

ELABORATION AND ASSESSMENT OF A SET OF CRITERIA FOR THE EVALUATION OF PRODUCT IDEAS

Mathias MESSERLE, Hansgeorg BINZ, Daniel ROTH
University of Stuttgart, Germany

ABSTRACT

It is important for companies to identify the most promising product ideas very early in the product development process in order to use the available resources for the “right” projects. Consequently, the question arises how the most promising product ideas can be identified. A potentially good way to achieve this goal is by applying a systematic process for idea evaluation and selection. Therefore, among other things several evaluation criteria are required.

In literature, a lot of studies dealing with different sets of evaluation criteria can be found. Nevertheless, in business practice often sets of criteria that are not clearly defined are used, with partly vague, incomplete or even changing evaluation criteria. In order to resolve these problems, in this contribution a set of criteria that is as complete as possible and particularly applicable is elaborated by means of a wide literature survey and an assessment in business practice. The results of the assessment show that the set of criteria is suitable for being used in business practice. However, also a potential for improvement has been detected. Based on that, some proposals for improvement are developed.

Keywords: design management, product idea, early design phases, portfolio management, idea evaluation

Contact:
Mathias Messerle
University of Stuttgart
Institute for Engineering Design and Industrial Design (IKTD)
Stuttgart
70569
Germany
mathias.messerle@iktd.uni-stuttgart.de

1 INTRODUCTION

In companies, there are often a lot of ideas available which could be selected for further development. However, companies' resources are limited, so not all ideas can be realised. Therefore, it is necessary and very important for companies to select the most promising product ideas as early as possible in the product development process in order to use the available resources for the "right" projects (Sandau and Herstatt, 2006). In this context, ideas for new tangible products and service ideas can be significant with respect to the company's future and are summarised under the term "product ideas". Consequently, the question arises how the most promising product ideas can be identified in a comprehensible and transparent way. A potentially good way to achieve this goal is by applying a systematic process for idea evaluation and selection (Breiing and Knosola, 1997). In relevant literature, several idea processes can be found which can serve as a framework for systematic idea evaluation (inter alia Wahren, 2004, Vahs and Brem, 2013, Cooper, 2011). These different processes often contain similar stages and gates. Based on these processes, an example of an idea process is shown in Figure 1. The idea evaluation is carried out by means of several gates where ideas are analysed and the most promising ones are selected for further development. As a result, the number of ideas is reduced (see Figure 1). Often used are a first gate, where ideas are preselected, a second gate, where a rough evaluation is done, and a final gate, where a decision must be made as to whether an idea should be realised based on a detailed evaluation (Wahren, 2004, Cooper, 2011, Kerka et al., 2011).

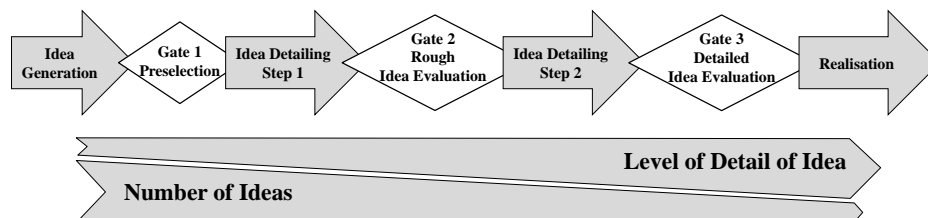


Figure 1. Example of an idea process

In each gate, a specific procedure and several evaluation criteria are required for evaluating product ideas. In order to define a set of criteria, all aspects that are relevant for the purposes of idea evaluation have to be considered. In this context, aspects are seen as contents that are formulated in less detail than criteria and, therefore, cannot be applied in an evaluation. Whereas, evaluation criteria are seen as aspects which are put in such concrete and applicable terms that an evaluator is able to find an answer, to make an estimation and to judge an idea. An example of a typical evaluation criterion for product ideas (formulated as a question) is: To which degree are existing customer needs satisfied?

