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CATCHWORD

Marketing Automation

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1 Marketing Automation – What it is and what it is not

1.1 History and Definition

The term "Marketing automation" was first introduced by John D.C. Little in his presentation at the 5th Invitational Choice Symposium UC Berkeley 2001 (Little 2001) and refers to the automated marketing decision support on the Internet (Little 2001; Bucklin et al. 1998, 2002). Little (2001) formulated its key essence in the phrase "What do we tell retailer X to do when customer Y arrives on Monday morning?". He suggested analyzing the digital footprints of customer Y and using appropriate models to come up with meaningful managerial implications for the whole purchase funnel. Such an automated marketing decision support promises enhanced productivity, better decision-making, higher returns on marketing investments, and increased customer satisfaction and loyalty through customization of marketing activities (Bucklin et al. 1998).

The motivation for marketing automation in 2001 was just the same as today: the lack of appropriate models while facing huge amounts of data automatically collected by online companies. The core idea was to adaptively react to customer choices on the web. Little (2001) suggests five levels of system operation: (1) Data inputs, (2) Real time decision rules, (3) Updates of the decision rules, (4) Feedback to site management, and (5) Strategy choice. This framework suggests deploying real-time decision rules which are calibrated using historical data and updated by conducting adaptive experimentation (Little 2001; Bucklin et al. 2002). The developed systems are expected to give feedback to site management and to provide directions to adapt retailers strategies.

This initial understanding of marketing automation was very generic and included, e.g., development of recommendation engines which meanwhile presents its own research stream. Whereas automated marketing decision support was intended for all four marketing mix activities, in today's business it has narrowed down to the computer-enabled real time personalized pricing (e.g., Hinz et al. 2011), promotion and user journey.

1.2 Exemplary Applications

For a better understanding, we will provide three scenarios of possible marketing automation applications:

- A franchise restaurant may customize contents for its smartphone application according to weather, location, and daytime. If it is a cloudy morning in Berlin, the mobile application may automatically display hot coffee coupons to users around the city. But if it is sunny in Munich at the same time, orange juice may be a better choice for prospective customers in the south of Germany.

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- A customer may have bought cinema tickets for a romantic comedy, which features a very famous actor duo. Based on this purchase history and gender, filed in the account information (in this case: female), a newsletter may be triggered as soon as a new movie is released featuring the male actor in a new film.
- An online travel agency may customize the displayed offers according to entered keywords in the search engine that redirected the user to, e.g., warmer destinations if the user has searched for "beach holiday", and mountain regions if the search phrase was "skiing".

1.3 Differentiation from Related Terms

Marketing automation is often associated with Customer Relationship Management Systems (CRMS) or mailing list based promotion campaigns management (e.g., newsletter) and could be confounded with other related fields such as database marketing, interactive marketing, e-marketing, one-to-one marketing (Montgomery and Smith 2009), direct marketing, dialog marketing or email marketing. The concept of marketing automation has some principles in common with these related fields, but also exhibits features that justify its autonomous definition.

The core of marketing automation is an automatic "customization" or "personalization" of marketing mix activities and has its roots in the business-to-business (B2B) area. Whereas most B2B marketers manage their customers by sales people (using automated processes managed in CRMS) who address their clients in person and nurture their interest with customized offers, business-to-consumer (B2C) marketers are limited in applying this costly personalized communication. Applying marketing automation transfers key qualities of the B2B model to the B2C area by addressing customers with personalized content and customized offers (e.g., customized couponing and discounts). As a result, customers are assumed to show increased involvement and pay more attention to the brand's communication due to the enhanced relevance of the provided information (Dijkstra 2008). Consequently, companies using marketing automation may enhance their conversion rate, cross- and up-selling, and retention rate.

Marketing automation therefore complements areas like interactive or direct marketing by adding automated processes. It further exceeds disciplines such as CRM or email marketing, because marketing automation intends to utilize multiple data sources even for unknown users to design the communication on-the-fly (in real time) for all kind of touch points (e.g., website, smartphone app, email, etc.).

2 Status Quo of Marketing Automation

2.1 Marketing Automation Process

Little's (2001) system operation corresponds to the classical marketing management process: evaluate the status quo situation (data analysis), derive objectives that can be fulfilled, define a set of (automated) action to be undertaken, implement them, measure the outcome and if necessary adapt the action plan. Because the evaluation or calibration phase in the beginning is inevitably linked to customer or user information, the availability of data is a critical condition (Level 1, Little 2001). These data may originate from a customer database, but may as well stem from tracked user journeys or clickstream data (Bucklin et al. 2002) on the website. Moreover, data remain an important element beyond the analysis, since all automated marketing actions are a direct response to existing, incoming or changing customer/user information. These actions are linked to the information by simple rules: If a customer/user shows a certain behavior, then initiate a predefined marketing action (Level 2). The major gain lies in the automated execution of these actions for thousands of events once a rule is determined.

