

CHANCES AND BOUNDARIES OF COMMUNITY BASED INNOVATION IN SMALL AND MEDIUM-SIZED ENTERPRISES – BASED ON THE STUDY OF WOOD-PROCESSING COMPANIES

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Abstract:

Community Based Innovation (CBI) is a concept that uses the innovation potential of online communities for product innovations and has been successfully applied by large producers of branded goods in the B2C sector. As a promising approach to reduce the risk of market entry of high-tech start-ups in the B2B sector the current study depicts the chances and boundaries of CBI in small and medium-sized enterprises (SME), focusing on the role of the customer in the innovation process of Austrian wood-processing companies in the B2B market. The main challenges for the study are the adverse qualities of Austria's timber industry: a high innovation potential and a strong traditionalism at the same time. The findings are based on eight problem-centered interviews and are a constituent part of the three-year research project N00092 "hi-tech center" financed by the European Territorial Cooperation Program of the European Union.

Key words:

High-tech marketing, innovation, innovation process, open innovation, community based innovation, innovation community, marketing testbed, wood-processing companies, SME, Austrian timber industry

1 Introduction

During a long time companies have been innovating new products and processes without participation of the public. This paradigm, the so called closed innovation, has experienced major changes throughout the past 40 years. Open innovation, the new paradigm, is characterized by integrating external knowledge and technologies into the innovation process (see illustration 1).¹ The internet and especially the Web 2.0 have greatly favoured this change: "*The primary resources for competitive advantage have shifted from financial capital to knowledge and information, fuelled by digital connectivity and increasing access to information.*"² Today online social networks are booming and customers are providing their know-how voluntarily and for free.³ As the virtual integration of customers into the innovation process is presumed to accelerate the innovation of new products and consequently to reduce the risk of market default a new approach has evolved: Community Based Innovation (CBI). This concept actively uses customers' creativity and problem-solving capabilities throughout the innovation process (see illustration 2) and consists of four stages according to Füller et al. (see illustration 3)⁴. Although the formation of the community and

¹ CHESBROUGH, H.: *Open Innovation – The New Imperative for Creating and Profiting from Technology*. Boston: Harvard Business School Press, 2003, p. 52.

² ALLEE, V.; TAUG, J.: *Collaboration, innovation, and value creation in a global telecom*. In: *The Learning Organization*, Vol. 13, No. 6, 2006, p. 569.

³ VON HIPPEL, E.: *Democratizing Innovation*. Cambridge, MA: The MIT Press, 2005, p. 77.

⁴ FÜLLER, J.; BARTL, M.; ERNST, H.; MÜHLBACHER, H. HIPPEL, E.: *Community Based Innovation: How to Integrate Members of Virtual Communities into New Product Development*. In: *Electronic Commerce Research*, Vol. 6, No. 1, 2006, p. 5.

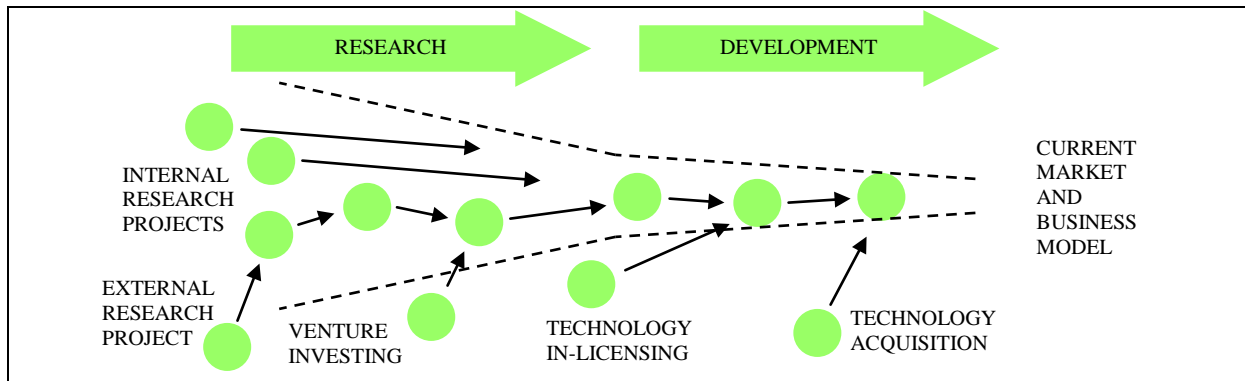


Illustration 1: Filling Gaps with external Technologies (CHESBROUGH, H.: *Open Innovation – The New Imperative for Creating and Profiting from Technology*. Boston: Harvard Business School Press, 2003, p. 183.)

