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Converting Users into Customers: The Role of User Profile Information and Customer Journey Analysis

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Abstract: Due to the digital transformation, the importance of web analysis and user profiling for enterprises is increasing rapidly as customers focus on digital channels to obtain information about products and brands. While there exists a lot research on these topics, only a minority of firms use them to their advantage. This study aims to tighten the link between research and business such that experimental methods can be used for the improvement of communication strategies in practice. Therefore, a systematic literature analysis is conducted, workshops are observed and documented and an empirical study is used to integrate single steps into a framework for the practical usage of user profiling and customer journey analysis.

Keywords: user profiles, user profiling, user tracking, user analytics, user footprint, customer journey, conversion analysis, digital footprint management

1 Introduction

The digital transformation led to a change in customer behavior which needs to be dealt with adequately by companies. As consumers increasingly focus on digital channels to obtain information about products and brands, enterprises need to re-adjust by using web analysis and customer profiling. Firms need to gain knowledge about their users as well as their individual behavior on the website, webshop and other digital channels like social media in order to develop effective communication strategies. Furthermore, they need to track and evaluate the individual steps their users take within a customer journey to attain improved channels and enhanced conversion rates. To date, while there is a lot of research on these topics, only few companies use profile information and customer journey analysis to their advantage. Therefore, the linkage between research and business needs to be tightened in order to use experimental research methods for the improvement of communication strategies in practice.

This study aims to compare the conceptual framework and methods of user profiling and customer journey analysis discussed in scientific research to those currently used by enterprises. Furthermore, it will be analyzed which preconditions have to be met prior to the implementation of the corresponding research into practice for this attempt to

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succeed. Ultimately, the study proposes a conceptual framework for the practical usage of user profiling and customer journey analysis in companies. Consequently, we are focusing on the following concrete research questions:

RQ1: How are the terms user profiling and customer journey analysis conceptually defined?

RQ2: Which methods for user profiling and customer journey analysis are present in current scientific research?

RQ3: Which methods for user profiling and customer journey analysis are currently used by firms?

RQ4: Which prerequisites are essential for an effective implementation of corresponding research methods in practice?

RQ5: How can a framework for the practical usage of user profiling and customer journey analysis be conceptualized?

Within this paper, a systematic literature analysis will be conducted to identify the current state of research on the topics user profiling and customer journey analysis and to determine which methods are presently discussed in science. Following this theoretical foundation, business workshops will be analyzed to pinpoint the user profiling and customer journey analysis methods that are currently used by enterprises and to identify the prerequisites needed for an effective implementation of these methods in practice. An empirical study is then executed to collect and analyze customer data and integrate single steps into a framework for the practical usage of user profiling and customer journey analysis.

The following Section 2 lays the theoretical foundation for the following work. Due to the methodical approach, the main work of this paper is divided into three studies. Section 3 contains the first study which is conducted as a systematic literature review. The second study, which is a qualitative analysis of several business workshop observations, will be discussed in Section 4, before a quantitative analysis of the empirical study and its gathered data is described in Section 5. Section 6 summarizes the results and gives a brief overview of the implications and possible future work to be realized.

2 Theoretical Foundation

Personalization is an important element to fulfilling a special customer or user requirement. Pednault [PE00] claims “true personalization implies not only adapting content to the individual, but also how that content is communicated for maximum effect”. Deitel et al. [DS01] understand personalization as using “information from tracking, mining and data analysis to customize a person’s interaction with a company’s

products, services, web site and employees." The personalization begins subsequent to the user identification. Users are not similar, they differ in many aspects. User profile is a method of presenting data from studies of user characteristics, industrial companies use the term to represent real users [JA05].

The ultimate ambition of applying user profiles is to help companies to recognize or learn about the real users by presenting them with a description of a real user's attributes. The main purpose of the businesses is the customer's transition from never-a-customer to always-a-customer. The Customer Journey helps marketers everywhere with better seeing the world through the customer's eyes. The customer journey is the cycle of the points of contact between the customer and the organization [LO07].

3 Study 1: Systematic Literature Review

The basis to identify the current state of research on the topics user profiling and customer journey analysis was an extensive systematic study of the existing literature. To ensure the best possible use of this research the systematic literature search was conducted in the databases ACM, EBSCO, Emerald and IEEE Xplore. The research was based on default keywords.

On the basis of these keywords a search string for the topic user profiling was defined as:

"digital footprint" OR "user footprint" OR "user tracking" OR "user analytics" OR "user profiling"

The systematic literature search on user profiling provided 811 hits. The comprehensive and critical viewing of the literature reviews reduced the number. Only 42 results were relevant for the topic user profiling.

