

Electromobility Solutions for Cities and Regions

User Guide

Open Innovation

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1 THE SHIFT FROM CLOSE TO OPEN INNOVATION – A HISTORICAL OVERVIEW

As long as humanity exists, there is innovation. Many radical technical and social innovations such as unzip, blood bank, wristwatch as well as tea bag, took place during the First World War and hereafter. Plenty of them were made out of the plight of the population. Later on innovation was regarded as a business field, mostly steered by consumers' demands. Following this argumentation, innovation became part of the strategy of nearly each company. Over the years, affected by the pressure of growing globalisation flows and internationalisation, companies were forced to stay competitive. To follow the movements of the worldwide markets and to avoid lock-in effects, they were required to innovate constantly.

The concept of Open Innovation (OI) spawned when large companies, (in the need to innovate) struggling to secure future development based on in-house R&D alone, started to strategically leverage internal and external sources of ideas, including new approaches to get those ideas to the market. Especially, in the awareness, that there is so much knowledge outside the company, which somewhat stays unused, but is full of potential.

Over more than 100 past years the Closed Innovation (CI) model mainly defined the world of companies' innovation processes. A CI model suggests that companies take care of their innovations and the followed up products and processes, in which their innovative ideas were manifested. Particularly with regard to property rights (e.g. intellectual property), the CI process seemed to be the most proper for a long period of time. Concerning this background companies relied on their own employees and internal knowledge. The first noticeable shift in the innovation history came in with the rise of "Fordism" and its organisational model of specialisation, which allowed a fast growth of companies and a more flexible response to the users'/customers' requirements. The "Flexible Specialisation" model, being a response to insufficient growth rates, which occurred, followed the "Fordism". It was a further step towards the later OI approach. Flexibilisation of production, labour as well as shorter product life cycles were the characteristics of the "Flexible Specialisation". In that vein, over the years the "New Economic Growth", a theory raised by Romer (1990) offered an approach to decrease unemployment by increasing R&D activities for companies and so to act stretcher to market demands. The increase of R&D activities took e.g. place by co-operation with knowledge centres and universities. But it was not only about increasing in-house R&D activities alone, but also about the co-operation with further external parties. This fact forced companies to open up to outside knowledge sources. As a consequence, there was a paradigm shift from the traditional innovation model, where ideas and development were conducted exclusively in-house changes to a broader understanding of innovation biographies (Butzin/Widmaier 2012) including outside sources to inner innovation processes. Innovation

biographies regard innovations as fluent processes, including the co-operation and input of various partners at different stages rather than as stable phenomena.

Before that shift, there existed the assumption of the linear innovation model mainly including three phases that are: invention, innovation and diffusion. This model was suggested to be either technology push or market pull driven (Godin 2006). Later on concepts such as the popular “Triple Helix” (Etzkowitz/Leydesdorff 1998) extended the understanding of innovation by co-operation possibilities including the interplay of universities, industry and government. This concept, among others, questioned the path of linearity within innovation processes by e.g. expanding the role of the university from a knowledge generator to the role of an entrepreneur (Entrepreneurial University) as the main idea of the “Triple Helix”. Thus, the universities’ so-called “third mission” (Etzkowitz/Leydesdorff 2000) is about universities’ involvement in socio-economic fields and even in raising the regional knowledge base and regional innovation capacities. This foremost happens by collaborations with further partners and the opening up to external processes. Doing so, the university left the path of “mode 1”, which was the traditional concept of knowledge generation by means of a hierarchically, disciplinary and homogeneous approach (Gibbons 1994) and shifted to “mode 2” knowledge production. This new understanding of the role of a university could also be called in a broader sense as the “commercial” role. Meanwhile also the “Triple Helix” concept is expanded to a “Quadruple and even Quintuple Helix” including even more partners to innovation creation such as the civil society (media and culture-based public) and even natural environments of society (Carayannis et al. 2012). Both expansions move away from a inner “knowledge production” bias within innovation, but even more stress the importance of the society and third parties as innovation drivers (Carayannis et al. 2012).

The boosting of innovation especially challenges SMEs, as they neither have the financial nor the human resources to act strictly goal concerned. For that reason, SMEs are more short then long term oriented and even more depend on OI processes including discussions, loops and feedbacks at different stages of the development. Against the background a richer process of innovation was set up through opening the in-house routines through using participatory systems, involving internal and external players (such as costumers, business partners, university representatives and even futurologists etc.) at different stages of the value chain. This procedure opened up new opportunities to smaller businesses, which are said (often being a supplier) to be very solution focused and therefore holding a great potential of innovative ideas in the field of products and processes. While the traditional innovation model required a scope of resources that were usually only available within large organizations and universities, as described above OI offers various concepts and tools that are accessible also to SMEs or even individuals seeking ideas for problem solving. OI originally disseminated in the 1960 by Henry Chesbrough assumes that companies should use, besides their internal knowledge also external knowledge and incentives, which can set up new ideas generated outside the company. Chesbrough (2006:1) regards OI as a paradigm that “(...) can be understood as the antithesis of the traditional vertical integration model where internal research and

development (R&D) activities lead to internally developed products that are then distributed by the firm. (...) Open Innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively.”

Knowledge and knowledge carrier, especially in form of external parties and qualified workers, are regarded as drivers of innovation in that context. Intra-regional knowledge transfer is important, but not sufficient for innovation. It is rather about inter-regional interactions, which contribute to the knowledge flows (David et al. 2012). In this vein, Martin and Sunley (2006) state that missing external knowledge can turn regional advantages into hazards, which results in regional inflexibility and the so-called “lock-in” effects. Being locked-in means for companies to be out of the exchange circle, to be blind and deaf to new outside developments, as a consequence of too much concentration on own inner processes. In the long term, this means to be out-dated and out of the flow of natural progress. Thus a tension between local and global processes is needed (Appadurai, 2008). For regions, and at the next level, for companies, especially SMEs, an exchange of information and knowledge with the outside world is essential. This can happen, as already mentioned, by co-operation with universities and further companies. For such an exchange trust is needed. Literally speaking, the exchanging partners do not need to be located dense to each other. It is a frequent practice, that such exchange collaborations take place over long distances. Further possibilities to absorb new knowledge from outside can be international conferences, codified knowledge in forms of technical literature, employees exchange programs and foremost innovation networks. Interorganizational networks tend to contribute to the “(...) innovative capabilities of firms by exposing them to novel sources of ideas, enabling fast access to resources, and enhancing the transfer of knowledge” (Powell/Grodal 2005).

In the broad literature on innovation (Fagerberg et al. 2005) networks and the right partners to co-operate are one of the main pillars of OI processes. For this a good network structure based on trust (Granovetter 1973) is needed to share both tacit and explicit knowledge. These innovation networks do not necessarily be face-to-face interactions, but can make use of new technologies such as Internet platforms, social media and communities of practice etc. A community-based model of knowledge management can simplify and fertilize the OI processes. Already in the first lines of their work “Networks of Innovators” (2005) Powell and Grodal stress the advantages and benefits of social circles such as resource sharing, information diffusion and interorganizational learning. They argue, referring to e.g. Powell and Brantley (1992) that “(...) no single firm has all the necessary skills to stay on top of all areas of progress and bring significant innovations to market. Innovation networks can be formal and informal, but mainly they base on formal contractual relations - in some cases they are subcontracting relationships, strategic alliances etc. (Powell/Grodal 2005). Often they vary in their temporal dimension or organisational form. Grabher (1993) and Powell (2004) distinct in the context of innovation between the following forms of networks, which can overlap and should rather be seen as combining components: informal networks, project networks, regional networks and business networks. Among these it can be differentiated between strong and weak

ties, as Granovetter (1973) calls loose or wider relationships in interpersonal terms. Burt (1992) rather questions which position in networks is the best situated to make full use of it. Vinding (2002) finds that the impact on innovation relating to such networks depends on the type and the partner and how and if previous co-operation were accomplished. Moreover, the benefit of such co-operation lies in the capacity to enhance the information flow among current network members and at the same time to be open to new entrants (Powell/Grodal 2005).

Innovation today is often associated with disruptive processes leading to drastic quantum leap changes that usually involve high risk and potentially large returns. This perception is influenced by the innovations that have shaped the IT development. It still, to some extent, applies to growing companies and start-ups in this sector, but does not fully reflect the innovation paths, their biographies (Butzin/Widmaier 2012) and needs in the more traditional business areas.

Traditional SMEs tend to pursue a strategy of incremental innovation, building on their core business and expanding to new markets or business areas cautiously. This strategy can also lead to solid growth and expansion. Depending on the size or structure of the company, but also on company's culture and the gaps of settings and spaces created for innovative exchange a radical innovation approach might not even be possible, as it would require expertise not available within the organization or a dedicated team to drive innovation.

