



# DEVELOPING A DECISION FRAMEWORK FOR INTERACTIVE VALUE CREATION

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**Abstract:** *The willingness of customers to co-create products and services together with companies has led to the rise of interactive value creation (IVC) in corporate strategy approaches. While large companies have experimented with and activated these new possibilities of co-creation, small and medium enterprises (SMEs) are looking for guidance if, how and to what extent they should embed IVC with its two dimensions open innovation and mass customization in their companies' business structure.*

*The paper describes a research project to create a decision framework for SMEs in order to analyze and identify strategic co-creation potential and to set-up a repeatable roadmap.*

**Key Words:** *Interactive Value Creation, Open Innovation, Mass Customization*

## 1. INTRODUCTION

The world of companies is changing. Innovations in product development create new product architectures and with it new technical possibilities arise for fulfilling customer needs. Customers are learning that they can expect products and services that are customized according to individual needs and customers also learn that they can become active in helping companies to understand what these individual needs are. The “age of individuality” is starting to disrupt economies but a paradox market development can be observed: On the one side, a remarkable growth can be recorded for companies that offer customized products and services. Also, the number of customers, who prefer to buy customized goods online, increases [1]. Especially Generation Y, (the age group born 1980 to 2000) is an attractive target group: 50% of the participating GenYs in a study have already purchased online customized products [2].

On the other side, a fairly high dropout rate of customization offering companies can be observed every year. In the Configurator Database Report 2017/18 1250 online B2C product customization companies in 16 different industries are listed [3]. Compared to 2016 a growth of totally existing customization product offers has taken place. Nevertheless, up to 12% of the players have disappeared within one year. Between the years 2014 and 2015 even up to 29% of the customization offerings have been removed. [4]

By taking a closer look at the question why the company protagonists of a new economic era are vanishing various reasons can be found.

One of the main reasons for failure is that companies just offer product features fitting to their existing process. They don't analyze and define clear target groups for the configurable product and these companies also often don't learn to understand the real needs of their customers. [5]

Walcher and Weger [6] developed a classification system for failure reasons which distinguishes between the categories market & customer (customer benefits, configuration, communication), product & process (finance, production, organization, personal factors) and mass production to mass customization & change management. A study based on these categories from Blazek and Pilschl [7] found out, that most companies face challenges in the category market & customer as well as in the innovation phase and the customer interaction phase. They concluded that the requirements of companies and customers have not been defined from the very beginning.

Skjelstad, Sjøbakk, Thomassen and Bakås [8] mention that for successful companies the sufficient integration of front-end (e.g. customer choice navigation processes, product configuration, user interfaces and customer behavior patterns) and back-end (e.g. order management, purchasing and production planning and control) systems is the key.

In this context, drawing on the experience of several studies and company requests to get guidance when deciding if shifting their business to a customer integrated business approach, the present paper describes a research project to create a supportive decision framework for SMEs. Before starting a customization project, this Decision Framework for Interactive Value Creation (DFIVC) should generate awareness of all needed requirements to succeed. Additionally, the output of the framework should help to decide between an open innovation or a mass customization approach or if there could be a logical evolution for the company to embed both approaches.

## 2. THEORETICAL BACKGROUND

### 2.1. Concept of interactive value creation

As mentioned in the introduction, more and more customers prefer individualized products. The idea behind the concept of interactive value creation expects that active and “empowered” customers are not active because a company requires so, but because they act out of their own initiative. Many studies attest that these customers regularly do not wait for a suitable product, but develop it for their needs or suggest such development. Through their active role value creation becomes interactive [9].

Piller, Möslein, Ihl and Reichwald [9] describe this interaction as concentrated on the process of solving a problem collectively and within the context of a company’s value creation tasks.

Depending on 1. the value creation phase in which customers are involved, 2. location and 3. the degree of integration, two basic forms of interactive value creation (IVC) can be distinguished:

#### Open Innovation

In this concept, customer activities target the development of new products, therefore they are woven into the innovation process. The central idea is that actively integrating customers in the innovation process is a better source of required input than traditional ways like marketing research or trend scouting. Additionally, a large, heterogeneous network of customers can improve the search for solutions. In contrast to mass customization open innovation refers to an open solution space. It can be created, expanded, or modified in collaboration with customers.

#### Mass Customization

This concept defines collaboration in terms of value creation activities within the operational production process. Communication with customers is necessary to acquire information about their needs to better fulfill the precise individual demands. But customers are faced with a restricted or even closed solution space to co-design an individual product.

As shown in the figure below, the openness of the company’s solution space is important for both forms of IVC, although being specifically differentiated as extension in the open innovation dimension and as specification of the solution space in the mass customization dimension, thus showing the degree of the offered freedom of co-creation possibilities for customers.

