

Open Innovation Intermediaries



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A.A. 2018-2019

Open Innovation Intermediaries – a definition 1



- Open Innovation Intermediaries (OII), can be considered third parties (Mantel and Rosegger, 1987), “*whose main objectives are to facilitate and sustain interaction, participation, collaboration and creation of profitable relationships between the different actors involved in the innovation process (Howells, 2006; Stewart and Hyysalo, 2008; Sieg et al., 2010; Hakanson et al., 2011; Ollila and Elmquist, 2011; Ye and Kankahalli, 2013), changing the traditional value creating systems, and, in such a way, bridge the gaps between the different knowledge resources (internal and external to organisations), managing to overcome miss-matching*” (Aquilani and Abbate, 2015).

Open Innovation Intermediaries – a definition 2



- OII aim at facilitating, coordinating and supporting interactions and relationships between multiple actors (defined as ‘innovation seekers’ and ‘innovation solvers’) in the challenging innovation context.
- These OII help companies transgress their own organizational boundaries and skilfully connect supply and demand sites of the market, creating successful links between firms searching for external knowledge with highly-qualified solution providers located globally, thus mitigating the associated innovation costs (Howells, 2006; Sieg et al., 2010 in Aquilani and Abbate, 2014, p. 376).

Open Innovation Intermediaries – a definition 3



- OII can be variously described as a (Aquilani and Abbate, 2014, p. 377):
 - *broker* (assisting transactions between actors of innovation processes and contributing effectively to technology and knowledge transfer);
 - *consultant* (ensuring forms of assistance through providing useful information, support and expert professional advice in different activities, like recognition, negotiation and acquisition of IP or knowledge capabilities);
 - *mediator* (a concrete third party between diverse organizations and facilitators in knowledge networks which generates benefits from collaboration);
 - *resource provider* (predominantly the agent who facilitate access to funding pools, knowledge resource and other material support for innovation outcomes) (Bessant and Rush, 1995; Hargadon and Sutton, 1997; Howells, 2006; Winch and Courtney, 2007; Gassmann et al., 2011; Hakanson et al., 2011; Tran et al., 2011).

OII characteristics



- OI platforms show several characteristics (Aquilani & Abbate, 2013):
 - **Collaborative:** platform able to connect various seekers and solvers and also to stimulate the participation of different solvers, among them: professionals, experts and also communities;
 - **Interactive:** able to simultaneously connect various seekers and solvers also without the OII direct participation;
 - **Connective/Network:** this characteristic has to be connected to “scanning” (Howells, 2006, p. 721) activities in that OII should search and stimulate even new solvers to participate through an intensive networking activity able, per se, to also attract inside the platform other seekers;
 - **Articulated:** the platform should be created paying attention to create various sections each deemed to an activity to make easier to seekers and solvers to find the right information and to be aware of the different functionality and/or services the platform can allow (Verona et al., 2005);
 - **Navigability:** the platform should contain an internal search engine and filters to make easier and more rapid to find the searched information. Seekers and solvers should also be able at each time to know exactly the point in which they are and how they reached this point;
 - **Multimedial:** OII platforms should allow to use all Web 2.0 tools in order to make easier for seekers and solvers to build and nurture their mutual relationships;
 - **Member Group:** this characteristic identify the ability of some OII to create *ad hoc* groups and/or communities to support seekers in their OI process.

OII roles



- OII roles has been studied embracing various perspectives (Aquilani et al., 2016):
 - scanning information and identifying needs (Diener and Piller, 2010; Gassmann *et al.*, 2011);
 - *knowledge transfer, experience sharing, and diffusion* (Diener and Piller, 2010; Gassmann *et al.*, 2011);
 - *brokering for problem solving* (Agogue *et al.*, 2013);
 - *intermediation* for technology transfer (Lichtenthaler and Ernst, 2008; Agogue *et al.*, 2013);
 - *systems and networking* (Gassmann *et al.*, 2011; Agogue *et al.*, 2013).