2 PROBLEM STATEMENT AND GOALS

As stated in the introduction, a systematic idea process, which is based on a systematic evaluation method, is a promising way of identifying the "right" ideas (Breiing and Knosola, 1997). In literature, many methods can be found that support the evaluation of product ideas in some way (Gutiérrez, 2011). In the context of evaluation criteria, the same thing can be observed. In literature, a lot of proposals and studies dealing with different sets of evaluation criteria can be found (inter alia Hart et al., 2003, Tzokas et al., 2004, Carbonell-Foulquié et al., 2004, von Ahsen et al., 2010, Stern and Jaberg, 2010, Cooper, 2011, Hauschildt and Salomo, 2011). Nevertheless, in business practice there are still several problems with regard to identifying the most promising product ideas (Gutiérrez, 2011, Messerle et al., 2012a). Often, sets of criteria that are not clearly defined are used, with partly vague, incomplete, overlapping or even changing evaluation criteria (Pippio et al., 1999, Stern and Jaberg, 2010). Thus, there is the risk that not all relevant aspects are considered in every evaluation and evaluation results are in part erroneous.

A comparison of sets of criteria which can be found in literature shows that most of them contain different aspects. Some studies focus mainly on a limited range of criteria and do not include all other ones that can be found in other studies. In contrast, the result of other studies is only a list of evaluation criteria that is not integrated in an idea process (for example, Stern and Jaberg, 2010). Other studies deal only with the aspects that are relevant for evaluation on an abstract level but do not transfer these aspects into usable and detailed evaluation criteria (for example, Messerle et al., 2011).

All of these problems can be reasons for difficulties in connection with idea evaluation in business practice.

In this contribution, the problems in business practice in connection with criteria for detailed evaluation of product ideas (Gate 3) shall be resolved. For this purpose, a set of criteria that is as complete as possible and particularly applicable will be elaborated and assessed in business practice. This set of criteria has to meet, among others, the following main requirements in order to achieve an advantage compared to the state of the art:

- All aspects that are relevant for idea evaluation have to be respected (Brandenburg, 2002).
- The criteria have to be precisely and clearly formulated so that every evaluator knows exactly what a criterion is dealing with, easy usage in business practice is possible and there is no overlapping between different criteria (Stern and Jaberg, 2010).
- The criteria have to be clearly defined before the start of the evaluation (Brandenburg, 2002).
- The criteria have to match the specific evaluation gate of the real idea process in which they are used (Vahs et al., 2003).
- It must be possible to adapt the criteria to the specific requirements in a company (Brandenburg, 2002).
- The criteria have to be assessed in business practice so that a certain level of applicability is given (Messerle et al., 2011).

3 METHOD

In order to structure this contribution, the following stages of the Design Research Methodology (DRM) according to Blessing and Chakrabarti (2009) have been used: Research Clarification, Descriptive Study 1, Prescriptive Study and Descriptive Study 2.

In the first stage of DRM (Research Clarification), the existing problems are analysed and described in order to clarify the research approach. Literature and results of empirical research are analysed in the second stage so that understanding of examined phenomena can be increased (Descriptive Study 1). In the next stage (Prescriptive Study), approaches are developed for improving the current situation. In the fourth stage (Descriptive Study 2), the support developed is assessed and implications for improvement are developed (Blessing and Chakrabarti, 2009).

In this paper, the results of the Research Clarification are analysed and described in Section 2. The results of a literature research can be found in Section 4 where the state of the art is discussed (Descriptive Study 1). For this purpose, literature that deals with the question which general aspects have to be respected in such a set of criteria has been analysed and used as a basis for elaborating criteria. Additionally, studies are analysed that are relevant to this topic and propose certain evaluation criteria.

During the Prescriptive Study, the set of evaluation criteria has been elaborated (see Section 5). Based on literature research, criteria are structured by means of two main categories in order to support evaluators in obtaining an easy overview of evaluation criteria and to give them the opportunity to analyse product ideas according to the different categories so that strengths and weaknesses can be identified. In Figure 2, it is summarised how the set of criteria has been elaborated.

