



# AGLIS: Open Innovation and Knowledge Management

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28.01.2013



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# Open Innovation...?!



<http://mashable.com/2012/11/28/gadget-innovations-2012/>



Google Lunar X Prize  
<http://www.googlelunarxprize.org/>



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- Introduction
- Innovation
  - Open vs closed
  - Frugal innovation
- Knowledge Management and Open Innovation
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# Innovation

## ❏ Innovation

- “Technological innovations comprise new products and processes and significant technological changes of products and processes. An innovation has been implemented if it has been introduced on the market (product innovation).” (OECD, 2001)
- Or in simple words: a new process, service, product

## ❏ Innovation vs Invention (Schumpeter)

- **Invention** is an idea, a sketch or model for a new or improved device, product, process or system which has not entered the market
- **Innovation** is only accomplished with the first commercial transaction involving the new product, process, system or device



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# Innovation

## Open Innovation:

- “the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation” (Chesbrough, 2006)

## Frugal Innovation

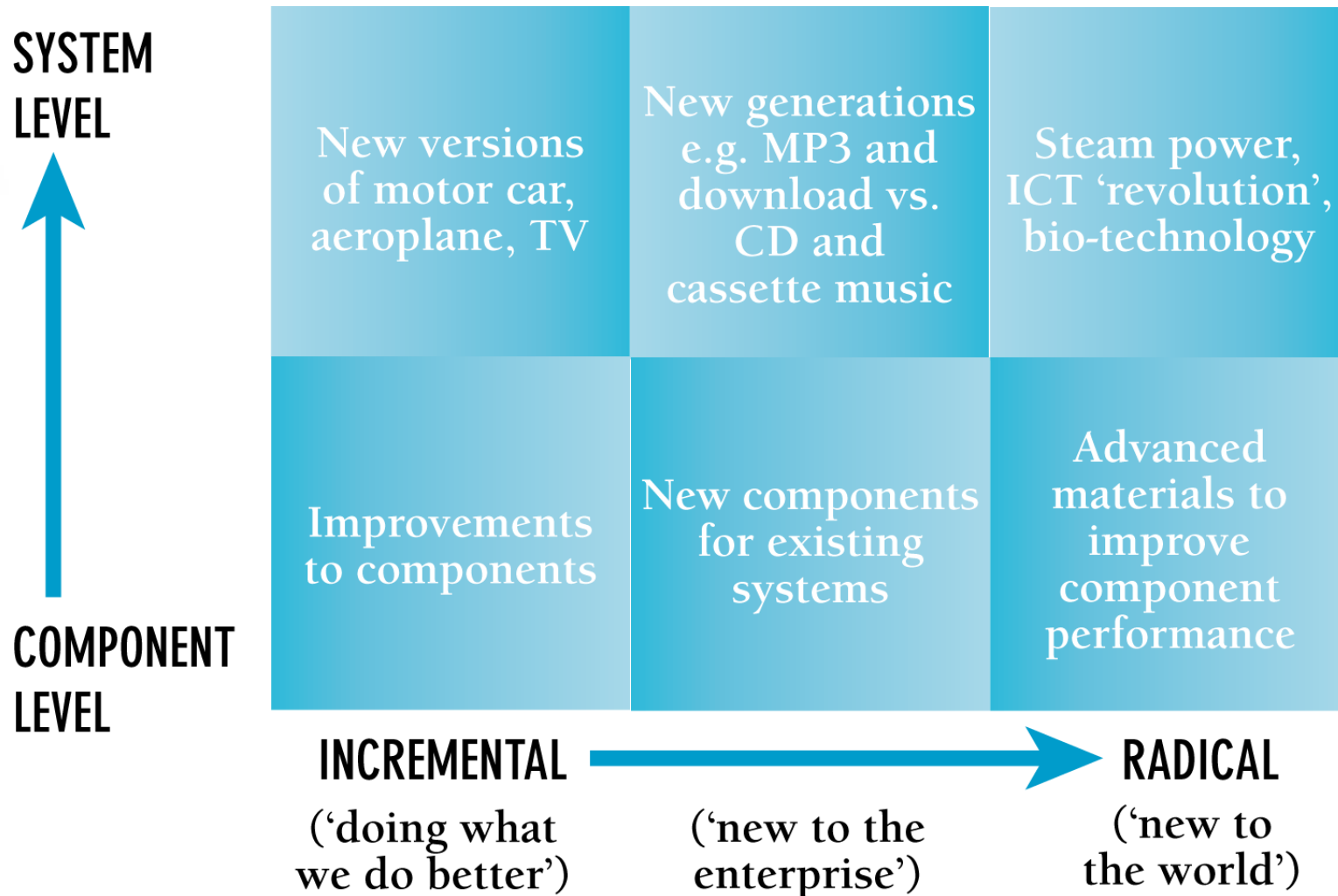
- “simple and plain and costing little”
- Taking away non-essential features of a product or service



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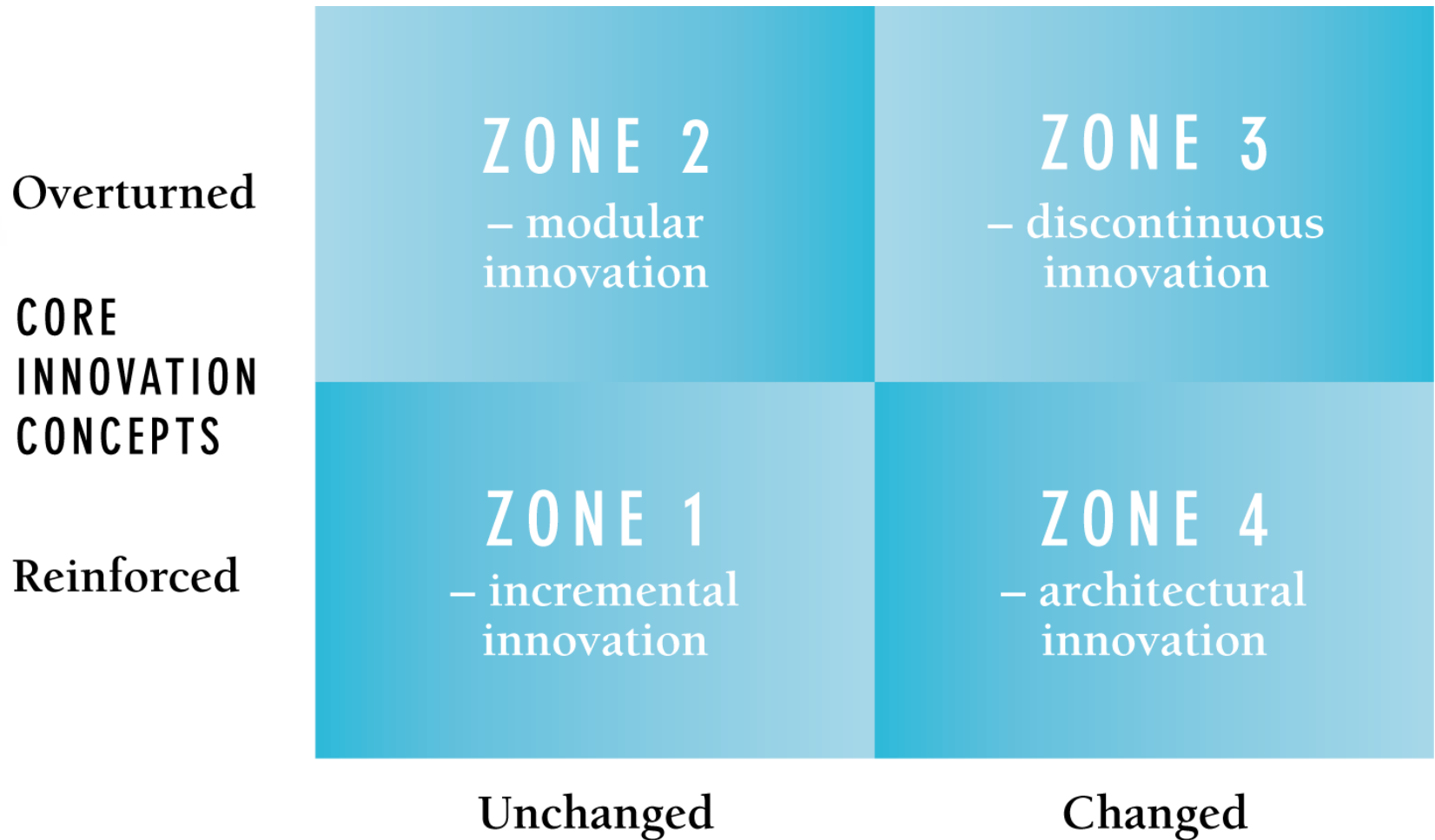
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# Dimensions of Innovation