During the systematic literature inspection, we explored the user profiling area by looking into different lines of research. The term user profiling is defined and clarified as follows. User profiling is defined as a collection of information about a user, including demographic information, usage information, and interests or goals [KG03]. There appear to be two types of user data: those that describe an individual user and those that describe groups of users [RE83]. User profile data can be lifted out from the client side, server side or from a proxy, by direct survey or through observed behavior such as purchases or dialogue acts [JZ03]. The data may be categorized as behavioral, demographic, attitudinal or click data stream [AJ01]. In the literature two basic types of user profiling methods can be distinguished: the content-based and the collaborative methods. These methods are filtering strategies based on user profiles [GD03]. There is the possibility to use the hybrid of these two methods. The following section will deliver information about each of these methods. Content-based methods, also referred as content-based filtering, assume that the user shows the same special behavior under the same requirements [GD03]. Collaborative methods, also referred as collaborative

filtering, assume that the users who belong to the same group behave similarly, and therefore have related profiles. A hybrid method, also referred as hybrid filtering, uses content-based and collaborative methods to combine the advantages and avoid the restrictions of both methods [GD03].

The following table contains an overview of the user profiling methods.

USER PROFILING METHOD	DESCRIPTION	TECHNIQUES USED
Content-based Filtering	Filtering content from a data stream based on extracting content features that have been expressed in	Vector Space model, Latent semantic indexing, Learning information agents, Neural network agents
Collaborative Filtering	Filtering items based on similarities between target users collaborative profile and peer user/group	Memory-based and Modelbased
Hybrid Filtering	Combines two filtering techniques	Collaborative Content based

Tab. 1: Overview of User Profiling Methods [AC14]

The search string for the topic customer journey has been defined as:

"customer journey" OR "conversion analysis"

Based on the issue customer journey the systematic literature search yielded 193 hits. After the critical viewing of the literature reviews only 18 results were important for the issue customer journey.

Customer journey is defined in the literature as a cycle of points of contact among customer and service provider. It normally starts when the need of particular service or product arises and continues until the product is claimed back, cashed or regenerated [NR08]. As defined by Flom [FJ11], Customer journey illustrates individual customer's requirements, the interactions to meet those requirements and their emotions and expectations throughout the process in a visually intuitive way. Based on this definition, Temkin et al. [TB10] presented three necessary elements of customer journey: customer processes, customer requirements and customer perception. Customer processes show the stages, interactions and touch-points across the life cycle of the relationship. Through comparing several existing customer journey maps and reading some research papers within this area, the author of this thesis suggests describing touch-points as a single necessary element of this map due to their significance of service innovation. The element customer requirements illustrate customer needs, motivation or drivers of each interaction. The final element describes customer expectations, thinking, view or fulfilment about current interactions.

Multiple scientists consider the touch-points between the customer and the company as vital importance for the customer journey. When clients interact with the business, product or service, every point of contact impairs to the customer journey. Every contact is an opportunity for a company to sell themselves, to strengthen the offerings and try to supply the needs of the customer but also an option to disappoint the customer [GK09].

According to Nenonen et al. [NE05] the Customer Journey is "a systematic approach designed to help organization's understand how prospective and current customers use the various channels and touch points, how they perceive the organization at each touch point and how they would like the customer experience to be. This knowledge can be used to design an optimal experience that meets the expectations of major customer groups, achieves competitive advantage and supports attainment of desired customer experience objectives."

In summary, user profiles represent users and they reflect each user's preferences, behaviours, requirement and interest. These profiles are the result of the user profiling process and they are necessary for the service personalization. This paper presents a review on user profiling including its related methods, as well as the existing solutions in the literature. The Customer journey provides data about the processes and user experiences in the work environment. These different orientations provide a possibility to record rich data from the work environment and weight the customer experience from different perspectives. The advantage of the methods is that they can uncover those small details that prejudice the workplace experience.

4 Study 2: Qualitative Analysis of Business Workshops

Subsequent to the systematic literature review, the observation and qualitative analysis of two business workshops was conducted to answer the research questions regarding the methods for user profiling and customer journey analysis that are currently used by firms and which prerequisites are essential for an effective implementation of those methods in practice. The workshops were attended by various business experts and employees of twelve different companies, mainly from consumer goods and services branches like healthcare, banking and automobile, including Bayer, Capgemini, Daimler, Siemens and the Robert Bosch GmbH. The first workshop focused on user profiling and the application of the knowledge derived from user profiling and customer journey analysis methods to provide customized services to consumers. The second workshop centered on the customer journey and how content as well as content strategies can aid the beneficial influence on the customer journey. Both workshops consisted of two keynote speeches and four to five moderated group discussions. The discussions were structured by predefined questions and the participants decided on the key findings that then were presented to the plenum. The process as well as the results were observed and documented by three different persons in form of notes during the particular workshop.

