Tracking user behavior on the web for digital marketing personalization with Salesforce

Olga Akimova

Author(s) Olga Akimova	
Degree programme Business Information Technology	
Report/thesis title Tracking user behavior on the web for digital marketing personalization with Salesforce.	**Number of pages and appendix pages** **45+1**

Technological advancement and growth of connectivity skyrocketed the demand for the quality of customer experience. It drives business to accommodate various sources of understanding the interests and preferences of its audience. This trend made web tracking a hot and controversial subject for both business and consumers.

The goal of this report is to demonstrate how to improve the knowledge of customer audience through getting the insight into user behavior in the e-commerce website. In addition, it aims to find possible solutions to leverage the collected data.

This research is based on the practical case project to provide the most relevant and realistic results. This work is limited to the scope of Salesforce.com products and focuses on the existing customer audience.

The modern trends and concepts in customer relationship management are highlighted in the theoretical part. Moreover, it defines a customer and explains a data-driven approach to business and marketing. The thesis covers online store user data lifecycle: establishing the motivation and goals for the project, collecting user behavior data and utilization of the data for personalizing the customer experience.

The study identified a process behind learning customer interests. In addition, it revealed the challenges of the implementation process. The roadmap of the process demonstrates the way to be undertaken to achieve the desired results.

The research concludes that web tracking is a valuable source for gaining insights into the consumer audience of the online store. It opens broad horizons of opportunities to take advantage of the user data to benefit the business.

Keywords Web tracking, customer, Salesforce, marketing, product recommendations, personalization

Table of contents

Abbreviations

CRM	Customer Relationship Management
AWS	Amazon Web Services
URL	Uniform Resource Locator
CX	Customer Experience
UX	User Experience
SKU	Stock Keeping Unit
DMP	Data Management Platform

1 Introduction

The technological boom in recent decades has visibly impacted all aspects of people's life. The appearance of digital devices in the hands of almost every person on the Earth is one of the evident impacts. Nowadays more than half of the world's population is connected to the Internet (Internet World Stats 2019). This resulted in a constant contact to the vast volumes of information, impacting, among other aspects, education, communications, psychology and behavior of people (Boumphrey & Brehmer 2017, 20).

In our commercial world, such revolutionary change could not leave business and customers unaffected. The buying process expanded from shops to the web, opening the horizon of the new opportunities and challenges for both business and customers. With the large choice of providers, customer demands drastically increased, requiring high-quality user experience with personalization, real-time engagement, and flawless omnichannel services.

Quality of the customer experience is greatly dependent on the information about the customer available. In order to adapt and keep the competitive advantage, companies have put improvement of the knowledge of their customers on their closest agenda. Customer understanding requires gathering data from a range of sources, where any kind of interaction of the business and the customer takes place, analyzing the data and making it actionable.

Meeting those requirements becomes possible with the technological solutions available today, enabled by the vast amount of data constantly being generated on a daily basis. People are more and more engaged with electronic devices and online services in daily life. Growing online traffic turned the web into one of the largest sources for the data about the behavior and preferences of users, especially for retail companies owning e-commerce solutions. People are researching and buying products and services online, leaving their data footprints, which are invaluable for the business to learn about consumer auditory. As a result, the online store becomes one of the largest and obvious sources of information about the interests of the customers.

With the fast changing environment full of new trends disrupting the accustomed ways and growing pressure to keep pace with the latest technology, companies often struggle to realize the concrete path they need to walk towards the desired results - how to capture and take advantage of the user activity data generated in their e-commerce solution for learning more about their customers and improving experience?

The other side of user tracking online is the user perspective on the subject. More and more users are becoming curious about the footprints they leave when browsing the Internet. The only partial awareness of the users about their online trace creates concerns about online privacy and utilization of their data. However, quality user and customer experience and information about those users are both parts of the same equation. To address this aspect, the thesis answers the question: what is behind personalized experience?

This report will show how user activity tracking in an online store can be implemented with Salesforce Marketing Cloud and how the tracking data can be further utilized.

