TIMG 5105
Designing Innovation Communities

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Objective

- Upon completion of this class, you will know about:
  - Characteristics of innovation communities
  - Benefits and challenges of involving external parties
- And you will be able to:
  - Use the characteristics in your own designs

Agenda

1. Assignments

2. Innovation communities

3. Benefits and challenges of collaboration

4. Knowledge creation process

5. Key lessons

6. Key concepts

7. Questions

1. Assignments

- Innovation community (group)   25%

- Community design (group)   25%

- Technology selection (group)   25%

Innovation community (25%)

- Profile an existing innovation community

- What problem does the community solve?
- Who are the members of the community that we need to connect?
- What platform does the community use?
- What interactions does the platform support?
- What experiences will members gain from interacting?
- What value is created for initiator and members?

Community design (25%)

- Design your own innovation community

- Propose an innovation community and answer the questions from assignment 1

- Complete a community design canvas for your community

Technology selection (25%)

- Select the technology to support the innovation community from assignment 2

- Identify the activities that need to be supported in your community

- Select technologies that support those activities

Readings

- West, J., & Lakhani, K. R. (2008), Getting clear about communities in open innovation, Industry and Innovation, 15(2), 223-231.

- Dahlander, L., Frederiksen, L., & Rullani, F. (2008), Online communities and open innovation, Industry and Innovation, 15(2), 115-123.

- Greer, C. R., & Lei, D. (2012), Collaborative innovation with customers: a review of the literature and suggestions for future research, International Journal of Management Reviews, 14(1), 63-84.

- Lee, G. K., & Cole, R. E. (2003), From a firm-based to a community-based model of knowledge creation: the case of the Linux kernel development, Organization science, 14(6), 633-649.

- Germonprez, M., & Warner, B. (2013), Organisational participation in open innovation communities, In: Managing Open Innovation Technologies, Springer, 35-52.

2. Innovation communities

- Innovation communities play an increasingly important role in product development: many products are now designed in **collaboration** between companies and **customers**, and many tasks traditionally performed by companies are carried out by customers

- Innovation communities can be run online, offline or as hybrids and membership can be open or closed, although the majority of innovation communities are **online** and **open**, except during early growth stages: our main focus is on this type of community

Definitions

- "We consider a community to be a voluntary **association** of actors, typically not working for the same firm but united by a **shared instrumental goal** – in this case, creating, adapting, adopting or disseminating innovations" (West & Lakhani, 2008)

- In their study of co-creation, Greer & Lei (2011) refer to the **process** of engaging in the creation of new products or services in **collaboration with customers** as CIC (Collaborative Innovation with Customers)

Definitions (more)

- To Lee & Cole (2003), the community is the locus of innovation: their definition focuses on the **norms** (rules), **forms** (structure), and **evolutionary** nature of "knowledge creation" communities

- For Dahlander et al. (2008), communities are important external sources of innovation, especially of **symbolic value** (eg branding), for firms who can establish relationships between them

Role of firms

- "More commonly, firms play a **central role** in creating and organizing innovation communities. Often, a single firm holds a privileged role in which it seeks to guide or control the community towards achieving firm-level objectives" (West & Lakhani, 2008)

3. Benefits and challenges

- Firms that work closely with **external sources** obtain new insights and knowledge from them

- Both benefits and challenges of collaboration

- Greer & Lei (2011) provide a review of the literature, drawn from several disciplines, synthesize a **conceptual framework**, and provide summaries of the critical findings of studies of CIC

Conceptual framework

Forces	Customization; technology; individual, consumer or customer level; learning and knowledge transfer; strategic and structural; and organizational
Feasibility	Assessing costs and benefits; and processes for customer integration
Implementation	Indicators for collaborative potential; and learning and knowledge transfer processes
Further development	Mutual learning; and relationship management
Measurement & feedback	Impact on performance of in-house innovators; and return on relationships

Forces

- Demand for customization is stimulated by the **heterogeneity** of needs and can be used to create stronger bonding and customer lock-in

- Online communities give firms **access to knowledge** of customers with common interests

- For example, in the <u>Lego Ambassadors</u> program hobbyists collaborate in the development of new product features, and video game developers use customers as potential co-developers ("mods")

- Customers often have the expertise to improve future product designs: features and design flaws

Exercise

- Examine the Lego Ambassadors program

- Links:
  https://lan.lego.com
  https://lan.lego.com/static/build/docs/
  LEGO_Ambassador_Network.pdf

Forces (more)

- Modularization allows firms to create **differentiated products** at lower costs by combining modules

- **Strategic risks**: ownership, maintaining confidentiality, and (for users) hijacking of innovations by firms

- Customer involvement is potentially biased toward **incremental innovation**: risk of narrow focus

- However, there can also be internal **resistance** to ideas developed in collaboration with customers

- **Empathy**, as reflected in caring and helpfulness, facilitates deeper understanding of customers

Feasibility

- A firm's **absorptive capacity** is critical in order to incorporate learnings from customers

