
From Open Innovation to Open Organization - how external information can be integrated more successfully into companies

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Abstract: Looking at the automotive supply industry in Germany, only 15 % of the companies, which performed Open Innovation activities successfully, repeat this measure within a 2-year period. A reason is the lack of resources, but also the little influence the measures have on the products entering the market. A major obstacle for the collected Open Innovation Information (OII) to make it into the products is the integration of the OII into the company. We propose to open the organization in order to make it easier for the OII to travel along the process chain of the product development process. But how far should a company open its processes in order to balance risks and benefits? In two studies, strategies for the opening of the processes within product development will be developed and a general approach, meant as a cook book for companies, will be deduced.

Keywords: Open Innovation, Open Organisation, integrating information in companies, reducing risk, general approach to open organisations, change management, from close to open organizations

1 Problem

While working for a German supplier of the Automotive Industry for 10 years, I frequently experienced the company's difficulties in integrating results of Open Innovation projects. As an organizer of Open Innovation events in order to collect new ideas or to find technological solutions I tried to integrate this information into the company and most of the time I did not succeed, even though the team was perfectly capable of picking the right method, finding the perfect external participants and generating the Open Innovation Information after a while. It seemed to be more difficult to integrate the information into the product development process. (Enkel 2005)

2 Current understanding

The problem described above is framed by two concepts. In the concept of absorptive capacity, companies are looked at as a whole with its possibility for an organizational development. Companies are being classified by their ability to recognize, to assimilate

and to apply new information. Improvements will be achieved, e.g. by the optimization of the knowledge flow in-between the process steps. (Felten 2001)

The second concept, the “Keep the market out premise” (KMOP) explains the reasons why the OII is not integrated into companies. Here 6 dimensions: trust, cost, time, convenience and necessity illustrate why the information flow in companies, especially between marketing and R&D, might be interrupted.

Trust – Trustworthiness of colleagues and reliability of results: As R&D generally has large doubts that market knowledge can be measured and that it is possible to transform the measurements with statistical methods into information relevant to the R&D process, the marketing department reports frequently, that they are seen by the R&D department as responsible for PR only. Therefore, it is very hard for them to develop a trustful relationship to R&D. Market research results are not taken seriously.

Hi speed: Within the development process various decision gates are included. Even if R&D proposed a market study to answer open questions needed for the next gate, 3 – 6 months to finish a study is common. The OII collected is too slow to be integrated into the product development process at most gates.

Low cost: Most R&D employees do not include budgets for market studies in their R&D budget during the planning period. When a market study is essential later on, it has to be carried out with small budgets. Results are often not of high quality and usability is low. The OII, if collected is branded useless and therefore difficult to integrate.

Conveniences – easiness of result integration: The collected information is often analyzed and prepared by the marketing department in a way R&D is not used to, hence they cannot utilize the information immediately.

Necessity of process: Without a mandatory process the R&D colleagues very rarely accept the integration of Open Innovation Information into the product development process and hold their information as the only resilient information. (Lang 2011)

While the approach discussed in this paper focuses on the paradigm shift from Open Innovation to Open Organization, a variety of measures to overcome KMOP were proposed, among them adaptations in the process chain, in the companies’ organization, strategy and most important - culture.

3 Research question

In numerous interviews with companies addressing the problem, one solution to enable the Open Innovation Information (OII) to be integrated in companies seems to be to open up organizations. Transforming companies from closed to Open Organizations (OO) will bring about benefits, but also bears risks. How far should a company open up and what strategy should it follow in order to minimize risk and to benefit from opening to integrate the Open Innovation Information (OII)?

4 Research design

Using the developed collaboration model (Figure 1), where ten different forms of collaboration are defined, 850 employees in over 500 different German companies were asked about their general collaboration behavior. The results were visualized in 100 opening profiles and clustered in 11 norm-profiles using statistics. The clusters are characterized by similar behavior of the companies in collaborating with external partners and were named after one of the most obvious behaviors, e.g. “the know it all”, as the

ones who don't need any external support. Additionally, the results of the quantitative study were used to select the most promising companies for the second, the qualitative part of the study.