1.1 Research Questions and Objectives

In my project, I aim to open up the steps and efforts the company needs to take to improve the understanding of its customers and personalize digital marketing through leveraging user behavior data. The thesis provides guidance from reasons to do it, through the necessary steps, towards the solutions to act on the customer data. Based on the case project practical implementation the roadmap is drawn, sharing the most relevant experience and challenges of the process.

The research questions of the thesis are:
- How can a business know its customers better?
- What is behind personalized and informed digital marketing?
- How to leverage the e-commerce website and user data?

The thesis demonstrates a practical way to achieve better customer understanding and enable customer data.

1.2 Project Scope

The subject and research questions of the thesis are addressed through a practical case project implemented for a large Finnish retail company. The initial goals of the project are to get an insight into the preferences of the online store users and to target them with relevant and attractive product recommendations. The work presents and describes in detail the roadmap to achieving the abovementioned goals through tracking user behavior. However, collected data can be utilized for the benefit of the business in more than one way. Therefore, the possible solutions to leverage it further will be presented in the thesis. The customer relationship management activities of the case company mainly rely on the

Salesforce CRM infrastructure. Since it supports the required functionality for the project, the scope is limited to leveraging the available Salesforce software.

1.3 Research Method

The goal of my research is to provide insight into the way the business needs to take to achieve better visibility of its audience needs and interests and act on this data. For my research, I will mainly utilize the qualitative method and case implementation. The choice of the research methods is based on the need to provide the primary source view to the practical process for the most relevant and interesting content for the business and general audience.
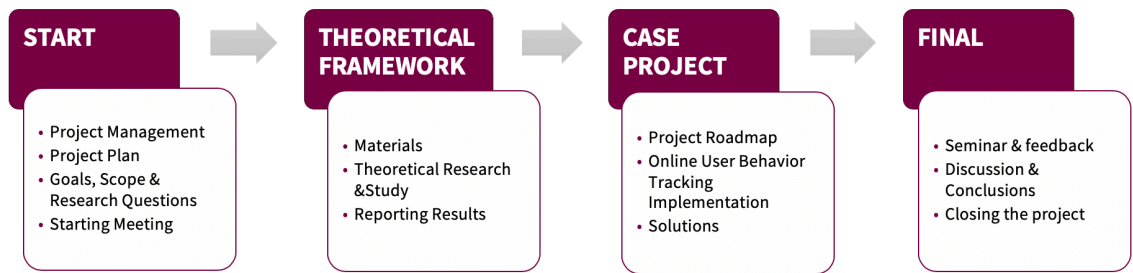
1.4 Significance and utilization of the results

Understanding customers is significant for the business for providing them with high-quality customer experience. The project implementation is valuable for the company since it results in the insight into its web audience and creates a base for targeting customers with relevant marketing. Aside from that, user activity tracking and personalized marketing became a popular and controversial subject for both the business world and web users. My thesis opens up the process behind it, which makes it relevant for both sides. For the companies, it provides a view on the roadmap to a new level in modern digital marketing with Salesforce. On the other hand, it increases awareness of the general audience about the web tracking and utilization of their data by the business and its impact on their customer experience.

1.5 Project Plan

The project includes four main stages: start, theoretical research, creation of empirical part, and final stage. The goal of the starting stage is to clarify and plan the project. It includes setting up project management practices and documenting project goals and a project plan. The second stage focuses on theoretical research. It creates a fundament for the project by investigating and describing the concepts around the subject of the thesis. The third stage is fully based on the practical case project. The goal of the stage is outlining the roadmap of the user behavior tracking implementation and utilization of the collected data. The closing stage of the project includes thesis presentation, reflection on the results and evaluation of the project. The following graph (Figure 1) represents the high-level picture of the plan and the schedule of the thesis project.