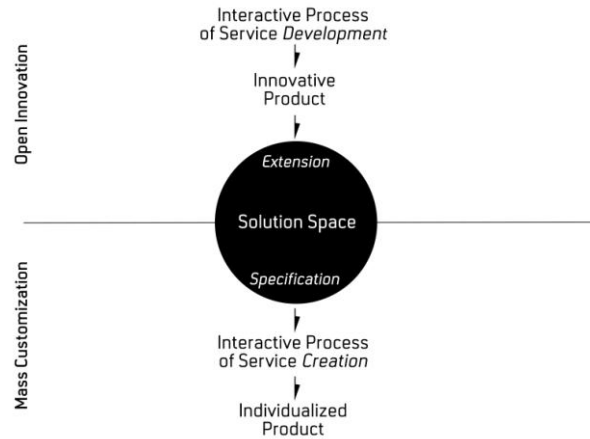


Fig. 1: Levels of interactive value creation

Although empirical studies prove that customer interaction serves as a strategic contribution to success, it is not clear which concrete way companies should go and how much embedding of their customers lead to a sustainable business success.

### 2.2. Business Models and Frameworks

A business model reflects a company’s progression and redevelopment of the own entrepreneurial action based on customer interaction [10].

A review of the literature shows a wide diversity of understandings, usages and definitions of the term business model.

Osterwalder, Pigneur and Tucci [11] describe a broad definition to embrace the different reflections on business models: “A business model is a conceptual tool containing a set of objects, concepts and their relationships with the objective to express the business logic of a specific firm. Therefore, we must consider which concepts and relationships allow a simplified description and representation of what value is provided to customers, how this is done and with which financial consequences.”

How powerful it can be to focus on customer values is proven by some of the fastest growing companies in the world – and they are often not established but young and are called startups. The core of a startup is the search for delivering repeatable customer value. To understand if this quest is sufficiently reached, startups apply the approach of radically identifying relevant customers with their needs and then validating the fit of the offered products and services. The initial “build-measure-learn cycle” is turned several times to modify and optimize the results and when ending this “search phase” the “execution phase” with constant measuring and asking the customer continues and fuels the startup’s growth (fig. 2).

## Lean Startup Cycle

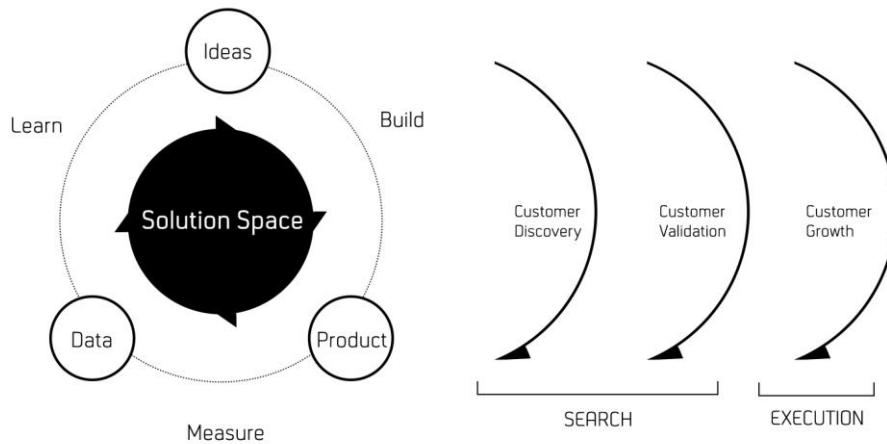


Fig. 2: *Lean startup cycle*

In fact, startups are radically rethinking the customer-centered value chain and have learned not to focus on the “unique selling proposition” (USP) but on the “customer value proposition” (CVP).

Ultimately the needed “customer validation” leads to a “business model validation” and often creates a “business model innovation” (BMI) when adaptations according to customer needs lead to new approaches.

While customer needs drive the business models of startups the business models for established companies that start focusing on customers seem to offer even more interesting development options when the customer is even more embedded into the value creation process than just used by startups as validator in the lean startup cycle.

Gembariski and Lachmayer [12] give a good overview of different business models for customer co-creation. These models are based on the degree of customization and the according customer integration.

Obviously one of the key ideas of a successful business model for mass customization is that customer specific products can be tailor-made by the use of flexible but stable processes with mass production efficiency [12, 13].

But looking at the broader picture of interactive value-creation Gembariski and Lachmayer [12] highlight already four relevant issues regarding the business model of customer co-design: relevant solution space elements, the significant co-design tasks, implemented knowledge and production technologies.

Understanding how these and more issues are relevant for SMEs and how startup-proven business model know-how can help to opt for an open innovation and/or a mass customization project and limit risks and maximize chances for the SMEs is a central part of the DFIVC research project.

### 3. PLANNED RESEARCH DESIGN

#### 3.1 Focus on SMEs

Most existing mass customization and open innovation literature and research focuses on cases of large enterprises; researching the relevance for small and

medium-sized enterprises (SMEs) just started in recent years with only few studies like Nielsen et al. [14], Boer et al. [15] and Ferencak et al. [16] that are having SMEs as their target point of research.

SMEs are defined differently, but we will apply the definition from the recommendation of the European Commission of 6 May 2003. A SME is a company with fewer than 250 employees and an annual turnover of less than EUR 50 million [17].

99.8 % of enterprises which operated in the EU-28 non-financial business sector in 2016 were SMEs. These SMEs accounted for 67 % of total employment in the EU, generating 57 % of value added in the EU. 93 % of the SMEs were micro SMEs employing less than 10 persons.