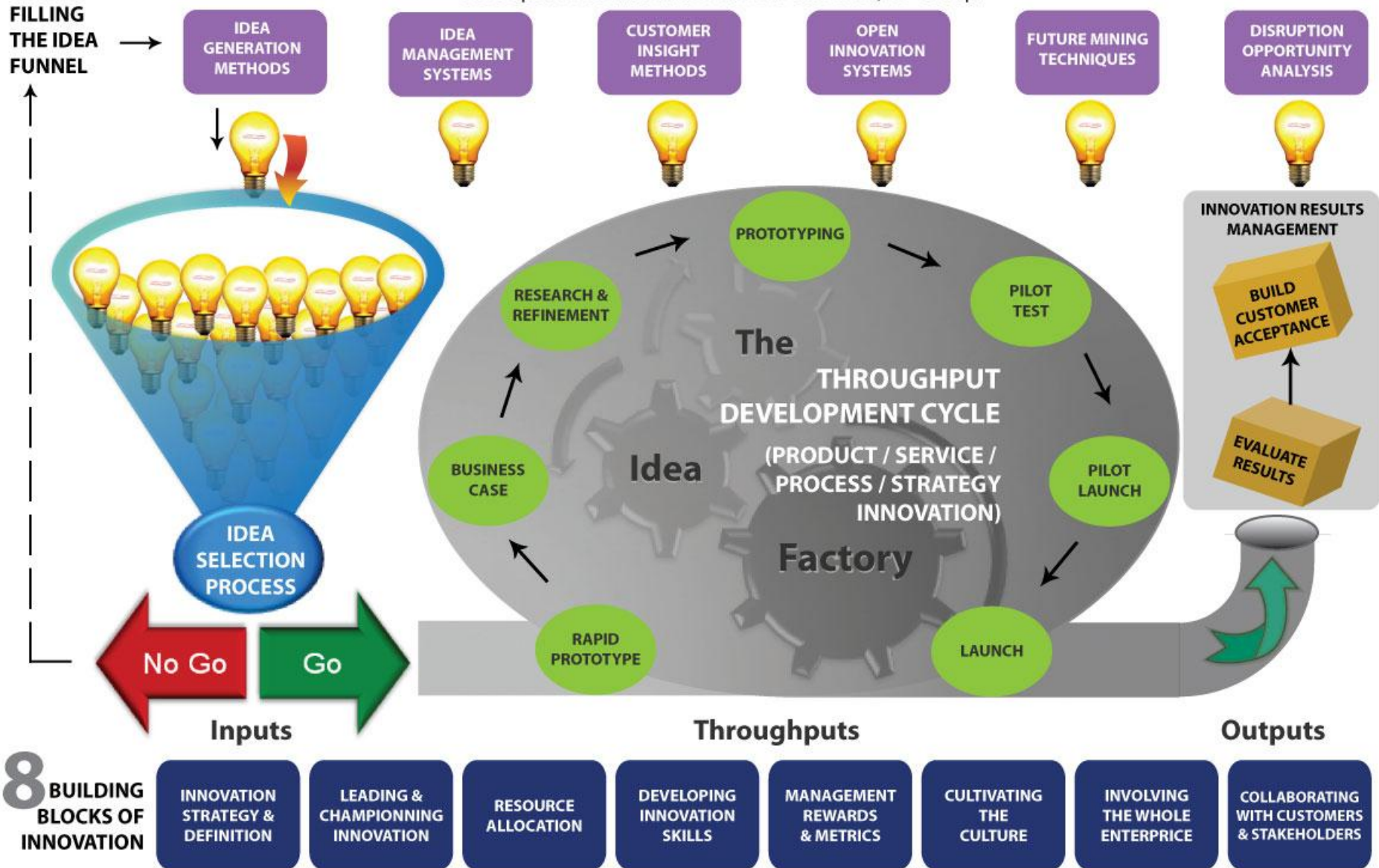
# Dimensions of Innovation



**LINKS BETWEEN KNOWLEDGE ELEMENTS**

# TUCKER INNOVATION MODEL

Developed in Collaboration with Dr. Peter Chee, ITD Group.





# Discontinuity

- New market emerges
- New technology emerges
- New political rules emerge
- Running out of road
- Change in market sentiment or behaviour
- Deregulation or reregulation
- Fractures along 'fault lines'
- Unthinkable events
- Business model innovation
- Shifts in techno-economic paradigm
- Architectural innovation