OII functions



- OIIs perform a wide range of core functions, which can be considered jointly with the above mentioned roles (Aquilani, Abbate and Dominici, 2016 available at: <http://www.ijdar.org/volume-previous-volume-16>):
 - connecting, involving, and mobilizing different actors in innovation processes (Hakanson *et al.*, 2011; Agogue *et al.*, 2013);
 - *facilitating the identification of suitable technology commercialization opportunities (Lichtenthaler and Ernst, 2008), diffusing technology transfer (Diener and Piller, 2010) and supporting “accreditation, validation and regulation, protection of the results” (Howells, 2006, p. 721);*
 - *processing knowledge by connecting companies with problems to solvers from different domains and industries (Howells, 2006; Stewart and Hyysalo, 2008; Lopez and Vanhaverbeke, 2009; Hakanson et al., 2011; Ye and Kankanhalli, 2013);*
 - *solving (or mitigating) conflicts between stakeholders (Agogue et al., 2013); e) foresight, diagnostic, and information processing (Howells, 2006), working closely with clients to define problems and find solutions (Ye and Kankanhalli, 2013), as well as brokering information flows (Diener and Piller, 2010).*

OII services - 1



Classification services	Services	Nine-Sigma	Innocentive			yet2.com	Big Idea Group	Ideas Project (Nokia)	Openideo	Inpama	mercatodellinnovazione.it
			Brainstorming Challenges ¹	Premium Challenges ²	Grand Challenges ³						
Method of contact management between seekers and solvers	Connection between solvers and seekers managed through the platform	YES (1,2)		YES Supported by experts (1,3)	YES Shaped ad hoc (1,3)	YES Yet2 Strategic Dealflow Service (1,2,3)	YES	YES	YES	YES Only for the commercialization of patents (1)	YES
	Connection between seeker and solver communities managed autonomously		YES (3)	YES (3)	YES (3)	YES			YES	YES Only for the commercialization of patents	YES
	Purchase and sale of patents in the marketplace					YES (1,4,5,6)				YES	YES
Communication services	Communication services	Platform, e-mail, personal	Platform, e-mail	Platform, e-mail, telephone	Platform, e-mail, personal	Platform, personal	Platform, personal	Platform, e-mail, personal	Platform, e-mail	Platform, e-mail	Platform, e-mail, personal

¹ “do-it-yourself challenges” through open and collaborative Web 2.0 instruments

² Challenges for product innovation (ideas, design, prototypes), connected to *Big Data*, or for molecule development in pharmaceutical, chemical, and other fields, with specific research partners.

³ Challenges concerning the big themes in disparate fields (e.g., environment, renewable energy, etc.).

OII services - 2



Classification services	Services	NineSigma	Innocentive			yet2.com	Big Idea Group	Ideas Project (Nokia)	Openideo	Inpama	mercatodellinnovazione.it
			Brainstorming Challenges	Premium Challenges	Grand Challenges						
Services providing support for contact and initiation of innovation process	Acceptance services, text preparation, and revision of post	YES NineSigma RFP™ (4,6)	YES By the <i>seeker</i> or through the <i>community</i>	YES (7)	YES	YES TechPaks (3,4)	YES		YES Together with <i>challenge sponsor</i>		YES
	Preventive analysis ideas/demand/problem	YES NineSigma QuickScan™		YES	YES	YES	YES		YES		YES
	Evaluation of existing and emerging technology to guide firms in innovation choices	YES NineSigma's Technology Landscaping™				YES (1)					YES
	Information guide/support to a shared innovation process	YES NineSigma Linked Innovation™		YES	YES	YES	YES			YES	YES
	Services defining the price range		YES	YES	YES						
	Communication and distribution services to community members or specific partners	YES NineSigma RFP™	YES weekly Newsletter	YES weekly Newsletter, used by social media	YES Completely personalized programs	YES Tech of the Week (3)	YES		YES (1)	YES	

1. Bakici et al., 2012; Hakanson et al., 2011; 3. Verona et al., 2005; 4. Huston and Sabbak, 2006; 5. Lichtenthaler and Ernst, 2008; 6. Lopez et al., 2009; 7. Sieg et al., 2010; 8. Lakhani, 2008; 9. Sahwney et al., 2005.

OII services - 3



Classification services	Services	NineSigma	Innocentive			yet2.com	Big Idea Group	Ideas Project (Nokia)	Openideo	Inpama	mercatodellinnovazione.it
			Brainstorming Challenges	Premium Challenges	Grand Challenges						
Services providing support for contact and initiation of innovation process (sequel)	Support services by experts on request/project	YES <i>Expert advisory service</i> (1)		YES With a standard process (3,7,8)	YES With ad hoc process (8)	YES			YES (1)	YES Contacted directly by the <i>seeker</i>	YES
	Services seeking specialized partners in answer to prerequisites dictated by the firm	YES <i>NineSigma Targeted Partner Search™</i>		YES (1)	YES	YES				YES	
	Creation of ad hoc group services for the resolution of problems	YES <i>NineSigma Linked Innovation™</i> (1, 9)		YES	YES	YES (9)	YES (1)			YES	YES
	Monitoring throughout the entire innovation process	YES <i>NineSigma RFP™</i>		YES	YES	YES	YES		YES (1)		YES By at least two experts
	Definition and evaluation of solutions found			YES	YES	YES (1)	YES		YES		