START
- Project Management
- Project Plan
- Goals, Scope & Research Questions
- Starting Meeting

THEORETICAL FRAMEWORK
- Materials
- Theoretical Research &Study
- Reporting Results

CASE PROJECT
- Project Roadmap
- Online User Behavior Tracking Implementation
- Solutions

FINAL
- Seminar & feedback
- Discussion & Conclusions
- Closing the project

Figure 1. Stages of the thesis project.

2   Theoretical framework

This chapter defines the ground terms and concepts surrounding the thesis subject. First, the subject is placed on a global scale in the world and business to explain the primary motivation for the project implementation. Salesforce CRM is the main technology used for user activity tracking in the scope of this project. Therefore, further in this chapter, its overview is provided. Then the common practice of web tracking and product recommendations implementation with the Salesforce Marketing Cloud Einstein is described.

2.1   Web tracking

Web tracking involves identifying and collecting the data about users and their activity online (What Is My IP Address 2019). Connected Commerce is a practice of tracking user behavior in the online store aiming to personalize communications with the customers.

Connected commerce is built around the customer centricity of the brand. The ground principle of the connected commerce is that the current visitors of the online store are the most important customers at that particular moment, and, therefore, require most of the attention. Fortunately, those visitors are handing over the vast amounts of information about their interests while browsing the products of the website, subscribing for newsletters, selecting their preferences or registering in the online store. Connected commerce attempts to personalize the experience of the visitor based on this information: visitor's own data such as activity history and self-declared data, or the data of other website visitors with similar characteristics. (Barratt & Davis 2009, 253.)

Being attentive to the needs of online store visitors brings tangible business benefits. Accommodating the practice creates a significant advantage represented by improved customer loyalty, an increase in sales volumes and profits. The study conducted by JupiterResearch in 2005 in the United States proved the worthiness of implementing the connected commerce practice - the monthly revenue and net profit of the companies which have taken into practice the tracking of the users on their e-commerce website doubles. The results of the study are presented in the picture below (Figure 2). (Barratt & Davis 2009, 253.)
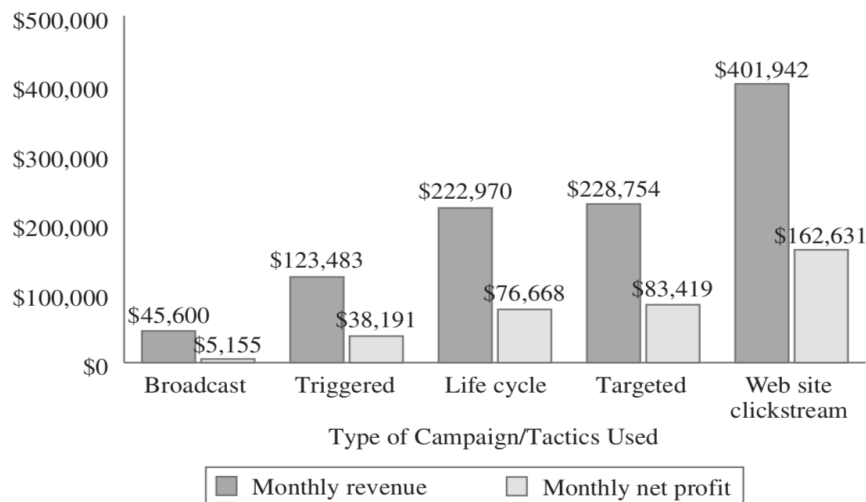
Figure 2. Revenue and net profit analysis by marketing tactics used, JupiterResearch (Barratt & Davis 2009, 253)

Web tracking has become a very common practice on the Internet nowadays (Englehardt & Narayanan 2016). The scale of the phenomenon can be explained by its tremendous benefits for the business - it makes a large contribution to knowing the customer audience. It has been proven that personalized customer experience creates loyalty and drives revenues. The Salesforce research focusing on the impact of personalization and product recommendations on the conversion rate and customer behavior in the website revealed that up to 25% of the company's revenue growth can be influenced by personalization (Salesforce 2017). Moreover, another study by Salesforce concluded that 53% of online shoppers are willing to share their personal data in exchange for personalized customer experience. The above-mentioned facts and figures prove the value of connected commerce for the modern business, and its practical feasibility (McGinnis 2016).