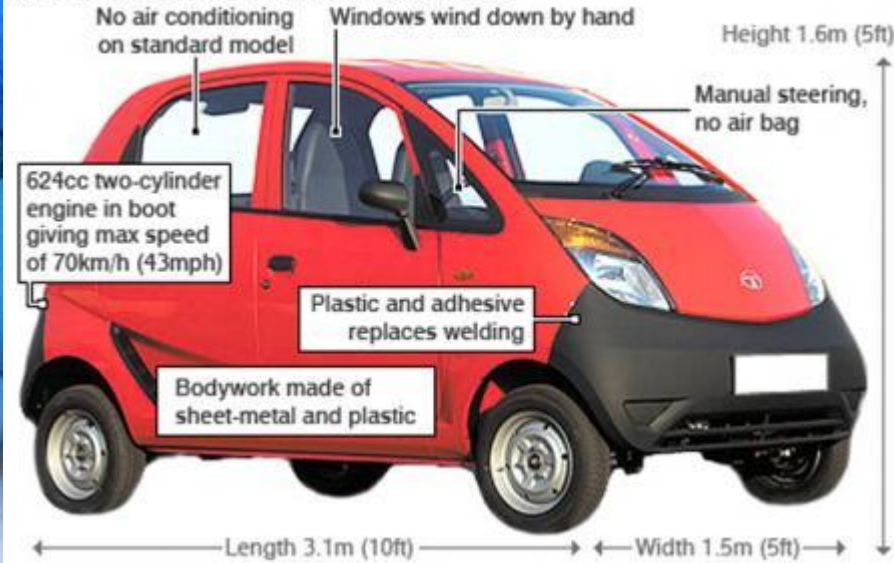


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# Frugal Innovations

## WHAT MAKES THE TATA NANO SO CHEAP?

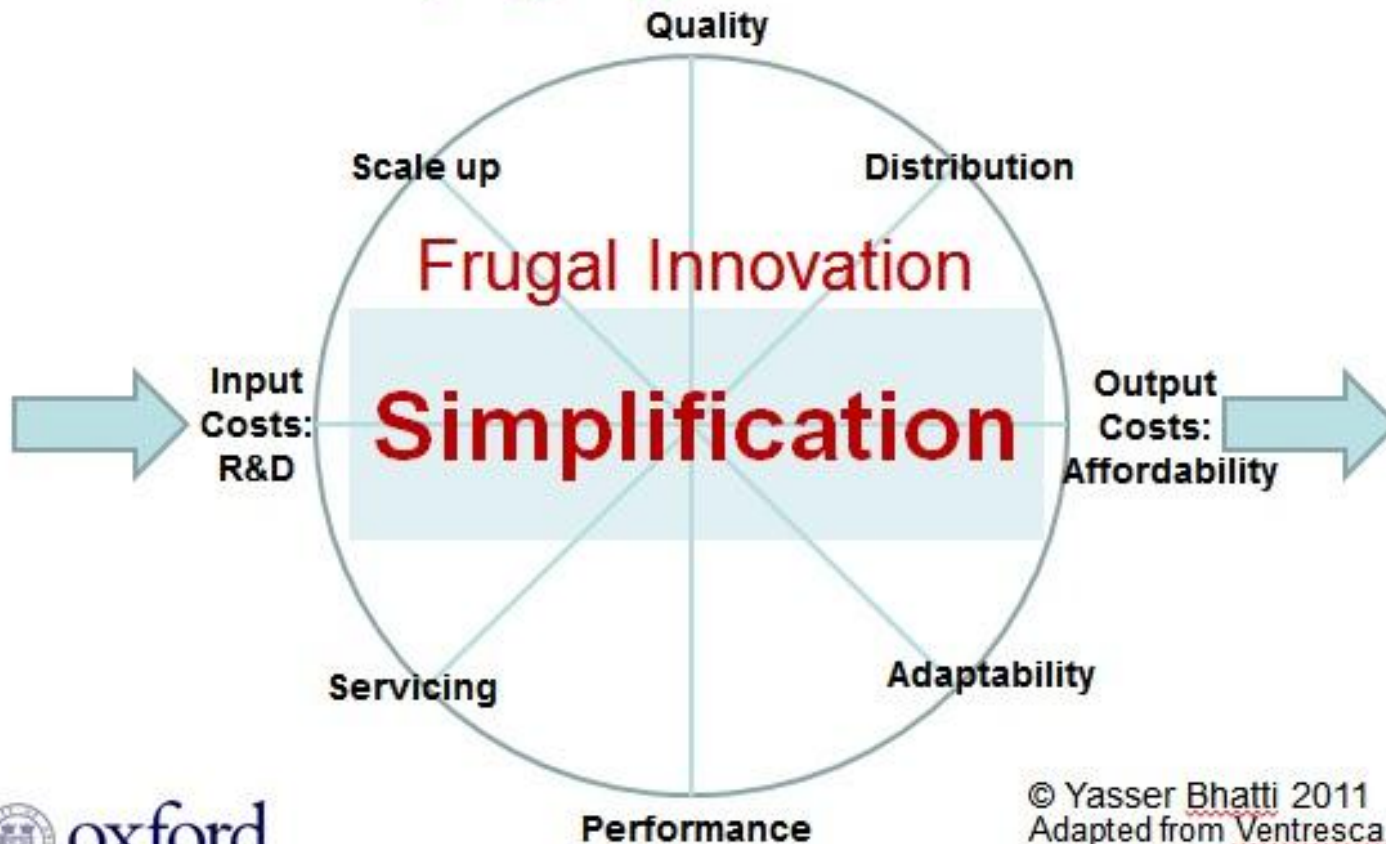


- Some nice samples [http://www.nesta.org.uk/news\\_and\\_features/frugal\\_innovations](http://www.nesta.org.uk/news_and_features/frugal_innovations)



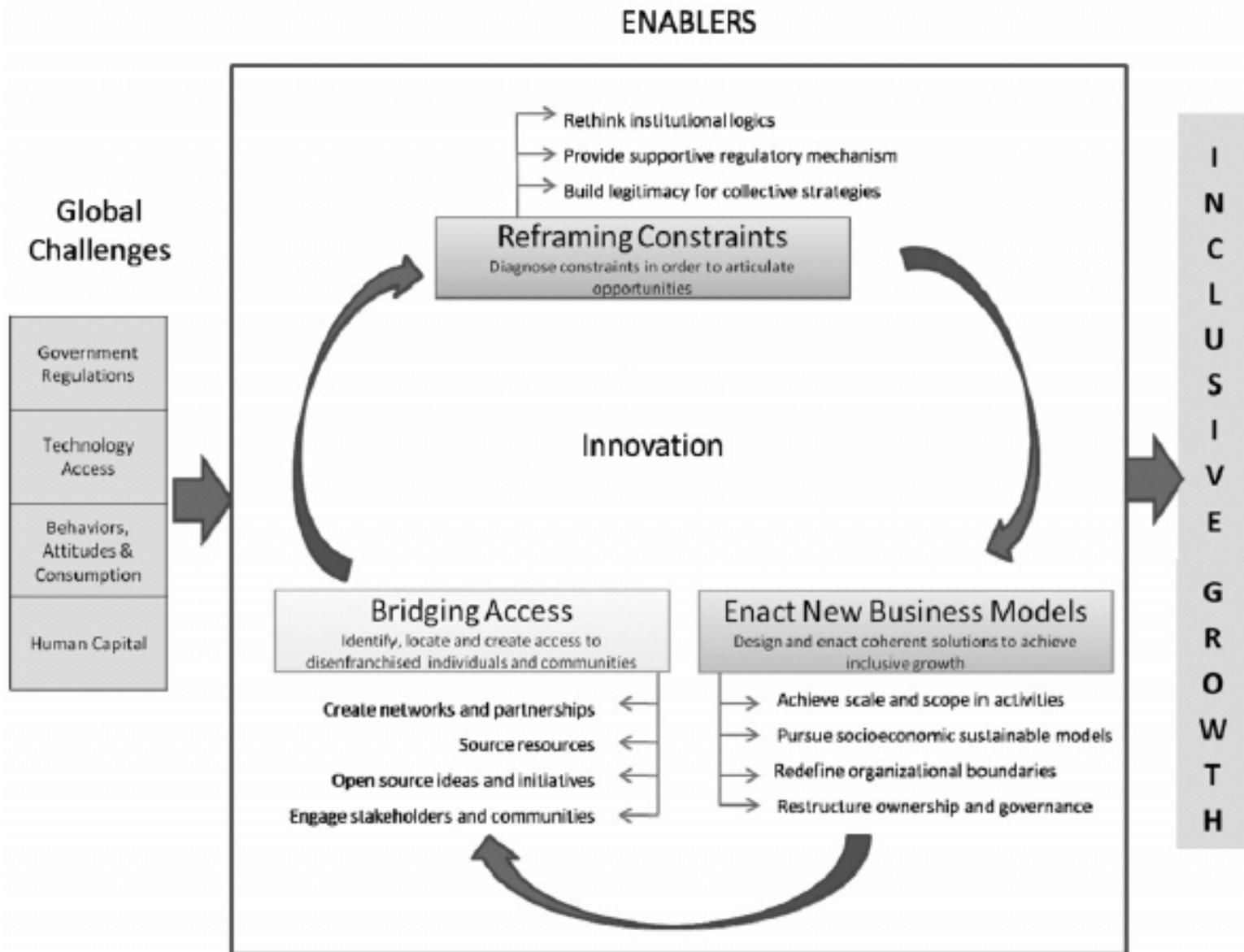
# Frugal Innovation (Bhatti, 2011)