Researching the question how SMEs can become successful mass customizers, Boer et al. [15] found out, that SMEs face the following challenges:

1. increase of the degree of communication and collaboration with customers and suppliers,
2. organizational integration of design and manufacturing through technology, tools and techniques,
3. control and improvement of the quality and flexibility of the processes, and
4. open communication, employee autonomy and continuous improvement.

#### 3.2 Restriction

As SMEs are defined differently depending on the country in which they operate the conditions of implementing interactive value creation might also be different. That’s why the planned research should take place in three different countries: one high cost country like Norway, a medium cost country like Austria and a low cost country like Serbia. To obtain valid data we intend to focus on one industry, the manufacturing business of B2C products and on companies which are older than 4 years.

### 3.3 Setting

It is planned to conduct 10 interviews in each country with co-creation adopting companies that see themselves as successful (n=5) and with such companies who failed (n=5). The interviews will be held face-to-face guided interviews with the owners of the company or persons who are responsible for the business strategy. They will take approximately 90 minutes and should be recorded.

Additionally, it is intended to interview 10 experts in the field of mass customization and open innovation. The experts will be recruited from the scientific community and management consultancies.

The results of both interview approaches will be analyzed concerning identifiable patterns and brought together with the knowledge from documented research projects to create a first draft of a framework design.

The draft will be tested with half of the interviewed companies to confirm or adopt the framework.

### 3.4 Underlying assumptions

When looking at the development of growing companies in the co-creation space it can be assumed that the willingness to constantly change and adapt the product and service offerings lead to a sustainable success.

Established big companies change their customer interaction tools in a faster and faster pace and don't stop modifying a build-up co-creation structure.

The DFIVC want to research if also SMEs with limited resources that want to enter the world of co-creation can improve their success with using the customer validation cycle approaches like startups and if this continuous process of listening to customers and taking their needs serious even might to lead to something that we call "liquid co-creation", a process of changing the involvement of existing customers and maybe even floating between open innovation and mass customization, adopting different roles of lead users and customizers and changing this in a new generation of customers that are living their participation with a very flexible intensity. We want to research if such an

interactive value creation cycle (fig. 3) can be recommended as approach for SMEs.

According to experience and literature about mass customization and open innovation business models for SMEs, the following subjects will be analyzed in their relevance for the decision framework:

- customers: digital know-how, patience, pride, willingness to pay
- competitors: early adopters, followers
- employees: knowledge, commitment, openness, innovativeness
- user interface: frontend solution, customer experience
- product properties: solution space, customization of fit, form, function and/or taste
- manufacturing process: robust, automated, semi-automated
- costs: internal and external
- APIs: backend integration, checkout
- communication, marketing

## 4. OUTLOOK

The aim of the DFIVC research is to develop a framework for SMEs to assist them in their decision whether to opt for an open innovation or a mass customization project, while paying attention to the abovementioned factors, the dependencies and impacts.

Once the decision is supported to enter strategically into interactive value creation the next step is to help SMEs constantly in refining their business model and optimizing their success in embedding customer co-creation mechanisms into their business DNA. With matching the success approaches of startups in running iterations to improve their market performance with the way how established companies deal with customer value we expect to generate relevant decision-supporting data and to set up an ideal roadmap to easy SMEs the way to enter this field of active customer individuality.

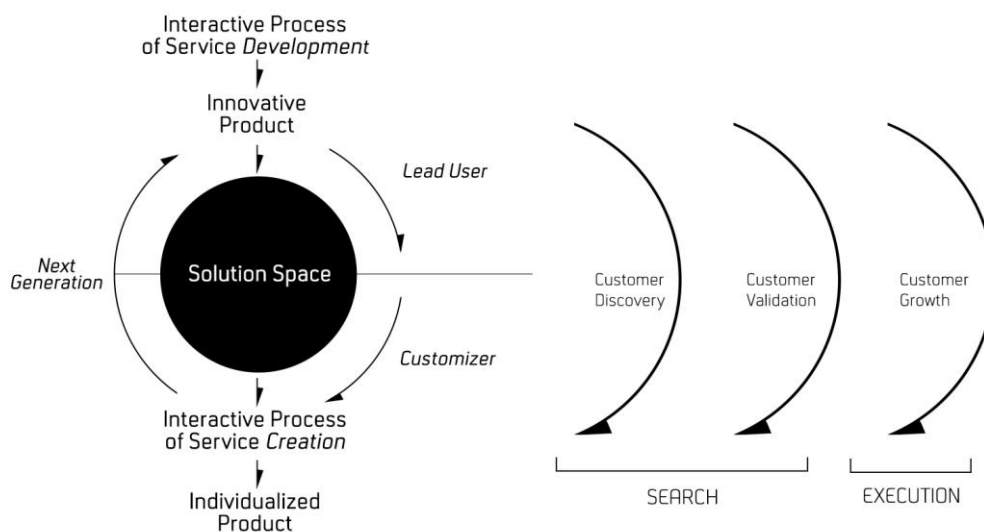


Fig. 3: Interactive value creation cycle

## 5. ACKNOWLEDGEMENTS

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