

## ANALYSIS OF OPEN INNOVATION SYSTEMS

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### **Abstract:**

In a rapidly changing environment, selecting and effectively pursuing the right information and management system development can be a key factor in sustaining corporate livability and success. Open innovation systems enable organizations to look outside their company boundaries and gain new ideas and solutions from professionals all around the world. With the development of online social networks and other Social Web tools, the Web has become a platform for collaboration. In this paper we present a research on the comparison of open innovation website. The framework is implemented to compare existing well known systems of open innovation platforms (ex. Innocentive, Hypios, NineSigma, Yet2, Innoget, etc.) which are putting in contact, on the one hand, the seekers (companies, organizations etc.) which are struggling to solve their R&D problems and, on the other hand, a large network of potential solvers, who are more likely to have a solutions to problems. The aim of this paper is to provide a framework that can help in making decisions and in choosing right Website according to wanted paradigms in an Open Innovation process. The study concludes by showing how open innovation websites will play a significant role in growing the overall values of the firm. It is concluded that for organizations with time and cost constraints, analysis of open innovation system will be the most appropriate evaluation method. The discussion will lead to a stronger understanding of website differences and co-creating values with customers within open innovation networks.

*Keywords: Open Innovation, Knowledge management, idea generation, crowdsourcing,*

## 1. INTRODUCTION

Increasing globalization, connectivity, access and industrialization brings to business nontraditional competitors and new instability which causes many companies to improve to reach superior innovation models. Open innovation paradigm launched by Henry Chesbrough (2003) is a new way to bring innovations to market. Two drivers to open innovation: the best ideas don't necessarily come from the people you have hired and companies need to focus on what they are good at (Pontiskoski & Asakawa, 2009). Open innovation paradigm assumes that organizations can and should use external research results and new inventions as well as internal, as they look to advance their product and technology (Jesic, Kovacevic, & Stankovic, 2011). Accordingly, recent literatures and case studies showed us the successful implementation of the open innovation models and strategies in various companies such as IBM, Philips, DuPont, Intel, Sun Microsystems, Cisco Systems, Lucent and Procter & Gamble (Sari, Salmi, & Torkkeli, 2007). In recent years, Internet has become a new channel for sustainable business models. Companies are increasingly turning to the Internet to provide better services to customers and more business opportunities to companies. Successful Internet providers have become the maintainers of community platform (Chia-Liang, Chou, & Tse-Ping, 2011). For example, Amazon eBay YouTube and Wikipedia. Therefore, it is important to understand the role of Internet for new business models. Industry is moving very fast towards an OI structure, in which external agents like universities play a primary role and they are inevitable source of information for industrial innovation processes. The aim of this paper was offering a framework that can help in making decisions and in choosing right Website according to wanted paradigms in an Open Innovation process. The study concludes by showing how open innovation websites will play a significant role in growing the overall values of the firm. It is concluded that for organizations with time and cost constraints, analysis of open innovation system will be the most appropriate evaluation method. The discussion will lead to a stronger understanding of website differences and co-creating values with customers within open innovation networks.