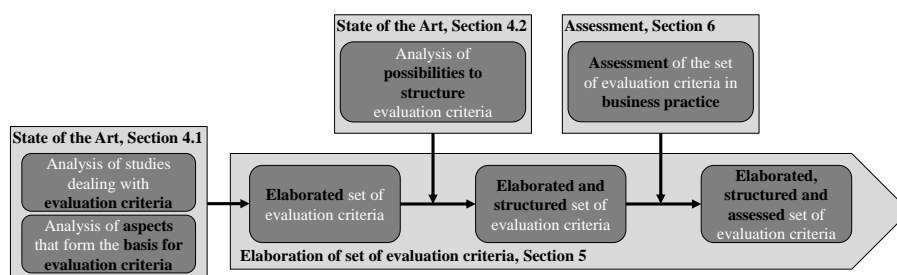


Figure 2. Elaboration and assessment of evaluation criteria

The next stage of the DRM (Descriptive Study 2) has been realised by assessing the set of evaluation criteria in business practice (see Section 6). It has been assessed by means of expert discussions. In concrete terms, unstructured interviews have been conducted with 6 experts from three different companies. These experts included managers from innovation management, predevelopment, development, product management and marketing departments. They all deal with the evaluation of

product ideas in their everyday work in German enterprises with 600 to 10,000 employees. The companies are market leaders in their fields and belong to different sectors of the German industry (cleaning technology, window and door technology, industrial networks technology). In order to clarify the purpose of the criteria, it was shown in which gate of the idea process they can be integrated (see Figure 1, Gate 3) and by which method they can be applied. For this purpose, the criteria have been integrated into an evaluation form that could serve as a tool for idea evaluation and that shows the experts how the criteria should be used. Afterwards, the set of criteria was shown to the experts and they were asked several questions concerning completeness, comprehensibility, applicability and usefulness.

4 STATE OF THE ART

As described in the previous sections, there is a lot of literature available dealing with evaluation criteria or aspects that form the basis for such criteria. In this section, an overview is given of those evaluation criteria and the aspects that are considered relevant for idea evaluation at an early stage of the development process which is often called the product planning stage (e.g. Pahl et al., 2007). In this context, it has to be noted that in this paper a product idea as part of the product planning stage is seen as a solution, which is not very detailed to that point of time but that satisfies a more or less obvious need of a market. During the product planning stage the idea becomes more detailed until a requirements list is generated and the conceptual design stage is started (Pahl et al., 2007).

Beside the overview of evaluation criteria, a summary of possible ways of structuring a set of evaluation criteria by means of different categories is given in this section.

4.1 Aspects and criteria that are relevant for idea evaluation

In this context, the main goal is to elaborate a list of aspects and criteria that is as complete as possible so that no important facts can be overseen during idea evaluation. This list forms the basis for the elaboration of the evaluation criteria for Gate 3 which is done in Section 5. Messerle et al. (2011) have already answered the question which aspects are relevant for an evaluation of product ideas by conducting a literature survey. As a result, it is possible to build directly on this study. Messerle et al. (2011) have come to the conclusion that the aspects that are shown in Table 1 have to be kept in mind when elaborating criteria for a detailed idea evaluation.

Table 1. Relevant aspects for idea evaluation according to Messerle et al. (2011)

Topic	Relevant aspects
Market	Market potential
Customer	Customer needs, visible/communicable benefits for customer
Financial aspects	Comparison of possible product profit and costs, availability of financial resources
Internal and external structures	Synergy, availability of technical resources, availability of human resources, existence of necessary infrastructure
Product	Product performance and advantage, technical feasibility
Strategy	Fit with strategy, fit with trends, sustainable advantage (patents) organisational learning, entry barriers
Politics and law	Legal restrictions, existing patents, political environment

In order to gain a comprehensive overview, other studies that have not been considered by Messerle et al. (2011) are compared with the aspects that are shown in Table 1. For example, Cooper (2011), Kerka et al. (2011) as well as Stern and Jaberg (2010) present different sets of aspects and criteria which are relevant for idea evaluation. Compared to Table 1, Kerka et al. (2011) also mention the following criteria: sustainability and exclusivity. Furthermore, Stern and Jaberg (2010), Kerka et al. (2011) and Cooper (2011) have subdivided “synergy” into several detailed dimensions (for example, synergy concerning development, means of production, marketing, etc.), which is helpful for the elaboration of evaluation criteria. Cooper (2011) specifies that financial criteria are not useful for the gates of idea evaluation, which represents a contradiction to Table 1. How this contradiction can be resolved, is described in Section 5. All these insights can be used in addition to Table 1 as the basis for the elaboration of evaluation criteria for Gate 3 in Section 5.

