Managing Innovation Platforms: The Nokia Solutions and Networks experience

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Abstract: This paper explores managing innovation inside global organisations. Taking Nokia Solutions and Networks (NSN) for a study, the central idea of this research is to understand the mechanism of managing innovation inside such organizations in the context of increasing emphasis on 'open innovation' approaches. How can a company like NSN share innovative ideas with more than 70,000 people working in 150 countries?

This study contributes to the existing literature on managing innovation in the open communication context by describing in detail the 'Global Innovation Mall' platform introduced by NSN as a tool to foster open innovation in a global company. In the paper we describe the platform in regard to its development states, technical structure, innovation management, incomes and outcomes, roles and people, results and potential future growth.

Keywords: innovation management; open innovation; communication; NSN

1 Introduction

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Nokia Solutions and Networks (NSN) was established as a joint venture between Nokia and Siemens in 2007. Formed as the result of a joint venture between Siemens' Solutions and' Communication (COM) division and Nokia's Network Business Group, Nokia Solutions and Networks emerged as a separate entity after Siemens left the partnership in 2013. NSN is now one of the largest telecommunications hardware, software and services companies in the world, with more than 70,000 people in 150 countries. It is a leading global enabler of telecommunications services operating serving more than 600 million customers. It is the world's fourth-largest telecoms equipment manufacturer measured by 2011 revenues (after Ericsson, Huawei and Alcatel-Lucent). The company provides a portfolio of mobile, fixed and converged network technology, as well as professional services including consultancy and systems integration, deployment, maintenance and managed services. NSN is a global company divided into eight regional divisions each covering a large geographic area. Merging the original partner businesses strategy turned NSN into a global leader but also posed a number of management challenges as both the companies used to have very different operating models. Siemens Solutions and' COM division was primarily decentralized, while Nokia's Network Business Group operated on a more centralized basis, with standardized processes and systems companywide. Cultural challenges existed as well: the two partners had incompatible backgrounds regarding customer service and different attitudes toward formality and reporting hierarchies[1]. To conclude, the research problem coming from this company, and any other global organizations as such, is how to address the challenge of managing the employees when their number equals to a small town? For this case, we narrow the scope of the research query to the issue of how to keep the flow of innovations going and what might be the processes of stimulating the innovation frontier among more than 70,000 people? Thus, taking NSN for a research sample, the central idea of this paper is to understand the mechanism of managing innovation inside global organizations. The main research question is how could the company like as NSN make its community work innovatively and share innovative ideas openly keeping the momentum going?

2 Literature review

An emerging challenge in the literature is around how to understand and operationalise concepts around 'open innovation'? This theme has received increased attention in the management literature (Veugelers, 1997; Ball and Rigby, 2006; Chesbrough, 2000, 2002, 2003, 2006; Chesbrough et al., 2002, 2006; Gassmann, 2006; Laursen et al., 2005; Laursen and Salter, 2006), finding its way into firm-level open innovation policy (Kazuhiro et al., 2010), open innovation inside-out process (Enkel et al., 2009), open 'innovation communities' (Fichter, 2009), firm theory (Jacobides and Billinger, 2006), firm investment (West and Gallagher, 2006), industrial dynamics (Christensen et al., 2005), spillovers (West and Gallagher, 2004), open sources (von Hippel and Krogh, 2003), or early adopters (Chesbrough and Crowther, 2006).

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[1] Source: http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Outlook-Driving-Successful-Change-Nokia-Solutions and-Networks.pdf Accessed in 2012.

In its broadest sense, Open innovation is interpreted as the purposeful use of inflows and outflows of knowledge between different organizations to enhance their internal innovation engine, and to expand the markets for external use of innovations, respectively (Chesbrough et al., 2006). This became possible since today "in many industries, the logic that supports an internally oriented, centralized approach to R&D has become obsolete" (Chesbrough, 2003b, p. 41). The originator of the concept explains:

> "Useful knowledge has become widespread and ideas must be used with alacrity. If not, they will be lost. Such factors create a new logic of open innovation that embraces external ideas and knowledge in conjunction with internal R&D....Innovators must integrate their ideas, expertise and skills with those of others outside organization to deliver the result to the marketplace....In short, firms that can harness outside ideas to advance their own business while leveraging their internal ideas outside their current operations will likely thrive in this new era of open innovation" (ibidem).