An OI strategy, in combination with the tools available today, can provide companies with the input and expertise needed to explore new ventures beyond their internal capacity. For this, co-operation is necessary, as we argue that innovation processes are regarded as expensive. Furthermore, space for employees' development should be given and the fostering of talents to be open to customer wishes.

As with all investment in future development, it is important to define the purposes and the right strategy to achieve the goal(s). Defining the meaning of innovation for the organization and the role of inventors and innovators within the company is a first step towards a joint strategy and realization of a tactical plan. On average, innovators have around 18 months time to demonstrate the impact of their activities, irrespective of the approach and the resources they have. Whether they are individuals working directly on innovative projects or teams of innovators harvesting ideas from within the organization and managing the innovation pipeline – a lack of demonstrated progress will likely lead to the termination of innovation initiatives. Defining and managing expectations is therefore another central point in innovation initiatives. It is important to understand the ambitions of an innovation effort and find a joint definition of purpose, strategic goals and the organizational set-up to achieve it effectively and efficiently. Fostering an innovation culture either through the involvement of innovators across the organization or through dedicated teams is a decision that will be driven by the company philosophy and culture, future goals and the available scope of resources (as already mentioned before, this is a challenge foremost for SME).

The aim of the following innovation guide is to provide the reader with an overview of the concepts, terms and tools used in OI. It offers a basis to choose and under circumstances make use of the OI approach that will fit the company goals the best. The first, theoretical part presents current concepts of OI processes and the related terminology. The second, practice-oriented part focuses on different OI tools and provides the reader with OI solutions.

2 IMPORTANT CONCEPTS AND TERMS IN (OPEN) INNOVATION

2.1 (OPEN / CLOSED) INNOVATION

In general, business innovation is understood as the process of translating and transforming an idea or invention into a product or service (process) that improves the given state of play, creates value in one of the categories below and reaches new customers or addresses the old one by e.g. expanding already existing products or processes in order to gain them for a specific mark in the long term.

An innovation can be described as the implementation of a

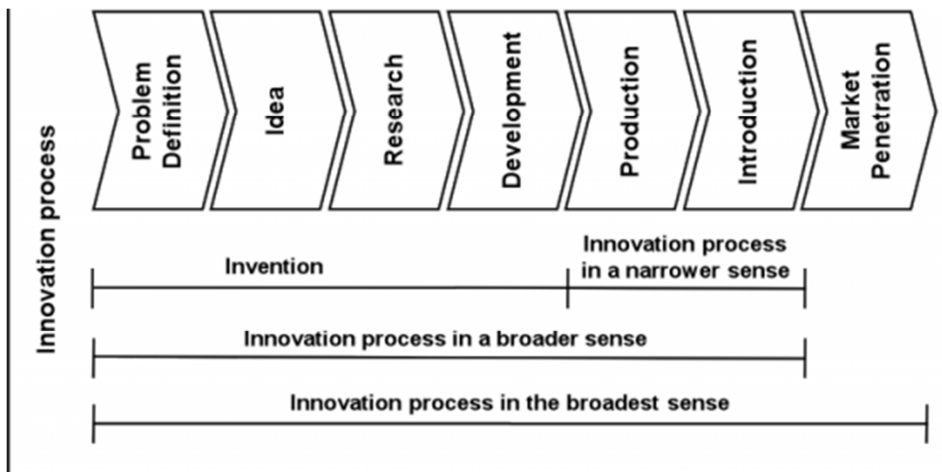
- New or significantly improved product (good or service) or process
- New marketing method
- New organisational method in business practices, workplace organisation or external relation (OECD 2005).

Irrespective of whether innovations affect products, processes or organisational structures, they will fall into one of the two major categories:

1. Evolutionary innovations: continuous innovation involving many incremental changes in technology or processes. These small, gradual, improvements at scale can be a successful way to develop a better business. Different from an optimization of existing processes, incremental innovation seeks to find new angles and approaches.
2. Revolutionary innovations, which involve high investment and risk-taking. These are often disruptive but bring higher and faster returns on investment than evolutionary changes.

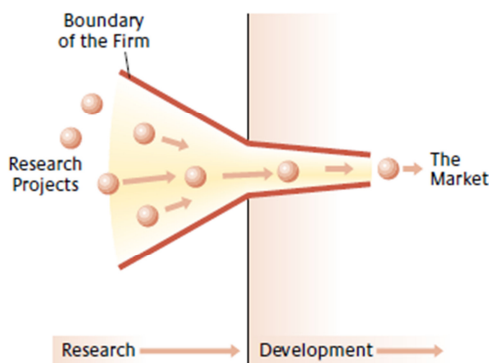
In both cases innovation is the result of a process, which consists of a series of different steps (Hauschilt 1997), which Butzin/Widmaier (2012) call innovation biographies. In the following graphic

a possible, but not always in the same way used and not always that strict innovation process from CI to OI is presented.



Innovation process [based on Sammerl 2006, p. 30]

Closed Innovation



Open Innovation

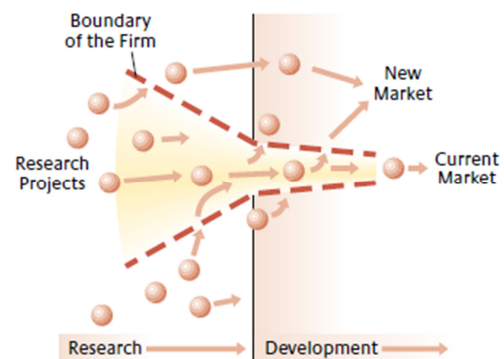


Figure 1: The Closed and Open Innovation Model (Chesbrough 2011)

Closed Innovation

As already lined out in the beginning, before OI was defined as a new paradigm main innovation processes were “closed”, and the open one, where open by coincident or by the need of companies’ further development or a dramatic crisis. CI was based on the theory that successful innovation requires control of the whole process and also ownership of the resulting intellectual property. Chesbrough (2003) calls this concept of innovation the “**old paradigm**”. It dates back to the beginning of the twentieth century when neither academia nor government participated in the

commercialization of science. As a result companies had their own research and development units, integrating product development completely within the company. Many R&D departments of private enterprises were leading scientific research and the set-up of a strong internal R&D unit was considered a paramount competitive advantage. The large investment needed, limited the number of potential competitors considerably. CI is often seen as a synonym of the “Not-Invented-Here Syndrome” demonstrated by decision makers, where anything coming from the outside is suspicious and not reliable. Such an attitude was reduced to a lack of trust. Despite of the negative image associated with the term CI today; the concept under circumstances can still be successful. There are a number of research projects and emerging companies investigating the pros and cons of CI versus OI.

CI dominated R&D in commercial enterprises until the late 20th century, when large companies could not meet the needs for innovation with internal R&D alone anymore. The pressure increased as many crucial patents for blockbuster products were expiring, allowing numerous competitors to enter the market with generic or me2 products. At the same time the mobility of experts and the resulting global fluctuation of staff between commercial and academic organisations was growing. The increasing availability of Venture capital and the emerging start-up trend enabled small and emerging companies to drive innovation. CI was and is highly challenged and no longer sustainable (Chesbrough 2003) for every field and in all circumstances.

Open Innovation (“new paradigm”)

OI assumes that internal ideas can also be taken to market through external channels, outside the current business of the company, to create additional value.” (Chesbrough 2003). It is a paradigm shift that requires companies to become much better at combining internal and external resources such as knowledge in their innovation process. They learn how to multiply their efforts by leveraging the work of people or potential partners outside their organisation and act on the opportunities this creates. People within the company are asked to change mind-set and acquire new skills. Furthermore, talents need to be identified and supported. “In Open Innovation, companies actively seek people of genius from both inside and outside the firm to provide fuel for the business model” (Chesbrough 2006:6). In addition to a strong internal network and knowledge generation, companies need to establish an externally oriented networking culture to build and sustain relationships. A business model, relying on OI, is the cognitive device that focuses the evaluation of R&D projects within the firm and pre-selects projects that “fit” into the company model (Chesbrough 2006).

For a company that decides to embrace OI it is important to define OI in terms of its own organisation and formulate a strategy in term of finances, property rights and outcomes. The possible definition for OI should meet the company’s individual needs, resources and market situation. After identifying the purpose and company-specific definition of OI, it is easier to define a

strategy and implementation plan. Furthermore companies working with IO, should create a flexible management structure, responding fast to market and users' requirements. Key elements of a management model in the shift from CI to OI, is a quick adaption of changing environments, and an extended absorptive capacity to deal with inflowing knowledge for renewal activities and even changes.

