

PUSH CONCEPTS – AN APPROACH TO ACTIVE CUSTOMER ORIENTED STRATEGIES IN E-COMMERCE

Dr. Susanne Robra-Bissantz, University of Erlangen-Nuremberg, robra@wiso.uni-erlangen.de

ABSTRACT

As a supplementary strategy for Mass Customisation (MC) in Customer Relationship Management (CRM) we propose an active approach to E-Commerce, the so called Push Concepts, where the supplier assumes the control during interactions with the customers. In this article we firstly describe the nature, the concepts and technical implementations of Push Principles in a meta-framework. After a short description of the main characteristics of CRM and the additional opportunities that are offered by the use of concepts of MC, special attention is turned to Push Concepts on relationship level, as they are particularly relevant for CRM. Two examples for Push Concepts on relationship level are cited, to make particular strategic concepts clear and to point out the advantages of Push Concepts in MC and CRM. These advantages are summarised and classified in a final conclusion about the integration of Push Concepts and MC into CRM so as to improve efficiency and effectiveness in relationships with customers in Electronic Business.

Keywords: Push Concepts, Customer Relationship Management, Mass Customisation, E-Commerce, Active Customer Oriented Strategies, Push Plan, Customer Life Cycle

IDEA AND META-FRAMEWORK OF PUSH CONCEPTS

The Problem of Customer Pull

E-Commerce using the Internet is mainly based on concepts with the customer being the active "pulling" partner who initiates and controls the transactions. She pulls information from the network, asks for offers, specifies her wishes and finally sends her order. The supplier rather reacts than he is able to act himself. He is faced with "stoppages" during the transaction where he has to wait for customer actions. To overcome this for suppliers uncomfortable situation, Push Concepts are deployed. In this case, the supplier takes the control during interactions with the customer.

A Push Approach

The crucial idea of Push Principles is, that the supplier takes over functions from the buyer or at least triggers the customer to take further steps in the buying process. Additionally there are two more characteristics of Push Concepts. Firstly all actions and triggers have to be individualised for one special customer, which e.g. excludes e-mail messages being sent to several recipients ("spam"). Secondly we assume an existing electronic relation between a customer and a supplier, as Push Principles are not restricted to Electronic Business.

A META-FRAMEWORK OF PUSH CONCEPTS

Levels of Push Activities

A conceptual meta-framework helps to classify Push Opportunities and to describe starting-points for Push Activities on three levels of the customer relationship (9).

- **Interaction level:** Here an interaction consists of a single, synchronous communication between buyer and supplier respectively their IT systems. If the buyer is about to abort an interaction without meeting the interaction's goal (e.g. completing an online order form and sending it to the supplier), a Push Opportunity arises. The supplier has to recognise the buyer's intention in time and react appropriate to continue the interaction.
- **Transaction level:** An economic transaction consists basically of the information phase, negotiation phase and settlement phase (2). These phases may as well be divided into a number of smaller sub-phases. If a phase is completed and the buyer has to initiate the next transaction phase, the Push Opportunity can consist either in re-addressing the customer to motivate him to continue or, in more sophisticated concepts in the supplier taking over the execution of a formerly buyer-dominated action.
- **Relationship level:** On this level, Push approaches do not aim at the completion of initiated transactions, but at the commencement of new transactions in the Relationship Life Cycle (8), the time between the first and the last contact of a seller with a customer. Push Opportunities can be realised by the automated perception of promising situations, followed by the generation of offers, covering expected needs of the customer.

Areas of Implementation of Push Concepts

An implementation of Push Concepts requires developments in mainly three fields (9).

