

How User Communities Improve Mass Customization Productivity

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ABSTRACT

This paper addresses the question how mass customization firms use communities to improve customer interaction and thus making mass customization more productive. Out of a pool of 118 mass customization firms and their communities, we selected representative companies (in terms of community size, - integration and openness) within an iterative approach for in-depth interviews.

We found that communities can serve as levers for mass customization productivity, but companies seem to exploit them differently: Companies with a small customer base tend to limit communities merely on marketing communication to increase sales output. Providers with large and integrated communities realize a broader productivity potential from communities, exploiting them not only for increasing productivity output but for decreasing input factors in customer interaction processes (such as support in product configuration).

Author Keywords

Mass customization; (User) Communities; Qualitative research

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

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1. INTRODUCTION

In mass customization (MC), customers are able to directly interact with service providers to 'co-design' their desired product. From a managerial perspective this is a two-edged sword: Customer interaction is a crucial prerequisite for offering an individualized product, which represents the competitive advantage of MC. On the other side, customer involvement is often negatively associated with intensive support and/or placing a burden on the customer (as the popular terms 'burden of choice' or 'mass confusion' describe), which might lead to low sales conversion rates and low productivity [1-2].

Recently, however, this interaction principle of MC is undergoing a fundamental change: The rise of social media over the last years and the steep growth of virtual user communities allow for new designs of customer involvement [3-5].

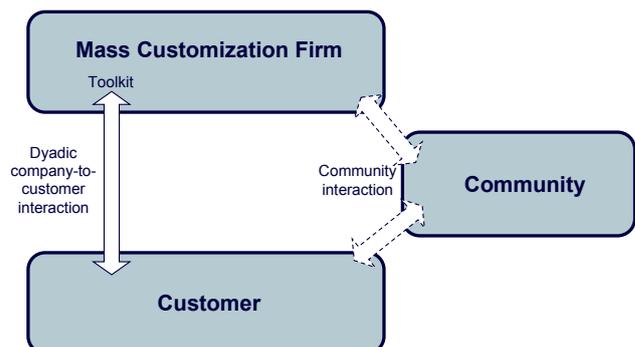


Fig. 1. Dyadic company-to-customer interaction complemented by user community [4]

Mass customization providers are enthusiastic on establishing user communities around their online MC configuration toolkits and making use of global, already existing communities, or they start building and managing

one on their own¹. In this manner, the traditional dyadic company-to-customer interaction principle can be expanded by direct customer-to-customer interaction through communities [6-8].

Several practice examples² and research literature from comparable areas such as *open innovation* and *crowdsourcing* give first indications that this community interaction might as well improve the productivity of MC: Findings are, that user communities can have significant impact on the perceived service quality of companies and are “a promising way for firms to reduce the burden of support” [9]. Other users assist each other during the configuration process by giving constructive feedback on interim design specifications. Thus, supportive information is exchanged between customers and problems such as mass confusion could be reduced. At best, this results in higher levels of customer satisfaction, an increased customer loyalty - reflecting in increased sales for the MC provider [6], [10-12].

1.1 Focus of the study

Only little research has concentrated on productivity of the interaction processes of MC. Since “the interactions which are created by the service provider and its customers influence the efficiency of the service process” [13], we focus on customer interaction processes when analyzing productivity within mass customization.

1.2 Research objective

With our research we want to bring light into the connection between mass customization productivity and user communities, with a strong focus on the interaction between firms and their customers. The research questions is how productivity levers can arise from user communities to improve customer interaction and thus help improve MC productivity.

Specifically, in this study we want to (1) qualitatively identify and (2) describe any currently existing productivity-related roles of user communities in MC.

2. METHOD AND MATERIAL

2.1 Data collection

To address the research question a qualitative research approach was chosen. We were able to use partial results of the "The Customization 500" study³ that portrays global mass customization providers in consumer industries. Based on the data pool of 500 companies we focused on the 118 companies with currently existing user communities.

To avoid large discrepancies in community user amounts, we considered only 'official' communities that are directly connected to the website and/or the design toolkit of the mass customization company. This includes the community size of own community boards, as well as social networks such as facebook.com (number of 'likes'), twitter.com ('followers') and youtube.com ('subscribers').

As proposed by Mayring [15], we started an iterative process to gain the relevant qualitative data for further analysis:

In a first step, we collected extensive sampling data on the 'community size' and the 'number of actively participating users' of the given MC communities (in terms of user amounts/followers). From this, we randomly selected companies with larger communities ($\geq 5,000$ users) as well as companies with smaller communities ($50 < 5,000$ users) and started to ask for in-depth interviews with employees on executive level and/or community-related expertise.