Dimensions on which firms  
(frugally) innovate



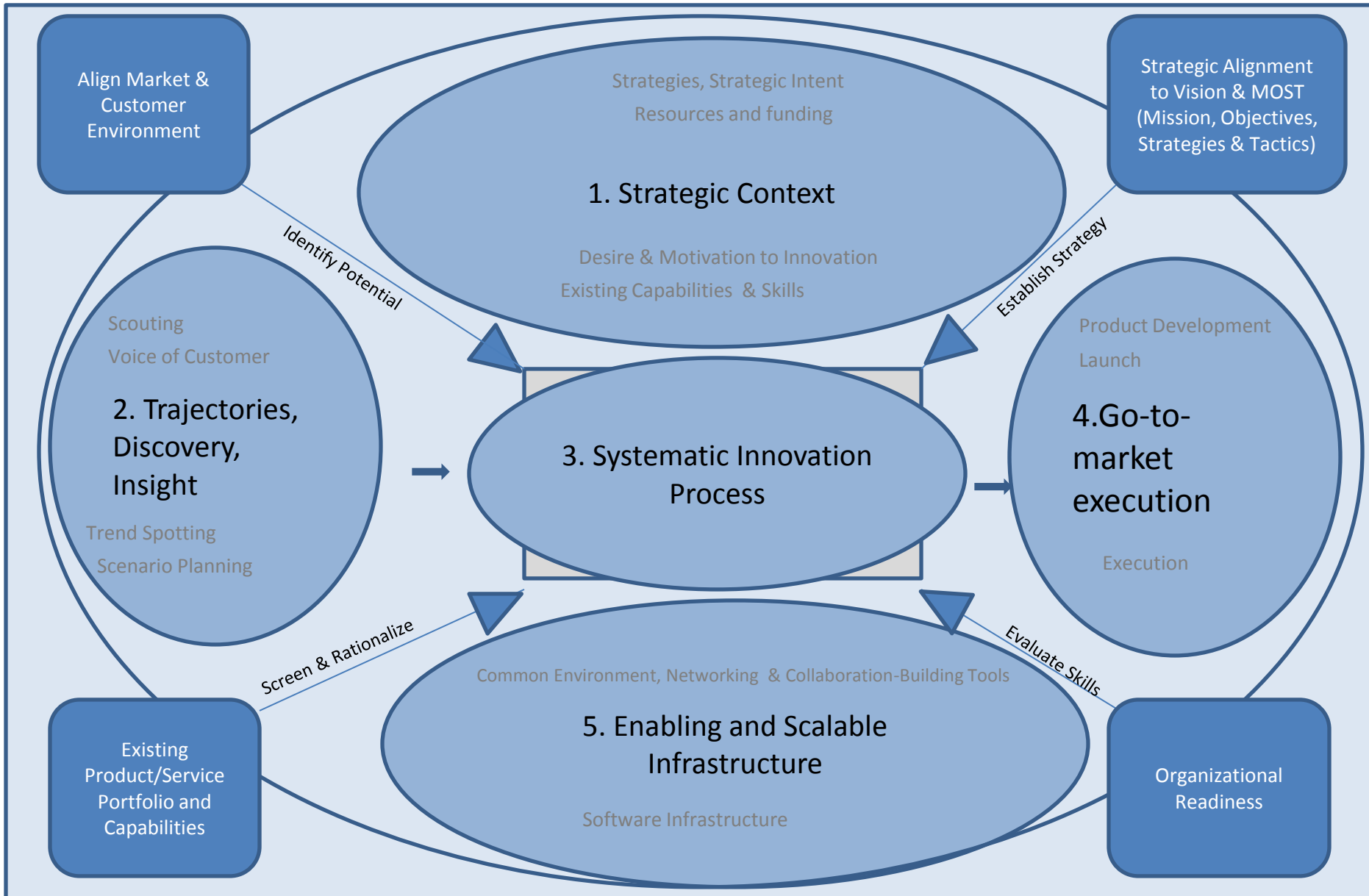
© Yasser Bhatti 2011  
Adapted from Ventresca,  
M., 2011 lecture slides

# Inclusive / Frugal Innovation (George et al., 2012)





# Innovation Processes and Components





# But:

*If innovation is only  
seen as . . .*

*. . . the result can be*

Strong R&D capability

Technology which fails to meet user needs and may not be accepted

The province of  
specialists

Lack of involvement of others, and a lack of in the R&D laboratory  
key knowledge and experience input from other perspectives

Understanding and  
meeting customer  
needs

Lack of technical progression, leading to inability to gain  
competitive edge

Advances along the  
technology frontier

Producing products or services which the market does not want  
or designing processes which do not meet the needs of the user  
and whose implementation is resisted



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# Open vs closed innovation (Huizingh, 2010)