4.2 Possible ways of structuring evaluation criteria by means of categories

In order to make it possible for evaluators to gain an easy overview of evaluation criteria, these can be structured by means of different categories of criteria. Furthermore, analysis of ideas can be facilitated by introducing different categories and dimensions due to the fact that the strengths and weaknesses of ideas become much more obvious by means of these dimensions and categories. Additionally, the decision about the realisation of ideas is not only made by analysing the average result of the evaluation of each criterion. Instead, the focus can be put on certain categories and dimensions that are important to the company. Several studies that deal with evaluation criteria subdivide them into two or more main categories. For example, Kerka et al. (2011) use the categories “Success potential” and “Effort for realisation”. Brandenburg (2002) uses the dimensions “Benefit for company”, “Technology potential” and “Potential for promising future”. Messerle et al. (2012b) propose a subdivision of the criteria by means of the categories “Idea potential” and “Idea familiarity”. While the category “Idea potential” deals with the chances connected to an idea, the category “Idea familiarity” serves as a basis for evaluating how good the risks and the effort connected to the realisation of a new idea can be mastered (Messerle et al., 2012b). Several other studies could be found that use similar terms in order to structure criteria according to their background. Normally, at least one category serves for analysing the risks or the effort connected to the realisation of an idea while at least one other category serves for analysing the potential of an idea.

5 ELABORATION OF EVALUATION CRITERIA FOR A DETAILED EVALUATION OF PRODUCT IDEAS

Based on the state of the art described in Section 4, a concrete set of evaluation criteria for a detailed evaluation (Gate 3) is elaborated in this section. In the last gate before a decision about the realisation of an idea is made, many different aspects introduced in Section 4 have to be considered.

In order to structure the criteria, different existing categories of criteria (see Section 4.2) have been compared. For the elaboration of the set of criteria, the categorisation according to Messerle et al. (2012b) has been chosen, firstly because they deal with a category which summarises the criteria connected to the potential of an idea (“Idea potential”) and secondly because they do not only look at the efforts connected to the realisation of an idea but also take the risks into consideration (“Idea familiarity”) (Messerle et al., 2012b). However, for a better comprehensibility in the following sections the term “Idea mastering” is used instead of the term “Idea familiarity”. For the elaboration of the set of criteria, the categories “Idea potential” (see Table 2) and “Idea mastering” (see Table 3) are subdivided by means of several dimensions consisting of criteria that regard related aspects. For example, all criteria connected to the “Strategy fit” of an idea are structured by means of this dimension (see Table 2). In Table 3, for example, all criteria connected to challenges in technical areas are structured using the dimension “Technical mastering”. The subdivision of all criteria into two main categories and several dimensions is done for the following reasons:

- Evaluators can obtain an easy overview of evaluation criteria.
- The evaluation results can be analysed according to the different categories and dimensions. This helps evaluators to gain an insight into the strengths and weaknesses of ideas.
- The decision about the realisation of ideas is not only made by analysing the average result of the evaluation of each criterion. Instead, the focus can be put on certain categories and dimensions that are important to the company.

Table 2 contains all aspects and criteria from Section 4 that can be assigned to the potential of an idea. The results of the literature survey have been used in order to elaborate a set of criteria which is as complete as possible so that no important aspect is neglected. Additionally, the aspects are structured by several subdimensions and a detailed description is added for each criterion. Such a description is often neglected in literature and in evaluations in business practice. However, it is very important because it forms the basis for a common understanding in the evaluation team.

Table 2 contains, as already stated above, all relevant aspects and criteria concerning the potential of an idea mentioned in Section 4. Some of these general aspects have been subdivided into more detailed ones. Others, in particular the market and the economic potential, have not been detailed. Based on the findings of Messerle et al. (2011), the aspects concerning the market potential are not split into more detailed criteria (market share, market growth, etc.) because it is not possible to determine all of these aspects accurately during the product planning stage. Furthermore, in Section 4 it has been shown that

some studies state that economic aspects are important for idea evaluation while others mention that it is not possible to use it in the idea evaluation stage. In order to prevent the aspect of economic realisation being totally neglected during an evaluation, this aspect is considered in Table 2 in a very general way, so that a first estimation of the economic potential can be made.

