

**Communities of Creation:  
Managing distributed and collaborative  
innovation**

**Emanuela Prandelli**

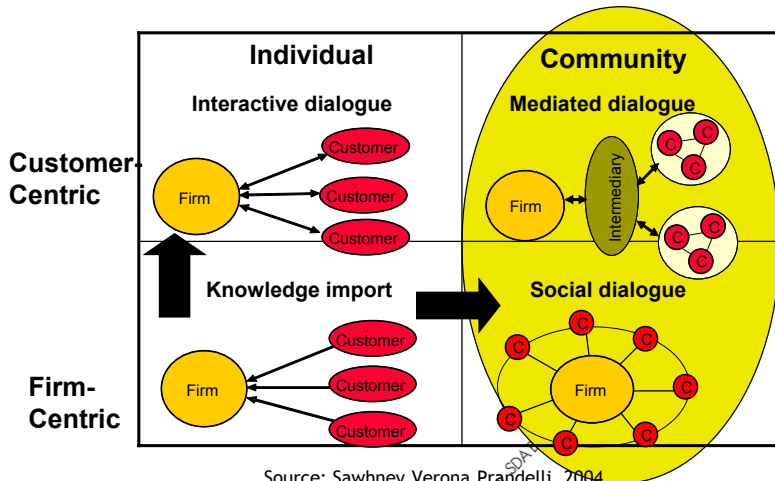
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**Global Forum 2004 – Malmo, November 5th**

## Why collaborative innovation is relevant

- Virtual customer environments have become a flexible and effective tool to interact with customers and partners and co-produce value with them (Nambisan, 2002)
- Such an ability has a direct impact on the firm's capacity to generate value both:
  - in the short term, through a better interaction with the customer and an implementation of a customer marketing policy (Peppers, Rogers, Dorf, 1999);
  - in the long run, through the creation of new products that may be better targeted to the served market (Sawhney and Prandelli, 2000).

# A taxonomy of collaboration mechanisms with and among customers



Source: Sawhney, Verona, Prandelli, 2004

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## Virtual communities enable a new model for managing distributed innovation: the Community of Creation

The community of creation is a new governance mechanism for managing distributed innovation.

When the locus of innovation is internal to the boundaries of the firm, innovation is managed through a hierarchical governance mechanism. Traditional R&D departments epitomize it.

ICTs have dramatically enabled a new market-based mechanism for managing distributed innovation: the open source model. It favors creativity, but the absence of coordination can make it unstable.

**Communities of creation** are permeable systems with ever changing boundaries, offering a **compromise between too much structure and complete chaos**.

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# Communities of Creation: how do they work

The community of creation relies on **extended participation** and **distributed content production**.

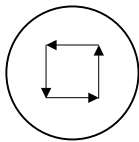
Within the community, explicit as well as tacit knowledge can be shared, because participants build up a common **context of experience**.

This model implies **specific rules for membership**

It needs a sponsor as well as a system for managing intellectual property rights that allow members to extract rents from the **intellectual property** they contribute to create.

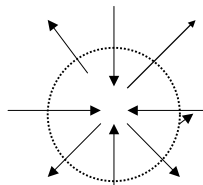
# Governance of collaborative innovation: Communities of creation

**HIERARCHY**



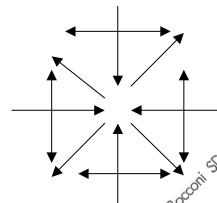
**Complete  
Control**

**COMMUNITY**



**Edge of  
Chaos**

**MARKET**



**Chaos**

**DEGREE OF OPENESS TO THE ENVIRONMENT**

**DEGREE OF STABILITY OF THE SYSTEM**

# The Community of Creation model

Advantages shared with the proprietary model	Advantages shared with the open source model
Protection for intellectual property	Open platform with published and specified interfaces
Structured innovation within a single responsible organization	Higher quality and more rapid innovation
Clear understanding of “who knows what”	Self-organizing and emerging structure
Control over compatibility	Flexibility of schedules and priorities

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## The Community Resource for Jini Technology

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**Jini.org** The Community Resource for Jini Technology

Microsoft Internet Explorer

http://www.sra.org/project/html/aboutprojectroles.html

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About  
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 Jini Community  
 Jini network technology

Community  
 Mailing Lists  
 Newsletter  
 Resources  
 Events  
 Downloads  
 Organization & Process  
 Standards  
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How do I...  
 Get help?