2.2   Fourth industrial revolution

The world has changed drastically in the latest decades, and the velocity of the changes is constantly increasing. This phenomenon is often being referred to as the "Fourth industrial revolution". It is characterized by technological advancement and technology becoming available to the masses (Cundari 2015, 4-10). The phenomenon caused profound changes in education, information, and communication (Jackson & Ahuja 2016, 170-186). "Revolution" has its impact on most spheres of people's life and, occurring in the society of consumption it could not bypass the person as a customer. Aldo Cundari, the author of

the book "Customer-Centric Marketing", argues that the world moved from the Age of Information to the Age of Customer (Cundari 2015, 4-10). Such revolutionary changes affected both business and consumer side of the relationship.

2.3 Customer

Customer by definition is someone who has an established relationship with the company, for example, has purchased products. Consumer is a potential customer. However, the audience that needs to be covered by marketing and Customer Relationship Management (CRM) has to stretch beyond the given customer definition and include both customers and consumers. It extends to the audience which is not yet actively engaged with the business or is in the consideration stage - website visitors, social media users expressing interest. Since this audience is often treated as customers and has the same patterns, it is also often referred to as customers. (Cundari 2015, 2.)

2.3.1 Connected customer

Connectivity is one of the current megatrends. Megatrend is a global, fundamental, disruptive and irreversible tendency that drastically change our world (Boumphrey & Brehmer 2017, 20). Connectivity is a direct result of the "Fourth Industrial Revolution".

Nowadays a customer has evolved into a connected customer - he is constantly connected to the information through various digital devices. Internet access and digital devices appearing in everyone's hands increased the accessibility of knowledge, services, and goods. This fact has put a customer "in the middle of an information tsunami" (Cundari 2015, 13).

Connectivity has brought various changes to the patterns of customer behavior. A modern customer is informed, impatient and empowered. On the other side, he is highly distracted with a wide range of options to choose from and no obligations to stay loyal. Every day people deal with large amounts of information coming from such sources as social media, media, internet or e-commerce. This shortens the attention span - the time and consideration the person can offer. (Barratt & Davis 2009, 260.)

Such environment skyrocketed customer demands and expectations and created significant challenges for the business. However, on the other hand, it opened new horizons for the business to explore its customers and understand them better.

2.3.2 Customer Understanding in Customer-Centric Approach

Putting the customer in the center defines the key to success of the modern business. Therefore, customer needs are located at the foundation of marketing (Kotler 2016, 27).

In a customer-centric approach business and marketing efforts are focused on providing the best possible experience for each individual customer. According to the research done by O'Keeffe & Company, Customer Experience (CX) is on the closest agenda of 97% of researched companies. It indicates the global shift of business towards customer-centricity. (O'Keeffe & Company 2013.)

Knowing and understanding the customer is essential for providing a competitive customer experience nowadays. Holistic customer view, insight into his current preferences and online behavior, personalization and omnichannel experience are on the list of the areas requiring the attention of the business (O'Keeffe & Company 2013).

The customer-centric approach in terms of online shopping experience is imperatively connected with content personalization. It includes dynamic web experience, displaying the most relevant content on the forefront of the pages during and after the visit. (Barratt & Davis 2009, 252.)

2.4 Data-driven business and marketing

Marketing is a fast-evolving and multi-aspect practice, and, therefore, there are various definitions of it. American Marketing Association defines marketing as "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large" (American Marketing Academy 2019). In "Marketing Management" Dr. Phillip Kotler provides a laconic definition that pinpoints the main idea and purpose of marketing - "meeting needs profitably" (Kotler 2016, 27).

Digital marketing is a type of marketing that focuses its efforts on digital channels such as web, social media, messaging, search engine optimization and others (Kenton 2018). Digital marketing gained its increasing value and importance due to the technological boost and a phenomenon of connectivity, which was discussed above.