Table 2. Criteria for the evaluation of the potential of product ideas

Dimension	Criteria	Criteria Description
Idea potential	Product advantage	The product offers an advantage compared to competing products.
	Product advantage visible	The product advantage is visible to customers.
	Sustainable product advantage	It is difficult for competitors to catch up the product advantage.
	Customer needs	The customer needs are satisfied at the time of market launch.
Strategy fit	Strategy fit	The product fits with the company's strategy.
	Trend fit	The product fits to trends that are important for the company.
	Organisational learning	The company increases its knowledge in important fields by means of carrying out the development of the new product.
	Positive influence on other products	The development/sale of the product has positive influences on other existing products of the company.
Market potential	Market size	The target market is attractive for the company.
Economic potential	Profitability	Economic realisation is probably possible.

In Table 3, criteria that can be summarised under the term "Idea mastering" are shown. All aspects of Section 4 concerning effort and risks connected to the realisation and the sale of the new product have been taken into consideration. Several aspects, as for example synergy, have been put in more concrete terms.

Table 3. Criteria for the evaluation of the mastering of product ideas (effort and risks)

Dimension	Criteria	Criteria Description
Technical mastering	Research & development	The company is able to master the challenges connected to research and development easily (effort and risks to develop and procure required knowledge and resources).
	Production	The company is able to master the challenges connected to production easily.
Mastering of market aspects	Marketing	The company is able to master the challenges connected to marketing easily.
	Sales	The company is able to master the challenges connected to sales easily.
Mastering of organisational aspects	Procurement	The company is able to master the challenges connected to purchasing easily.
	Cooperation partners	The company is able to master the challenges connected to cooperation partners easily.
	Processes	The company is able to master the challenges connected to internal processes easily.
	Organisational structures	The company is able to master the challenges connected to organisational structures easily.
Mastering of environmental aspects	External structures	The product fits to the customer's life. The customer can use the product with existing structures, services or interfaces.
	Law	Sale of the product will not be threatened by laws.
	Trademark rights	Sale of the product will not be threatened by patents.
	Politics/society	Sale of the product will not be threatened by political/social developments.

It is important to note that the criteria in Table 2 and Table 3 can only form the basis for a set of criteria in Gate 3. For its use in business practice, careful integration in the specific company is necessary. For example, the terms that are used in the tables have to be adapted to the terms that are used in the specific company.

6 ASSESSMENT IN BUSINESS PRACTICE

In Section 3, it has already been mentioned how the detailed set of evaluation criteria has been assessed in business practice. In the following subsections, the results of the assessment, the criticism and the comments made by the experts are summarised completely.

6.1 General Feedback

In general, the participating experts state that the set of criteria is important and useful for the purposes of idea evaluation. In their opinion, the majority of criteria are applicable and can be answered. Summarising, they stated that the detailed set of criteria can be used for an evaluation in Gate 3. In the following sections, the feedback on single dimensions and criteria is described in detail.

6.2 Completeness

Assessment of the detailed set of criteria has shown that no general aspect has been neglected according to the experts. However, some dimensions should be regarded in more detail. All experts expressed that the market and the economic potential should be subdivided into several criteria to enable more detailed analysis of the expected market situation and economic potential. For the subdivision of the market potential, the following criteria have been suggested: market size, customer retention and acquisition, market growth and competitive situation.

Furthermore, some of the experts stated that other criteria could be added in connection with the dimension “Mastering of organisational aspects”. Depending on the issue of which departments or operations of a company generate some risks or effort in connection with challenges connected to the market, some other aspects (such as the after-sales-management or competitive analysis) should be considered in the list of criteria. Furthermore, one expert remarked that no aspect is missing in connection with the criterion “Customer needs” but that it is so important, in his opinion, that it should be used as a single dimension and not only as a criterion in the dimension “Idea potential”.

6.3 Comprehensibility

Several comments were made by the participating experts regarding the comprehensibility of the set of criteria. Firstly, it has been mentioned that the understanding of several criteria could be improved by giving some examples (e.g. a “dangerous” political development for a better understanding of the criterion “Politics/society”). Furthermore, certain terms that are used for describing or titling evaluation criteria caused some misunderstandings or difficulties in understanding. In order to avoid such problems, several concrete proposals for improvement have been made:

- For the criterion “Sustainable product advantage” and the dimension “Mastering of environmental aspects”, other terms like “Long-term advantage” and “Mastering of risks connected to external structures” should be used in order to prevent evaluators thinking of ecological aspects in connection with the terms “sustainable” and “environment”.
- For the criteria “External structures” and “Organisational learning” other terms like “Customer fit” and “Growth of knowledge” should be used in order to facilitate understanding.