The following table describes the differences between Closed Innovation and OI

Closed Innovation	Open Innovation
Smart people in our fieldwork for us.	Not all the smart people work for us. We need to work with smart people inside and outside the company.
To profit from Research and Development we must disclose, develop and ship it ourselves.	External R&D can create significant value; internal value is needed to claim some portion of that value.
If we discover it ourselves, we will get it to market first.	We don't have to originate the research to profit from it.
The company that gets an innovation to market first will win.	Building a better business model is better than getting to market first.
If we create the most and the best ideas in the industry, we will win.	If we make the best use of internal and external ideas, we will win.
We should control our intellectual property, so that our competitors don't profit from our ideas.	We should profit from others use of our IP, and we should buy others IP whenever it advances our own business model.

Table 1: Comparison Closed and Open Innovation (Chesbrough 2003)

2.2 OPEN INNOVATION APPROACHES

Within the broad field of OI there are a number of different approaches. This guide focuses on four major OI strategies, which can also be adapted within smaller organizations such as SMEs:

- Lead User Method
- Living Labs

- Cross Innovation
- Crowd-Sourcing

The Lead User Method takes advantage of the fact that there exist users being ahead of the majority of the general market when it comes to trend setting (Bergvall-Kåreborn et al. 2009). On the contrary, Cross-Industry Innovation or Cross Innovation is a new phenomenon with respect to OI (Enkel/Gassmann 2010). It addresses the aspect, that rather than only focusing on own resources a company involves in cross-industry innovation processes, adapting already existing solutions from other industries (Enkel/Gassmann 2010). In Crowd Sourcing a company utilises the knowledge of the so-called “crowd”, generally an online social network of individuals who offer their input and social capital in form of knowledge, info, solutions, discussions, experience etc. for free. Depending on the crowd, the participants or members are experts in a certain field or can come from all walks of life. All OI approaches have in common that they make use of experts, interested individuals, multiplayer, networks or other organisations outside of the company.

Lead User Method: The “Lead user market research method”, “Lead user method” in short, rests upon the idea that just a few “lead users” have the best understanding of coming service needs and/or products. The so-called “lead users” set the trends, which are followed by the companies. The method aims at finding the lead users, offering them an exchange with companies in an innovation process. It is a fast and a resource-friendly way to innovate, which is said to generate even better outputs than traditional ways of innovation (Herstatt/von Hippel 1992).

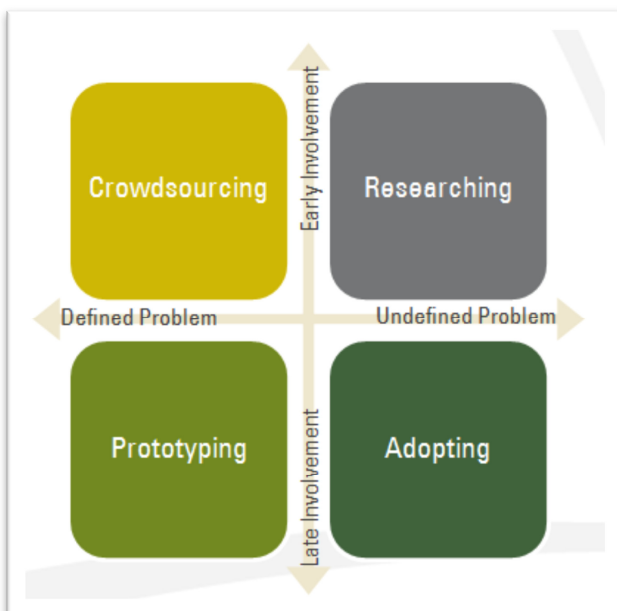
Living Labs: A living lab creates an environment in which a new technology can be tested under real-life-conditions. Businesses, authorities and citizens work with or use a new idea in their everyday life. The living lab challenges developed technologies and is able to make new needs or adoptions obvious, giving the companies the possibility for improvement. The concept of living labs can be defined as “(...) a research methodology for judging, validating and testing prototypes as well as to improve complex solutions in a multifaceted emerging real context.” (ENoLL Nordic 2009).

Cross Innovation: Cross-innovation is possible within a company, an organisation (cross-divisional innovation) but also between different organisations or even industries (cross-industry innovation). In cross-industry innovation, product solutions, business models or technologies can be transferred from one to other industries and then if possible can be adapted (Horváth 2012). There are different views on the singular types of cross-innovation. On the one hand cross-divisional innovation is said to have a higher value added potential than the combination of knowledge between distinct firms (Grote et al. 2012). Other authors favour cross-industry innovation and its “leading to unique products which contribute higher than average to sales and assets” (Horváth 2012).

Crowd-Sourcing: The term “crowdsourcing” originates from Jeff Howe, who outlined, that outsourcing is “so 2003” and that there is a new pool of cheap labour: “(...) everyday people using their spare cycles to create content, solve problems, even do corporate R&D” – he called it “crowdsourcing” (Howe 2006). Crowd-sourcing is a form of using collective intelligence. A famous example for crowd-sourcing is Wikipedia (Buecheler et al. 2010), but also further “social innovations”. There are various methods of tapping into what a group knows, but the key to successfully unlock the group’s wisdom is not a particular method but that the conditions for a group to be smart and use their knowledge are fulfilled, these are: diversity, independence and decentralization (Surowiecki 2004) - diversity and independence because the best decisions result out of disagreements and contest. “(...) ask a hundred people to answer a question or to solve a problem, and the average answer will often be at least as good as the answer of the smartest member. With most things the average is mediocrity. With decision-making, it’s often excellence. You could say it’s as if we’ve been programmed to be collectively smart.” (Surowiecki 2004).

Crowd-Sourcing can be seen as an instrument within the OI process by which companies and customers interact in the context of the innovation process, usually on the basis of web 2.0. (<http://wirtschaftslexikon.gabler.de>).

Figure 2: Classifying Open Innovation Platforms¹ Application Area of Open Innovation



Idea Couture Inc.² sees the method of crowd-sourcing most helpful when having already defined problems in an early involvement stage.

¹ Own graphic after Glinski Patrick (2012), Classifying Open Innovation Platforms: <http://www.ideacouture.com/blog/classifying-crowdsourcing-platforms/>.

As OI is still a young field of research only a limited number of review publications are available, which provide an overview and presents in which areas Open Innovation has been applied so far. This part of the guide presents empirical and other data from different sources to draw a picture of the current application areas of OI.

CURRENT STATE OF PLAY OF OPEN INNOVATION PRACTICES IN COMPANIES

Gassmann, Enkel and Chesbrough (Enkel et. al 2010) stated that the OI phenomenon developed from a small club of innovation practitioners mostly active in high-tech industries to a widely discussed and implemented innovation practice (Enkel et. al 2010). They identified 9 trends in OI:

- Industry penetration: from pioneers to mainstream.
- R&D intensity: from high to low tech.
- Size: from large companies to SMEs.
- Processes: from stage gate to probe-and-learn.
- Structure: from standalone to alliances.
- Universities: from ivory towers to knowledge brokers.
- Processes: from amateurs to professionals.
- Content: from products to services.
- Intellectual property: from protection to a tradable good.

This guide is not going to discuss all of them but for example the stated change in content, means the shift from products towards services so that the used of OI can be observed in practice. In this guide all 9 categories cannot be covered but few examples can be focused.

According to the OI Trend Panel³ that draws from the experience of German Trend Experts from TU Berlin as well as Steinbeis University, OI is a key topic for a majority of the companies in Germany, especially for service providers, health care and financial services. Nowadays SMEs and low-tech companies also use OI. Since 2010 the Chair of Innovation Management from the Zeppelin University in Friedrichshafen has been conducting an annual OI review in cooperation with companies from the DACH-region (Germany, Austria and Switzerland). A “Best Open Innovator Prize” is awarded in different categories – to large corporations as well as SMEs (Enkel/Bischoff 2009/10). A closer look at the statistics of the participating companies shows that they belong to a

² Idea Couture Inc. is an award-winning strategic innovation, experience design and customer insights firm with offices in San Francisco, Toronto, London, Mexico and Shanghai. The company brings together interdisciplinary thinkers to help clients to rethink, reimagine and reset.

³ Trend Panel Open Innovation. http://www.td-berlin.com/images/091227_Trendpanel_OpenInnovation_td.pdf

variety of sectors: More than 50% come from production and manufacture; 12% from ICT; around 5% from the energy sector; 4% of the companies belong to the automotive industry in the broader sense and another 4% provide scientific and technical services. The construction as well as traffic sector and financial services each account for 3% (Enkel/Bischoff 2009/10). These numbers do not give a representative picture on how OI is used in different areas but they demonstrate the diversity of organisations using OI.