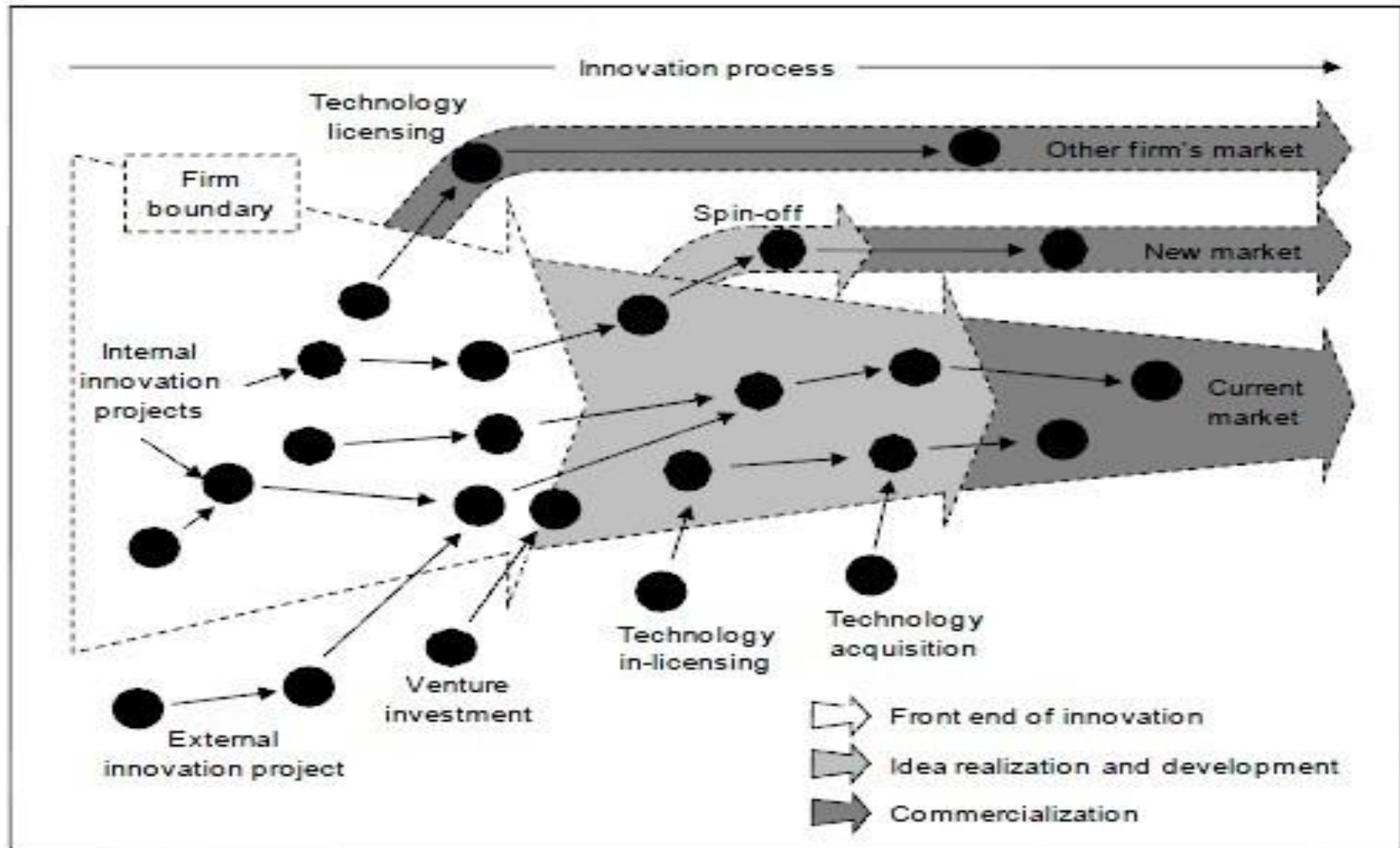
Innovation Process:	Innovation Outcome:	
	Closed	Open
Closed	1. Closed innovation	3. Public Innovation
Open	2. Private Open Innovation	4. Open Source Innovation



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# Open innovation model

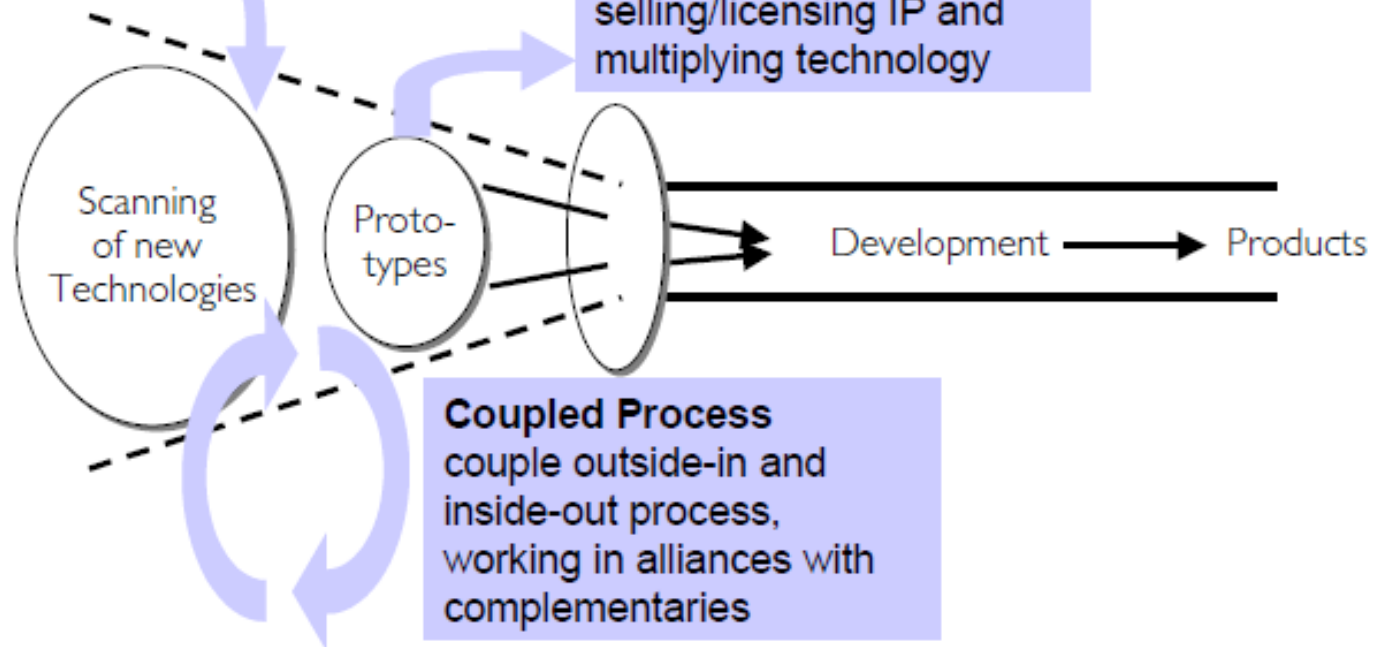


(Herzog, 2011)

# Process Archetypes (Gassmann & Enkel, 2008)

**Outside-In Process**  
Integrating external  
Knowledge, Customers  
and Suppliers

**Inside-Out Process**  
Bringing ideas to market,  
selling/licensing IP and  
multiplying technology



**Coupled Process**  
couple outside-in and  
inside-out process,  
working in alliances with  
complementaries

# A Capability-Based Framework for Open Innovation

	Knowledge exploration	Knowledge retention	Knowledge exploitation
Internal (Intrafirm)	Inventive capacity	Transformative capacity	Innovative capacity
External (Interfirm)	Absorptive capacity	Connective capacity	Desorptive capacity

(Lichtenthaler & Lichtenthaler, 2009)