Data is a cornerstone of the business nowadays. Becoming data-driven can be defined as "building a culture to act on data" (Anderson 2015). The concepts of being data-driven and customer-driven are closely related since in the data-driven activities the data originates

from the customer data with the single goal of providing relevant, personalized and attentive customer experience.

Data-driven marketing is the approach to marketing activities to be based on the customer data (Semmelroth 2013). Data-driven marketing provides significant benefits to the business by making marketing more successful and efficient. The most important and valuable advantage is accurate targeting with relevant content. The goal of data-driven marketing is to build a better relationship with the current and potential customers by understanding how they interact with a marketing message. (Lennon 2017.)

A holistic view of the customer provides the basis for the organization to be data and customer driven and opens the opportunities for data-driven and personalized marketing. Therefore, the primary prerequisite is focusing on collecting necessary data from available sources to learn about the customer. Further, the data gains the meaning through audience segmenting, profiling, identification of leads and other practices, some of which are described further in the thesis.

2.5 Salesforce

Customer relationship management (CRM) is defined by Gartner as "a business strategy that optimizes revenue and profitability while promoting customer satisfaction and loyalty". This business strategy is supported by CRM systems, the basic idea of which is unifying, storing and managing the customer data. CRM technologies enable strategy, identify, manage and act on the customer data. (Salesforce.com Trailhead 2019.) Modern CRM software provides a wide range of functionalities to support sales, marketing, customer service and digital commerce and analytics (Gartner 2019). Salesforce is one of the most progressive CRM providers. Salesforce CRM is a leading CRM solution in 2018 according to Gartner research (Figure 3) (Gartner 2018).

Figure 3. Gartner's 2018 Magic Quadrant for the CRM Customer Engagement Center (Gartner 2018).

Salesforce addresses the most recent trends and innovations in the field of customer relationship management. It was the first CRM platform to incorporate Artificial Intelligence (AI) and become cloud-based. Moreover, among others, Salesforce CRM supports the mobile-first approach, 360-degree view of the customer and omnichannel connection. The demands of the age of the connected customer are reflected in Salesforce CRM keeping the products on the edge of the CRM technology. The approach brings Salesforce a significant competitive advantage compared to other CRM vendors and helps companies utilizing the solutions to strengthen the relationships with their customers. (Salesforce 2019.)

2.5.1 Architecture and products

Salesforce CRM product family consists of various products to address different business needs: Sales, Service, Marketing, Commerce, Community, Analytics, and others. The products are interconnected, which results in a seamless data flow. Salesforce is the first company to provide cloud-based solutions for customer relationship management (Salesforce.com Trailhead 2019). In addition, most of the products have Einstein AI functionalities incorporated to provide analytics insights. Figure 4 presents the architecture of the Salesforce product family.
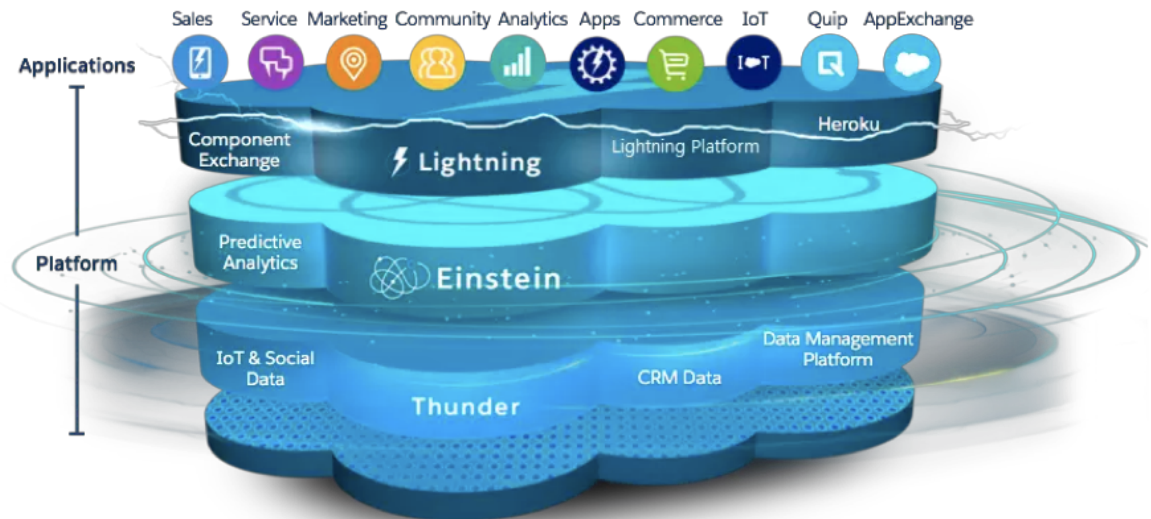
Figure 4. Salesforce platform architecture (Salesforce.com Trailhead 2019).