## 2. LITERATURE REVIEW

### 2.1. Open Innovation definition

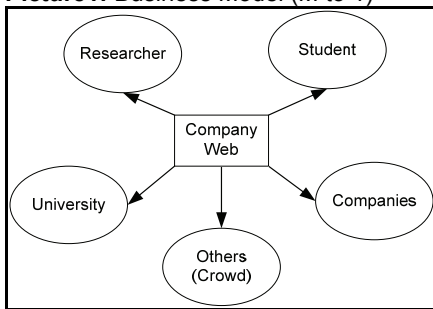
Open innovation paradigm launched by Henry Chesbrough in 2003. The open innovation inspires companies to explore internal and external resource of innovation, integrate those with the abilities and sources of a company and widely use the new opportunities through several channels (Viskari, Salmi, & Torkkeli, 2007). In the past, a company's innovation process was closed. That is, the R&D section was responsible for developing and designing new products. However, because of changes in the R&D members, consumer demands, and external factors such as new opportunities in the enterprise capital market, outsourcing, and so on, companies are now forced to change from closed innovation to an open innovation approach (Wu, Tsai, & Chang, 2011). There is mixed understanding the meaning of open innovation from a business vision and use of the term in different area. For example, there is other definition of open innovation that builds on the concept of open-source software. Chesbrough (2012) discusses that open source software is different from open innovation as a business model. Open innovation has other similar terms and applied to different themes such as distributed innovation, co-creation and customer-driven innovation (Franke & Hippel, 2003). Chesbrough's claim that firms that are too focused on internal technologies miss a number of opportunities because many will happen outside the current business or will need to be combined with external technologies to open their potential. Therefore, the important key of the open innovation model is how firms recognize, carry out and maintain knowledge and ideas of external sources in their innovation procedure (Raymond & St-Pierre, 2010).

## 3. METHODOLOGY

In this section we tried to present numbers of best practices in Open Innovation web platform and the companies having open innovation systems in order to understand the use of OI and its available frameworks.

*Open innovation practices for firms* covering actual performance of specific tactics, and processes that firms extension for develop value through internal and external cooperation. A company requires making decisions about internal and external partnerships, outside players such as universities, researchers, student, companies and etc. Business model for companies having open innovation systems are shown in picture 1.

**Picture1: Business Model (M to 1)**



Web based platforms act as mediator between researchers and experts and R&D section of companies that explore experts to solve problems. The problems are available for scholars, researchers and other interested people (crowd) all around the world. The aim of online market is to deploy open innovation between crowd and company. Business model for open Innovation web platform are shown in picture2.

**Picture2: Business Model (M to M)**



### 3.1. Analysis and Results

For analysis of open innovation web sites business model, we select 100 websites, 22 open innovation web platforms and 14 companies having open innovation systems select as a best practices of open innovation.

#### Companies with best open innovation practices

As an example from the perspectives of firms from manufacturing, services and technology, it is new approach to improve innovation technologies using customer-to-firm and firm-to-firm models. The table below shows the best open innovation company with different aspects.

**Table1: Companies with best practices in open innovation (Their web sites also represent the source of information)**

Name	Web Site	Definition
GE	<a href="http://challenge.ecomagination.com/ct/a.bix?c=home">http://challenge.ecomagination.com/ct/a.bix?c=home</a>	It is a platform in which GE reaches out to businesses, entrepreneurs, innovators and students with breakthrough ideas on energy issues.
P&G	<a href="http://www.pgconnectdevelopment.com/">http://www.pgconnectdevelopment.com/</a>	The poster boy of open innovation showed us the way, but now the Connect Develop site needs to develop. They have taken the first step with a design redo – a good start – and I know they are working on further developments.
HP	<a href="http://www.hpl.hp.com/open_innovation/">http://www.hpl.hp.com/open_innovation/</a>	HP Labs' Open Innovation team pursues and coordinates collaborations with researchers and entrepreneurs in academia, government and business.
Xerox	<a href="http://open.xerox.com/">http://open.xerox.com/</a>	Open Xerox is the place where you can experiment with technologies being developed in the Xerox labs around the globe.
Volvo	<a href="http://www.volvoce.com">www.volvoce.com</a>	create a company that would strengthen the development of vehicle services
Cisco	<a href="http://www.cisco.com/web/solutions/iprize/index.html">http://www.cisco.com/web/solutions/iprize/index.html</a>	offers IP-based networking and other products relating to the communications and information technology industry worldwide

