen (2013)	Mats Magnusson Ian McCarthy Agnieszka Radziwon Jonathan Sims
Industry, regional innovation systems and society	Industry development Inter-industry differences Local region Nation Supra-national institution Citizens Public policy	How organisations practice OI in ecosystems and industry platforms	Rohrbeck, Hözle, and Gemünden (2009), Adner and Kapoor (2010), van der Borgh, Cloodt, and Romme (2012)	Allan Afuah Sabine Brunswicker Annabelle Gawer Cristina Rossi-Lamastra
		Applications of OI outside of R&D in areas such as manufacturing, marketing, strategy, services, tourism and education	Bogers and Lhuillery (2011), Chesbrough (2011), Huff, Mösllein, and Reichwald (2013), Matzler et al. (2014), Egger, Gula, and Walcher (2016)	Esteve Almirall John Hagedoorn Dennis Hilgers Kathrin Moeslein

Levels of analysis and research objects for OI research

Level of analysis	Perspectives	Emerging themes	Examples of relevant contingencies	Examples of possible empirical settings and data
Intra-organisational	Organisational behaviour	Commitment, resistance to change, identity, motivation, communication and learning of employees involved in OI	Degree of OI challenges and costs, degree of organisational paradoxes	<ul style="list-style-type: none"> Formal inbound OI initiatives with intra-firm data on employee participation Individual engagement in informal OI activities in relation to identity and career trajectories of individuals Workshop interventions with R&D staff to overcome resistance and shift identity
	Organisational design	Formal and informal organisational structures and managerial tools that support different forms of openness	Strategic objectives, human resource management, growth stages	<ul style="list-style-type: none"> Use of surveys, qualitative configurational analysis and sequence analysis Organisational routines or structure-openness fit to determine when different structures are needed Intra-firm differences in OI structures, practices and policies as 'quasi-natural' experiment on incentives to engage in OI
Organisational	Entrepreneurship	Quantity and quality (nature) of entrepreneurial opportunities identified, formed and enacted via OI	Modularity, digitisation, IP frameworks, institutions, infrastructure, founder knowledge, experience and identity	<ul style="list-style-type: none"> Public open data initiatives or data from crowdsourcing, social media and 3D printing platforms on entrepreneurs interactions with other participants in forming and enacting opportunities Founder networks and knowledge domains in high tech setting Role of scientific, cultural, military experience of founding team members
	Business models	Link between open knowledge flows and economic activities	Customer interfaces, capabilities for orchestrating information technologies	<ul style="list-style-type: none"> Multi-sided business models that engage with innovative customers Customisation and servitization with data on externalities across customer groups Comparative case studies
	Innovation ecosystems	Interactions between various development and commercialisation actors, as well as the governance of such interactions	Technological complexity, business model complexity, IP frameworks	<ul style="list-style-type: none"> Action research focusing on inter-organisational attributes (e.g. governance, IP frameworks, co-creation) Direct observations of relations and interactions LexisNexis data
Inter-organisational	Innovation platforms	Governance of digital platforms to align individual success with collective welfare	Digitisation, technological interdependencies	<ul style="list-style-type: none"> Quasi-experiments comparing different platform configurations for different OI challenges Platform-based ecosystems with data on participating new ventures, offerings, sales, etc. (could be combined with e.g. surveys of entrepreneurs/founders)
	Crowdsourcing	'Hard' (e.g. governance) and 'soft' (e.g. values) aspects of crowd-based search	Digitisation, governance structures, industrial and spatial characteristics	<ul style="list-style-type: none"> Attributes of contributors and posts in external and internal crowdsourcing challenges Field studies and ethnographies focusing on individual actions and interactions

