

Communities and Personalization for Individual Products

Michael Koch¹, Kathrin Möslein², Petra Schubert³

¹ Department of Computer Science, Technische Universität München,
D-80290 München, Germany, kochm@in.tum.de

² Chair of General and Industrial Management, Technische Universität München,
D-80804 München, Germany, moeslein@ws.tum.de

³ Institute for Business Economics, University of Applied Sciences Basel,
CH-4002 Basel, Switzerland, petra.schubert@fhbb.ch

1. Moving towards Collaborative Customization

The use of electronic media for economic transactions adds a new potential to the vendor-buyer relationship. It gives the customer a voice, an input channel from which he or she can participate in a number of activities such as product development, feedback, support for other customers, recommendations etc. This can be in the form of active participation or simply a sharing of preferences. The structuring and organization of this participation may empower the customer and may result in new kinds of dynamics in customer collaboration.

Personalization is increasingly considered to be an important ingredient of Web applications. In most cases personalization techniques are used for tailoring information services to personal user needs. In marketing, personalization supports one-to-one marketing (Peppers & Rogers 1997) which should increase the customer share over a lifetime. Platforms for communities of transaction can result in an enriched product catalog, which Schubert (2000) termed “Participatory Product Catalog”. What used to be possible in the corner shop, since the shopkeeper knew her customers personally, will be extensively possible in the electronic medium by the storage of profiles and the automatic evaluation on the basis of predefined rules. With the use of electronic media, the advantages of mass marketing (the same online-shop and standardized customer communication) are harnessed to the strengths of personalized customer communication and may lead to collaborative customization as a powerful support mechanism in customer relationship management (Schubert & Koch 2002).

In this short paper we will briefly sketch some initial ideas from a research project that aims at enabling the collaborative customization of individual products based on personalization and community communication.

2. Communities and Personalization as Building Blocks of Collaborative Customization Platforms

Personalization is about selecting or filtering information objects or products for an individual by using information about the individual. There is already a broad range of methods and tools for filtering information mainly presented under the labels “information retrieval”, “knowledge management” or “customer relationship management”.

We are currently working on a project where we are trying to bring together the two “worlds” of communities and personalization in order to enable new forms of collaborative customization of individual products. The project aims at using information about specific customers to help them design or select personalized physical products.¹ The motivation for the effort is rooted in the fact that the emerging individualization of products and services (or ‘mass customization’; see Pine 1993, Piller 2001) in addition to the problems in manufacturing and logistics also generates a huge information problem (Reichwald et al. 2000). It becomes increasingly difficult for customers and sales staff alike to select from the large set of product variants. And even if the customer would like to have products tailored to her needs, she usually does not want to spend a lot of extra effort in making the selection and participating in the design.

Providing automatically generated recommendations could help in this process. In the project we are therefore aiming at providing customers and sales staff with filtered, context sensitive (personalized) access to information about possible design scopes. The ability to deliver personalization rests on the acquisition of adequate user information. Depending on the personalization methods used, there are different requirements for the representation of this information space:

- For *content based filtering* information about preferred content and relationships to content objects has to be stored.
- For *collaborative filtering* relationships to other users and ratings have to be managed.

While current work on personalization usually focuses on automatic filtering processes, where the customer does not get in contact with other customers, we are also looking into providing support for interactive collaborative filtering where users directly interact through the support platform.

In the project we will support users in talking about designs and recommending designs or design changes to each other directly. Similar features can already be seen on major web sites like amazon.com but have never been used together with a collaborative design environment as we foresee it for the user interface of our project.²

This is where *personalization meets communities*. Community platforms that support the communication among people can be used for collecting information about people (to be used in personalization), for collecting (trusted) comments from users, and for establishing direct relationships and communication among customers.

¹ The project “P3: Generation and Interactive Customization of Individualized Product Information” is part of a larger research effort towards local production of individualized products funded by the German Research Foundation (Deutsche Forschungsgemeinschaft, DFG) in the Sonderforschungsbereich SFB582 – “Marktnahe Produktion individualisierter Güter (Production of Individualized Products Close to the Market)”. See <http://www.sfb582.de/> for more information about the whole research effort.

² One example where we found collaborative design features is the non-commercial LEGO User Group Network (LUGNET™, www.lugnet.com) – The LEGO Company is currently investigating possibilities to use the potential of this community and the community processes in general to support their product marketing and sales.

