



Customer Involvement in Innovation Process Based on Open Innovation Concepts

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ABSTRACT

In recent decade, firms showing an increasing interest in involving customers, suppliers, other partners and even competitors in innovation process. With current interest in collaboration, partnership, outsourcing and growth in communication facilities, open innovation has gained more importance. Today, customers are considering as one of the major partners in innovation process. In this paper we explored involving customers as a CRM activity and engaging them in different phase of innovation process. We review open innovation concept and its three core process archetypes and investigate customer involvement in innovation process base on that. In addition we distinguished between different kinds of customer as B2B or B2C, when they involve in open innovation process.

1. Introduction

1.1. Open innovation

Open innovation for the first time was introduced by Henry Chesbrough. According to his 2003's book, valuable ideas can come from inside or outside the boundaries of company and can go to market from inside or outside [1]. He believes the value of inside ideas is equal to outsides. Open innovation is in contrast to close innovation, which companies research, develop and commercialize ideas, entirely inside the boundaries of company. Consider one company develops a new idea but does not bring it to market. It can partner with or sell the idea to others to commercialize it [2]. In fact the purposive use of inflows and outflows knowledge helps to hasten the internal innovation and expands the market for external use of innovation [3]. based on this, there is no need for the locus of creation of knowledge and innovation be equal [4]. Open innovation is not only limited to flow of idea, technologies [5] intellectual property and even people can flow freely in to and out of an organization [6]. There are two important issues about open innovation; one of them is size of a firm. Obviously SMEs are a bit different in using open innovation. They have some shortages like limited financial resource for R&D, unstructured innovation process, underdeveloped internal capabilities [3, 5, 7] and often lack a multidisciplinary competence base [8]. This makes them

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using open innovation in different ways, to gain more success and compensate their deficiencies. But large companies don't have these problems generally, large companies are interested in applying open innovation in R&D more and SMEs are interested in applying it in commercialization [7]. Another is industry. This issue can investigate from two directions. One of them is type of industry towards manufacturing opposed to service companies and type of activity of that industry. There is no significant difference in manufacturing and service companies, in ways of benefiting open innovation; just in outsourcing R&D and out-licensing of IP, manufacturing companies may acting actively [5, 9]. In other hands, using open innovation in some industries like nuclear reactor industry is questionable [10]. In contrast industries like motion picture industries greatly benefit from open innovation. Industries like computers, telecommunications, Pharmaceuticals and automotives have good potential to applying open innovation.

Already having a big internal R&D and strongly protected IP was a competitive advantage, that so many companies took profit from that. Because with strong protected IP and being first to market, there was a great chance to win .But these days there are some reasons that business models based on that way of thinking do not work for many industries any more. Reasons like increasing availability and mobility of knowledge workers, widely dispersed knowledge across multiple public and private organizations, the broadening scope of possible external suppliers in the present age, venture capital markets, flourishing of the internet, increasing knowledge of customers and suppliers and decreasing time to market for new products and services [1, 7, 9, 10].

Open innovation can help firms accessing customer and suppliers expertise outside the organization [11]. Something that companies should be aware of is that they never can claim that they have all of the ideas, technologies, knowledge and even brightest people. Companies should act with tact and take most advantage of external sources.

Open innovation now includes customer input, crowd-sourcing, open-source projects, joint-development projects, asking external insight, etc [12].

According to those descriptions, open innovation is an umbrella that encompasses and integrate wide range of already existing activities [13].

There are three core open innovation processes: inside out or outbound, outside in or inbound and coupled process. Some scholars use technology exploration term as inbound open innovation and technology exploitation term as outbound open innovation e.g. [7, 9].