- Collaboration with external partners are particularly important for **complex** or radical innovation

- For firms, **costs** can also be substantial, the greater the involvement with customers

- Some **limitations** to learning from customers: customers' inability to communicate what they need, to recall problems encountered with a product, and their lack of experience what can be built

Implementation

- Indicators for collaborative **potential**: level of user involvement, diversity of experience, business size (–), interdisciplinary knowledge, & purchasing power

- Different **approaches** to learning and knowledge transfer: lead users and participatory design

- In the **lead user** approach, lead customers provide early insights into needs and solutions

- In **participatory design**, users are "shadowed" in their work environments to collect tacit knowledge

Further development

- Ability to learn from customers is a function of the quality of the **customer relationship**

- Building a relationship must be seen as an **investment**

- Depth of relationships should be **requisite** to the circumstances: eg complexity of product

- **Intellectual property management** practices also affect relationship with customers (eg open source)

- Customer **myopia** can undermine firm innovation

- These considerations also affect how the **performance** of collaboration should be measured: ROI?

4. Knowledge creation process

- Lee & Cole (2003) propose a community-based model and processes of knowledge creation

- Dahlander et al. (2008) focus on creation of symbolic value and community governance

- Germanprez & Warner (2013) study how firms can participate in open communities

Community-based model

- Lee & Cole (2003) contrast **community-based model** with the firm-based model of knowledge creation

Ownership	Knowledge is **public** (not private) & can be owned by members (builds trust, promotes sharing)
Membership	Membership is **open** (rather than closed) and the size of the community is not constrained
Motivations	Motivations shift from extrinsic (employees of one firm) to **intrinsic** (volunteers)
Knowledge distribution	Members are organizationally and geographically **distributed** (not limited by firm boundaries)
Communication	Technology-mediated (**online**)

Linux kernel community

- Earlier we noted that Lee & Cole (2003)'s notion of community focuses on the norms (rules), forms (structure), and evolutionary nature of "knowledge creation" communities

- What are the norms of the Linux kernel community?

- What is the form of the Linux kernel community, and how does it support an evolutionary process?

Linux kernel community

- Developers assume four different **roles** and sort themselves into a **two-tier structure**

- Periphery **generates** bug reports & patches (variations), which are then tested and reviewed by other periphery members, so as to encourage **improved** variations

- Core **selects** and **retains** best variations to produce a release as basis for the next round of variations

- Two-tier structure of the community helps achieve the delicate **balance** between quality (order or exploitation) and innovation (disorder or exploration) in a distributed innovation system

Symbolic value creation

- Symbolic value refers to the **meaning** or relevance of a product beyond the its functionality in the sense that design, status, or emotional impact of a product affect its value (eg an iPhone is more than a phone)

- Rindova & Petkova (2007) write that "when designing new products, innovating firms design not only tools that perform different functions, but also meaningful objects with symbolic and aesthetic properties that systematically affect the psychological processes involved in the perception of value"

Governance

- West & Mahoney (2008), cited in Dahlander et al. (2008), propose a "participation architecture"

- It comprises three dimensions for the coordination of tasks and communication in a community:
    - Participation: what external parties can see (transparency of artifacts/process) and ability to contribute (access)
    - Governance: decision rights over project direction and membership (open or closed)
    - Intellectual property: allocation of rights to artifacts created by community members

- These rules are designed by the community sponsor (community can be firm-owned or peer-owned)

Leveraged development model

- Products can be developed at lower cost and in shorter time by **leveraging** community assets

Traditional model

Leveraged model

Modes of participation

- Organizations must consider how they participate through **contributions** to the community, **compliance** with, and **differentiation** from the community

- High contributors are actively engaged in the community by developing shared assets

- Low contributors are far less active

- High differentiators create tailored products or services based on shared assets

- Low differentiators use shared assets out of the box

- Compliance comprises making expected technical contributions and adhering to licenses

Exercise

- How does this apply to the Linux kernel community?

		Differentiation	
		High	Low
Contributions	High		
	Low		

4. Key lessons

5. Key concepts

- Innovation communities

- Collaboration

- Knowledge creation

- Contribution

- Differentiation

- Ownership

6. Questions

Next class

- Autio, E., Dahlander, L., & Frederiksen, L. (2013), Information exposure, opportunity evaluation and entrepreneurial action: an empirical investigation of an online user community, Academy of Management Journal, 56(5), 1348–1371.

- Gruner, R. L., Homburg, C., & Lukas, B. A. (2014), Firm-hosted online brand communities and new product success, Journal of the Academy of Marketing Science, 42(1), 29-48.

- Wenger, E., et al. (2009), Communities of practice: a glimpse of theory, Digital Habitats.

- Gouillart, F., & Billings, D. (2013), Community-powered problem solving, Harvard Business Review, 91(4), 70-77.

- Piller, F., Ihl, C., & Vossen, A. (2010), A typology of customer co-creation in the innovation process, SSRN Electronic Journal, 1732127.