DuPont	<a href="http://www2.dupont.com/Science/en_CA/Innovation.html">http://www2.dupont.com/Science/en_CA/Innovation.html</a>	offers innovative products and services for agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel
IBM	<a href="https://www.ibm.com/development/university/collaborativeresearch/">https://www.ibm.com/development/university/collaborativeresearch/</a>	famous company that licenses its own intellectual property to outsiders
Intel	<a href="software.intel.com/en-us/oss">software.intel.com/en-us/oss</a>	big manufacturer of computer, communication and networking products
Lucent	<a href="open-innovation.alcatel-lucent.com">open-innovation.alcatel-lucent.com</a>	innovative design Lucent could utilize the advantages of both corporate venture
Philips	<a href="http://www.research.philips.com/open-innovation/index.html">http://www.research.philips.com/open-innovation/index.html</a>	It is committed to working with external partners
Starbucks	<a href="http://mystarbucksidea.force.com/">http://mystarbucksidea.force.com/</a>	My Starbucks idea was one of the early crowdsourcing-like initiatives that gained widespread attention.
Nokia	<a href="https://ideasproject.com//index.jspa">https://ideasproject.com//index.jspa</a>	The company turns to consumers with their Ideas Project.
Shell Game Changer	<a href="http://www.workingknowledge.com/blog/gamechanger-open-innovation-through-angel-investing/">http://www.workingknowledge.com/blog/gamechanger-open-innovation-through-angel-investing/</a>	The Game Changer program encourages inventors outside and inside the company to come up with creative ideas. The program is run by great people who know how to make things happen

Companies are learning that they must develop innovation in order to keep up with the competition. This paper is addressing the importance of Web to identify people, knowledge and company to solve the innovation problems.

### Web platforms with best open innovation practices

Nowadays, as we mentioned before internet or web usage in service and innovation is increasing without reduction. Traditionally e-service was to deliver service from firm to customer, but later on this issue generated to different type of business models. Website open innovation is also one type of business model which is highly useful and beneficial the website perspective. The table below presents number of the best open innovation practices with some details.

**Table2:** best practices website in open innovation. Their web sites also represent the source of information.

Name	Web Site	Definition
innocentive	<a href="http://www.innocentive.com">www.innocentive.com</a>	Innocentive is the open innovation and crowd sourcing leader that enables organizations to solve problems by connecting them to employees, customers, partners, and scholars all around the world.
ninesigma	<a href="http://www.ninesigma.com">www.ninesigma.com</a>	provides expert sourcing, business intelligence and more
quirky	<a href="http://www.quirky.com">www.quirky.com</a>	Quirky is a website in which you can submit your idea for an invention. After evaluation of your idea, Quirky will make a prototype. Then, if the prototype gets success, they start to commit into manufacturing step and commercialization of your invention on Quirky online shop. You will have royalties on the sale
inpama	<a href="http://www.inpama.com">www.inpama.com</a>	Inpama is the marketplace to sell inventions and patents and provide inventors a platform to sell and market their inventions .fees from inventors or invention seekers is free.
hypios	<a href="http://www.hypios.com">www.hypios.com</a>	Hypios helps companies solve their research & development problems by organizing online competitions with thousands of qualified solvers