1. Bakici et al., 2012; Hakanson et al., 2011; 3. Verona et al., 2005; 4. Huston and Sabbak, 2006; 5. Lichtenthaler and Ernst, 2008; 6. Lopez et al., 2009; 7. Sieg et al., 2010; 8. Lakhani, 2008; 9. Sahwney et al., 2005.

OII Services - 4



Services	Nine-Sigma	Innocentive			yet2.com	Big Idea Group	Ideas Project (Nokia)	Openideo	Inpama	mercatodell innovazione .it
		Brainstorming Challenges	Premium Challenges	Grand Challenges						
product design support through prototype	YES <i>NS² Accelerated In-Market Solutions</i> together with Nottingham Spirk		YES			YES		YES Process shared with the community		
innovation launch support and pre-launch services	YES <i>Open Innovation Roadmap</i> (5,6)	YES (6,8)	YES (1,6,8)	YES (1,6,8)	YES (1,3,6)	YES			YES	
existing technology improvement services and/or integrable to firm (e.g., adherence to norms or vertical integration)	YES <i>Technology Search™</i>				YES (3)					YES
support in the identification of prospects and/or projects for major investment	YES <i>NineSigma's Technology Landscaping™</i>									YES
organizational and financial consultancy services						YES			YES	
consultancy on suppliers and supply chain management						YES			YES	
partner seeking services for venture capital operations					YES	YES			YES	
marketing services (e.g., communications)						YES			YES	
internationalization support										YES

OII services - 5



Classification services	Services	Nine-Sigma	Innocentive			yet2.com	Big Idea Group	Ideas Project (Nokia)	Openideo	Inpama	mercatodellinnovazione.it
			Brainstorming Challenges	Premium Challenges	Grand Challenges						
Other services and/or innovation opportunities	Training and coaching services	YES									
	Psychometric tests for team leaders and project managers	YES <i>The Collaborative Innovation Profile</i> together with Caliper									
	Possibility of participating in big innovation projects in fields of great interest worldwide (e.g., in environment)	YES NineSigma, Grand Challenge™			YES Stimulated by seekers				YES Big challenges for social good		

OII services, roles and functions - 1



Roles	Functions	Services provided by OIIs
<p>1. Networking (Gassmann et al., 2011 ; Agogue et al., 2013)</p>	<p>To connect, involve and mobilize large number of actors (Hakanson et al., 2011; Agogue et al., 2013).</p>	<ul style="list-style-type: none"> - Connection services between seekers and solvers direct (<i>Innocentive, Yet2.com, Openideo, Inpama for patents, Mercatodellinnovazione.it</i>) and through the platform (all eight platforms); - Support services by experts on request/project (<i>Nine-Sigma, Innocentive except for Brainstorming Challenges, Yet2.com, Openideo, Inpama, Mercatodellinnovazione.it</i>); - Services seeking specialized partners in answer to prerequisites suggested by the firm (<i>NineSigma, Innocentive except for Brainstorming Challenges, Yet2.com, Inpama</i>); - Creation of <i>ad hoc</i> group services for the resolution/response to problems (<i>NineSigma, Innocentive except for Brainstorming Challenges, Yet2.com, Big Idea Group, Inpama, Mercatodellinnovazione.it</i>); - Purchase and sale of patents for OII which are marketplaces (<i>Yet2.com, Inpama, Mercatodellinnovazione.it</i>).
<p>1. Intermediation for technology transfer (Lichtenthaler and Ernst, 2008; Agogue et al., 2013)</p>	<p>To facilitate the identification of technology commercialization opportunities (Lichtenthaler and Ernst, 2008) and the diffusion of technology transfer (Diener and Piller, 2010). “Accreditation, validation and regulation, protection of the results, commercialisation and evaluation of outcomes” (Howells, 2006, p. 721).</p>	<ul style="list-style-type: none"> - Definition and evaluation of solutions found (<i>Innocentive except for Brainstorming Challenges, Yet2.com, Big Idea Group, Openideo</i>); - Services defining the prize range (<i>Innocentive</i>); - Searching for commercialization opportunities through networking (all platforms, for details look to the previous raw).
<p>1. Knowledge transfer/experience sharing (Diener and Piller, 2010; Gassmann et al., 2011)</p>	<p>Knowledge processing and combination/recombination by connecting companies with problems to a broad range of solvers from different domains and industries (Howells, 2006; Stewart and Hyysalo, 2008; Lopez and Vanhaverbeke, 2009; Sieg et al., 2010; Hakanson et al., 2011; Bakici et al., 2012; Ye and Kankanhalli, 2013).</p>	<ul style="list-style-type: none"> - Information guide/support to a shared innovation process (<i>NineSigma, Innocentive except for Brainstorming Challenges, Yet2.com, Big Idea Group, Inpama, Mercatodellinnovazione.it</i>); - Monitoring throughout the entire innovation process (all platforms except <i>Innocentive for Brainstorming Challenges, Ideas project, Impama</i>); - Communication and distribution services towards community members and/or specific partners (all platforms except <i>Ideas Project, Mercato dellinnovazione.it</i>).