In a second step, after analyzing the first interviews, we found that community size alone was not a sufficient criterion to comprise the given field of data of different communities. The first interviews focused on companies that are representative for either large communities or small communities. However, a number of interview answers indicated that productivity levers depend not only about size and activity of a community, but how well the community functionality is integrated in each separate customer interaction steps (e.g. is the community offered visibly for the customer within the co-design process?). We decided to include this dimension and call it the 'community integration' (low/high level of integration). Following the iterative approach to cover the data field, we again selected representative companies with low - as well as high - community integration for expert interviews.

¹ For most prominent examples of general communities or 'social networks', see e.g. facebook.com, plus.google.com, twitter.com, pinterest.com.

² For practice examples see e.g.: www.mymuesli.de, nikeid.nike.com, www.threadless.com. A comprehensive database with further mass customization examples can be found in the online magazine Egoo (www.egoo.de).

³ For further information on the study 'The Customization 500' by D. Walcher and F. Piller, see <http://mass-customization.de/mc500study.html>.

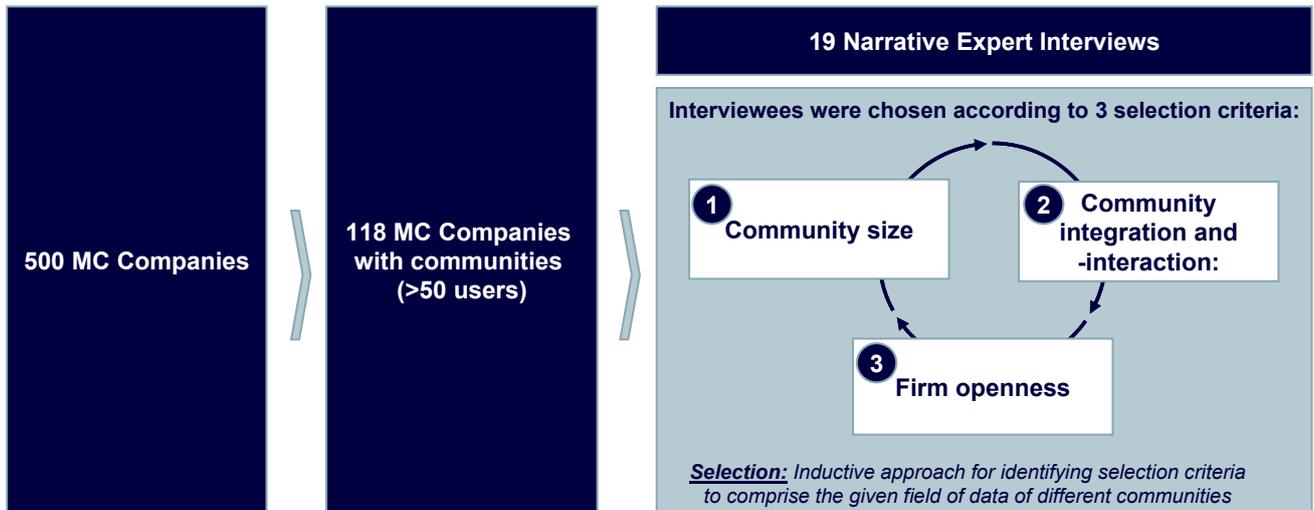


Fig. 2. Data collection approach

In a third step, we learned during the interview phase that the availability of productivity levers highly depends on how open a company is to aligning its internal processes towards customer interaction and communities, and to follow MC as a sustainable business strategy. Thus, we added a third dimension called 'firm openness' (low/high level of firm openness).

2.2 In-depth interviews

We decided to conduct narrative in-depth interviews following the instructions of Lamneck [14]. Therefore we developed an interview guide, which is structured according to the interaction processes between customers and the company. The guiding research questions were as follows:

- *How does the typical mass customization process look like in your company?*
- *What steps of customer interaction occur prior to the settlement of the sales agreement?*
- *What are managerial challenges in these interactions?*
- *How do communities impact these managerial challenges?*
- *Where do you see potential for further community integration?*

The in-depth interviews were on average of 60-90 minutes length and were transcribed and adjusted. The text then was analyzed using the data processing software ATLAS.ti.

2.3 Data Analysis

The qualitative content analysis, as developed by Mayring [15] offered a guideline for the analysis by inductively deriving categories for further data interpretation (see Fig. 3).