3 OPEN INNOVATION PROCESSES

Three core processes have been defined in OI:

1. The **Outside-in-process**: In this process the company's knowledge base and thereby its ability to innovate is enriched by the integration of suppliers, customers, and external knowledge. Knowledge creation thus has not to happen at the same place as innovation (Gassmann/Enkel 2004). A study by Gassmann and Enkel (2004) showed that the most important sources of knowledge are clients, followed by suppliers, competitors and

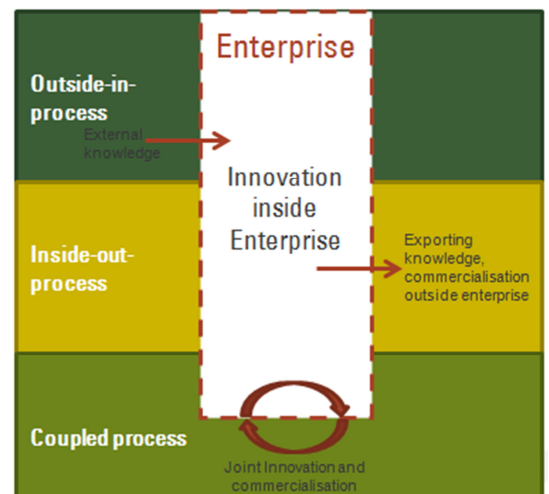


Figure 3: Open Innovation Process (Gassmann/Enkel 2004, adapted¹)

commercial research

institutions. Also partners from other industries play an important role in the outside-in-process (Gassmann/Enkel 2004). Within the outside-in-process the importance of new forms of customer integration shows; as for example the importance of crowd-sourcing, customer community integration or mass customization. Also the awareness of the importance of innovation networks and innovation intermediaries (ex. Innocentive, NineSigma) has increased.

2. The **Inside-out-process**: When ideas and/or intellectual property are sold to the market, this is described as an inside-out-process. Usually knowledge and innovation are externalized when more income is generated by licensing, joint ventures, spin-offs than by bringing a new idea to market through internal development. Within the inside-out-process a new awareness of possibilities of commercialization of own technologies in new markets can be observed (cross-industry innovation) (Gassmann/Enkel 2004).

3. The **Coupled process**: the notion “coupled process” refers – as the terms described above – to the way OI is achieved. In this case it refers to a co-creation of ideas with mainly complementary partners.

According to Gassmann (2006) the most of the empirical evidence related to OI is based on cases from high-tech industries such as the medical equipment industry. But he states that opening up the innovation process in low-tech industries is also a clear empirical trend that could be observed recently. Nevertheless OI has different characteristics and has to be viewed from several angles (Gassmann 2006). Depending on the industry sector, companies that use OI methods make their own specific experience with regard to key success factors.

Chesbrough and Crowther (2006) identified organizations in industries outside ‘high technology’ that are early adopters of the OI method. They found key success factors for each of the four defined activities strategy/goals, sourcing, integration and management and metrics and organization.

Key Success Factors

To do

Strategy and Goals	<ul style="list-style-type: none"> – Define innovation goal and strategy for your company – Provide top-down direction and encouragement for OI practices – Focus on efforts and ensure alignment with business growth objectives
Sourcing	<ul style="list-style-type: none"> – Build deep networks in relevant areas – Bring in innovations where R&D can still add value and have wins – Obtain market exclusivity or purchase technology outright when core
Integration and Management	<ul style="list-style-type: none"> – Assign business ownership and responsibility for success – Establish innovation team(s) – Modify existing management system (unless a new business model is needed) – Conduct stakeholder analysis – Established a networked innovation culture
Communication	<ul style="list-style-type: none"> – Put communication strategy in place – Establish a common language – Promote innovation

- Make it stick

Metrics and Organization

- Align metrics and incentives to encourage success whether in an open or closed environment
- Communicate OI-link to strategy and business objectives
- Publicize wins

Table 2: Inbound Open Innovation Key Success Factors (Chesbrough/Crowther 2006)

In its OI Report, PA Consulting Group (2012) gathered insights from the practice of leading companies. For the “Open Innovation survey in Healthcare and Manufacturing” PA interviewed R&D and marketing professionals in sectors ranging from pharmaceutical and medical devices to engineering and consumer products. Overall they stressed certain points like the importance of leadership, the commitment of the top management, the culture and the choice of the right resources.



Leadership: There has to be a clear strategy on the top level. In concrete terms successful OI projects require leadership from the top management as well as from the heads of functions: “When relevant, respected members of the company were championing it, the process became much easier.” (PA Consulting 2010).

Figure 4: Success Factors of Open Innovation Projects (own illustration, based on PA report)

Culture: Another important topic is the culture (company culture), which determines the attitude, energy and commitment of the top management (PA Consulting 2010).

Resources: OI requires skills such as collaboration, relationship building, negotiations and the ability to pioneer novel legal arrangements. As these skills are not always available in-house, the company needs to find external partners that can provide the skills and the needed know-how. OI projects are often complex and require expertise in different areas, meaning that the OI effort has to be led by a dedicated team. “We put one person in position to lead the effort, but if you want to make it work, you need an entire team of people who all understand different aspects of open innovation across the entire company.”

Organisation: To ensure that different success factors are working efficiently together organisational issues need to be defined early in the process. According to Kelly (2011) a holistic approach is needed to be successful and organisational departments like Public Relations, Marketing, R&D, Finance, Operation, HR and Legal should be involved from the very beginning – each one with a special predefined task in the OI process.

4 OPEN INNOVATION FOR SMALL COMPANIES – MANAGING EXPECTATIONS

If in the past companies kept complete control of all aspects of the innovation process and protected inventions by keeping them secret, the adaptation of OI will require the whole organisation to embrace the new philosophy and mind-set. This also implies that the organisational infrastructure has to be altered. It needs to support the process of bridging internal and external resources. Some companies adopt new knowledge by embedding new staff with complementary skills within the company. This, however, still keeps the process and outcome closed. In OI the organisation should ideally assimilate external input, act on it and thus drive the innovation process. Depending on the OI method chosen, the impact on the organisation and the outcome will vary. It is important to take the limitations and potential drawbacks into account when choosing the method.

For example small companies can benefit from an OI partnership that can provide access to resources needed to hit it big, such as distribution channels and production resources. But at the same time large companies can exhaust the resources of SMEs and force the smaller partner into a legal framework that is determined by the larger party.

In the case of crowd-sourcing approaches, which may seem low-cost at first sight, SMEs have to consider the time required for the management of initiatives and the fact that most crowd-sourcing ideas will be average, unremarkable & incremental, if the process is not guided adequately.

Since talent is a global resource and has become globally accessible with Web 2.0, this presents a huge opportunity for small companies to benefit from a worldwide pool of experts or volunteers offering their knowledge for free. This is especially important since the advancement of technology and science is too fast to be followed by a single small company. Thanks to the flat organisation in SMEs, opportunities can be quickly seized and ideas put into practice. The smaller organisation will also change easier to accommodate and on average, if a new approach requires a review of the business model, small companies tend to make new rules, while a large entity will take a long time to implement changes in its structure and culture.

Traditionally, most companies view external partners as paid service providers rather than equal players in creation and OI. Focused to protect their own knowledge they will focus on their benefit, instead of designing win-win scenarios. With this mind-set they tend to manage, rather than moderate a process and often try to secure their potential gains by trying to apply the same legal restraints to OI that they would use in a traditional partnership. They fail to understand the philosophy and interaction of OI platforms and as a result, misuse the system.

The biggest reason why people contribute to crowd-sourcing platforms is the fact that they enjoy it and the process of creation gives them satisfaction. People like to share experience and knowledge and be part of communal projects. This very human incentive has also been used from the early days of online communities to harness the knowledge and power of thousands of users who offer their contributions for free. Wikipedia, Amazon's book reviews; Flickr and YouTube are the most famous examples. Individuals in online communities donate ideas and time, which are increasingly becoming the basis for the creation of commercial value for online and offline businesses. Web 2.0 enables businesses to use the labour of volunteers at an unprecedented scale.

In "The High Tech Gift Economy", Barbrook (1998) describes the Internet users: "Unrestricted by physical distance, they collaborate with each other without the direct mediation of money or politics. Unconcerned by copyright they send and receive information without thought of payment. In the absence of states and markets to mediate social bonds, network communities are instead formed through the mutual obligations created by gifts of time ideas." They are also characterised by trust and attempts to transfer offline methods of regulation and legal frameworks to such communities, can backlash, causing OI initiatives to fail.

Many crowd-sourcing campaigns use awards as an additional incentive for the crowd community. The awards range from a few thousand to millions. InnoCentive covers a range from 5000 to 5 million, IdeaConnection awards lie between 20 000 and 100 000 \$.

However if a company has a problem that is blocking a major process and cannot be solved internally, it might be worth the investment.

5 OPEN INNOVATION TOOLS

Different ways leading to OI through the lead user method, living labs, cross-innovation, crowd-sourcing, intermediaries or networks are described here below. Here, “tools” include different concepts: an actual software tool, a consultancy provided by a specialist, a network provider or anything else that works as a means to enable open innovation.