- **Identification and development of Interaction Modules:** Interaction Modules are reusable software components supporting specified types of interaction in Push Activities. They combine conceptual interaction patterns with supporting technical solutions, e.g. pop-up-windows presenting additional payment information if the customer hesitates when choosing a payment option. The application of predefined Interaction Modules depends on the specific Push Opportunity, characterised by the properties of the message to be sent.
- **Generation of application strategies for Interaction Modules:** To apply Push Principles successfully the company has to define the Push Strategy, namely a Push Plan for customers or customer groups and a Push Flow through single transactions in order to connect conceivable Push Opportunities with appropriate Push Activities. With an additional checklist of possible stoppages during interactions, the company can recognise Push Opportunities on all Push Levels. By characterising the Push Opportunity, Push Plan and Push Flow determine Interaction Modules and their customisation.
- **Development of software modules to control Interaction Modules:** On all Push Levels the company employs modules that control the application of Interaction Modules. These controlling modules observe interactions and transactions with the customer and collect information that is stored in a customer record. If a Push Opportunity as defined in the Push Strategies is detected, the modules trigger the appropriate Interaction Module. The controlling modules in interaction, transaction and relationship are Push Spy, Push Flow Manager and Push Planner.

PUSH-CONCEPTS IN CUSTOMER ORIENTED STRATEGIES

Aspects of CRM and Mass Customisation

As comprehensive concept for customer oriented strategies in E-Commerce, Customer Relationship Management orientates all companies' activities to longer lasting customer relations with profitable current and prospective customers in order to enhance companies' success (3) (10). The leading concept of CRM is an individualisation of communication as well as of products and services in the whole Customer Life Cycle.

Mass Customisation (1) (4) aims at a large number of potential customers and offers them individualised products (differentiation option) at a price that corresponds with price of a mass product (cost option). Tailored products for particular customers can only be produced at comparatively low cost if the whole production process is transformed, which includes e.g. a change of the order in which parts are assembled and modular production processes.

Mass Customisation can improve CRM concepts (7). The differentiation option, where customers tailor their products themselves leads to additional knowledge about them, compared to One-to-One-Marketing Strategies. The relationship between company and customer becomes more intense with each contact, so that in repeat contacts individualisation information can be raised more easily (learning relationship) (5). Aggregation and comparison of information from different customers allow a better service for new customers (via profiling) and product modifications according to customers' taste. Even more important for successful CRM is the cost option of Mass Customisation. Producing the product or the service after selling it, leads to smaller risks than the traditional variant production and to smaller storekeeping costs. Production costs can be kept low with the new concepts for manufacturing of high market potential products with little internal and great external variety (6).

Push Concepts on Relationship Level

Relevant Push Concepts for CRM and Mass Customisation can be found on the relationship level. In order to discover functions that can be adopted by the supplier, we analyse the customer, his processes and activities. On relationship level we find four aspects that can explain future needs:

- identity of the customer (structure and positioning of business customers, personality and preferences of private customers),
- position of the customer in his life cycle (education and marital status of private customers, developmental stage of companies),
- relationship to the supplier (position in a Relationship Life Cycle, e. g. new/regular customer),
- processes of the customer (business processes or processes in private life).

A seller can adopt the function of identification and specification of a need as well as a first configuration of a product, if he knows the customer's situation, preferences and development. He can basically find opportunities for offering new products or special offers to customers according to their profile or their buying history. New specific Push Concepts are based on a dynamic perspective by the use of the Customer and Relationship Life Cycle.

For a supplier, who mainly sells goods and services for single or seldom occurring needs, it is important to predict the development of the customer in order to find out the chances when a new or different need, that he can satisfy, appears. By observation of the Customer Life Cycle and anticipation of its future stages the seller can discover these potentials e. g. for cross selling.

Together with a consideration of the Relationship Life Cycle and the collection of information about the customer's preferences he is able to generate an individual offer for a product or a service. The Push Plan we propose for this kind of Push solutions is the Life Cycle Anticipation. Suppliers that sell expendable goods have to emphasise concepts that intensify their relationship to the customer. The buying history of the customer has to be analysed and orders have to be compared with a future situation, where the supplier satisfies all possible needs of the customer. This requires an analysis of the Relationship Life Cycle which, under consideration of the customer's processes and identity, leads to offers for additional products. For supplemental prospective offers the Customer Life Cycle should be applied and matched with the buying history, to predict his development. The basic concept in this situation is called the Expanding Shopping List.