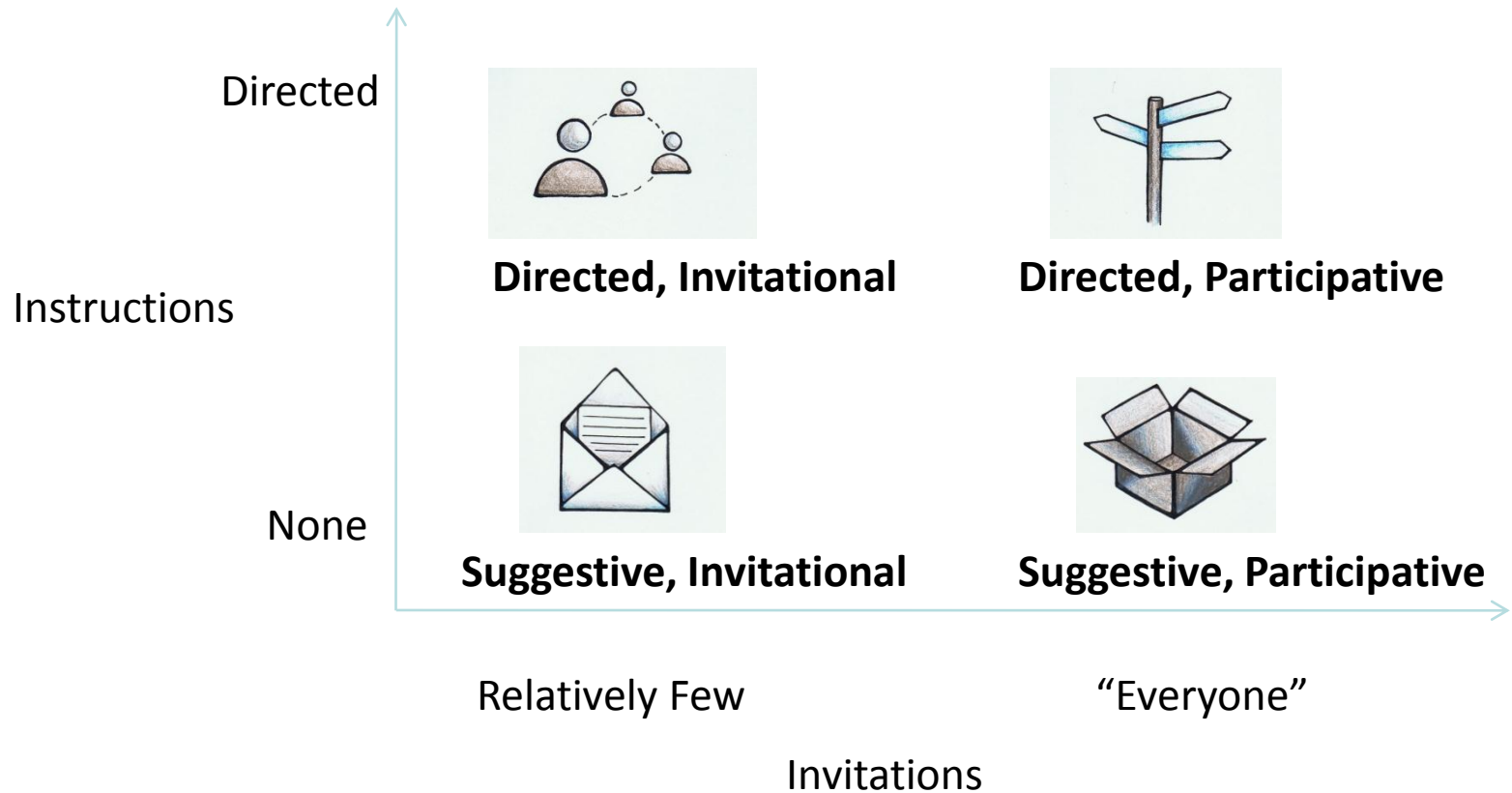


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# Open Innovation Framework



[OVO, 2008]

# Sketching the innovation process and support

- Fetterhoff & Völkel (2006)
  - seeking opportunities
  - evaluating their market potential inventiveness
  - recruiting potential development partners
  - capturing value through commercialization
  - extending the innovation offering
- Wallin and von Krogh (2010): managing knowledge integration
  - define the innovation process
  - identify innovation-relevant knowledge
  - select an appropriate integration mechanism,
  - create effective governance mechanisms
  - balance incentives and controls
- Support instruments
  - Living labs
  - Idea competitions
  - Think tanks
  - ...and many many more...



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# Risks and Partners (Enkel et al, 2009)

- External barriers
  - loss of knowledge (48%),
  - higher coordination costs (48%), as
  - loss of control (41%)
  - higher complexity (41%)
- Internal barriers
  - Difficulty in finding the right partner (43%)
  - Inbalance between open innovation activities and daily business (36%)
  - insufficient time and financial resources for open innovation activities
- Partnerships
  - clients (78%)
  - Suppliers (61%)
  - competitors (49%)
  - Public and commercial research institutions (21%)



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# Tools and Instruments (Hidalgo & Albors, 2008)

IMT typologies	Methodologies and tools		
Knowledge management tools	Knowledge audits Knowledge mapping Document Management IPR Management	Creativity development techniques	Brainstorming Lateral Thinking TRIZ Scamper Method
Market intelligence techniques	Technology Watch/ Technology Search Patents Analysis Business Intelligence CRM: Customer relationship management Geo-marketing	Process improvement techniques	Mind Mapping Benchmarking Workflow Business process re-engineering Just in Time
Cooperative and networking tools	Groupware Team-building Supply Chain Management Industrial Clustering	Innovation project management techniques	Project management Project appraisal Project portfolio management
Human resources management techniques	Teleworking Corporate intranets On-line recruitment e-Learning	Design and product development management tools	CAD systems Rapid Prototyping Usability approaches Quality Function Deployment Value analysis
Interface management approaches	Competence Management R&D - Marketing Interface Management Concurrent Engineering	Business creation tools	Business Simulation Business Plan Spin-off from research to market



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# Examples: Innocentive.com

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## Looking to Expand Your Open Innovation Capability?

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### Crowdsource Your Innovation Challenge

- Which Challenge is right for you?
- Case study: \$1M Prize4Life Grand Challenge
- Analyst firm Gartner's take on InnoCentive



### Improve the Way You Innovate & Work

- Mobilize your workforce to solve problems
- Case study: Syngenta's 182% ROI
- White paper: Turbocharge Stage-Gate



### Become an InnoCentive Solver

- Why become a Solver?
- View all of our open Challenges
- Register for free

What is InnoCentive? Watch!

Resources

The Latest

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# Examples: bigideagroup.net

## Crowdfunding Services & Consulting



Big Idea Group (BIG) helps inventors, businesses and entrepreneurs prep their innovations for crowdfunding and monetization.

Contact BIG now to discuss your crowdfunding & innovation needs.