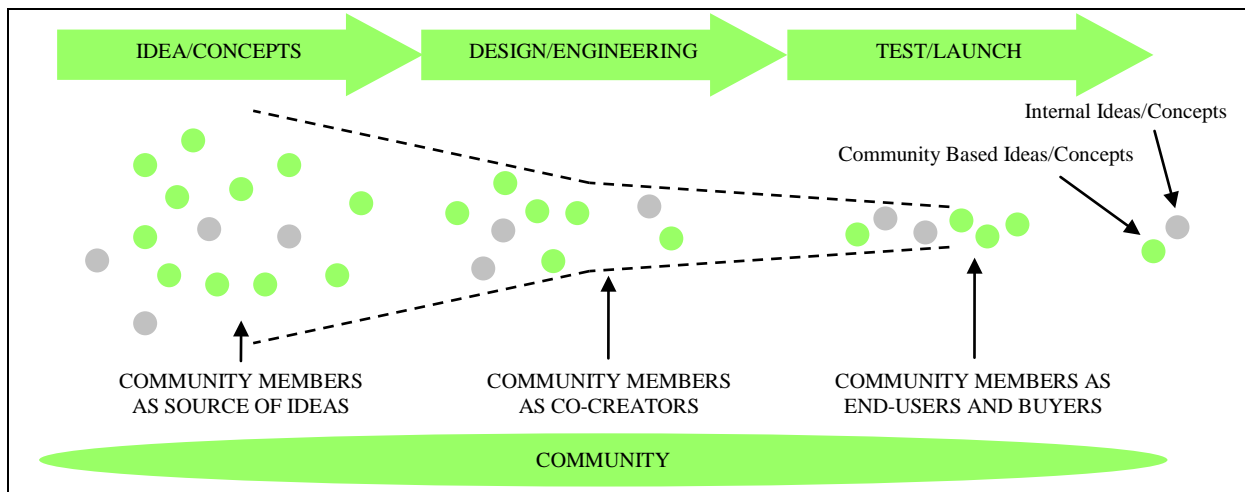


Illustration 2: Utilization of Communities in New Product Development (FÜLLER, J.; BARTL, M.; ERNST, H.; MÜHLBACHER, H.: *Community Based Innovation: How to Integrate Members of Virtual Communities into New Product Development*. In: *Electronic Commerce Research*, Vol. 6, No. 1, 2006, p. 57-73.)

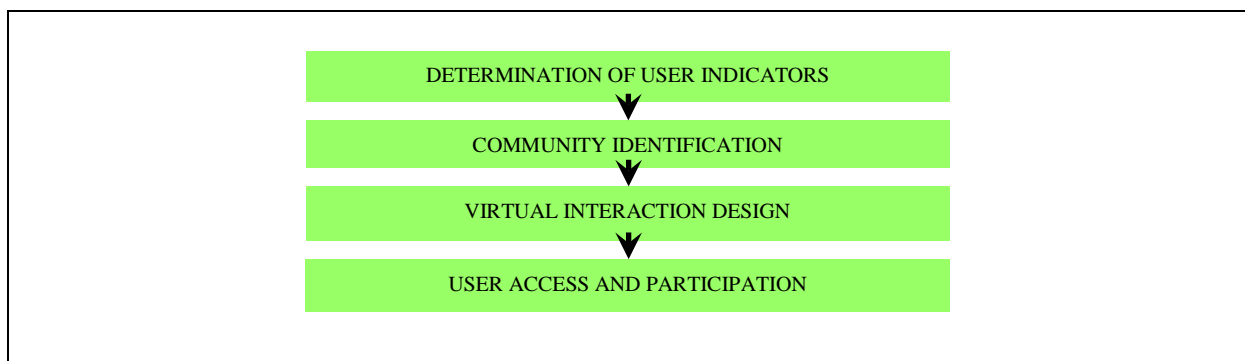


Illustration 3: Community Based Innovation Method (FÜLLER, J.; BARTL, M.; ERNST, H.; MÜHLBACHER, H.: *Community Based Innovation – A Method to Utilize the Innovative Potential of Online Communities*. In: *Proceedings of the 37th Hawaii International Conference on System Sciences*, 2004, p.3.)