1.2.Outbound open innovation

Outbound open innovation refers to using internal knowledge externally [1]. in other words outbound open innovation means using purposive outflows of knowledge to expand the markets for external use of innovation [14].maybe there are many technologies or ideas in the companies ,which they don't want to commercialize them, it's better not to put them on shelf. There are reasons which some companies have ideas which, do not interested in taking them into market by their own, other companies may have interest in commercialize them. Different companies have different markets, assets, resource and other things which makes them not same looking at opportunities [2]. That makes some companies to outbound their

ideas to make more profit from them. For example companies can out-license their IP to earn more value from it [15]. Van de Vrande et al. identified three activities related to outbound open innovation: venturing, outward licensing of intellectual property, and involving non-R&D workers in innovation initiatives [9].

1.3. Inbound open innovation

Inbound open innovation means using external knowledge internally [1]. Never all the most qualified people work for us. There are so many ideas, technologies and even people out that we can use them to speed our innovation process. The boundaries of organization should be open to take them in, and use them internally. In these days there is no need for firms to generate ideas only by their own and develop, build, market, distribute, service and support by their selves. Inflow and even outflow knowledge have many potential benefits for companies.

Empirical studies shows that firms are interested in using inbound open innovation more than outbound open innovation [3, 16]. Growth and revenue as basic entrepreneurial values [3], and even increasing customer satisfaction and acquisition of new knowledge [17] are the reasons that firms show interest in using inbound open innovation. The external knowledge can be achieved from customers, suppliers, competitors, consultants, universities, public research organizations.etc [18-21] According to [9] they identified five practices for inbound open innovation: customer involvement, external networking, external participation, outsourcing R&D and inbound licensing of IP.

According to [22] they proposed four inbound open innovation activities as follows: technology scouting, vertical technology collaboration, horizontal technology collaboration and technology sourcing.

One aspect of vertical technology collaboration is collaborative relationship with customers. Collaboration with present customers, potential and end users have an important impact on improving internal innovation process [14, 15, 22-24].

1.4. Coupled open innovation

This refers to coupling the outbound and inbound processes by working in alliance with partners in which give and take knowledge is crucial for make good partnership. In other words in this case companies try to co-operate with each other. Capacity existence to integrate foreign knowledge into companies own knowledge and externalize it to learning of partner, is very important precondition to co-operation and coupled open innovation [4].

2. Customer relationship management as an inevitable fact

CRM refers to activities which firms do to understand demands and preferences of customers and improving their satisfaction[25].

In an era of flourishing new technologies and shortened product life cycle and unpredictable markets, companies should be aware and try to improve their innovation capability to satisfy market demands and customer satisfaction, to preserve a long term competitive

advantage.[26, 27]. Researchers classify various CRM mechanisms into internal and external programs. The former refers to organization structure, culture, and knowledge management. And latter involve interaction with customers [26]. In CRM dealing with open innovation external programs are more considered. These days customers are not passive adopters of innovation [23]. Nowadays, with rise of the internet, the customer engagement, is not considered just as the voice of the customer as an input to create and test the products, the customer consider as a partner in the innovation process [28].

In comparison with last decades, these days, customers have more knowledge and ideas and their knowledge is increasing steadily.

3. Open innovation and CRM

most important CRM activities include[26]:

- **Information sharing.** It refers to interactive activities which customers and manufacturing companies can share. They can also exchange needful and exclusive information [29, 30]
- **Technology-based CRM.** .it involves manufacturing companies using computer technologies to make CRM activities easier and bring forward technology assistance to customers.[31]
- **Long-term-partnership.** It is a business based relationship between firms which both parts have commitment to each other [32].
- **Joint problem solving.** It refers to collaboration between customers and manufacturing companies in order to solving problems, and when encountering unexpected situations, sharing responsibilities.[29]
- **Customer involvement:** it is related to participation in developing new products, to do this, technical meeting, supply chain and market evaluation conference are common methods. [31]

Open innovation has potential to apply these CRM activities in to innovation process.

Information sharing can be very useful CRM activity which organizations can profit from in innovation process. It considered as an inbound open innovation, because there are knowledge flowing to companies from outside the boundaries of them. One of the eventual goals of most of the organizations is customer satisfaction. Who better than customers can prepare useful information for companies? But identification of customers that can give companies most useful information would be an issue.