OII services, roles and functions - 2



Roles	Functions	Services provided by OIIs
<p>1. Problem Solving (Agogue et al., 2013)</p>	<p>To solve (or mitigate) conflicts among stakeholders (Agogue et al., 2013).</p>	<p>- Techno-technological support services for innovation: (a) Product design support through to prototype (<i>NineSigma</i>, <i>Innocentive for premium Challenges</i>, <i>Big Idea Group</i>, <i>Openideo</i>); (b) Innovation launch support and licence-out services (<i>NineSigma</i>, <i>Innocentive</i>, <i>Yet2.com</i>, <i>Big Idea Group</i>, <i>Inpama</i>); - Other consultancy services: organizational and financial, on suppliers and supply chain management, partner seeking services for venture capital operations, marketing services for <i>Big idea Group</i>, <i>Inpama</i>; partner seeking services for venture capital operations for <i>Yet2.com</i>; internationalization support for <i>Mercatodellinnovazione.it</i>; training and coaching services and psychometric tests for team leaders and project managers only for <i>NineSigma</i>.</p>
<p>1. Scanning information and articulating needs (Diener and Piller, 2010; Gassmann et al. 2011)</p>	<p>Foresight and diagnostics, scanning and information processing (Howells, 2006). Working closely with clients (seekers) to define the problems and to find possible solvers (Ye and Kankanhalli, 2013). Brokering information flows, filling information gaps (Diener and Piller, 2010).</p>	<p>- Acceptance services, text preparation and revision of <i>post</i> (all platforms except <i>Ideas project</i>, <i>Inpama</i>); - Preventive analysis ideas/demand/problem (all platforms except <i>Innocentive-Brainstorming challenges</i>, <i>Ideas project</i> and <i>Inpama</i>); - Evaluation of existing and emerging technology to guide the firm in the innovation choice (<i>NineSigma</i>, <i>Yet2.com</i>, <i>Mercatodellinnovazione.it</i>); - Technic-technological consultancy services to the seeker (<i>NineSigma</i>, <i>Yet2.com</i> only for <i>Existing technology improvement services and/or integrable to firm</i>, <i>Mercatodellinnovazione.it</i>).</p>
	<p>OII own functioning activities</p>	<p>- Communication services (online for all platforms, personal only for <i>NineSigma</i>, <i>Innocentive-Grand Challenges</i>, <i>Yet2.com</i>, <i>Big Idea Group</i>, <i>Ideas Project</i>, <i>Mercato dellinnovazione.it</i>) - Other innovation opportunities provided by the OII (<i>NineSigma</i>, <i>Innocentive - Grand Challenges</i>, <i>Openideo</i>).</p>

A classification of Open Innovation Intermediaries



«Access»
The way in which OIIs interact with their networks

In terms of
«sources»

In terms of
«proposals»