communication between its members is based on virtual interaction in this model, for the current empirical study online and offline interaction are considered equal for the following reason: Austrian wood-processing SME have a high innovation potential and are among the world leaders regarding products and technologies. Nevertheless, the sector describes itself as old-fashioned and interaction via virtual platforms does currently not happen. The author consequently applies the CBI concept to a non-virtual environment. The main challenge of this study is to apply the CBI concept, which has successfully been tested in the B2C sector, to the traditional Austrian woodworking B2B sector and to depict its chances and boundaries, paying particular attention to the role of the customer in the innovation process. Furthermore the study focuses on wood-processing companies in Styria, a federal state located in the south-east of the country, as its forest area, public innovation expenditures and labour force in the timber industry lie above Austrian average. The empirical findings are incorporated in the three-year research project N00092 “hi-tech center” and form a basis for further studies.

2 Research Questions

The two research questions are: (1) How does the product innovation process look like in wood-processing SME in the B2B sector in Styria? (2) From the wood-processing companies point of view, what are the chances and boundaries of CBI in wood-processing SME in the B2B sector in Styria?

Each research question is divided into three subquestions: (1a) How is the innovation community formed and how do its members interact (online/offline)? (1b) Who are the members of the innovation community? (1c) Who delivers ideas for product innovations? (2a) When are customers actively involved during the innovation process or when could they be involved? (2b) What advantages and disadvantages does the involvement of customers in the innovation process have and what potentials result from it? (2c) How big is the willingness to disclose intra-corporate know-how (protected or unprotected) to the innovation community?

3 Research Method

The problem-centered interview is considered as proper research method for studying customer needs in high-tech markets⁵ and is often used to generate hypotheses for preparatory studies.⁶ On the basis of a particularly designed problem-centered interview guideline (mind map) eight Styrian wood-processing SME were interviewed for the current study. The interview partners were selected on the recommendation of the Styrian Wood Cluster (non-probability sampling) based on predefined criteria (SME, B2B, headquarter in Styria, wood-processing company with high innovation activity). All interviews with the exception of one were carried out in the headquarters of the respective company and took place between 20 and 30 September 2011. The interview duration varied between 75 and 120 minutes. All interviews were recorded and transcribed between 20 September and 10 October 2011. The transcription document has 113 pages and is deposited at the Department of Marketing Management of the Vienna University of Economics and Business. The interview transcription document constitutes the basis of the analysis and interpretation for the empirical study but is not published as interviewees have been guaranteed strict confidentiality.

⁵ WITZEL, A.: *Das problemzentrierte Interview*. In: Forum Qualitative Sozialforschung – Theories, Methods, Applications, Vol. 1, No. 1, 2000, p. 1.

⁶ KURZ, A.; STOCKHAMMER, C.; FUCHS, S.; MEINHARD, D.: *Das problemzentrierte Interview*. In: BUBER, R.; HOLZMÜLLER, H. (Hrsg.): *Qualitative Marktforschung – Konzepte – Methoden – Analysen*. Wiesbaden: Gabler, 2007, p. 465.

4 Results

To structure the collected empirical data the author chooses three approaches: (1) Innovation process by Hauschildt⁷: It is not possible to apply one specific innovation process model to all wood-processing SME. Although bigger companies follow a clear predefined innovation process, small companies do not even have innovation structures. “*We are just trying to make the best out of a need.*”⁸ Their high innovation potential often remains idle, mainly due to limited capacities (e.g. staff shortage). Innovation structures could help small enterprises to optimize their tasks regarding innovations and to use new ideas. One option is establishing multi firm cooperative innovation structures by cooperative basic development and competitive marketing and sales of innovative products and services. Another option is to establish neutral innovation brokers by the federal timber association, who are forming micro markets of innovative business ideas. These innovation brokers are matching market interests of supply and demand. (2) CBI concept by Füller et al.: Physical interaction plays the most important role in the product innovation process of wood-processing SME and there is almost no virtual interaction taking place. Community members vary throughout the different stages of the innovation process. To fully apply the CBI concept developed by Füller et al. to the wood-processing companies the author adds two dimensions to the model: (a) Design of physical interaction and (b) selective user profile of community members within different stages of the innovation process. (3) Members of an innovation community: Internal community members refer to the management, R&D department members and employees to all other departments. External members of the innovation community can be customers, experts from related or other sectors, engineering offices, architects, research institutions, universities, the Wood Cluster, suppliers and competitors. Each member plays a different role throughout the innovation process.