Companies and their customers can have long term partnership. We can refer it to co-operation and coupled open innovation process. Because co-operation refers to joint development of knowledge with partners [4, 33], that customers can be one of them. And co-operation is usually characterized by a deep interaction between parties over a longer period of time[4].customers as partners are good choice to be as long term partner.

Companies can also use customers to solving problems. It would be relate to coupled open innovation; because working in alliances with customers to solving problems, can leads to new product innovation or improving old products.

Customers even can involve in innovation process to develop new products. Knowledge and ideas of customers can enter to companies to make innovation, as inbound open innovation.

4. Customer involvement in innovation process

Rising of communication technologies leads closer ties with customers. It enables direct interaction possibilities among individual customers [34]. These days, Customers certainly, have much easier ways to communicate with companies to give their comments, ideas, feedbacks, etc.

Evidence from industry like Procter and Gamble and Cisco shows there are more interest to apply open innovation in R&D, despite R&D can get more benefit from open innovation, but high capacity of commercialization to utilize open innovation cannot be ignored. This is more marked in small organizations which have lower power in accessing to marketing channels and introducing themselves to innovation markets. According to [9]'s findings customer involvement in open innovation process as technology exploration or inbound open innovation is mostly applicable by SMEs both in manufacturing and service companies. It seems there would not be a huge difference in large companies. There should be many reasons for companies to involve customers in innovation process, like market-related motives as most important reason and motives related to costs, focus, control and capacity [9].

Customer involvement leads most to incremental innovation versus radical innovation [35, 36]. But according to [22] which investigated in high-tech SMEs customer involvement in open innovation leads to radical innovation more than incremental. This means customer involvement as a vertical collaboration impacts both on incremental and radical innovation.

Companies can involve customers in different stages of innovation; like idea-generation, idea-developing or commercialization. For B2B customers, they can contribute in open innovation by participating in conferences, "insight sessions", and product ideation contests [37]. Company website and online forums are very common in B2C communications to reach new ideas.

4.1.Idea-generation phase

Perhaps, good innovative products and services are result of good ideas. First step in innovation process is idea generation. This idea can come from academics, employees, customers and other sources. There would be so many ideas outside companies that lead promising products or services. One of the very important external sources of new ideas is customers. Because in order to be successful in offering innovative product, companies should consider about customer needs, preference, and their insights.

In addition, different customers have different insights. There are varieties of people with very different perspectives outside the companies. Involving diversity of minds to generating ideas is crucial to ensuring access to many new ideas because groups of individuals with similar perspectives and backgrounds will tend to produce similar ideas [12]. That's why companies should involve different people in idea generation. One example of applying open

innovation for idea-generation with customers occurred when TESCO which is an international grocery retailer set up an open innovation jam. The project name was TJAM and invited interested customers to participate in generating ideas about creating applications to improving internet shopping. The winner idea was a device called T-scanner that a customer can have it on their key ring. The imagined idea contains a bar code scanner that collects bar codes of purchases to build up a 'favorites' list of products for customers. Then before future online shopping trips the customer would insert the scanner into a USB slot on their computer and upload all their product ideas to a personalized Tesco grocery list [38].

4.2.Idea-development phase

Customers even can take part in developing ideas. In this phase most important part of the business model will elaborate [12]. In fact companies consider about proportion of ideas with customer needs and whether these ideas are valuable to customers or not, that's why customer opinion and suggestions are very important here.

Companies even can gain market-ready ideas from customers (especially from B2B customers). Acquisition occurs most with B2B customers. Customers' advantage in comparison with others is that companies recognize them more and have experience working with them.

4.3.Commercialization phase

It may seem that open innovation is applicable only in idea generation and development. But inbound open innovation has good potential in applying in commercialization. One of the important aspects of applying open innovation in commercialization phase is that it can reduce the commercialization time. Like what is happening in mobile industry, that companies want customer and non-customers to write Apps for their device, to speed up commercialization [12]. Companies even can use coupled open innovation as partnership with customers to commercialization. Figure 1 shows that how companies can benefit from open innovation in innovation process.