Gassmann (2006) summarises the process of opening up innovations through the following research streams: globalisation of innovation; outsourcing of R&D; early supplier integration; user innovation; and external commercialisation of technology. Interpreting the complexity of the open innovation phenomenon, Gassmann (2006, p. 225) construes that "collaborative R&D appears to be a useful means by which strategic flexibility can be increased and access to new knowledge can be realized...more and more managers are discovering the value of cooperative R&D for higher innovation rates...enabling break-through thinking....[which] also mitigat[ing] the not-invented-here syndrome".

In the words of Chesbrough (2003) the syndrome 'not-invented-here' (NIH) has a different sense now. Originally, NIH expression had a meaning of firms' resistance to innovative ideas from the environment. Managers were always wary of technologies which were not produced inside their company. They simply could not be sure of quality, performance, and availability of outside technologies. Today NIH means "companies *n*eed not re*i*nvent the w*h*eel, since they can rely on external sources to do the job effectively. In an abundant knowledge landscape, one can now do a great deal by focusing in a particular area, without having to do everything" by themselves (Chesbrough, 2003, p. 49, bold-print emphasis added).

Interestingly, "models of open innovation offer the promise that firms can achieve a greater return on their innovation activities and their IP by losing their control over both" (Chesbrough, 2003a – cited from West and Gallanger, 2006, p. 319). Dodgson *et al.* (2006, p. 335) further specify that the open innovation process "redefines the boundary of the firm and its surrounding environment, making the firm more porous and embedded in loosely coupled networks of different actors, collectively and individually working towards commercializing new knowledge". West and Gallanger (2006, p. 320) caution that "open innovation paradigm goes beyond just utilizing external sources of innovation such as customers, rivals, and universities ....and is as much a change in the use, management, and employment of IP".

Further, West and Gallanger (2004, p. 1) explain that open innovation "involves identifying, exploiting, and integrating external knowledge into [a firm's] internal R&D activities". Then, West and Gallanger (2006, p. 319) identify "three fundamental challenges for firms in applying the concept of open innovation: finding creative ways to exploit internal innovation, incorporating external innovation into internal development, and motivating outsiders to supply an ongoing stream of innovations".

A number of dramatic changes in the global R&D framework caused the shift from closed to open innovation. In addition to the changes specified above, there are others such as: growing mobility among highly experienced people; decreasing of time between invention and market introduction; increasing of complexity and intersectoral nature of new technologies; opening up of S&T outsourcing domains; active venture capital, numerous start-ups, importance of universities, and a large number of external ideas, to name just a few crucial shifts (Hagedoorn, 1993; Allio, 2004; Chesbrough, 2003). In the words of Buijink[1] (2006) "the emergence of China as a global R&D player and the globalisation of industry and research have brought open innovation policy to the centre of the policy agenda".

Butler (2004) has most eloquently explained why governments, companies, universities, scholars, conferences, welcome open innovation as a "neat concept". "Managers might be happy enough that Chesbrough has effectively consolidated and interpreted this momentum of observations and has given it more relevance and significance and popularization" (Butler, 2004, p. 198). As early as in 1989, Hagedoorn and Schakenraad published a detailed study of technology alliances into which Philips entered. The list is headed by 27 agreements with Solutions and, and is followed by 11 agreements with Thomson, 10 with Matsushita, 8 with Bull, Olivetti and Sony, 7 with AT&T and Bosch, 6 with DEC and Nixdorf, 5 with Alcatel, Hewlett-Packard and STC (Manders and Brenner, 1995). General Motors, appreciating strategic value of technology cooperation (Ferguson, 2005), has also moved to develop a global R&D network of collaborators and partners, combining newly established labs in such emerging knowledge centres as India and increasing the number of research partnerships with universities around the world.