The main points we want to stress are the following:

- In transaction systems people like to have direct recommendations.
- For recommendations people like to have confirmation by people they trust (these may be strangers that are backed by an anonymous crowd – see reputation indicators (Eisentraut et al. 2001))
- Community platforms can be used to gather information about the people that can be used in personalization (creation of recommendations).
- Community platforms can also be used for collecting trusted comments (indirect exchange among customers) or for getting in direct contact with other customers.

It is important to note that when buyers and sellers are brought together there may be very little value-sharing between these two communities as in the classic communities discussed by authors like Rheingold (1993). We have seen that the hype around communities as “Virtual Enterprises” glorified by Hagel and Armstrong (1997) has recently faded. However, the knowledge-oriented view of buyer communities taken by Hagel and Armstrong still seems very promising and its full potential for personalization is only beginning.

There are two important lessons to be learned which have not been stressed appropriately in technology and marketing literature yet: (1) Personalization and communities are closely related. (2) Personalization is not (only) about grabbing information from the customer, and using it to provide a personalized offer. Its broader value proposition lies in supporting long-term relationships between customer and online merchant where the electronic platform (Web site) learns about the customer, thus establishing trust and better catering to the customer’s individual needs.

3. Summary

Many consumers already take it for granted that they will be addressed personally when re-entering major online-shops such as amazon.com, buch.ch or ebay.com, and will not have to give their address and banking details with every new purchase. Apart from this very easy aspect of personalization, this concept hides a wealth of possibilities. Personalization allows the shop operators to offer their customers additional tailor-made benefits and individualized products (Schubert & Ginsburg 2000, Piller 2001).

In this short paper we have presented first ideas from a research project where personalization and community communication techniques will be used to support the collaborative customization of individual products. In this project classic information individualization and product customization meets a new generation of personalization, in which aspects of the physical world can be collaboratively customized. The main idea stressed in this paper is, that customer relationship management and personalization cannot be provided properly when keeping customers separate. In order to realize collaborative forms of customer relationship management, however, *interactive collaborative filtering* has to be provided in addition to *automatic collaborative filtering*. Customers have to be supported in talking to each other and in collaborating with each other – since mutual collaboration is one of the (often forgotten) core features of communities and customer behaviour in the real world.

The research project is still in its early stage. In the coming work packages we will continue the modelling of customer profiles and product (feature) descriptions and will apply concrete filtering algorithms to them. The proposed solution will focus on generic customer and product models with a variety of algorithms working on them and with tight integration into operating customer platforms.

4. References

- Eisentraut R., Koch M. and Möslein K.: Building Trust and Reputation in Communities and Virtual Enterprises. Proceedings of Americas Conference on Information Systems (AMCIS2001), Diane Strong, Detmar Straub (eds.), Boston, MA, Aug. 2001, pp. 1506-1509.
- Hagel, J. and Armstrong A. (1997): Net Gain: Expanding markets through virtual communities. Boston, MA: Harvard Business School Press.
- Peppers D. and Rogers M. (1997): Enterprise One to One: Tools for Competing in the Interactive Age. New York: Bantam Doubleday Dell.
- Piller F. (2001): Mass Customization. Ein wettbewerbsstrategisches Konzept im Informationszeitalter. Wiesbaden: Gabler Deutscher Universitäts-Verlag.
- Pine J. (1993): Mass Customization: The New Frontier in Business Competition. Boston: Harvard Business School Press.
- Reichwald R., Piller F. and Möslein K. (2000): Information as a critical success factor for mass customization. Proceedings of the ASAC-IFSAM 2000 Conference, Montreal, Canada.
- Rheingold H. (1993): The virtual community: homesteading on the electronic frontier. Reading, MA: Addison-Wesley Publishing Company.
- Riecken D. (2000): Personalized Views of Personalization. In: Communication of the Association for Computing Machinery (CACM), Vol. 43, No. 8, pp. 27ff.
- Schubert P. (2000): The Participatory Electronic Product Catalog: Supporting Customer Collaboration in E-Commerce Applications, in: Electronic Markets Journal, Vol. 10, No. 4.
- Schubert P. and Koch M. (2002): The Power of Personalization: Customer Collaboration and Virtual Communities. Proceedings of Americas Conf. on Information Systems (AMCIS2002), Dallas, TX, Aug. 2002.
- Schubert P. and Ginsburg M. (2000): Virtual Communities of Transaction: The Role of Personalization in Electronic Commerce. In: Electronic Markets Journal, Vol. 10, No. 1.