CONTACT US

### Our Crowdfunding Services

- [Crowdfunding consulting](#)
- [Research & positioning](#)



### Latest Blog Posts

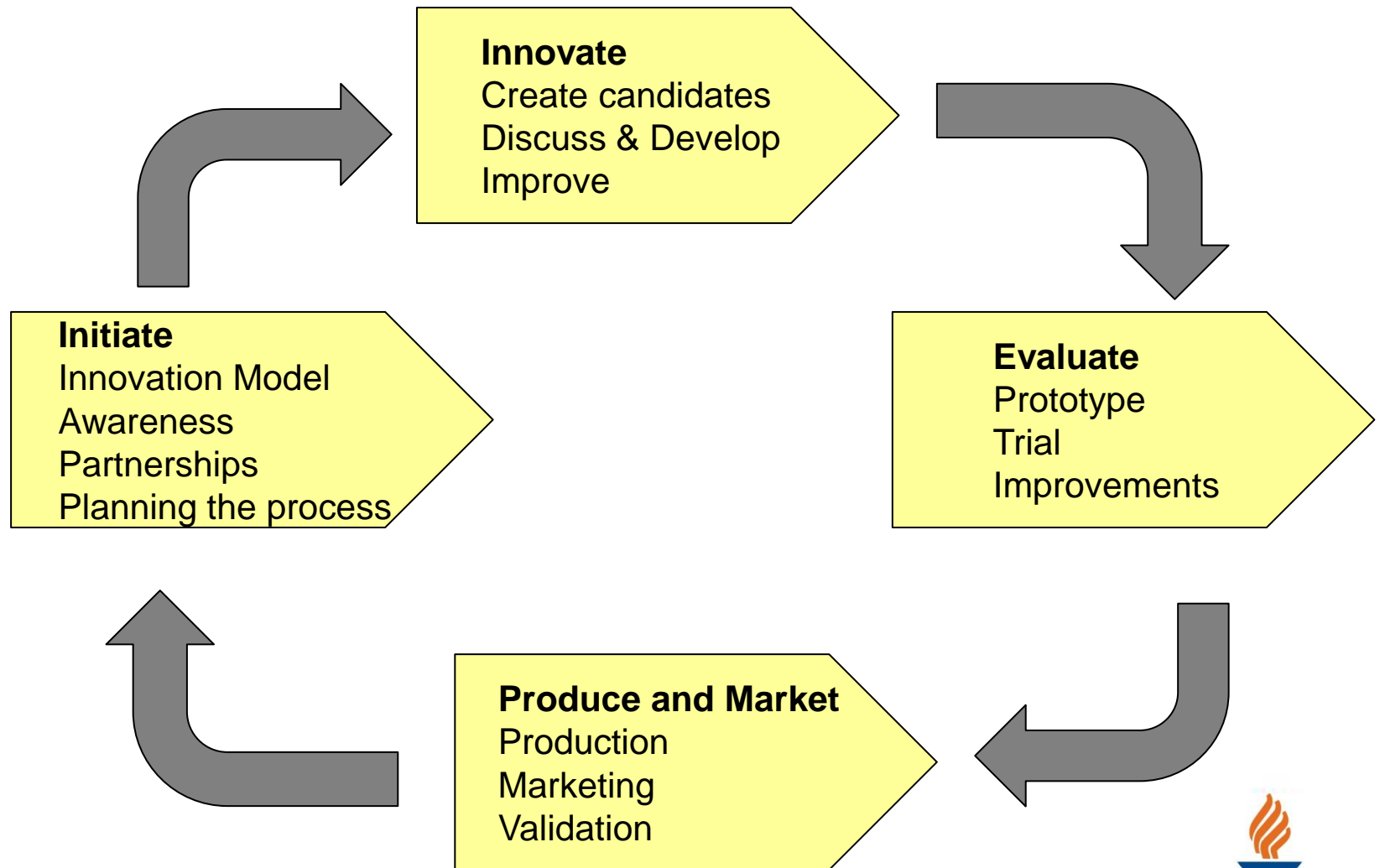
- Jan. 23: [Kickstarter's Banner Year](#)



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# (Simplified) Open Innovation Process



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# Innovation and Knowledge Management (DuPlessis, 2009)

- Knowledge management assists in creating tools, platforms and processes for tacit knowledge creation, sharing and leverage in the organization
- Knowledge management assists in converting tacit knowledge to explicit knowledge
- Knowledge management facilitates collaboration in the innovation process
- Knowledge management ensures the availability and accessibility of both tacit and explicit knowledge used in the innovation process
- Knowledge management ensures the flow of knowledge used in the innovation process
- Knowledge management provides platforms, tools and processes to ensure integration of an organization's knowledge base
- Knowledge management assists in identifying gaps in the knowledge base and provides processes to fill the gaps in order to aid innovation
- Knowledge management assists in building competencies required in the innovation process
- Knowledge management provides a knowledge-driven culture within which innovations can be incubated



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# OI and KM: Common barriers (Liu, 2012)

Barriers	Score/ 3	Rank
Do not know which kind of knowledge can be shared	1.3999	1
Licensing details of the resources	2.0768	2
Lack of citations for the original online resources	2.2309	3
The privacy of personal profile and contributions	2.3844	4
Lack of motivation to share	2.6920	5
Lack of training	2.6921	6
Lack of time	2.9230	7
Do not want to share ideas (keep advantages)	3.0770	8
The problem with the layout of the network	3.1536	9
The problematic to be dependent on the others' resources	3.1538	10
Language misunderstanding	3.2305	11



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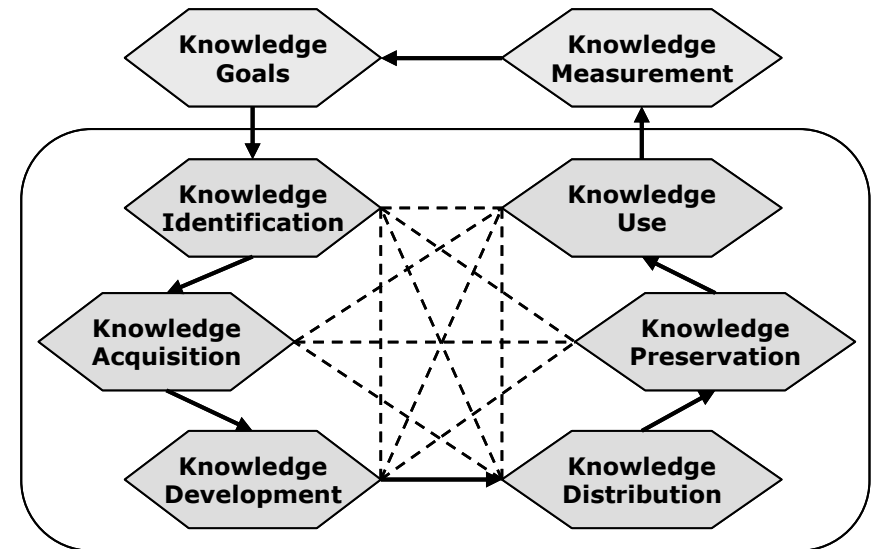
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# Knowledge Management Framework

## Core Knowledge Activities

### Knowledge Management Tasks (Maier, 2004)

- creation, building, anticipation or generation
- acquisition, appropriation or adoption
- identification, capture, articulation or extraction
- collection, gathering or accumulation
- (legally) securing
- conversion
- organization, linking and embedding
- formalization
- storage
- refinement or development
- distribution, diffusion, transfer or sharing
- presentation or formatting
- application, deploying or exploiting
- review, revision or evolution of knowledge



(Probst & Romhardt 2000)