For this purpose managers may exploit historical customer data, which are then used, e.g., to create customer segments based on interests (observable through purchase behavior or click-paths on the website), response to direct communication (e.g., newsletter) or demographics (e.g., age). Managers draw insights from these segments (e.g., segment X is interested in category Y) and schedule rules for future marketing actions (e.g., send customized offers every month) dependent on the pursued objective (e.g., increase sales). Apart from that, marketing automation can also be applied whenever current user behavior is observable, e.g., an unknown user has been passed to the website by a referral. Equal (tracked) events in the past may have shown that a certain marketing action could be advantageous in this situation, e.g., a customized landing page (i.e., first page after a user follows an external link).

However, even the learning process itself can be automated to some extent (Level 3). If for example a finite number of options is applicable (e.g., background color), then marketing automation software is able to apply these options randomly and successively favor the objective-maximizing alternative (e.g., blue background reduces the number of immediate drop-outs). This optimization process and the performance of the above-mentioned rules can be monitored and adjusted by the manager at any time (Level 4). Figure 1 depicts the general process of marketing automation.

Finally, there are also marketing processes, which do not necessarily rest upon greater insights or optimization

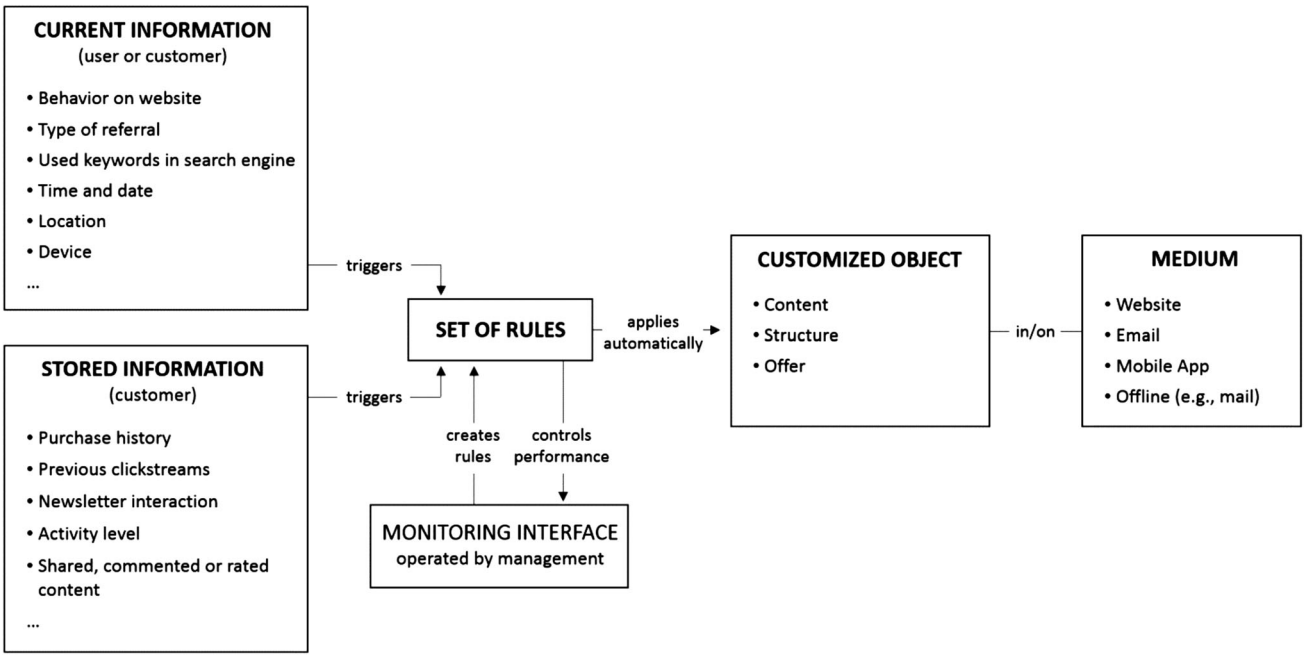


Fig. 1 General framework of marketing automation

procedures but still enhance customer utility (e.g., automated welcome email). For such functionalities marketing automation is simply an enabler or cost-safer.

In general, two questions capture the variety marketing automation provides: What is customized? And which trigger is implemented?