Additionally, in several cases the experts were familiar with other terms that can be used as synonyms for the terms that are used in the set of criteria. This can lead to misunderstandings or difficulties in understanding. In one company, the term “uniqueness” is used for the term “product advantage”. In another company, for the dimension “Mastering of organisational aspects” the term “Mastering of internal aspects” is used.

6.4 Applicability

Concerning the applicability of the set of criteria, the experts were asked, among other things, if it is possible to answer each criterion at this point of time in the development process (Gate 3). Only for one criterion (Cooperation partners) did the experts of one company question the possibility of doing at least a rough estimation. Furthermore, it became clear that some criteria can only be evaluated when the necessary information is available to evaluators. It is, for example, obvious that an evaluator has to

know the company's strategy in order to evaluate the criterion "Strategy fit". The other criterion where this could be observed is the criterion "Trend fit".

6.5 Usefulness

The usefulness only incurred negative criticism in the context of one evaluation dimension, "Mastering of organisational aspects". However, with regard to this dimension, in part contradictory statements have been made by the participating experts. On the one hand, it has been mentioned that this dimension does not seem to be very useful because hardly ever any idea influences the processes or the organisational structure of a company. On the other hand, it has been stated that ideas indeed only rarely are found to have such an influence, but in such a (rare) case this evaluation dimension is of paramount importance. In general, the usefulness of the set of criteria has been assessed very positively. All experts stated that, using the set of criteria, a transparent, comprehensible and useful idea evaluation can be carried out. Furthermore, two experts emphasised the possibility of finding new ideas or improving existing ones by taking the different evaluation criteria into account.

7 DISCUSSION

Assessment of the set of evaluation criteria has shown that the requirements formulated in Section 2 have been fulfilled in principle. However, with regard to some details, a potential for improvement could be identified.

According to the experts, no important aspects have been neglected. Most of the criteria are suitable for the evaluation gate and could be answered. For some criteria, a more detailed description and a subdivision have been proposed. In this context, it has to be noted that a more detailed description or a subdivision can without a doubt be helpful in several cases. However, it must be ensured that no overlapping is introduced into the set of criteria when some criteria are subdivided. Most of the criteria have been comprehensible to the experts but in some cases the formulation of certain terms needs to be adapted. On the one hand, this feedback can be used for optimising the set of criteria. On the other hand, this fact shows that it is necessary to adapt the set of criteria to each company and this can be realised for the presented set of criteria by means of simple changes such as changing the terms that are used for describing a criterion. Furthermore, the feedback has shown that there are different opinions concerning the relevance of certain criteria. By using a criterion as a single dimension, as proposed by one expert for the criterion "Customer needs", its relevance can be adapted to the specific needs of a company. In addition to that, the relevance of criteria could be adapted to the specific situation by introducing some weighting factors.

In general, it has to be noted that the assessment of the criteria can only be seen as an initial step. Only a small number of companies took part and, therefore, there is no empirical evidence that the same results would be observed in all other companies. However, the companies belong to totally different industries. This prevents the set of criteria being adapted to suit only one specific industry or type of company. Another critical point is the fact that the applicability of evaluation criteria can only be assessed by conducting a real evaluation. For the assessment of the set of criteria, several experts were only asked for their opinion and no real evaluation was performed.

As mentioned in Section 1, the term "product idea" is used in this paper for ideas for new tangible products as well as for service ideas. However, the assessment was focused on evaluators and experts that deal mainly with tangible product ideas in their everyday work. Therefore, it cannot be assured that the results of the assessment can serve as a basis for criteria for evaluating service ideas.

8 CONCLUSION AND OUTLOOK

In this paper, a set of criteria for detailed idea evaluation has been elaborated and assessed in business practice. The goals were to consider all aspects that are relevant for the purposes of idea evaluation, to formulate the criteria clearly and precisely so that easy and comprehensible usage in business practice is possible and to define criteria that fit the specific evaluation gate of the real idea process in which they are used and that can be adapted to the specific requirements within a company. The first assessment has shown that no important aspects have been neglected. Furthermore, the assessment has indicated that, by using the detailed set of criteria, it is possible to conduct a comprehensible evaluation that corresponds to the specific evaluation gate. In addition, the assessment has shown that most of the criteria are clearly formulated and easy to use. However, some of them can only be seen as

a basis whose formulation and description have to be adapted to the company where the evaluation is done.