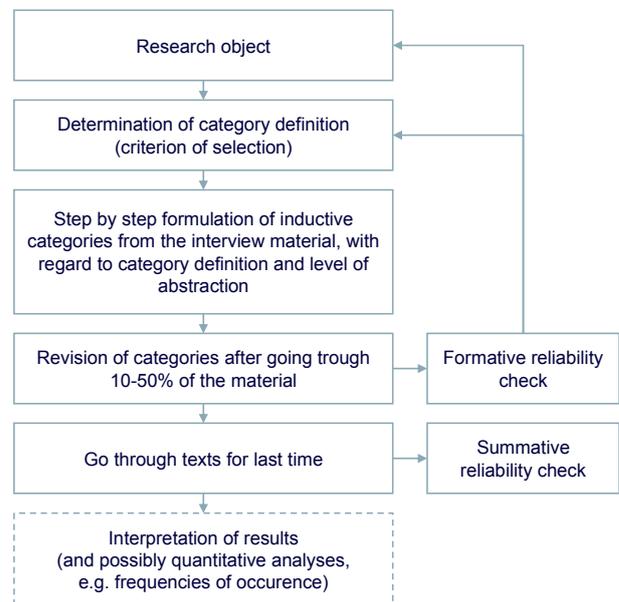


Fig. 3. Guideline of inductive category development [15]

Choosing this inductive approach, we developed the categories in the course of the text analysis rather than derive it from theoretical considerations such as theories or pre-studies [15-16]. The advantage of this approach allows an unbiased view on the data and tolerates focusing on the very basic definition of 'productivity as the ratio of 'output factors' to 'input factors':

Accordingly, we searched for citations that linked to either increasing output factors and/or decreasing input factors to understand connections and find indications for productivity levers. As output related factors we highlighted e.g. expressions including "Increase in...", "Rise of...", "Higher...", "Better...", "More...", in connection with "(customer) satisfaction", "loyalty", "willingness to pay", "recommendations", "better feedback", "conversion rate".

Regarding the input factors we looked e.g. for the terms "Decreasing...", "Lower...", "Less...", and corresponding terms such as "Cost", "Confusion", "Support".

3. EMPIRICAL FINDINGS

3.1 General results

At this time the findings in this paper are preliminary and based on the collected community data and a total set of 19 in-depth interviews⁴. Because of the elaborative collection of representative sample data prior to the interviews and the iterative approach of category building and -revision, first results lead to several indications *where* and *how* communities can serve as levers for MC productivity.

3.2 Where mass customization productivity is improved by user communities

From the qualitative content analysis of the narrative interviews, we were able to extract insightful information on community interaction and resulting productivity impacts in different types of MC organisations. All identified levers were collected and the following six categories (levers L1-6) were derived, according to their corresponding process steps in the customer-company interaction process:

MC firms use communities to improve productivity in...

... direct customer interaction processes such as

- (L1) *Marketing communication,*
- (L2) *Support in choice exploring,*
- (L3) *Support in design configuration,*
- (L4) *General support (technical, process-related, etc.),*

⁴ Interviews consist of 16 MC executives (owners/founders of MC companies, MC community managers and MC marketing managers), as well as 3 experts for MC and/or community knowledge (from academia or community-related companies).

... and in some cases also in not directly customer-related but company-internal processes such as

- (L5) *Market research (e.g. demand forecasting/ stock planning)*
- (L6) *New product development (NPD)/ co-creation.*

3.3 How mass customization productivity is improved by user communities

In general, we found that companies exploit these productivity levers very differently:

MC firms with a small customer base, which represent the typical MC start-up in the beginning of its lifecycle, tend to use communities merely for the process of marketing and public relations communication to increase their output factors (i.e. sales, see Lever 1). Interviewees stated that communities "...reduce marketing and communication cost" and "...spread the message of our products very fast and to right target groups".

Providers with a large community size and a visibly community functionality integrated in their co-design process realize a broader productivity potential from communities, exploiting them not only for increasing productivity output factors through marketing, but for decreasing input factors in customer interaction processes - such as support processes (e.g. in product configuration, see category 3). "...complementing our support with communities is by far the most interesting lever, as mass customization is [...] very complex". MC firms experienced that they can "...reduce support cost especially for product configuration" by e.g. "provide customer care mainly via twitter" or having "... customers helping each other through the design process".

The most innovative and advanced companies in terms of identifying communities for productivity leveraging are represented by established MC specialists (threadless.com, spreadshirt.com, mymuesli.de), but interestingly also by large organisations who follow MC as one business strategy out of many (such as NikeID, miAdidas, Puma Social). These companies seem to have the experience as well as to fulfil all other necessary prerequisites to exploit communities even for not directly customer-related processes, such as the cost-effective evaluation of community data for market research purposes (see Lever 5).

Executives from this group state that "Communities are our best market research instrument"; they "...increase speed to access valuable customer knowledge" and "...enable ,now-casting" (i.e. real-time feedback what customers like). When a company is completely open in its MC processes and ready to provide its user communities with extensive design possibilities, communities are even used "...to generate great product ideas with our toolkit or own design solutions" and thus might increase productivity through

"more successful product innovations and decrease time-to-market". "Lead customers will provide valuable new ideas that can be exploited - As a result, NPD has lower risks and a higher chance of being successful."