5. Conclusions

Clearly, customer involvement in open innovation process has so many advantages for organizations. Something that is not very clear is cost of this involving for companies. In general cost of open innovation for organizations is not a very clear subject. Also selecting and motivating most fitting customers to involving in open innovation process would be another issue, which should be considered and needs more depth explore. Perhaps, applying open innovation in former business model based on closed thinking would not be very efficient. That is why business model in open innovation is very important. Employees and especially top managers should believe the power of outsides which customers are one of them. If top managers don't believe this new business model, Involving customers is just waste of cost and time for organization.

As mentioned, customers are not considered just as participant in generating ideas, in all parts of innovation process from generating idea to commercializing, customers can have prominent presence and different kinds of customers can take part in different stages in innovation process.

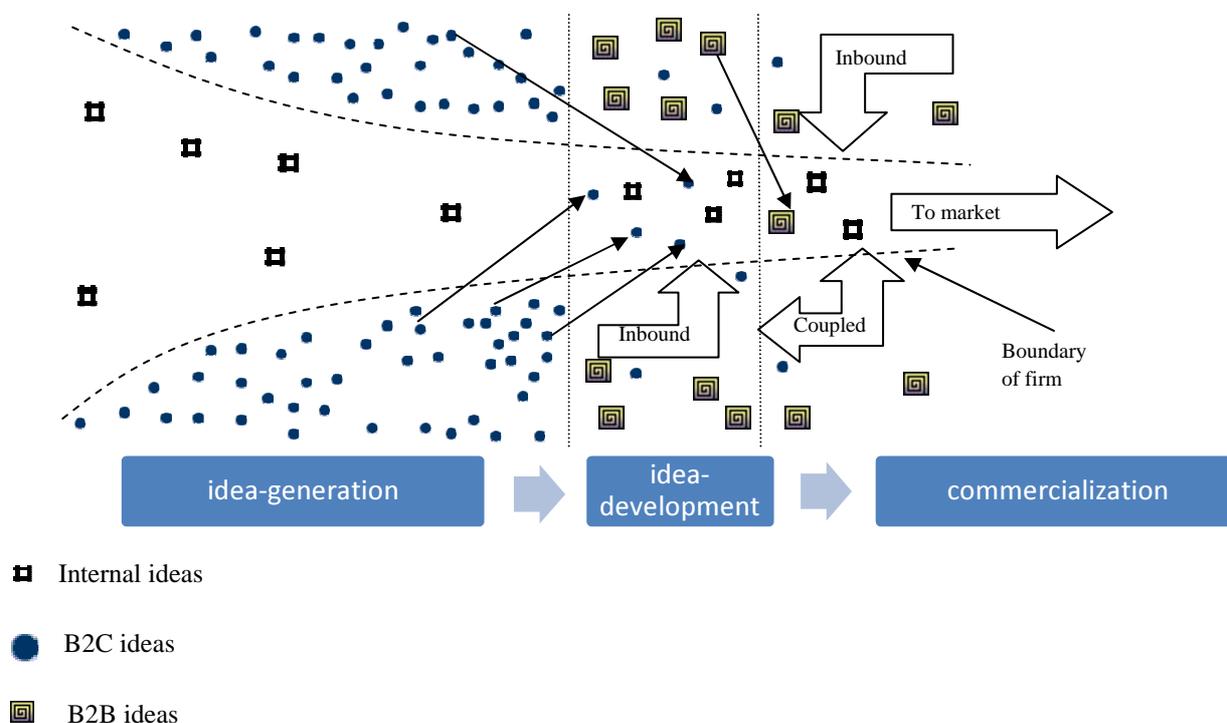


Figure 1. customer involvement in innovation process, based on open innovation funnel

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