EXAMPLES FOR PUSH CONCEPTS

Life Cycle Anticipation for Financial Service Companies

The first example for the creation of Push Plans according to the concept of Life Cycle Anticipation is located in the Financial Services Sector. Appropriate to the recent trend of integration in this sector we consider a company that sells banking as well as insurance products. The generic concept for a dynamic search for prospective offers is based on an analysis of socio-demographic and psychographic criteria as well as on criteria of observable buying patterns. A two stage procedure firstly determines the general need of the customer and secondly supports the individual composition of the product. A suitable starting point to state future needs is the well known life cycle analysis. The criteria of this analysis, age, marital status and size of the household, have to be completed with additional socio-demographic characteristics of the customer, depending on the branch and the products that are to be sold. Most important for financial services are the criteria education and occupation. As a basis for the realisation of a Push Planner, the Customer Life Cycle is modelled with a revised kind of Petri net. If the company observes a transition into a new situation in the Customer Life Cycle, by means of a collection of customer data by cookies or transaction analysis, it proceeds to the next step, product composition. If there is no change of customer situation observable, a second dynamic criterion will be used: the Relationship Life Cycle. The company again analyses customer data to find out, whether a change in the relationship has occurred. This is particularly important if the phase of maturity migrates to the crisis. In this case or otherwise if a certain time spread without changes has passed, the company tries to anticipate a transition from one situation in the Customer Life Cycle into the next by different methods of projection or prognosis e.g. by the means of a Markov model.

A thorough assignment of the company's products to particular customer situations reveals products, that should be offered, if the situation changes. Transitions and assigned products can be summarised in a matrix. If you cite the financial services as an example, the transition from marriage to divorce leads to new needs of insurance or provision for the former partners. For product composition the company has to split up each product into a basic product and additional modules according to particular needs of different customers or customer groups. Then it compiles all customer features that influence the particular need for the product modules. A so called subtraction method leads to an accurate determination of product components that should be supplemented with pricing proposals. Pricing options also depend on special customer characteristics, e.g. an observed crisis in the Relationship Life Cycle, that may lead to special prices.

Life Cycle Anticipation can be integrated as a specialised method into CRM. Crucial basis is an elaborated customer database. Information collection can be refined by the needs for data that arise from the above mentioned techniques that assign customer characteristics to needs and products. The forward looking information processing reveals new opportunities for offers. Just as in common CRM the maintenance of customer records is crucial for success. We stress an undirected strategic observation of all customer activities, that can be analysed by methods of Data Mining and the recording of responses and reactions of the customer.

To scoop the opportunities of collecting customer reactions and preferences and to satisfy particular customer needs, we propose a Mass Customisation supplement as integral part of the concept, in such a way as to enable the customer to individually customise the basic offer.

Expanding Shopping Lists for Dealers in Office Equipment

The concept of Expanding Shopping Lists expands the Learning Shopping List as known from Mass Customisation. For expendable goods each purchase e.g. via internet can intensify a Learning Relationship between the seller and the buyer. A Learning Shopping List simplifies already the second purchase by customising the catalogue of the seller by directly offering only the goods of the first order. By-and-by the system gains more individualisation information of the customer's transactions so that it can remind him of goods that he might have forgotten.

The Expanding Shopping List includes features, that lead to an elaborated Learning Shopping List (7), like recommendations of special offers and prognoses of recurring regular needs. But beyond that it consistently watches out for cross selling potentials. As this is particularly suitable for business customers, we realised a prototype system for a dealer in office equipment.

The basic idea is, that for all office tasks, there is a closely related group of articles, that the seller can provide. A product database reproduces this groups in a hierarchic model.

Cross Selling potentials derive from a specialised Relationship Life Cycle with objectives that grow with the intensity of the relationship. Objectives are embodied by prospective baskets of goods, that are refined by customer characteristics and analyses of customer groups.