To give a better overview where MC firms use communities to improve productivity we structured the categories according to the three selected criteria (1) 'community size' (including 'number of actively participating users'), (2) 'community integration', and (3) 'firm openness'. These criteria reflect the crucial organizational requirements, which can be interpreted as sequential prerequisites for achieving comprehensive productivity from communities (see Fig. 4).

within the customer interaction process chain. They can serve to increase output factors (such as additional sales revenue through quicker marketing communication or avoiding 'mass confusion') or to decrease input factors (such as lowering cost for support, market research or product development). However, we also encountered that not all MC firms are able to exploit these productivity levers like-wise. Instead, we proposed three sequential requirements (i.e. community size & user activity, community integration, firm openness), which are crucial for organizations that want to take advantage of productivity improvements through their user communities.

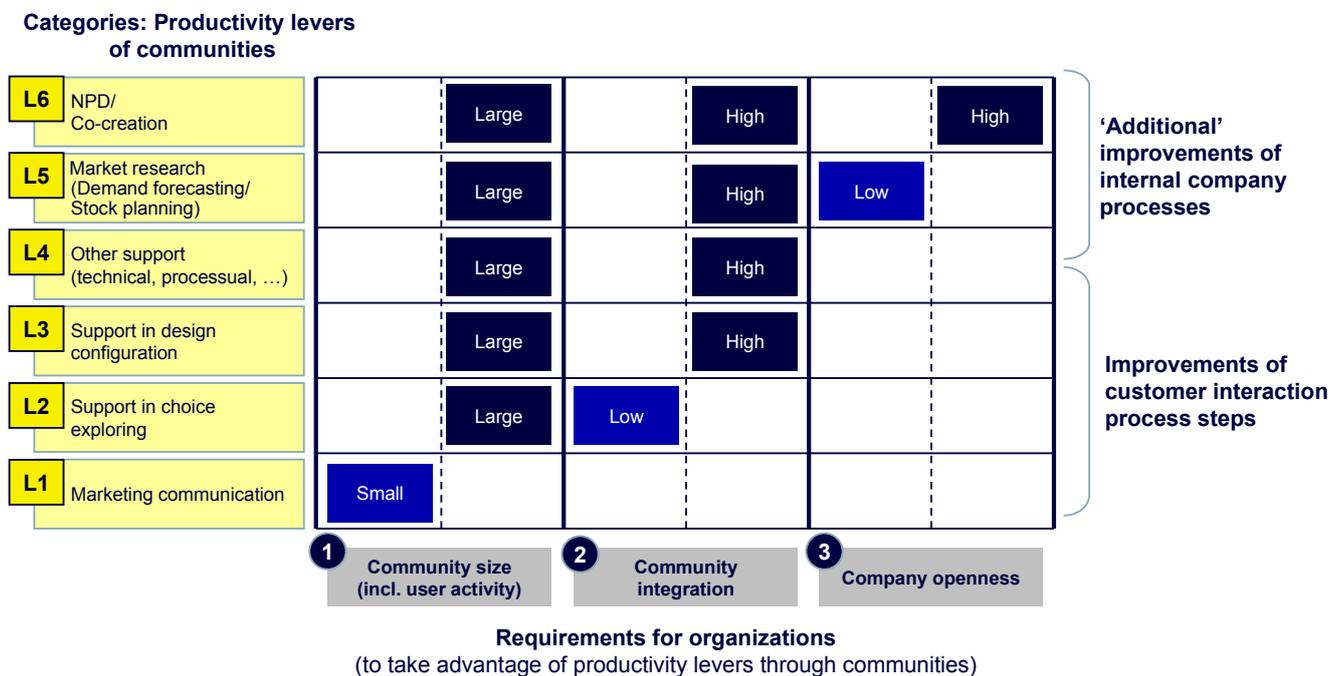


Fig. 4. Derived productivity lever categories and organizational requirements

4. CONCLUSION

With this paper we would like to contribute to the current discussion on MC productivity from a managerial perspective and potential improvements through user communities. Especially, we focused on the questions (1) where in the co-design process chain communities can be beneficial for MC productivity, and (2) how productivity levers improve customer interaction and thus help improve MC productivity. Within multiple steps we followed a qualitative research approach and conducted narrative interviews with executives of representative MC companies.

We found indications that communities can be used as productivity improvement levers in 6 different categories

5. FURTHER RESEARCH AGENDA

These preliminary results will be validated by further data analysis and by additional in-depth interviews.

Apart from that, next steps involve conducting multiple case studies of MC firms to illustrate current examples and gain a deeper understanding of community exploitation for productivity improvements.

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