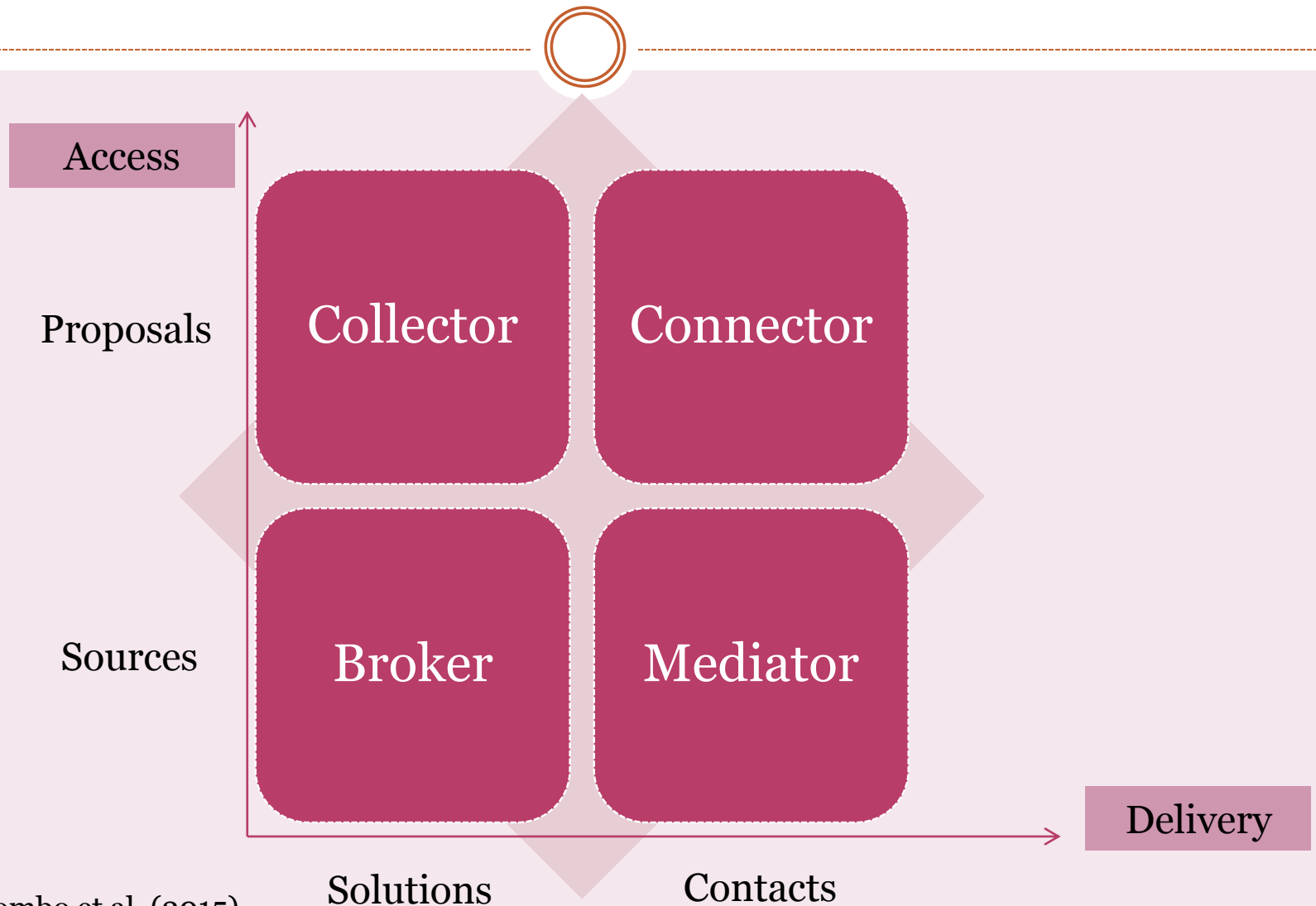
«Delivery»
The method OIIs use to support seekers in their innovation process

Providing
«turn-key solutions»

Providing
«contacts»

Source: Colombo et al. (2015)

OII types following “Access” and “Delivery” features



Source: Colombo et al. (2015)

OII services for OI with customers: two cases



Classification of services	Communication Services	Services supporting contact and processes to attain innovation							Support to technical-technological aspects
	<i>Activated communication tools</i>	<i>Acceptance, text preparation and post revision</i>	<i>Guide for shared innovation processes</i>	<i>Definition range of rewards</i>	<i>Communication and exchange with the community and/or specific partners</i>	<i>Support by experts on request/project</i>	<i>Ad hoc group creation for problem solving</i>	<i>Monitoring of innovation processes</i>	<i>Product design support to prototype</i>
NineSigma	Platform, e-mail, staff	Yes NineSigma RFPTM (Huston & Sabbak, 2006; Lopez & Vanhaverbeke 2009)	Yes NineSigma Linked Innovation™		Yes NineSigma RFP™	Yes Expert advisory service (Bakici et al., 2012)	Yes NineSigma Linked Innovation™ (Bakici et al., 2012; Sahwney et al., 2005)	Yes NineSigma RFP™	Yes NS² Accelerated In-Market Solutions together with Nottingham Spirk
Innocentive	Platform, e-mail	Yes By the seeker or through community		Yes	Yes Weekly newsletter				