Approach	Tool / Provider	Focus of the Tool	Operation Method	Chapter
Lead User Method	None	Companies	Consultancy	6.1.1
Living Labs	ENoLL	Regions, industries	Networking	6.2.1
	iMinds (IBBT iLab.o)	Companies	Support, Consultancy	6.2.2
Cross-Innovation	CrossInnovation	Companies	“Experience Warehouse TM ”, consultancy	6.3.1
Crowd-Sourcing	Atizo	Innovators in general	Crowd-Sourcing	6.4.1
	Brainfloor	Innovators in general	Crowd-Sourcing	6.4.2
	Chaordix	Companies	Crowd-Sourcing	6.4.3
	Tricider	Mostly individuals	Crowd-Sourcing	6.4.4
	Passbrains	Companies	Crowd-testing (crowd-sourcing)	6.4.5
Innovation Networks, Innovation Intermediaries	Innocentive	Companies, public sector, non-profit organizations	Crowd-Sourcing	6.5.1
	NineSigma	Companies, universities	(Open) Innovation services, innovation intermediary services, consultancy	6.5.2
	yet2.com	Companies	Open Innovation services,	6.5.3

Crowd-Sourcing			
	Die Ideeologen	Companies	Open Innovation services 6.5.4
	bluenove	Organizations and companies	(Open) Innovation services 6.5.5
	Innovation Partagée	Companies, public sector	Open Innovation services 6.5.6
	IdeaConnection	Large and small companies	Open Innovation intermediary
	TopCoder	Companies	Software development community
	YourEncore	Companies	Intermediary – targets retired scientists
Other Approaches	CCC Deutschland	Companies, public sector	Events, platforms, workshops, networking 6.6.1
	Presans	Companies	(Open) Innovation intermediary 6.6.2
	SmartSystem	Companies	(Open) Innovation intermediary, Crowd-Sourcing, living lab 6.6.3
	Expernova	Companies, organizations	International expert-sourcing, connecting business to research, Open Innovation services 6.6.4
	conntect2ideas		Expert-sourcing? 6.6.5
	BrainBank	Companies, organizations	Consultancy, (Open) Innovation services, Crowd-Sourcing, events 6.6.6

Table 3: Index Open Innovation Tools

Overview of the below presented tools:

Approach	Tool Name	Provider	Focus of the Tool	Operation Method
Lead User Method	None	Vienna University of Economics and Business	Product generating companies	Consultancy
Living Labs	ENoLL	European Network of Living Labs	Regions, industries interested in working with living labs	Networking
	iMinds	iMinds (IBBT iLab.o)	ICT in business and science	Support in research and development, coaching for entrepreneurship
Cross-Innovation	Cross Innovation	Cross Innovation	Effectiveness of decisions in oil, gas, energy, mining, agriculture and finance industries	“Experience Warehouse™”, consultancy
Crowd-Sourcing	Atizo	Atizo AG	Innovators of products and services in general	Crowd-Sourcing, evaluation of solutions in a crowd
	Brainfloor	Brainfloor – Open Innovation	Any idea seeker	Crowd-Sourcing
	Chaordix	Chaordix	Companies	Crowd-Sourcing, market research, idea management, communication, brand loyalty
	Tricider	tasqade GmbH	Decision making of mostly individuals	Crowd-Sourcing, exchange of ideas, decision making



Electromobility Solutions for Cities and Regions

	Passbrains	Pass Switzerland	Software professionals and testing experts	Crowd-Testing (Crowd-Sourcing)
Innovation Networks, Innovation Intermediaries	Innocentive	InnoCentive EMEA Ltd.	Building Open Innovation capabilities in commercial enterprises, public sector agencies and non-profit organizations	Crowd-Sourcing
	Dell Idea Storm			
	MyStarbucks			
	Cisco I prize			
	NineSigma	NineSigma Europe BVBA	Mainly businesses and universities, but also governmental institutions, non-profit organizations and consultants	(Open) Innovation services, innovation intermediary services, consultancy
	yet2.com	yet2 Europe	Companies with a technological focus	Open Innovation services, crowd- sourcing
	Die Ideeologen	Die Ideeologen – Gesellschaft für neue Ideen GmbH	Companies in Germany	Develop new services and products for companies in different innovation processes
	bluenove	bluenove	Different kinds of organizations and companies	(Open) Innovation services
	Innovation	Innovation	Companies, public	Open Innovation

Funded by




	Partagée	Partagée	administrations	services
	Challenge Post			
	Hyve			Open Innovation services
Other Approaches	CCC Deutschland	CCC Deutschland	Corporate Citizenship for companies, policy, communities	Events, platforms, workshops, networking
	Presans	Presans	Companies (also out of the automotive sector)	Innovation intermediary connecting business to experts
	SmartSystem	La Fabrique du Futur	3D-technology sector and sectors of creative economy and sustainable development	(Open) Innovation intermediary, crowd-sourcing, living lab
	Expernova	Expernova	Companies and organisations wanting to increase their internal R&D capacities	International expert-sourcing, connecting business to research, Open Innovation services
	conntect2ideas	conntect2ideas		Expert-Sourcing; Crowd-Sourcing, Open Innovation services
	BrainBank	BrainBank Inc.	Motivate and facilitate innovation in companies, idea management	Consultancy, organization of events, crowd-sourcing, implementation of open innovations

Table 4: Overview Open Innovation Tools

5.1 TOOLS LEAD USER METHOD

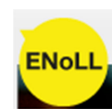
5.1.1 VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

Provider	Vienna University of Economics and Business Institute for Entrepreneurship and Innovation Augasse 2-6 1090 Vienna Austria +43 1 313 36-0 http://www.wu.ac.at/entrep/forschung/userinnovation/toolkits/leaduser/index	
Focus	Product generating companies	
Operation Method	Consultancy	
Description	The IEI offers accompanying and consulting of companies that are interested to integrate lead users in to new product development efforts.	
Price	No indication found	
Specials	Video tutorial how to engage in a lead user method	
References	Deutsche Telekom, Palfinger, Schindler, Siemens, Stock Austria, Frequents, OMV (Oil and Gas)	

5.2 TOOLS LIVING LABS

5.2.1 EUROPEAN NETWORK OF LIVING LABS

Provider	European Network of Living Labs (EnoLL) Pleinlaan 9 1050 Brussels
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	<p>Belgium +32 2 629 16 13</p> <p>info@enoll.org</p> <p>http://www.openlivinglabs.eu/</p> <p>(Founded in 2006)</p>
Focus	Regions, industries interested in working with living labs
Operation Method	Networking
Description	ENoLL provides a label, network contact points, communication and promotion services, project development services, brokering services, policy and governance services, learning and educational services.
Price	Membership fee: 5'000 Euro, adherent membership: 500 Euro
Specials	The Network is globally active
List of ENoLL members	IBBT-iLab.o, Flemish Living Lab Platform, Northern Rural-Urban Living Lab (NorthRULL), Laurea Living Labs Network, HumanTech LivingLab, Suuntaamo Tampere Central Region Living Lab, Helsinki Living Lab - Forum Virium Helsinki, Ways Of Learning for the Future (WOLF LL), Telecommunication Networks and Integrated Services Laboratory, Trentino as a Lab, Lighting Living Lab, i2Cat Catalonia Digital Lab, espaitec Living Lab (eLiving Lab), BIRD LIVING LAB, Consorcio Fernando de los Rios Living Lab (CFRLL), Botnia Living Lab, Manchester Living Lab, City Lab Coventry

5.2.2 AN LIVING LAB EXAMPLE: iMINDS

Provider	<p>iMinds (IBTT iLab.o) Zuiderpoort Office Park Gaston Crommenlaan 8 (box 102) 9050 Ghent-Ledeberg Belgium +32 9 331 48 00</p>
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info@iminds.be

<http://www.iminds.be/en>

(Founded in 2008)

Focus	ICT in business and science
Operation Method	Support in research and development, coaching for entrepreneurship, networking
Description	iMinds wants to stimulate ICT innovations by being a nucleus for open innovation activities and providing relevant knowledge and expertise (concept of co-designing stakeholders). They coordinate and carry out Living Lab research aiming at exploring and achieving policy and business goals related to ICT innovation.
Price	No indication found
Specials	iMinds is an independent research institute founded by the Flemish Government. Various Living Lab settings are used.
References	UrbiZone network (wifi mesh networks), Fibre to the Home Networks, Cross-media labs, city service platforms, electric vehicles,

5.3 TOOLS CROSS-INNOVATION

5.3.1 CROSS-INNOVATION

Provider	<p>Cross Innovation 7300 W. 110th Street, Overland Park, KS 66210 USA 866-496-2416</p> <p>mihwa@crossinnovation.net</p> <p>http://www.crossinnovation.net/</p>
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Focus	Effectiveness of decisions in oil, gas, energy, mining, agriculture and finance industries
Operation Method	“Experience Warehouse™”, consultancy
Description	Cross-Innovation offers an approach to increasing the effectiveness of decisions that includes leveraging the collective intelligence of organizations. Their tool is called “Experience Warehouse™”. They do accelerating of discoveries with a search engine looking for cross-innovations; strategic brokering, which means discovery of commercial-ready products/technologies through licensing agreements between organizations that typically operate in very different industries; and they do market assessment.
Price	No indication found
Specials	Broad use of cross-innovation tools and different problems to which cross-innovation is a valuable approach
References (on the website no enterprise names)	Tools (for example Spectrayield, a yield forecasting tool), medical device development,