JINI

java.net MEMBER

### About project roles

- Help Index**
  - Learning about projects
    - Viewing project details
    - about subscriptions to mailing lists
    - Jinnos & projects
    - Learning about project roles
  - Project resource for members
  - Hosted tools
  - Creating a new project
- Observer**
  - Views, but does not change project resources.
  - Read-only access to most project resources.
  - Read-only access to web content and source code (CVS).
  - Submits issue to issue tracking (Issuezilla)
  - Subscribes and posts to project mailing lists.
- Developer**
  - Contributes directly to project -- source code and HTML.
  - Gains write access to most project resources.
  - Write access to HTML, news utility, files utility, CVS, Issuezilla.
  - Mailing list privileges the same.
- Content Developer**
  - Contributes directly to project's web content (HTML).
  - Gains write access to project's HTML, news utility, files utility, and Issuezilla.
  - Mailing list privileges the same.
- Project Owner**
  - Defines the project's overall mission, direction, methodology, and community make-up.
  - Gains administrative access to all Project functions.
  - Grants members requested permissions on project.
  - Administers all project mailing lists and is default moderator on all lists.
  - Administers Issuezilla.
  - Project Owner role supersedes any other roles you may hold on a project.

See | Help index

Resources | Downloads | FAQ | Feedback | Policies and Terms of Use

Operazioni completate

start

# Different levels of participation

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### Constitution

(constitution)  
 Version 1.0, Nov Dec 16 09:46:46 2002

This document is the basic document for actions, Bylaws, rules, and processes in the Jini Community™. The original Constitution was passed by a vote of the Community on 21 November 1999. The changes made to the original Constitution clarified language or addressed trademark issues, but some were notably more substantial, most notably the invention of the Executive (E) role. You can see the original Constitution and a marked-up version of the Constitution which highlights the changes that were made.

Constitution \*  
 Bylaws \* Transition \*  
 Rules \* Executive \* TOC \*  
 Supporting \* Overview \* Documents \* Approval Standards \* Executive Roles \* TOC Roles \* Timeliness \*  
 Download All \* PDF \* FontSize \* ZIP \* tar \* tar.gz (speed) \*

#### I. Definitions

- A **Community Member** is any person or organization that is a valid licensee of the Sun Community Source License for the Jini™ network technology, and has satisfied any other requirements specified in the Bylaws.
- A **Commercial Member** is any **Community Member** that has signed a commercial attachment to the Sun Community Source License for the Jini network technology, and has satisfied any other requirements specified in the Bylaws. The **Original Contributor** is also a Commercial Member.
- A **General Member** is any individual who is a **Community Member** and has accepted the Sun Community Source License for Jini network technology as an individual, and has satisfied any other requirements specified in the Bylaws.
- The **Original Contributor** is the individual or development group that produced the original technology that is the subject of a Sun Community Source License. Here this refers to Sun Microsystems, Inc., its affiliates, successors, and assigns.
- A **Standard** is a specification that has been approved by a vote of the Community as a whole. A standard may be approved either as a draft or as final.
- An **On-Line Vote** is one that is conducted by email, the Web, or other techniques that allow members to vote without being present at any meeting.

#### II. Community Decision Making

- The voting membership shall be partitioned into two bodies called Houses as follows:
  - A **General House** made up of all **General Members**.
  - A **Commercial House** made up of individuals representing **Commercial Members** in the proportion of one representative per **Commercial Member**.
- All decisions requiring an **On-Line Vote** shall:
  - be brought forward either in one of the two Houses, or by the **Original Contributor**, which designates the House that will vote on the proposal first.
  - be approved in the same form by both Houses sequentially.
  - there shall be a **Technical Oversight Committee (TOC)**, composed equally of members selected by the **Commercial House**, the **General House**, and the **Original Contributor**.
    - be appealed to the **TOC**. The **TOC** can veto the decision.
    - 2/3 **On-Line Vote** by each House.
    - the meaning of any existing **Standard** or bylaw, shall require an **On-Line Vote** (11.1.B).
    - for carrying out the procedures of the Community under these and other rules.
    - the **TOC**.
    - stitution takes precedence. The Bylaws of the Community will take precedence in any conflict that the Constitution does
    - in each House.
- All decisions that are unique to the **Original Contributor** also require the **Original Contributor's** approval. This covers: **SOI**, which grants membership in the **Commercial House**; **SOI**, which gives the right to put a proposal to the **TOC**; and, (of course) this clause itself. This clause is analogous to (but more limited than) the veto that each House brings down proposals.