Finally the two research questions can be answered as follows: (1) Product innovation processes vary greatly between businesses and within very small companies innovation often happens by chance. (1a) Wood-processing SME decide internally about the formation of the innovation community. Community members usually interact physically, via telephone or email. Online platforms play no active role in the innovation process. (1b) Members of the innovation community vary but almost always include the owner of the firm and the R&D department, if available. Further internal members can be employees of any other department. External members refer to customers, experts, suppliers, architects, universities or competitors. (1c) Most ideas derive from inside the company with the exception of the Wood Cluster and universities regarding basic research. Suppliers hardly ever deliver ideas for product innovations. (2) The chances of the CBI concept lie in the increasing willingness of wood-processing SME to open up their innovation processes and limited capacities that force them to use the great infrastructure and specific know-how of the Wood Cluster as well as in the growing awareness of the innovation potential of web-based platforms. Boundaries of the concept are the old-fashioned attitude of the sector, mistrust towards competitors, and that specific technical know-how makes it sometime difficult to include customers in the product innovation process. Furthermore traditional companies have a general aversion against any type of change and refuse new methods of innovation. (2a) Customer experience strong integration in the first and last stage of the product innovation process but there is only little involvement in the R&D stage of the process. (2b) Integration of the customers in the innovation process has a strong potential in the future. The main advantages are cost

⁷ HAUSCHILD, J.; SALOMO, S.: *Innovationsmanagement*. München: Vahlen, 2011, p. 20.

⁸ Quotation by interviewee No. 6, 28 September, 2011.

reduction and a decreasing risk of market failure. The main disadvantage is the companies' fear of disclosing protected know-how. (2c) The willingness to disclose intra-corporate know-how is very small, as there is only little trust in external community members and a strong fear of loss of know-how to competitors. Hence cooptation is no strategic option nowadays.

5 Future Aspects/Recommendations

Based on the results of the empirical study the author draws four future trends for the CBI concept in the B2B sector of wood-processing SME: (1) Growing importance of alliances regarding marketing and innovation activities: Due to limited capacities SME will develop a growing demand for the support by the clusters. (2) Growing importance of the community: Time pressure and the need for fast product innovations will make the high potential of innovation communities indispensable. (3) Growing importance of web-based activities: As the awareness of the importance of the internet in respect of product innovations rises, traditional wood-processing SME will soon increase their online activities. (4) Market leadership: Although many Austrian woodworking companies have world leading technologies, fierce competition, mainly from Asia, will force them to improve their innovation process in terms of time and/or cost.

The author furthermore suggests the following three recommendations for wood-processing SME and their clusters/alliances: (1) Growing responsibility of the cluster for market development: Clusters will experience more power and indirect and direct influence in the innovation process of new products and should consequently use their networks and competence to increase community based innovation activities among SME. (2) Creation of awareness in wood-processing SME and cross industry awareness for wood-processing innovative solutions: Especially small companies should use the high innovation potential of communities as external know-how is an essential resource and often for free. (3) Quality as competitive advantage: The international attractiveness of the Austrian woodworking sector derives from the high quality of its products. The CBI concept will enable SME to furthermore keep up with international competition.

6 Summary

Increasing time pressure, limited intra-corporate capacities and competition from the countries own timber industry as well as from Asia force Styrian wood-processing SME to develop new products faster and tap their full innovation potential in order to guarantee attractiveness of the sector. The main findings of the empirical study can be summarized as follows: (1) The product innovation process varies strongly among the interviewed companies. One general model that holds for all innovation processes does not exist. (2) The author suggests expanding the CBI concept developed by Füller et al. by the two dimensions (a) *design of physical interaction* and (b) *selective user profile of community members within different stages of the innovation process* to enable equal existence of physical and virtual interaction. (3) Customers play an important role in the first and last stage (idea creation and market entry) of the innovation process. Universities, engineering offices and the Wood Cluster play a major role in the R&D stage of the innovation process. (4) Confidentiality and discretion have high priority for wood-processing SME, particularly concerning competitors. (5) The major chance of CBI is the growing readiness of companies to open up their processes which will favour the virtual integration of external community members. (6) Boundaries of the CBI concept are the prevailing traditionalism within the sector and little trust in external innovation community members.

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