Chiaroni *et al*. (2007, p. 2) echo Butler by saying that a significant evolution in the way companies manage the technological innovation process resulted in "an increased reliance upon external sources of technology, the use of multiple channels of technology exploitation, the birth and growth of markets for technology, and the internationalization of R&D and innovation activities". All these have been "carefully studied by Henry Chesbrough…and systematised …into an insightful paradigm labelled "open innovation"" (*ibidem*).

The new emerging approach is "almost by definition related to the establishments of ties of innovating firms with other organisations. Companies are increasingly forced to team up with other companies to develop or absorb new technologies, commercialize new products, or simply to stay in touch with the latest technological developments" (Chesbrough *et al.*, 2006, p. 205).

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[1] '*OECD Summary of the conference on globalisation and open innovation*' (2005), p. 1.

3 Our research approach

This investigation was accomplished using a case study methodology (Yin, 1989; Eisenhart, 1989). Development of the case study included handling all aspects of defining the case through interviews with the responsible people within the company and acquiring relevant images with illustrations from the interviewee. Supplementary data for the study came from an archive containing data such as project reports, drawings, presentations, photos and press releases. The case was, therefore, developed using largely qualitative methods (Denzin and Lincoln, 1994; Silverman, 2005). In order to facilitate cross-case analysis, a comparative framework was developed focusing on the innovation processes (Tidd and Bessant, 2009): search stage; select stage, implementation stage; capturing stage, and overall innovation process. Since the idea of the investigation is not only to highlight the innovation processes but also to find the essence of the essence, i.e. the "NSN essence of their innovation management essence", the study was additionally focused on identifying tools and methods used at each stage of the innovation process.

4 Findings

As suggested above the major challenges around 'open innovation' lie less in the concept than its implementation. How does a large globally dispersed company mange the complex flows of knowledge to optimize innovation? How does it balance work along core trajectories with the input of novel business and technological ideas from elsewhere – both in the broader external environment and across its own multi-national campus? Schlage aha described extensively elsewhere the underlying model of NSN for innovation, highlighting the need for rapid and update-able structures – very much a dynamic emerging model rather than a static bureaucratic approach. This underlying scaffolding is also extensively supported by IT-based platforms, as might be expected in a company operating in the turbulent ICT marketplace.

Here we briefly describe one of the key resources in that structure, the "Global Innovation Mall" (GIM) which was introduced at NSN in 2007 to support the open innovation communication. Below the tools is described in detail in regard to the following aspects: objects, concepts, people, platform, activity, results, and involvement (Figure 1).
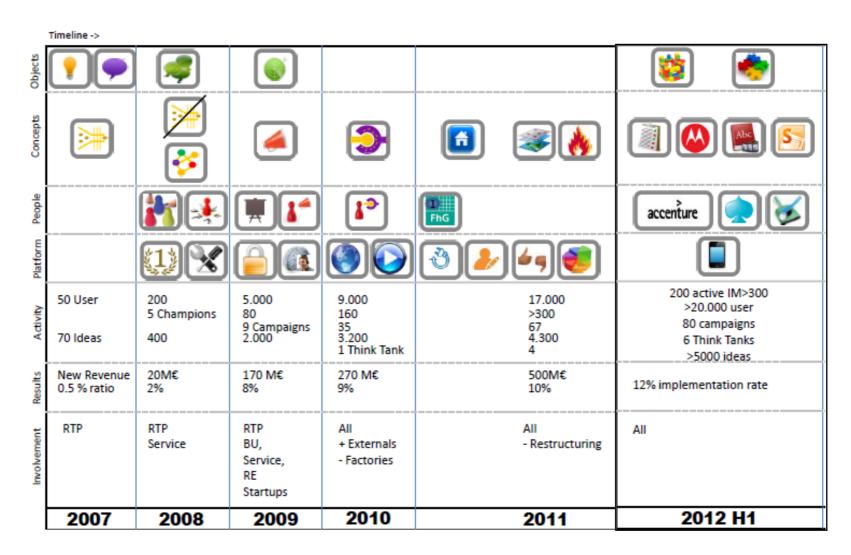
Figure 1. GIM Architecture