Here single projects will be evaluated in 10 companies and each product development step investigated. The product development process (PDP), which will be discussed with

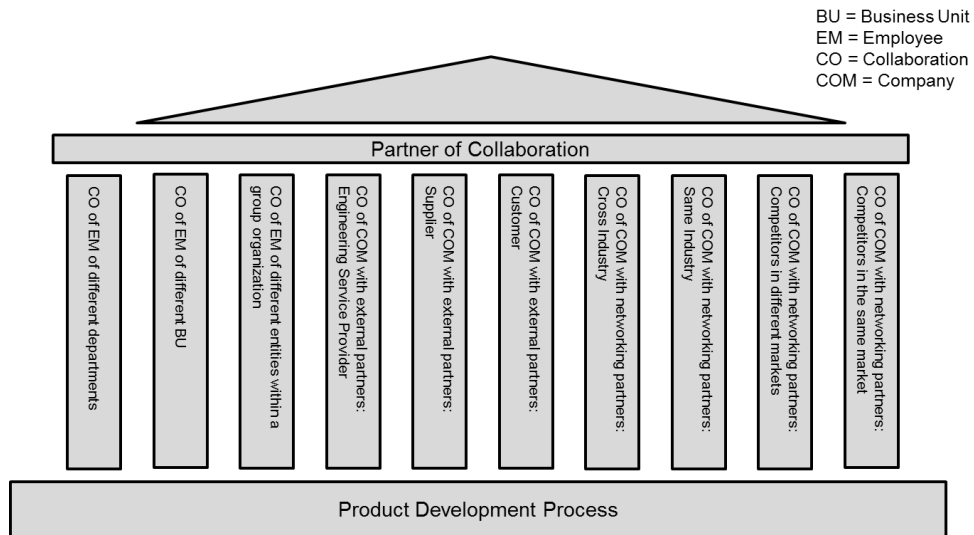


Figure 1: The collaboration model

the companies, has been simplified and the visualization has been altered in comparison to ISO 16949. The process is stated in the manner of a stage gate process with two boundary conditions.

First, open and closed innovation is separated into two branches. Second, all process steps executed and controlled by one sub-team and with the involvement of the same group of collaboration partners are summed up in one stage and finished by a gate at the end of each stage. The process steps, which will be discussed in the interviews with the companies, are indicated by the numbers 1 – 6 in figure 2.

On the one hand, employees will be asked about collaboration with external and internal partners within each product development step deducing the “actual” opening profile of this particular process step. On the other hand, we will discuss risks and benefits of a collaboration of the ten collaboration partners of the collaboration model at the same process steps. Using this information, a “best” opening profile will be calculated and compared with the actual opening profile defined in the first step. The difference between the two profiles will be used to base the optimization measures, the cook book how to open up on. In order to calculate the best opening profile the risks and benefits reported by the interviewed for each step will be combined in different matters. The amount of risks and benefits can simply be subtracted, they can be weighed and afterwards subtracted or risks and benefits can be sorted in pairs, which annihilate each other, and only risks and benefits without a partner will remain and form the best opening profile.

We will be executing all the methods stated to form a variety of best opening profiles and a variety of strategies to transform a company from the actual to the best opening profile.

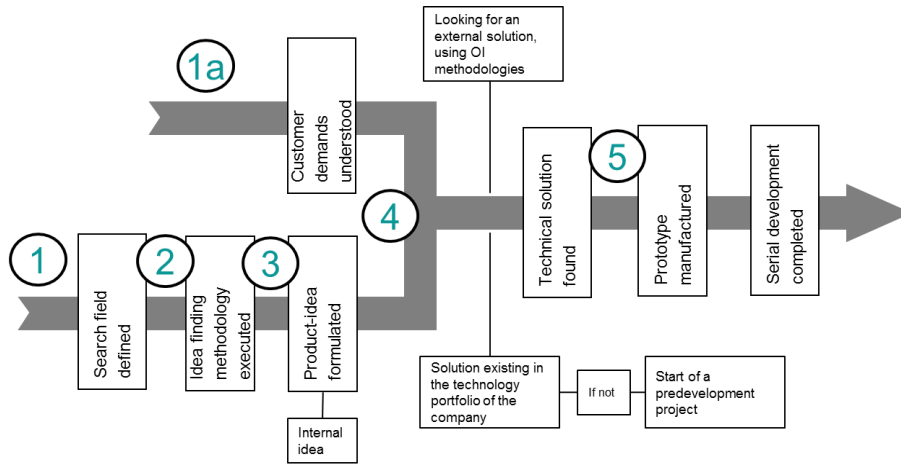


Figure 2: Product development process in stage gate manner

In workshops with the interviewed companies, we will be discussing the formulated best opening profiles and the various strategies to reach the profiles. The feedback collected will help to identify the preferred methodology to calculate the “best” opening profile and to optimize the calculation methodology.