Subsequently, in each case the three documentations were consolidated before the results were condensed and extracted from the recorded information.

First of all, it has to be mentioned that the majority of enterprises only possess little knowledge about their users. In most cases, user profile information is collected once and rarely updated thus companies often work with outdated user data and information. Methods for user profiling and customer journey analysis can be divided into methods for strategic planning, conception methods and methods for monitoring. Regarding methods for strategic planning, user interviews, user surveys, focus groups and personas are known and actively used by most firms whereas innovative methods like mental models, semantic analyses, experimental studies and multi-variant statistics are neither familiar to nor utilized by businesses. In the field of conception, companies primarily profit from the methods card sorting, experience map and customer journey map, whilst methods like usability tests, use cases and scenarios are known but hardly used. Regarding the conception methods flash it, immersion, contextual interview, a day in a life, be your own customer, camera journal and empathy map, the overall majority of firms don't hold enough knowledge about those approaches to use them to their advantage. Of the existing user profiling and customer journey analysis methods for monitoring, techniques like social media monitoring, website tracking, predictive modeling, online scripts, targeting, log files and cookies are known to most enterprises, thereof all but predictive modeling are actively and regularly used in business. Predictive modeling is still considered marginally field-tested which is why the mass of companies are reluctant to use this approach.

As of which user profiling and customer journey analysis methods will be especially relevant for the future, the workshop participants agreed on the techniques semantic analysis, persona, immersion, be your own customer, social media monitoring, targeting and predictive modeling. In the future, the value of a user profiling or customer journey analysis method will be evaluated by how fast the approach can be implemented and how fast it provides the required data and information about customers. Furthermore, user profiling and customer journey analysis will be used in addition to the development of innovative products to ensure the economic stability and growth of a company by meeting the demands of the end users and exploiting niche markets. The participating business experts agreed that the methods user survey and user interview won't be important in the near future anymore as they take too much time and resources whilst not providing the required information within a reasonable timeframe.

The prerequisites that are essential for an effective implementation of user profiling and customer journey analysis methods in practice can be categorized into basic requirements, preconditions regarding the corporate culture, planning and conception, analysis and evaluation of the data as well as the usage of the findings, and content strategy. The basic requirements for a successful application of the previously discussed techniques are the availability of the required data and information as well as basic resources like the needed time, workforce and financial means to conduct the desired studies. Regarding the preconditions with respect to the corporate culture, an unrestricted

handling of data transparency is fundamental, the different departments have to agree to be measured. Furthermore, the courage to try new approaches and methods is needed as well as a clearly defined ownership of the collected data. Nevertheless, data has to be made available to every division where it is needed or can be used to the advantage of the enterprise, this requires different departments to be interconnected and work together.

In the planning stage the clear definition of objectives is crucial, the goals have to be set before the methods can be selected. This procedure ensures the assessment of the correct and needed data instead of collecting irrelevant data that has to be filtered out later on. In terms of data collection, quality is more important that quantity therefore firms should focus on the essential information. If this approach is followed, the analysis and evaluation of the data can be facilitated. Still, companies often face the problem of waste data which has to be cleaned and filtered to identify the relevant data. Smart analytics can help to convert big data into smart data and harness the information required by the company. Following this, it is essential that the obtained customer information is used to derive beneficial knowledge, future objectives and guidance that can help to enhance customer retention and satisfaction or positively influence the firm in another way.

Concerning the content strategy, whilst all participating business experts agreed that content itself as well as the content strategy are vital parts for the successful implementation of user profiling and customer journey analysis methods in practice, none of the companies that took part in the workshop possess one single standardized content strategy for the whole enterprise. Instead, a majority of firms use different content strategies for separate countries, regions or channels. This aspect should be improved in the future to optimize the application of user profiling and customer journey analysis methods by businesses.

5 Study 3: Empirical study, pilot testing and conceptualized framework

With the systematic literature review and qualitative analysis of the workshop observation we established an overview about the different methods. To identify clear statements about the practical usage, we used an empirical study and pilot testing. In this context we used a conference to test several methods from theory and practice to collect data and build a conceptualized framework that converts users into customers and integrates user profiling and customer journey.

The first step of the empirical study was the identification of the target audience, which represents potential conference participants. For this audience several marketing actions for different channels and touchpoints were designed. The fundamental points of the customer journey - awareness, consideration, purchase, retention and advocacy - were used to get an optimal marketing strategy over the whole period. Also varying content, that is adapted for individual groups, was produced to reach the target groups. AdWords

of speaker and subject areas of the conference were set. Banner advertisement for Social Media and Search was established. As next step the measurement points and the KPIs for tracking were defined. With weekly reporting and analysis the tracking and monitoring of users and their interaction was created. Afterwards, based on the tracked data and the conversion rate further actions for the following week were defined.