# Participation ruled by an ad hoc constitution

**Physical support to participation**

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**The InnoCentive Community by Eli Lilly**

Companies contract with InnoCentive as "Seekers" to post R&D challenges. Scientists register as "Solvers" to review challenges and submit solutions online. The Seeker company reviews submissions and selects the best solution. InnoCentive issues the award amount to the winning scientist/Solver.



The screenshot shows the InnoCentive website interface. At the top, there's a navigation bar with 'About Us', 'InnoCentive Challenges', 'Using the Website', 'My InnoCentive', 'Seeker Companies', and 'News & Press'. Below this, the 'biology' category is selected, and a list of current challenges is displayed. The challenges include:

- INNOCENTIVE SEARCH:** New water-soluble comb polymers. PICTURE: APR 29, 2004. DEADLINE: APR 29, 2004. \$10,000 USD.
- INNOCENTIVE SEARCH:** Bottom Indicator. PICTURE: APR 29, 2004. DEADLINE: APR 14, 2004. \$10,000 USD.
- INNOCENTIVE SEARCH:** 2- Specific source of microbial origin. PICTURE: APR 29, 2004. DEADLINE: APR 29, 2004. \$10,000 USD.
- INNOCENTIVE SEARCH:** Non toxic inhibitor for lipase. PICTURE: APR 27, 2004. DEADLINE: APR 14, 2004. \$10,000 USD.

Each challenge entry includes a brief description of the problem and a note that more details are available once registered as an InnoCentive seeker.

**The InnoCentive challenges**

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## An example of application

- A seeker company wanted to improve the process of manufacturing a chemical called 4-(4-hydroxyphenyl) butanoic acid.
- After devoting 12 man-months of work to the problem, the company had only developed a five-steps process that needed expensive starting materials and produced low yields. Its goal was to devise a two-step process that had a starting cost of less than 100\$ per kilogram and produced a better yield.
- The company posted the problem on InnoCentive's site in June 2001.
- It soon received several submissions, including a promising approach suggested by Werner Mueller, a retired senior scientist from Hoechst Celanese. In November, Mueller's fifth submission was accepted by the seeker company, and he was awarded \$25,000 by InnoCentive.
- In less than five months, one scientist had solved a problem that had eluded a team of researchers at a leading company.

## The InnoCentive community: some figures

- More than 12,000 scientists from 105 Countries had registered, and more than half of them are from outside the United States
- Over 3,000 project rooms opened
- Awards ranging from \$2,000 to \$100,000
- Scientists who participate include retired researchers, university professors, researchers working for independent clinical research organization and even scientists working for non-competing pharmaceutical firms

## Lessons for managers

Key questions	Lessons for managers
What level of control should the sponsor company maintain?	<ul style="list-style-type: none"> <li>• Needs to pull individual organizations into a circle of shared concerns, then allow them to self-organize</li> <li>• Needs to coordinate individual schedules and priorities</li> <li>• Needs to establish responsibilities to ensure alignment</li> </ul>
How can property rights be managed?	<ul style="list-style-type: none"> <li>• Intellectual property has to be protected in the community</li> <li>• Rights have to be directly proportional to responsibilities</li> </ul>
What incentives favor a direct involvement in the long run?	<ul style="list-style-type: none"> <li>• Business model encouraging /rewarding individual invention</li> <li>• To preserve the quality of innovation, the community needs to be “gated”</li> </ul>
How can the community evolve and keep stability?	<ul style="list-style-type: none"> <li>• Preserving and renewing the balance between continuous innovation and internal cohesion, openness and closeness</li> <li>• Tolerance for diversity and redundancy</li> </ul>
What level of support should the sponsor provide?	<ul style="list-style-type: none"> <li>• The sponsor needs to fund support for the community</li> <li>• On the long run, physical support is required</li> <li>• Services should be tiered, depending on the intensity of individual members’ involvement</li> </ul>



## In brief ..... the requirements for a virtual community supporting collaborative innovation

- Natural structure, but clear **participation rules**, often defined by the same members;
- Spontaneous** subscription from members (everyone can contribute), based on **self-signalling** mechanisms
- Centralized coordination** activities to support the constant **animation** of interpersonal communication;
- Feeding up **shared languages** and a collective **identity**;
- Social control** mechanisms (mutual trust among members);
- Incentives** for favouring participation (**pay-off sharing**): not just members ... fans
- Rules to manage **intellectual property rights**.