5 Findings

In the first part, the quantitative study, around 100 individual opening profiles were defined, which were clustered in 11 norm-profiles of company groups with similar opening behavior. As the intensity of collaboration with each external partner is visualized in the profiles they can be seen as the opening strategy of the companies. The sum of the single collaboration intensities per partner has been defined as the degree of openness. The 11 clusters were named after the most significant part of the diagrams. The 11 clusters are named:

- The Classics
- The Conservative
- The Stubborn Conservative
- The Dependent
- The Know-It-Alls
- The Unfaithfulls
- The Discoverer
- The Pioneer
- The Expressionists
- The Half-Open
- The Open

Using factor analysis, it could be shown which of the companies' properties were significant for the clustering of the profiles. For example, in the cluster the Pioneers 12 companies are located: Magna, Merck, Vaillant, KSB, Adidas, Webasto, Benteler, Getrag, Unify, Wittenstein, Fraunhofer and Innosabi.

Analysis shows that those companies belong mainly to industries where customer input in form of specifications is essential to generate business; therefore openness to a customer is mandatory. Not as trivial as the openness to the customer is the structure in which these companies are organized. The companies belong mainly to the larger German SMEs which usually don't have a group structure. Due to the lack of an international group organization those companies are able to connect on local levels with competitors, members of the peer group and other networking partners. Commonly, they don't produce consumer products and are mostly part of a B2B value chain where relationships and trust with suppliers and partners are essential.

All 11 clusters will be analyzed according to the stated methodology and statistics will reveal dependencies which are not as evident as the ones discussed before. To do so, we have defined 42 properties of the companies which we are in the process of defining.

Among the 42 properties are: Sales volume, amount employees, in production or service, mass production or single piece, money spent on R&D, profit, growth rate, age, national/international, B2B or B2C, high tech/ low tech, but also criteria which are not as obvious as single office concept/ open work space concepts or how often an employee is sent to training per year. A statistical analysis will reveal connections between the properties and those connections will help to explain the membership of companies within the cluster groups.

Additionally, the quantitative study helped to identify the most promising companies for the qualitative study. Furthermore, those companies need to have a similar product development process; ideally they belong to the same industry with a certified product development process.

In this second part, the quantitative study, we will focus on a single development project per company and discuss each development step with the employees responsible. Using the collaboration model, we will ask for the collaboration level of each step and doing so we will define an opening profile for each individual step containing not only the collaboration partner, but also the intensity. This will define the actual opening profile within this precise project. Moreover, we will discuss the risks and benefits of each process step using a list of predefined risks and benefits. By means of this information we will calculate the best opening profile. The gap between the actual and best opening profile will be the basis for the deduction of the optimization measures, e.g. how to improve the opening of the companies, always keeping in mind that opening will increase the risk but also enhance the benefits. A company which moves its actual opening profile to the best opening profile (which is defined as the equilibrium between risks and benefits) can ensure the OII to travel along the process chain much more easily than in closed companies and therefore will help to succeed Open Innovation projects at last.

6 Contribution

Research on Open Innovation mostly focuses on the selection of the methodologies to find new ideas or technological solutions prior to the start of the projects, the optimization of the methodologies and the interfaces to external information. The

integration of the OII focusing on risks and benefits is still open to research. The approach described with the further development of the concept of OI to the concept of OO and the focus on risks and benefits using the model of collaboration is pushing research on the topic of absorptive capacity to a new level.

7 Practical implications

If processes in companies were organized optimally, the gap between actual and best opening profile would be small, in the best case, it'd be zero. In pretests, performed in summer 2015, we never saw a result, which was close to zero. Furthermore, we could not find any cases in which the company was more open than it should have been. Reasons might be the overestimation of the possible risks and therefore an organization which is closer than it need to be with processes in place not supporting the travelling of the OII along the process chain. The development of the optimization measures in the manner of a cook book will empower the change agents within companies to change the companies' degree of openness and with that support the possibility for external, Open Innovation Information to travel alongside the process chain and finally to be part of a new market-entering product or service.

Reference List

- [1] M. R. Gürtler, A. Lang and U. Lindemann, "Reducing risk in Open Innovation" in 8th annual IEEE International Systems Conference, Ottawa, Canada, 2014
- [2] A. Lang, R. Kirschner, A. Kain, and U. Lindemann, "Overcoming the keep the market out premise (KMOP) in product development," in 18th International Conference on Engineering Design, Copenhagen, Denmark, 2011.
- [3] E. Enkel, J. Perez-Freije, and O. Gassmann, "Minimizing Market Risks Through Customer Integration in New Product Development: Learning from Bad Practice," *Creativity and Innovation Management*, vol. 14, no. 4, pp. 425-437, 2005.
- [4] Claudio Felten, "Adoption und Diffusion von Innovationen", Gabler Edition Wissenschaft, Wiesbaden 2001