The following conceptualized framework sums up user profiling and customer journey for the practical usage based on the three studies:

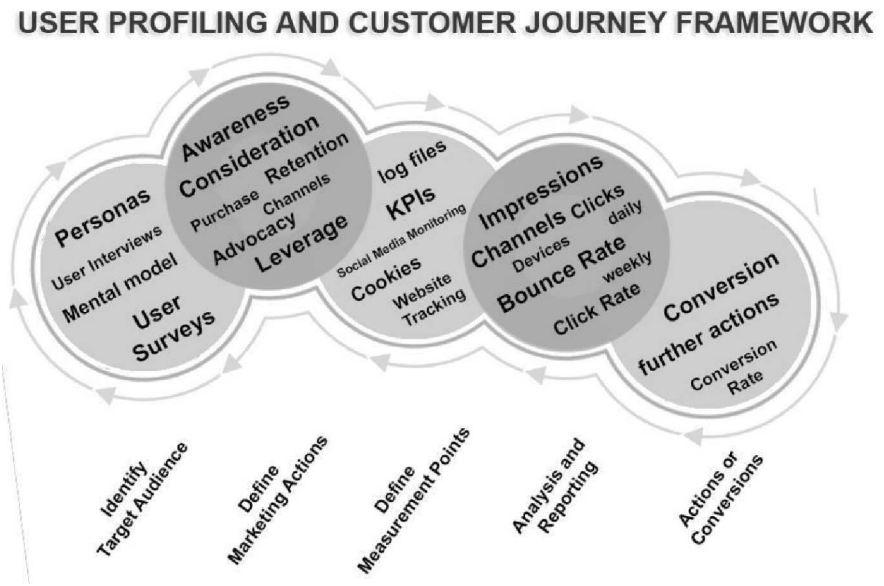

Fig. 1: Conceptualized Framework for practical usage

As it is depicted in Fig. 1, there are five main stages in our conceptualized framework: Identify Target Audience, Define Marketing Actions, Define Measurement Points, Analysis and Reporting and finally Conversions or Actions.

The first stage Identify Target Audience uses methods like personas, user surveys, user interviews, causal analysis, focus groups, semantic analysis, etc. to identify the target audience. If the audience is defined the Marketing Actions are set up for the main points of the customer journey: awareness, consideration, purchase, retention and advocacy. Now the KPIs, log files, website-tracking, cookies, social media monitoring, predictive modelling, etc. were defined at the Measurement Points stage. It is important to define measurement categories and make purposeful assumptions to identify the KPIs. Aimless data collecting is not a good practice, because you want an additional benefit from the data and this is only possible with a clear strategy. The stage Analysis and Reporting shows the impressions, channels, clicks, bounce rate, devices, etc. for the defined period. Here the tracked data are merged together to a report. With the assumptions and tracked

data, a conclusion - the realized marketing action was successful - can be done. If a Conversion is now done, no further action is necessary to convert a user into a customer. If not, there is one or more action required.

This framework is to be regarded as an iterative process. From each stage you can jump backwards or forwards to another stage to optimize and readjust at some point. This is necessary if something is not working as expected or new aims were defined. This conceptualized framework shows how to use methods from user profiling and customer journey in practice, to develop and optimize the process of converting users into customers. It displays the main points and important steps of the data collection and analysis to get a successful conversion strategy.

6 Conclusion and Future Work

With this paper we provided an overview about research and practice and introduced a conceptualized framework, that enables converting users into customers by the application of user profiling and customer journey.

The systematic literature review and qualitative analysis of the business workshops demonstrates many methods for user profiling and customer journey analysis, but only a few of them were used in practice. The main aspect is to merge these different kinds of methods to get a comprehensive view. Most firms have the problem to focus on the essential information to identify the relevant data from the collection of data. The merging problem is also due to the decisive point to use different methods in parallel. But you don’t need to use all of them. Select only the methods which can provide you an additional benefit and integrate these optimally in your process, to get a more detailed view about your user profiles and customer journeys. If new methods are available, use them and integrate them into your business. Another main point are the internal structures and silo mentality in companies. They must change to enable integrated data cooperation! A main strategy must be defined for the entire company to handle collection and analysis of this kind of Big Data. All departments must work together to get an entire overview about their users and customers.

The presented framework provides assistance to integrate user profiling and customer journey in your business. With these five stages you have a step by step procedure to find, include and use the different methods efficiently and optimally. With its iterative process you can add or remove methods or actions at every time. The pilot testing had demonstrated that the concept of the framework has high potential.

Further research could evaluate the framework in bigger ventures and extend it with new and innovative methods. Also the methods and collaboration among each method can be pointed out to get an in-depth view.

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