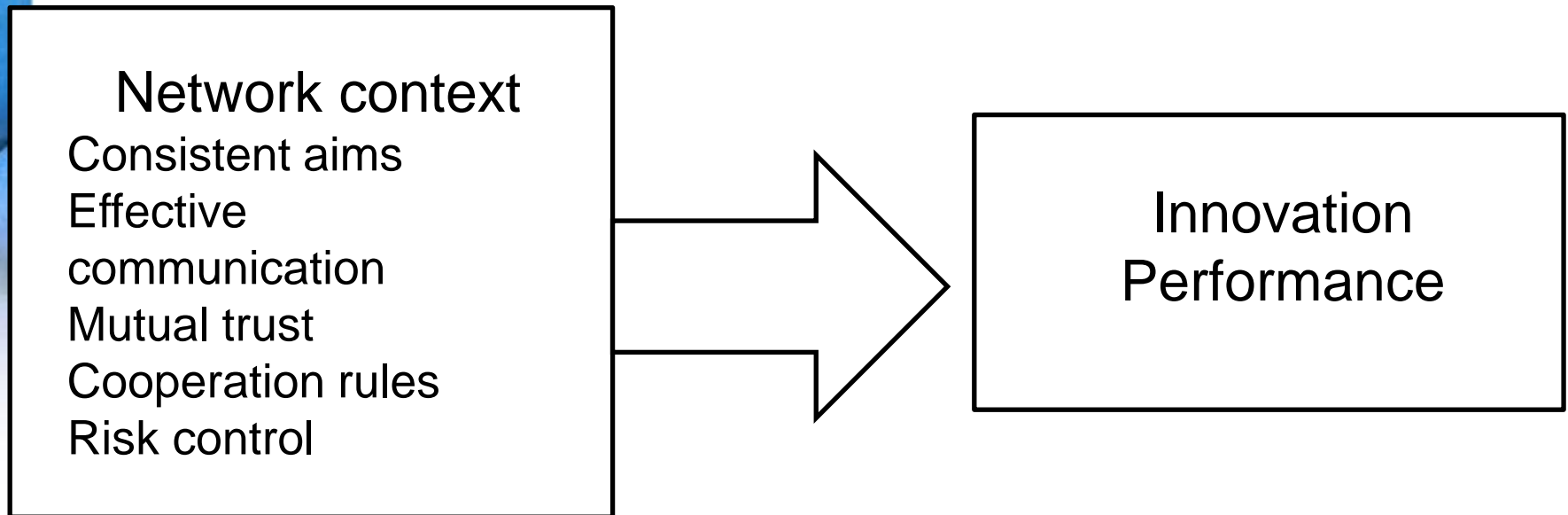


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# Influence Factors / Knowledge Networks



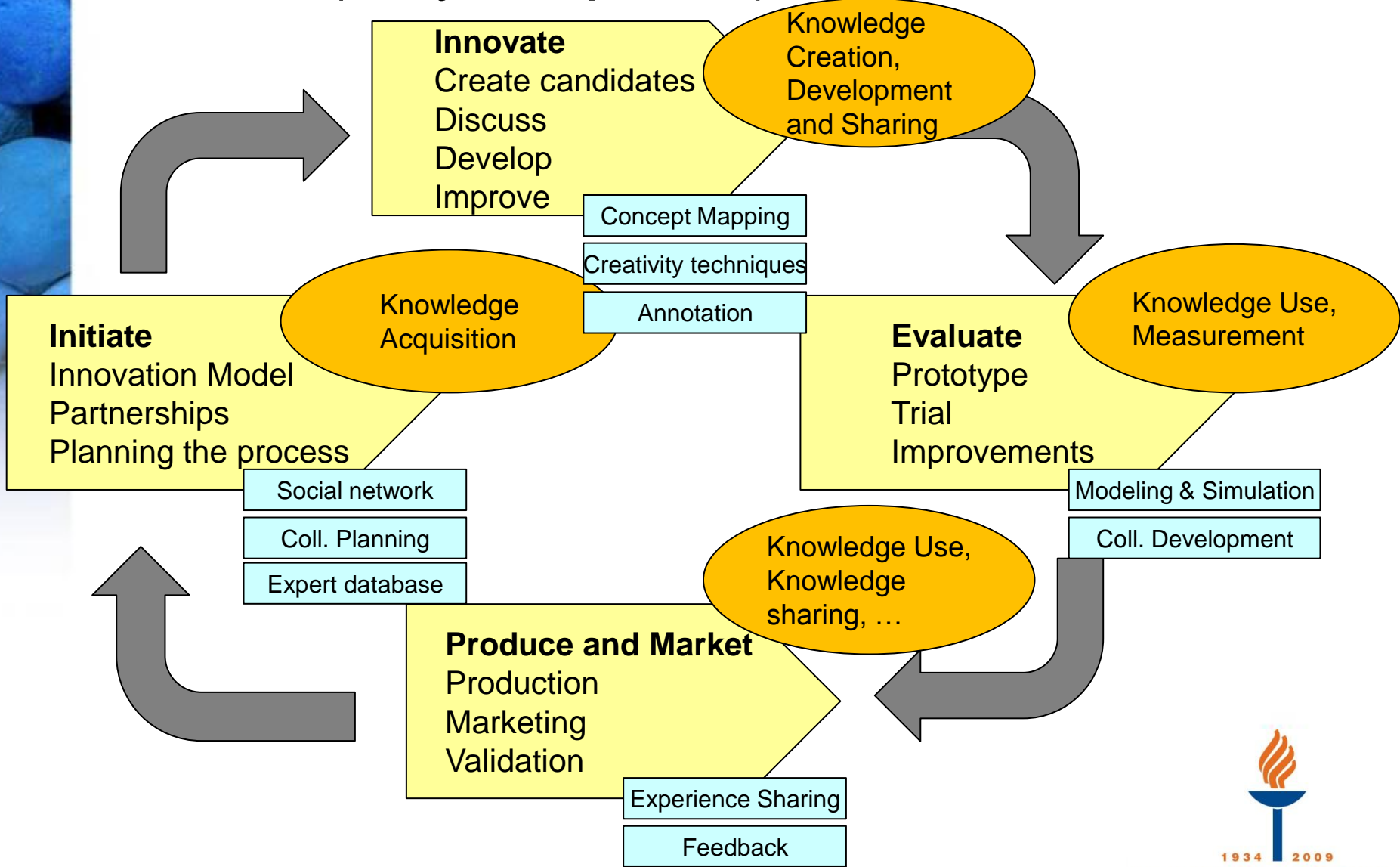
Relationship between context quality and innovation performance within knowledge network (Li & Zheng, 2009)



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# A (very simplified) OI & KM Process



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# Challenges

- ❏ Support regarding knowledge activities
  - Partnership creation
  - Trust building
  - Knowledge acquisition
  - Knowledge creation
  - Knowledge sharing
  - Knowledge development
  - Knowledge use
  - ...
- ❏ Parallel innovation
- ❏ How to integrate KM and OI processes (aligned with business processes)
- ❏ Which instruments / tools can support which activity?



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# Summary

- ❏ Open Innovation covers many different areas, perspectives, processes and instruments
- ❏ KM is clearly related
  - Matching OI and KM processes
  - Matching OI and KM activities and interventions
- ❏ Understanding OI processes requires to understand knowledge flows
- ❏ New ways of innovation collaborations
- ❏ Validation of KM tools strongly necessary!
- ❏ Complex, not fully explored area, in particular for social software tools



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