Levels of analysis and research objects for OI research

Extra-organisational	Stakeholders	Different types of knowledge provided by stakeholders at different stages of the innovation process	Nature and type of knowledge (e.g. tacitness, heterogeneity, distance)	<ul style="list-style-type: none"> Stakeholder-specific context and roles For-profit and non-profit stakeholders, including NGOs, governments, educational institutions, legal institutions, consumer groups and professional bodies Surveys, observations, mixed methods
	Users as innovators	Identification and leveraging knowledge produced by individual users with different abilities and motivations	User characteristics, intellectual and emotional property frameworks	<ul style="list-style-type: none"> User characteristics in terms of demographics (e.g. gender, age, nationality) product/service sector (e.g. sporting goods, healthcare, consumer electronics), expertise (e.g. professionals versus amateurs) and the legality of the innovation act (e.g. hackers, pirates) Industry groups and value chain studies CIS data, surveys, mixed methods
	Communities	Structural and relational alignment, and interfaces between organisations and communities	Digitisation, pecuniary versus non-pecuniary settings	<ul style="list-style-type: none"> Traditional and virtual communities of practice, industry study groups, and firms and organisations Comparing different forms of organisations such as online communities and living labs Qualitative exploratory research, mixed methods, early quantitative research
Industrial, regional and societal	Industry dynamics	Industrial characteristics that enable OI	R&D intensity, modularity, knowledge distribution	<ul style="list-style-type: none"> Standard industries (SICs), emerging industries, new combinations of industries (e.g. pharma and biotechnology, new innovation-driven design and service sectors, cross-sectoral 'industries' such as new materials) Data with relation to standard SIC data, CIS data, USPTO and EPO patent data Tailor-made surveys on industry, regional or societal level
	Spatial organisation	Management of spatial challenges at the intersection of virtual and real platforms	Digital transformation	<ul style="list-style-type: none"> User data and usage patterns from OI platforms (online, offline, mixed) Case studies on corporate projects on these platforms Field experiments with companies, users and intermediaries in different spatial settings
Public management	New forms of democracy and managerial skills for collaborative public management in the context of cities, regions, governments	Policies and services		<ul style="list-style-type: none"> Surveys, case studies and experiments with citizens and public officials (e.g. new forms administrative openness and innovative smart cities) Content analysis of platform dialogues and social network analysis of contributors Cross-country comparative analysis of openness and transparency (large data surveys, e.g. secondary data-sets by OECD)

OI research categories, concepts, research questions and theoretical approaches

Bogers et al. (2017)

OI research categories	OI related concepts	Examples of multi-level research question	Examples of possible related theoretical perspectives
OI behavior and cognition	<ul style="list-style-type: none"> • Identity • Commitment 	<ul style="list-style-type: none"> • How do individual-level attributes (e.g. motivation) influence inter-organisational knowledge flows with OI stakeholders? • How does individual-level openness affect organisational identity development and conflict? 	<ul style="list-style-type: none"> • Organisational behaviour • Human capital and resource management • Social and role identity theory • Self-regulation (e.g. self-control) • Role conflict theory
OI strategy and design	<ul style="list-style-type: none"> • Open business models • New types of entrepreneurial opportunities 	<ul style="list-style-type: none"> • As a focal firm opens up its business model how does it co-evolve with the business models of relevant stakeholders? • How does the involvement with external stakeholders shape employees' organisation identity and commitment? 	<ul style="list-style-type: none"> • Modelling and rational choice theory • Economic sociology • Service logic and value co-creation • Effectuation theory • Resource dependency theory
OI stakeholders	<ul style="list-style-type: none"> • Communities • Users 	<ul style="list-style-type: none"> • How do users as innovators collaborate with organisations in digitised platforms? • How does the involvement of external stakeholders shape new types of business models (e.g. combining pecuniary and non-pecuniary processes)? 	<ul style="list-style-type: none"> • Technology affordance and constraints theory • Economic and network sociology • Motivation theories • Behavioural economics • Dynamic capabilities and resource-based theory • Social network theory
OI ecosystem	<ul style="list-style-type: none"> • Digitised platforms • Crowd-based platforms 	<ul style="list-style-type: none"> • How do innovation ecosystems in specific sectors (e.g. food or renewable energy) shape policy and regulations? • How does ecosystem governance (e.g. open forms of governance) enable the participation of heterogeneous stakeholders in the innovation process? 	<ul style="list-style-type: none"> • Technology generativity • Information systems design • Practice theory and practice-based approaches to information systems • Actor network theory • Transaction cost theory • Agency
Open governance	<ul style="list-style-type: none"> • Smart cities • Open government 	<ul style="list-style-type: none"> • How can citizens influence the public sector, especially regarding performance, quality, innovativeness, compliance and integrity? • How do innovations in the public sector (e.g. smart cities) enable new forms of crowdsourcing (e.g. citizen participation)? 	<ul style="list-style-type: none"> • Public service motivation • Theory of planned behaviour • Principal agent and stewardship theory • Organisational and institutional trust • Technology acceptance model • Institutional theory

Key Sources

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