Source: Aquilani and Abbate, 2015

A model of OI with customers and OII

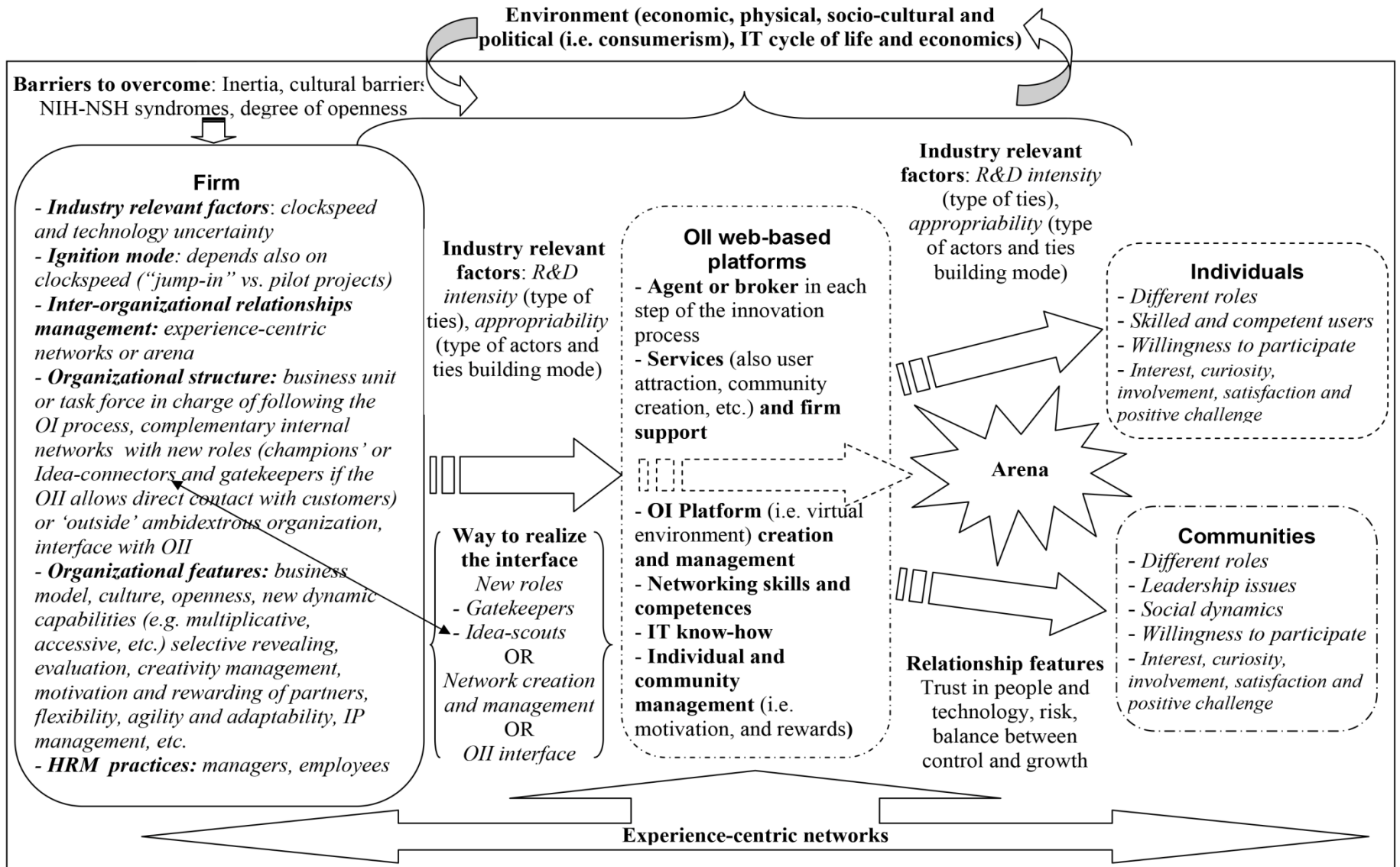


Figure 1. Firm indirect open innovation process through customer framework

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