innoget	<a href="http://www.innoget.com">www.innoget.com</a>	A web-platform through which companies and research partners-organization and individuals, such as research, inventors and technology companies from around the world interact to develop and share R&D projects and innovation.
onebillionminds	<a href="http://www.onebillionminds.com">www.onebillionminds.com</a>	One Billion Minds is the world's largest platform for Problems worth Solving. It is a powerful new way for Individuals, Corporations and Non Profit Organizations to unleash more than one mind on challenging problems in Science, Technology, Design, Business or Social Innovation they are grappling with.
innovationpartagee	<a href="http://www.innovationpartagee.com">www.innovationpartagee.com</a>	French language websites that connects R&D technological challenges from the industry to a professional global network of Experts
ideaconnection	<a href="http://www.ideaconnection.com">www.ideaconnection.com</a>	Give businesses access to the world's most creative and innovative people, who work collaboratively to solve problems and develop innovations.
innovationexchange	<a href="http://www.innovationexchange.com">www.innovationexchange.com</a>	Innovation Exchange (IX) is an online open innovation marketplace. It's where diverse community members from all over the world respond to challenges sponsored by Global 5000 companies and not-for-profit organizations.
atizo	<a href="http://www.atizo.com">www.atizo.com</a>	The virtual brainstorming platform with thousands of creative thinkers
mcinnovationnetwork	<a href="http://www.mcinnovationnetwork.com">www.mcinnovationnetwork.com</a>	The University of Glasgow's new Innovation Network, help companies to increase levels of innovation, increase product development, reduce time to market and introduce new supply chains.
globalchallenge	<a href="http://globalchallenge.mit.edu">globalchallenge.mit.edu</a>	The MIT IDEAS Global Challenge connects students with the passion and talent to improve the world with the experience and resources of the MIT community worldwide.
ibridgenetwork	<a href="http://www.ibridgenetwork.org">www.ibridgenetwork.org</a>	Ibridge network is to drive transparency and access to university developed innovations that are available to field experts, ideas and information. Through the iBridge SM Network, researchers and those seeking innovations can easily search for and obtain the resources they need.
openinnovation	<a href="http://www.openinnovation.net">www.openinnovation.net</a>	The Open Innovation Portal serves as an informational resource for thought leaders, consultants, authors, business leaders, academics and others who have a deep interest in open innovation. Created and hosted by the father of open innovation, Henry Chesbrough, Executive Director of the Center for Open Innovation at the Haas School of Business
openinnovationberkeley	<a href="http://openinnovation.berkeley.edu">openinnovation.berkeley.edu</a>	This website focus as a Program is to conduct research, publish articles and develop teaching materials around a more distributed model of industry innovation, which call "Open Innovation.
energyinnovationnetwork	<a href="http://www.energyinnovationnetwork.org">www.energyinnovationnetwork.org</a>	The Energy Innovation Network accelerates energy innovation by connecting the dots between technology, entrepreneurship, finance, and policy, making the pathway for entrepreneurs more transparent.

eriknetwork	www.eriknetwork.net	ERIK (European Regions Knowledge based Innovation Network) ERIK's main aim is to sustain and further develop networking and good practice exchange between European regions.
incj	www.incj.co.jp	The Innovation Network Corporation of Japan (INCJ), a unique public-private partnership aimed at promoting innovation and enhancing the value of businesses in Japan, was launched in July 2009
errin	www.errin.eu	ERRIN, the European Regions Research and Innovation Network, is a dynamic network of more than 90 EU regions and their Brussels-based offices.
europe-innova	www.europe-innova.eu/	Europe INNOVA is a European initiative which aspires to become the laboratory for the development, testing and promotion of new tools and instruments in support of innovation, with a view to helping innovative enterprises to innovate faster and better
innovation network	www.innovationnetwork.biz	Innovation Network's purpose is to support a vibrant global economy by helping individuals and businesses to thrive and grow through innovation

Problem or technology solution may exist somewhere, but seeker is not aware of them. Definitely, the Web enables easier access to the solver and knowledge. It fasten communication between seeker and solver or technology owner and buyer, consequently Web is the potential place to link all of this.

#### 4. CONCLUSION

It is clear that technology transfer is a key factor for innovation. It is realized mainly through a company's R&D as a result of the development of new products and services. However, in order for a firm to have access to technological innovations that are informed through scientific research, firms need to make collaborations with research institutions and universities. The process of achieving scientific effect as means of obtain technological innovation is known as university-industry collaborations. The aim of the open innovation model is to produce an online place for raising innovation between academia and industry. We found from research review that the preparation of certain tools and services are of key importance for users to be able to expose both their own innovation and also to be able to find expertise and skills from partners through an online platform that will couple academic staff with industry. Finally, we found that for provide open environment, collaboration and user based feedback should be common and therefore, we recommended for the open innovation system to allow to absorb new ideas from different research communities, to be able to rate ideas and evaluate their feedback. These elements will be used to inform the design of the open innovation system.

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