5.4 TOOLS CROWD-SOURCING


5.4.1 ATIZO

Provider	<p>Atizo AG Schosshaldenstrasse 1 3006 Bern Switzerland +41 31 961 90 90</p> <p>info@atizo.com</p> <p>https://www.atizo.com/</p> <p>(Founded in 2008)</p>
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Focus	Companies, Innovators of products and services in general
Operation Method	Crowd-sourcing, evaluation of solutions in a crowd
Description	A crowd is provided by Atizo, which can help finding solutions in high technology causes; marketing issues, name finding, product development and so on. You can also build your own crowd-sourcing platform. Workshops for a good innovation process are offered
Price	Not for free. Depends on chosen service. No indications found
Specials	Uses an already existing crowd that regularly works for free
References	BMW, Mirgos, AXA Winterthur, Mammut, Swisscom

5.4.2 BRAIN FLOOR

Provider	brainfloor.com – Open Innovation Mitterndorfer Straße 23 6330 Kufstein Austria +49 8025 99 49 64 welcome@brainfloor.com http://www.brainfloor.com (Founded in 2009)	
Focus	Any idea seeker (and the crowd looking for a prize, when a winning idea is presented)	
Operation Method	Crowd-sourcing	
Description	Idea finders sell their problem solutions to concrete questions of the idea seeking party. The idea seekers are supported by experts from brainfloor in formulating their questions.	
Price	From 3500 Euro	
Specials	Uses an existing crowd. Only registered members can see the	

questions presented by the idea seeker.

References

adidas, BSH (Bosch Siemens Haushaltsgeräte), Credit Suisse, Deutsche Post, Eurocopter, FH KufsteinTirol, Fraunhofer Institut, Fritz Dinkhauser – Bürgerforum Tirol, Handelskammer für München und Oberbayern, Hilton Hotels, Jugend denkt Zukunft, Klinikum München, Linde AG, Flughafen München, Marriott Hotels & Resorts, Wrigleys, Zürich Versicherung.

5.4.3 CHARODIX

Provider

Chaordix
Suite 313, 1240 – 20th Avenue SE
Calgary, Alberta T2G 1M8
Canada
+1 403 263 2655



<http://www.chaordix.com/>

(Founded in 2009)

Focus

Companies

Operation Method

Crowd-Sourcing, market research, idea management, communication, brand loyalty

Description

Chaordix stands for a cloud-based, enterprise-class engine for the customized programs and communities. They provide the flexibility to adapt and address emerging or growing crowd-sourcing needs throughout the organization of tomorrow

Price

No indication found


Specials

Market focus through different use of crowds for different kinds of insights looked for.


References

Orange, EON, IBM, WWF, P&G, Monster.com, PwC

5.4.4 TRICIDER

Provider	<p>tasqade GmbH Greifswalder Str. 206 10405 Berlin Deutschland +49 30 577 095 062</p> <p>mail@tricider.com</p> <p>https://tricider.com/de/t/</p> <p>(Founded in 2011)</p>	
Focus	Decision making of mostly individuals	
Operation Method	Crowd-Sourcing, exchange of ideas, decision making	
Description	The tool focuses at a fast and straightforward international exchange of ideas and decision making	
Price	<p>With no gratification to the provider of the best idea:</p> <p>4-6 Euro per month</p> <p>With a gratification to the provider of the best idea:</p> <p>For the use of crowds <20: for free</p> <p>For the use of crowds <500: 300 Euro</p> <p>For the use of crowds >500: 850 Euro</p>	
Specials	A decision is possible what group of crowd-members can see and answer to your question	
References	Positive comments from individuals	

5.4.5 PASSBRAINS

Provider	<p>PASS Switzerland Dufourstrasse 91 8008 Zurich Switzerland +41 43 819 34 54</p> <p>swiss@passbrains.com</p> <p>http://www.passbrains.com/index.php</p> <p>(passbrains.com: founded 2011)</p>	
Focus	Software professionals and testing experts	
Operation Method	Crowd-Testing (Crowd-Sourcing)	
Description	A fast testing of software is a success factor in the market. So if you have a crowd testing a product you can be faster and better. Passbrains.com offers this crowd that tests software and the corresponding project management.	
Price	No indication found	
Specials	200-1000 free-lance crowd-testing members, project management and quality control is led by Swiss engineers	
References	Comparis.ch, eBay	

5.5 INNOVATION NETWORKS, INNOVATION INTERMEDIARIES

5.5.1 INNOCENTIVE



Provider	<p>InnoCentive EMEA Ltd. 57 Gloucester Place London, W1U 8JJ United Kingdom</p>
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+44 (0) 207 224 0110

<http://www.innocentive.com/>

(Founded in 2001)

Focus	Building open innovation capabilities in commercial enterprises, public sector agencies and non-profit organizations
Operation Method	Crowd-Sourcing
Description	Innocentive enables prize-based competitions, whereby organizations can post their challenges to diverse audiences – employees, partners/customers, or the Innocentive community (250,000+) – who try to solve them. Depending on the audience, challenges often carry financial incentives to generate solver interest and participation, and the management of intellectual property treatments is of paramount importance.
Price	No indication found
Specials	millions of problem Solvers, cloud-based technology platform guarantee for rapid solution delivery and the development of sustainable open innovation programs
References	Booz Allen Hamilton, Eli Lilly, Life Technologies, NASA, nature.com, Popular Science, Procter & Gamble, Roche, Rockefeller Foundation

5.5.2 NINESIGMA



Provider	<p>European Headquarters:</p> <p>NineSigma Europe BVBA Koning Leopold I straat 3 3000 Leuven Belgium +32 16 24 42 80</p>
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<http://www.ninesigma.com>

(Founded 2001)

Focus	Businesses (52%) , universities (34%), governmental institutions, non-profit organizations and consultants (altogether 14%)
Operation Method	(Open) innovation services, innovation intermediary services, consultancy
Description	NineSigma provides different core services for innovation-seeking companies: they show how to formulate your need and question, how to find the right solution providers, how to evaluate ideas and how to derive long-term value from open innovation.
Price	No indication found
Specials	More than 2 million in the NineSigma crowd, the company is well known and accepted in the open innovation environment.
References	SAPPI, CCEMC, IAVI, LAUNCH, Akzo Nobel, 3M, Kraft Foods, Hallmark, Elektrolux

5.5.3 YET2.COM



Provider	<p>yet2 Europe Liverpool Science Park Innovation Centre 1 131 Mount Pleasant Liverpool, L3 5TF United Kingdom +44 (0) 151 705 3539 europa@yet2.com info@yet2.com http://yet2.com/</p>
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	(Founded in 1999)
Focus	Companies with a technological focus
Operation Method	Open innovation services, Crowd-sourcing
Description	Yet2 screens potential solutions to customer problems and finds the most promising solutions by means of open innovation. They also find licensees and buyers for solutions, do marketing and articulate technology values; they do business development, patent transactions, and provide various other services.
Price	No indication found.
Specials	A proprietary network of global affiliates and a technology marketplace of more than 130'000 users
References	NASA (new contract 2012), State of Ohio (new contract 2012), Siemens, Bayer, Honeywell, DuPont, Procter & Gamble, Caterpillar, NTT Leasing


5.5.4 DIE IDEEOLOGEN – OPEN INNOVATION COMMUNITY




Provider	Die Ideeologen – Gesellschaft für neue Ideen GmbH Schwarzwaldstraße 139 D – 76532 Baden-Baden community@ideeologen.de http://www.ideeologen.de/
Focus	Companies in Germany
Operation Method	Develop new services and products for companies in different innovation processes
Description	Die Ideeologen offer innovation workshops, innovation training and innovation management.