A Push Plan covers the following steps: Firstly the supplier intends to sell all goods, that are needed to complete the same particular office task as one previously purchased article. All of these goods are potential offers for Push Activities. Once these opportunities are spooned - in a next phase of the Relationship Life Cycle - the seller wants to occupy additional office tasks. A comprehensive collection of standard office tasks, provided with references to customer characteristics and weighted with the probability of their incidence, leads to the next potential offers. Additionally the development of the company, e. g. its growth or higher quality requirements, and of technologies in the company, e. g. new methods of printing or presentation that are adopted step by step, are taken into account. In this phase an adapted Customer Life Cycle represents the basis of the search for potential offers.

A crucial feature of the Expanding Shopping List is, that the module Offer Maker, that develops the potential offers, never presents to many offers at a time. Therefore the potential offers are weighted for every customer. The most important bearing on the weight has the appearance of an indicator for potential needs, like an additionally purchased article from a new group or the observation of a searching for new articles on the web site of the seller. Furthermore responses to previous offers and customer preferences are taken into account.

The Expanding Shopping List is unthinkable without a customer database, that is in best order, and without information gathering and processing features known from CRM. Again the outstanding speciality is the search for prospective needs with new dynamic conceptual models.

The Mass Customisation part supports CRM, the subsequent application of Push Principles is even more promising.

CONCLUSION

An integrative application of Push Concepts and Mass Customisation in CRM seems to be promising because of multiple interdependencies between the concepts, e.g.:

- Technologies of CRM, that enable the collection and processing of customer information, namely Database Marketing or Data Mining Systems, build up the basis for the detection of Push Opportunities. They are complemented by standardised interaction modules, that are optimised on a conceptual and technical basis, and the controlling module Push Planner as well as by the modules that proceed transactions and interactions.
- The characteristic "individuality" of Push Activities requires, that the offers (resulting from strategies on relationship level) can be customised for particular customers. The prerequisite for those individual offers is, that the product, the service or additional services can be configured (e. g. by modularization). Therefore it seems obvious to combine the Push Concept with concepts of Mass Customisation.

The supplementary application of Push Concepts on relationship level to Mass Customisation and CRM offers three approaches to improve efficiency and effectiveness in relationships with customers in Electronic Business.

1. Supplier activity

The most interesting aspect of an addition of Push Principles to CRM and Mass Customisation is, that the seller assumes the active role in E-Commerce. He doesn't have to wait for the customer in order to supply him with new individualised products or services but he decides when to approach him. The basic concept for this activity approach is the acquisition of customer functions. Relevant functions are the identification and specification of prospective customer needs as well as an individualisation of the product. Specialised concepts for anticipating future needs are Push Plans derived from Life Cycle Anticipation and Expanding Shopping List.

2. Differentiation option

A competitive advantage lies in individual products and auxiliary services. Push Concepts offer a first configuration of a proposed product. This is in many cases more convenient than leaving the whole customisation process to the customer. The primary proposal for the product will become better by-and-by, for one particular customer caused by the Learning Relationship. Across many customers, Case Based Reasoning components can learn from each customisation, so that the system can offer improved first configurations. Particularly with regard to the identification of future needs, Push Concepts also improve the propositions of the supplier, as Push Plans, the Life Cycle Anticipation as well as the Expanding Shopping List, are also designed to be learning through evaluations of all customers or customer groups.

3. Cost option

By means of consistent standardisation and modularization, Push Concepts are designed to offer differentiation advantages and the opportunities of active customer address with simultaneous consideration of their costs. Examples for standardisation are the Push Strategies and the software components:

- After a first creation of Push Plans, the company can adopt them standardised and possibly improved for all following customers.
- Interaction modules are standardised and reusable with regard to the conceptual patterns and technical implementation.

The building block approach enables a general development of an expandable library and a versatile application of Interaction Modules on interaction, transaction and relation level as well as in all branches and E-Business solutions. Products and services should also observe the principle of modularization. In our sample applications the concepts of Push Plans entail a formation of modules according to e.g. situations and preferences of the customers.

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