The first question focuses on the object and medium. Marketing automation can be used to customize content, structures or the attributes of an offer. In addition, one can automatically customize an email and other communication channels (e.g., smartphone app) or a landing page and webpages beyond that. Even traditional (offline) channels could be improved by marketing automation (e.g., backside of a theatre ticket).

The second question focuses on the trigger. One can adapt content as a function of technical facts like time (elapsed time or time of day), date, IP address (for location-based marketing), device or browser. It is also possible to use individual information like entered keywords in a search engine, purchase history, previous or current browsing behavior or account information (i.e., demographics).

2.2 Requirements

First, well-conceived data storage is necessary to systematically collect and analyze data on customer and user behavior. Second, software for rule creation and execution does the trick. Many software providers offer a combination of data analysis and execution tools whereby the range of functionalities varies a lot. Third, although most software has an intuitive user interface and does not require a technological background, expertise in both professions (computer science and marketing) will pay off. Marketing automation lies thus in the heart of Business and Information Systems Engineering (BISE).

2.3 Matching Business Models

The applied business model (Veit et al. 2014) affects the relationship between a customer and a firm. As a result some companies have a greater incentive to implement marketing automation processes than others. The potential gains a momentum with the number of online customers and sales, follow-up purchases, products & brands, communication channels and competitors. For this reason, online retailers are in general more interested in marketing automation than companies without an online shop. Nevertheless, marketing automation does provide several advantages to them as well. The success of every instance of customer relationship management or a customized user journey is conditional to the efficiency and creativity of applied marketing automation. Hence, customized marketing actions are more and more replacing one-fits-all solutions in all industries.

3 Importance for Business and Information Systems Engineering Research

As an interdisciplinary subject, marketing automation requires the integration of different kinds of knowledge and

approaches from consumer psychology, marketing, and information systems. Systematical integration of IT and marketing would then be the central activity fields for companies. As IT is a core enabler for marketing automation applications, BISE faces a wide variety of research questions. Whereas two decades ago the research areas concentrated on control system optimization tools, on design of databases and recommendation engines (Little 2001), the future research might focus on two streams: design of marketing automation software, and the analysis of customer behavior and corresponding identification of interesting patterns.

3.1 Design of Marketing Automation Software

3.1.1 Usage and Integration of New Data Sources

Modern IT allows inferring consumer preferences and behavior from clickstream and historical purchase behavior data which enables companies to personalize the customer's journey and experience on the Internet. With steadily evolving computational and storage capacity even more data are collected nowadays. Future research areas are then embraced under the umbrella of "Big data" (see Buhl et al. (2013) for a discussion of this topic). Currently the potential that consumers' digital "footprints" offer has not been fully tapped. Business practice calls for validated models and ideas how data can be used in the consumers and the industry's interest.

Further, the development of marketing decision support might integrate external data sources, e.g., utilizing user data from online social networking platforms to generate product recommendations in online stores (Gottschlich et al. 2013) or to reach new people who are similar to the customer base (e.g., using Facebook's Look-alike concept, facebook.com/help/164749007013531).

As a consequence, the increased amount of user data (Big data) from multiple, heterogeneous sources requires the adaptation of the technological infrastructure and the design of effective and efficient applications to store, process and apply data and models.

3.1.2 Improvement of Data Analysis Tools and Real Time Decision Rules

The development of software which autonomously recognizes or at least visualizes complex patterns and relationships in data is needed (e.g., Ringel and Skiera 2014). Moreover, future research questions might move around the balance of value and price of target audiences in auction-based display advertising (i.e., Real Time Advertising). In this domain the determination of optimal bids (in real time) for reaching a relevant audience is as challenging as pricing keywords (Skiera and Nabout 2013).

Next, due to increased usage of mobile devices the decision rules might become dynamic and adaptive to the context. As described in the example of recommending coffee in rainy Berlin and orange juice in sunny Munich, historical data on customer behavior may not be sufficient.

Finally, a higher level of adaptivity could be reached by designing self-learning systems. It may be possible to design software which autonomously adapts the promotion campaign parameters using the feedback of previous campaigns.

3.2 Customer Behavior

Potential research questions could address customer reactions to marketing automation activities. As personalization is tightly related to privacy, potential research areas could investigate the optimal level of personalization. On the one hand theory explains that users favor personalized communication and content that matches their tastes. On the other hand, through inappropriate ways or levels of personalization (the company could be perceived as intrusive) the customers could regard their privacy threatened. The fear of breaching privacy is one of the greatest challenges online companies face in marketing automation today (Sheehan and Hoy 2000).

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