Price	No indication found
Specials	Different websites for special projects (ex. http://www.open-innovation-community.de/preise)
References	Axel Springer, ELE, TUI, Cine Star, Nestlé, VW, Siemens, Thomas Cook, SAP, 38odafone, McDonalds, Deutsche Bahn, Henkel

5.5.5 BLUENOVE: OPENING INNOVATION

Provider	<p>bluenove, 67 rue d'Aguesseau, 92 100, Boulogne-Billancourt, France +33 1 41 86 21 20</p> <p>contact@bluenove.com</p> <p>http://www.bluenove.com/</p> <p>(Founded 2008)</p>	
Focus	Different kinds of organizations and companies	
Operation Method	(Open) innovation services	
Description	Bluenove helps organizations to plan and implement collaborations inside the organization and open innovation projects and strategies. They do consulting, trainings and project management.	
Price	No indication found	
Specials	More than 120 projects realized since 2008.	
References	Valiant Group, SNCF, Suez environment, Orange, Microsoft, L'Oréal, France Télévision, Pernod Ricard, Johnson & Johnson, Danone, Natura Brasil, Gimélec,	

5.5.6 INNOVATION PARTAGÉE

Provider	<p>Innovation Partagée (IP) 5, Impasse du Marais 72400 La Ferté Bernard France + 33 (0)970 448 020</p> <p>http://www.innovationpartagee.com/</p> <p>(Founded in 2009)</p>	 <p>Innovation Partagée <small>Conseil & Outils en Innovation Ouverte</small></p>
Focus	Companies, public administrations	
Operation Method	Open Innovation services	
Description	<p>IP provides different offers to facilitate open innovation for their different customers. They consult how to pursue innovation intentions in a firm with the help of open innovation, provide an open innovation platform, do idea management and make evaluations of innovations processes and collaboration inside of organizations. Trainings, seminars and conferences are offered.</p>	
Price	No indication found	
Specials	Broad offer of services	
References	Cegos, Groupama, MAAF, Ipsen, CNED, Europlastiques, Bretagne, Inn-Lean Design, Réseau Ferré de France	

5.6 ININTERSECTION OPEN INNOVATION AND SOCIAL MEDIA TOOLS

Set up for interactions and conversations; easy creations of forums; collaboration including sharing of ideas and solutions

Intuit Intuitcollaboratory.com merges physical and virtual activities

P&G Pgconnectdevelop explains needs and available assets; multiple languages;


GE challenge.ecomagination.com

Psion ingenuitworking.com

SAP sdn.sap.com/irj/sdn/coil

5.7 OTHER TOOLS

5.7.1 CCC DEUTSCHLAND


Provider	<p>Centrum für Corporate Citizenship Deutschland (CCC Deutschland) Husemannstr. 28 10435 Berlin Germany +49 – (0)30 – 88 49 98 45</p>	
	<p>info@cccdeutschland.org www.cccdeutschland.org</p>	
	<p>(Founded in 2010)</p>	
Focus	Corporate Citizenship for companies, policy, communities	
Operation Method	Events, platforms, workshops, networking	
Description	<p>CCCD supports the idea of organizations engaging in social activities and sees a win-win situation pursuing business goals and at the same time support the community. Therefore they organize and stimulate stakeholders at events, in platforms and workshops. So they support cooperation between companies, policy and civil society. They provide different networks of experts.</p>	
Price	No indication found	
Specials	Blog, provided publications	
Partners (no	Active Citizenship Network, Boston College, Bundesnetzwerk Bürgerschaftliches Engagement, COX Steuerberatungsgesellschaft,	

References found) Verban kommunaler Unternehmen, ..

5.7.2 PRESANS

Provider	<p>Presans X-Technologies / Ecole Polytechnique 91128 Palaiseau Cedex France +33 1 69 33 59 59</p> <p>contact@presans.com http://presans.com/</p> <p>(Founded in 2008)</p>	
Focus	Companies (also out of the automotive sector)	
Operation Method	Innovation intermediary connecting business to experts	
Description	Presans supports in time-critical actions and provide background to strategically decisions, latest technological trends, and qualifying key partners with means of open innovation. They do innovation management and expertise- and competency mapping showing where experts are worldwide and what profile they have.	
Price	No indication found	
Specials	Network of over 1'000'000 leading experts in their fields	
References	Air Liquide, MBDA, SKF, SEB, Sorbonne Universities	

5.7.3 SMART SYSTEM

Provider	<p>Smart System, la fabrique du future 110, Boulevard de Sébastopol, 75003, Paris France</p>	
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admin@smartsystem.fr
<http://en.smartsystem.fr/>

(“La fabrique du future”, co-founder of smartsystem, was founded in 2006)

Focus	3D-technology sector and sectors of creative economy and sustainable development
Operation Method	(Open) innovation intermediary, crowd-sourcing, living lab
Description	Smartsystems provides different technologies and methodologies for innovation processes, a living lab and different interconnected networks and an animated and lively virtual gathering culture.
Price	No indication found
Specials	Including a living lab and specialized on 3D-technology. Smartsystem plans to install a living lab campus in Paris.
Smartsystem is member of (no references found)	ENoLL (European Network of Living Labs), Cap Digital, Co-Creation Association, Jeune Entreprise Innovante

5.7.4 EXPERNOVA

Provider	<p>Expernova.com Business & Innovation Center Cap Oméga, rond point Benjamin Franklin, 34960 Montpellier France</p> <p>+33 (0)4 67 65 54 41</p>
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contact@expernova.com
<http://www.expernova.com/>

(Founded in 2010)

Focus	Companies and organisations wanting to increase their internal R&D capacities
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Operation Method	International expert-sourcing, connecting business to research, open innovation services
Description	Through an elaborated technology of open innovation expernova can find the experts corresponding to a certain question.
Price	No indication found
Specials	Access to more than one million European researchers is possible
References	Jamespot, Alma, ami, Techniques de l'Ingénieur, Hypios, oseo, Cap Digital, cnrs, University of Montpellier, incubateurTec

5.7.5 CONNECT2IDEAS

Provider	<p>Connect2ideas RTC North 1 Hylton Park Wessington Way Sunderland Tyne & Wear SR5 3HD</p> <p>United Kingdom</p> <p>191 5164400 enquiries@rtcnorth.co.uk http://www.connect2ideas.com/</p>
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Focus

Operation Method	Expert-sourcing
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Description	Connect 2 ideas is a resource for people developing new technology and market leading products. An online matchmaking service for people with innovative ideas, Connect2ideas also offers support from a team of technology scouts and account handlers.
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Price

Specials

References

5.7.6 BRAINBANK

Provider	<p>BrainBank</p> <p>475 Dumont, Suite 200 H9S 5W2 Dorval, QC, Canada 514 636 - 6655</p> <p>info@brainbankinc.com</p> <p>http://www.brainbankinc.com/</p> <p>(Founded in 1999)</p>	
Focus	<p>Motivate and facilitate innovation in companies, idea management</p>	
Operation Method	<p>Consultancy, (open) innovation services, organization of events, crowd-sourcing, implementation of open innovations, ranking of ideas, ect.</p>	
Description	<p>BrainBank began as an online suggestion box but is now an innovation management platform. They support open innovation workflows through consultancy, different management tools and they organise events to support idea findings. They focus also on ranking and implementation of ideas. For some of these services they provide software tools.</p>	
Price	<p>No indication found</p>	
Specials	<p>In their innovation events they support cross-innovation. (Ideaswarm™)</p>	
References	<p>KPMG, Aetna, GM, International Olympic Committee, Canal de Panamá, Hertz, Tesco, Johnson&Johnson, FedEx</p>	

6 PRACTICAL EXAMPLES

6.1 EXAMPLES LEAD USER METHOD

6.1.1 SURGICAL DRAPE BY 3M



cost-effective surgical drape.⁴

3M is a multitechnological company, amongst many other products famous for its post-it note. In an attempt to develop a breakthrough surgical drape product, preventing patient infections. A team of manufacturing and marketing experts from 3M created a team of lead users containing a veterinarian surgeon, a makeup artist, doctors from developing countries, military medics, and microbiologists and so on. This team found developed then an absorbent, imperious and

Figure 5: Lead User: Surgical Drape⁵

6.2 EXAMPLES LIVING LABS

6.2.1 OCULAR MOUSE

Computer technology has a high potential to enable handicapped people to communicate. The Amazon Living Lab makes sure that these opportunities are developed together with governments, hospitals, handicapped associations and also the handicapped themselves.

The first product developed was the ocular mouse, a computer user interface system made for people who can't move their superior member. The ocular mouse allows to access computer functions through eye movements that command the mouse cursor in the screen. To detect the ocular movements electric contacts are plugged in the face to detect the bioelectric signs and transmit them to the computer.⁶



Figure 6: Living Labs: Ocular Mouse⁷

⁴ Video 1: Overview of the lead user process <http://www.leaduser.com/>

⁵ http://solutions.3m.com/3MContentRetrievalAPI/BlobServlet?locale=en_GB&lmd=1272630994000&assetId=1258566677537&assetType=MMM_Image&blobAttribute=ImageFile

⁶ <http://www.openlivinglabs.eu/livinglab/amazon-living-lab-0>

⁷ <http://iberoamerica.campus-party.org/ForoDeProyectos.html>

6.3 EXAMPLES CROSS INNOVATION

6.3.1 BMW-JOYSTICK

Car cockpits have a complex user interface. There are many buttons for many functions that want to be pushed while driving and it's sometimes difficult to find them without losing your concentration on the streets. So BMW looked for a solution to make the cockpit user-friendly and save for driving.