In future work, the applicability of the set of criteria has to be assessed again by doing real evaluations using the optimised evaluation criteria. Moreover, further assessments have to be done in order to determine the suitability of the criteria for service ideas. In general, several other steps are necessary in order to arrive at an assessed and useful evaluation of product ideas. Firstly, an assessment of a less detailed set of criteria (Gate 2, see Figure 1) has to be conducted so that it is possible to gain a comprehensible view of this gate. In this context, an approach for less detailed evaluations could be developed during and subsequent to the expert discussions. It became obvious that Gate 2 cannot be seen as one evaluation gate that can be realised in every company in exactly the same way. Instead, several evaluation gates are often necessary, where less detailed evaluations are carried out by concentrating on the most important aspects and criteria and evaluating in a short period of time, in order to come from a large number of preselected ideas to a reduced number of ideas which shall be evaluated in detail in Gate 3. Figure 1 is therefore adapted and extended, see Figure 3. In Figure 3, all gates between Gate 1 and Gate 3 are summarised in “Gates 2a -x”. Therefore, the process shown in Figure 3 can be understood to be an example that has to be adapted for application in business practice.

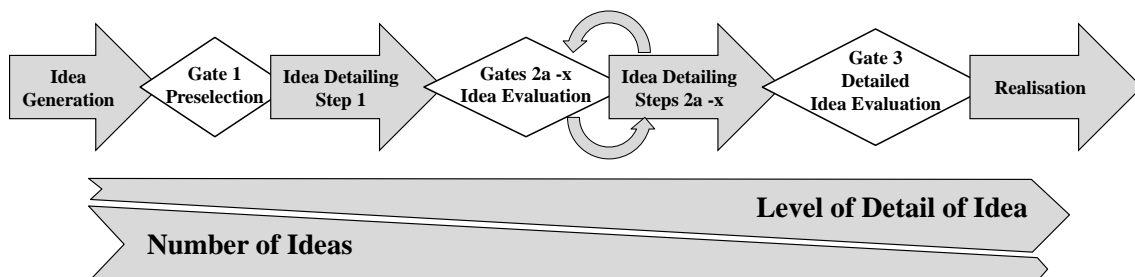


Figure 3. Adapted and extended example of idea process

The criteria for Gates 2a -x could be derived by summarising several criteria from Gate 3. An example approach for deriving evaluation criteria for less detailed evaluation gates is shown in Figure 4. The two main categories of “Idea potential” and “Idea mastering” from Gate 3 have been maintained. In Gate 2a, these two categories are used as the only criteria so that an initial, very rough estimation can be done. In Gate 2b, the eight dimensions of Table 2 and 3 are used as criteria to gain a more detailed but still rough view of the product ideas.

Gate 2a		Idea Potential		Idea Mastering	
Criteria	Criteria Description	Criteria	Criteria Description	Criteria	Criteria Description
Idea potential	The anticipated product is attractive for the customer.	Idea potential	The anticipated product offers an important, easily visible and long-term product advantage.	Technical mastering	The company is able to master the challenges connected to the technical feasibility easily.
Idea mastering	The company is able to master the challenges connected to the realisation of the idea easily.	Strategy fit	The product fits to the company's strategy and to trends.	Mastering of market aspects	The company is able to master the challenges connected to marketing easily.
		Market potential	The targeted market is attractive for the company.	Mastering of organisational aspects	The company is able to master the organisational challenges easily.
		Economic potential	An economic realisation is probably possible.	Mastering of external aspects	The sale of the product will fit to the customer's life and will not be threatened by laws, patents or political/social developments.

Figure 4. Approach for evaluation criteria for Gates 2a and 2b

Furthermore, in future work, all aspects that influence an evaluation have to be considered: the evaluation process, the evaluation procedure, the scale of evaluation and its description and the introduction of the whole evaluation package in the company. The last point in particular, the introduction of a comprehensive evaluation package in a company, seems to be very important. In this context, it is also necessary to consider adaptation of the method to the specific circumstances within the company and training of employees to enable them to use the method successfully.

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