As seen from Figure 1, in 2007 NSN GIM started with 50 users who brought 70 innovative ideas. In 2008 GIM NSN already attracted 200 internal users with 400 ideas having five innovative champions altogether. The developments of GIM NSN activities shows stable dynamics resulting in 5,000 users for 2009, 9,000 users in 2010 and already 17,000 user-employees in 2011. The numbers of innovation is growing accordingly bringing in 2009 already 2,000 ideas, 3,200 ideas in 2010 with 4,300 in 2011. Revenue results support the effectiveness of GIM for NSN providing 20 million euro in 2008, 170 million euro in 2009, 270 million euro in 2010 and 500 million euro in 2011.

GIM NSN has steadily grown from being an outside-in to inside-out community enhancement platform. In 2012 GIM has attracted more than 20,000 users, initiated 80 innovation campaigns, opened 6 think tanks, and brainstormed more than 5,000 innovation ideas.

To illustrate our findings further we refer here to one of the notions of GIM NSN which 'innovation campaign', for example. As explained by one of the interviewees innovation campaigns are important because NSN "*experience showed us that only to setup up an Innovation Funnel and just waiting for Idea is not enough. To get and drive ideas we actively do Campaigns to support NSN strategic goals*".

NSN innovation campaigns typically have several elements:

- Idea Races for special topics / regions / sites;
- Idea Competitions with winners;
- Workshops for products / solutions / services;
- Other Events (e.g. Innovation Forum / Innovation Day).

Anyone outside the company who is interested to join a GIM NSN Campaign can check current campaigns to follow or is welcomed to launch his/her own campaign submitting a request. Some campaigns are certainly limited to certain organization's topics, but others are open for everybody.

GIM NSN Innovation Campaigns are structured in terms of roles and, for instance, have:

(i) Campaign Stakeholder(s) who are high management supporters and get listed to show management attention with no further function in the tool;

(ii) (ii) Campaign Moderator(s) who are initiators of the campaign, they get notification if an idea was sent to the campaign; assign ideas of the campaign to idea channels (funnel) (if it's not done by the user);

(iii) (iii) Idea Manager(s) whose role is to drive the ideas forward,

> setup community discussion on each idea, get notification if idea was assigned to his / her idea channel and track the status of the idea e.g. implementation or assessment.

The GIM NSN tool allows managing open innovation ideas from the following administrative notions: 'concept created', 'clarified', 'order placed', and 'implementation'. Open innovation ideas of GIM NSN are managed through the following internal stages of company's innovation processes: 'define focus areas', 'assessment scheme (T2B)', 'technology funnel structure', 'campaign design', and 'focal point interface'.

5 Conclusions

The ideas of 'open innovation' are no longer new; the challenge for organizations is to translate the concepts into workable structures and processes to take advantage of improved knowledge flow. In large multinational corporations like NSN there are distinct opportunities – 'if only NSN knew what it knows'! But realizing these will require development of suitable routines to enable innovation of this kind – and the ability to adapt and flex these on a continuing basis.

We suggest that our study contributes to the existing literature on managing innovation in the open communication context (Tidd & Bessant, 2009; Veugelers, 1997; Ball and Rigby, 2006; Chesbrough, 2000, 2002, 2003, 2006; Chesbrough et al., 2002, 2006; Gassmann, 2006; Laurse and Salter, 2006) by describing in detail the 'Global Innovation Mall' platform introduced by NSN as a tool to foster open innovation in a global company. In the paper we describe the platform in regard to its development states, technical structure, innovation management, incomes and outcomes, roles and people, results and potential future growth.

The study has both academic and policy-making relevance. From the academic perspective the research identifies the data on how can a global company keep innovation frontier going using the open innovation platform created by one of the leaders in global communication. For policy-makers, this paper is a report on existing practices and positive experience in innovation leadership at a global company level. Additionally for practitioners, the study shows how to create profitable innovation growth in harmony with open communication and good corporate citizenship.

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