An analogy to the driving situation was looked for and found: Gamers watch their screen when using different buttons or a joystick. This technology from the entertainment industry was adapted and an accordant gear shifter was developed (Horváth 2012).

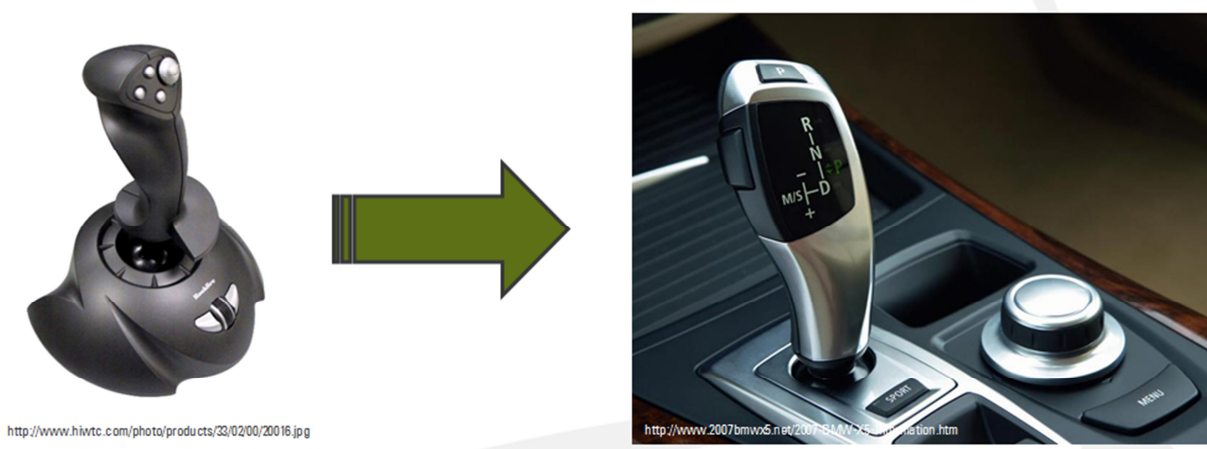


Figure 7: Cross-Innovation Example: BMW Joystick (Horváth 2012, adapted)

6.3.2 SMART HAND WASHING

Water is a highly valuable resource and not everywhere well available. At the same time there is amongst others a need of hygiene. How to combine hygiene with a responsible use of water?

The following application gave idea for the Smart Water Mixing System (Smixin): In coffee machines water and coffee are mixed in a perfect ratio. This idea was adapted and a system created that automatically dispenses soap and water for hand washing (Smixin 2012).



Figure 8: Cross-Innovation Example: Smart Hand Washing (Smixin 2012, adapted)

6.3.3 HILTI FLEET MANAGEMENT

The market for tools is very competitive and customer loyalty is sometimes weak. This and the fact, that tools often need to be maintained, led to the question: How can Hilti as a tool producer strengthen customer loyalty through services?

Automotive industry offers maintenance for their vehicles and so they tie customers with services. Hilti adapted this idea and developed a common customer service to an organised fleet (Horváth, 2012).



Figure 9: Cross-Innovation Example: Tools Fleet Management (Hilti, adapted)

6.4 EXAMPLES CROWD-SOURCING

6.4.1 BMW-MOTORCYCLE

BMW motorcycles wanted to develop creative approaches for the motorcycle of the future. They worked together with ATIZO – providing a platform for online brainstorming. It was a brainstorming with a public crowd and over 700 different ideas were generated, some of them were further developed into detailed concepts together with the innovators.⁸



Figure 10: Ideas of Future BMWs Motorcycles (Source: ATIZO⁹)

6.4.2 PORSCHE

Porsche was looking for solutions to different questions as for example what range extending possibilities exist for electric vehicles, what concepts are smart for new storage systems, ect. They are using Crowd-Sourcing as a means, the platform was provided by “automotive-bw” (an association connecting the different automotive clusters in Baden-Württemberg). Until end of November 2012 ideas can be posted.¹⁰

7 EXAMPLES FROM ELMO^S PROJECT

A first pilot project within the realm of «Open Innovation» was initiated in cooperation with VÉHICULE and Parkeon, one of their cluster members. Mundi Consulting, the TCBE representative in the project, set up a crowdsourcing platform (www.cluster-crowd.com), designed to generate innovative ideas. «Cluster-Crowd» is a brainstorming platform that taps into the expert knowledge of business, technology, ICT and life science clusters. Depending on the challenge in question, «Cluster-Crowd» initiates a call for ideas within one area of expertise or includes different knowledge clusters to initiate innovative ideas or solutions to interdisciplinary questions. In cases

⁸ ATIZO (2208-2012). Case Study BWM Motorcycles. http://www.atizo.com/docs/platform_docs/Atizo_CaseStudy-Mammut_en.pdf

⁹ ATIZO (2208-2012)

¹⁰ <http://automotive-bw.de/de/index.php>

where the challenge requires the view of the general public, Cluster-Crowd can also reach out to a crowd that includes 20.000 creative minds from all walks of life. Next to the planned project budget, Mundi Consulting funded the platform with an investment of over 20.000 EUR to achieve ELMOs innovation-related goals. The Crowd-Sourcing pilot was initiated in April 2013. The participating organisations were Mundi, VÉHICULE and the commercial partner Parkeon, a global player in integrated on-street parking management solutions. With the crowd-sourcing initiative «Imagine a parking meter you love» they reached out to the general public and ICT clusters, asking them to describe what useful services or applications parking meters should offer in the future not only to motorists but also to anyone in the street. The starting point was Parkeon's firm conviction that parking terminals can play a bigger role in the urban everyday life, as they are now being equipped with colour screens and connected to the 3G networks providing more interactivity to the users. Following a joint workshop, the call to the general public was launched on April 12th and remained open until May, 3rd. In total 479 innovative ideas were generated, providing the Company with valuable input for their future product development and marketing.

The call to clusters and their member companies was sent out by e-mail and encompassed a more complex set of questions and legal documents. This type of call was unfortunately not successful. The following hindering factors were identified through the ex post facto analysis:

- Parkeon was not known to all companies that were addressed in the call
- the incentive to companies was not sufficiently attractive
- the time to respond to the call was perceived as too short
- people who received the call were not always in the position to respond in the name of the company, which raised the level of complexity

8 CONCLUSION

While traditionally, new business development processes and the marketing of new products took place within the company boundaries, the OI model combines internal and external ideas/knowledge as well as internal and external marketing channels to promote the development of new products and services. It can include a greater use of outbound knowledge flows by companies, the creation of new organizational roles as well as the emergence of secondary markets and new practices to identify these possibilities (Chesbrough 2006).

Part of the challenge when introducing the concept of OI in traditional companies is to induce a shift in the way they view themselves and their environment. They need to adopt the attitude that the involvement of other, external, parties in innovation can add value to the process as well as the final

results. Without this process to market OI inside the company and establish the mind-set throughout the organization, the setup of external portals or OI initiatives makes little sense.¹¹ Without support within the company, OI initiatives will only be short-lived and may fail to prove their potential completely.

Getting an outside perspective on projects, solutions and market trends will provide a company with a much better feel for the actual situation in the market and future directions. It may confirm the analyses performed internally, expand those providing complementary ideas or even be an eye opener by highlighting the fact that a company was missing a major development on the market. Andy Zynga, CEO of NineSigma, stated that OI has the benefit of mitigating two cognitive biases: curse of knowledge and functional fixedness. Apart from the benefit of extending the internal idea and knowledge base, OI is also perceived as a cost effective way to do so. The fees for intermediary services cover a broad range that allows even small companies to find a suitable Crowd-Sourcing solution where the base fee and awards to participants are acceptable. However, the hidden costs remain. An OI initiative requires time, expenses for legal fees, time managing within the organization and managing the crowd community, marketing time plus time to evaluate the ideas. And while many companies have made good experiences harvesting ideas from crowds there is still the risk that the chosen crowd will not be enthusiastic about a company's proposal or produce only mediocre results. If the incentive is low or the crowd perceives that it is being used as a source for free labour the effects can even have a negative effect on the company running the campaign.

At a societal level, the issue of free labour in Crowd-Sourcing has much wider implications. The fact that jobs that were done by professionals are now done amateurs and people without experience has actually reduced the wages of professionals in fields such as design and creative jobs. Nevertheless the scope of Crowd-Sourcing models, providers and users is growing: crowd voting, crowd creation, association through crowd funding and other initiatives using crowd wisdom are becoming progressively established.¹² Crowdsourcing and all its strategies have come to remain.

¹¹ <http://www.crowdsourcing.org/editorial/weighing-the-costs-and-benefits-of-open-innovation/27261>

¹² <https://tricider.com/de/Crowdsourcing-Critics/>

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