The products of focus for this thesis are Sales and Service Cloud, and Marketing Cloud.

Sales and Service Cloud

Sales & Service Cloud are the core CRM components to be used by sales and service teams. There the customer data is accumulated into a holistic view. The concept provides consistency and reliability to the customer data, which serves a source for informed customer interactions for sales and service teams, and, in addition, marketing processes. (Salesforce.com Trailhead 2019.)

Marketing Cloud

Marketing Cloud is a platform for executing digital marketing. The system supports most of the existing channels for customer engagement: email, web, mobile, social and digital advertising. Marketing Cloud both contributes to customer data and acts on it. It provides functionality for collecting the data from various sources such as social media, emails and campaigns engagement, customer journeys, and websites. Moreover, audience segments, profiles or other customer data can be uploaded into Marketing Cloud from the external systems and sources and used for data aggregation, analytics, and marketing automation activities in Marketing Cloud. (Salesforce 2019.) Marketing Cloud is the main Salesforce product to be utilized for the thesis project.

2.5.2 Marketing Cloud Einstein

Marketing Cloud Einstein is an engine specifically designed for e-commerce solutions. It enables tracking user behavior, profiling users based on the collected data and providing them with product recommendations. Therefore, the thesis project takes a great advantage in utilizing its functionality.

Einstein is running on the cloud solution of Amazon Web Services (AWS) and is connected to Marketing Cloud. Such architecture eliminates disruptions in the work of the engine and the possibility of its failure. The tracking data is stored and analyzed in AWS and returned to Marketing Cloud for aggregation and utilization. Profiles and recommendations also originate from Einstein.

The overall architecture of the online user activity tracking project with Marketing Cloud Einstein can be presented as the following chart (Figure 5).

Figure 5. Marketing Cloud Einstein online user tracking solution architecture.

Connected commerce is enabled through seamless communication and data synchronization between product data, tracking, building affinities and presenting the personalized content (Barratt & Davis 2009, 253). The common practice of online user behavior tracking and product recommendations implementation using Salesforce Marketing Cloud and Einstein is described.

Product data

The process starts with the product catalog - a taxonomy of the products of the online store. Product catalog stores master data and metadata about the product. (Barratt & Davis 2009, 257.) Metadata is "data about data" (Techopedia) and it is used to describe the product.

Metadata should be descriptive and rich. For instance, the product catalog metadata can be color, size, category or any other feature of the product. The product catalog is the only source of knowledge about the products for Einstein for profiling and assigning preferences to users. Therefore, the more metadata is available the more precise the profiling is going to be, and more relevant the product recommendations and other content presented to the user are going to be.

The catalog can be imported into Marketing Cloud in multiple ways: from the FTP server, from the URL endpoint or manually. Moreover, the product data can be updated in real-time directly from the e-commerce website pages. The real-time update allows keeping such variable values as availability, stock, and pricing up to date. (Salesforce Trailblazer Community.)

Collecting user activity data

Collecting user behavior data is implemented by inserting code snippets on the website. The purpose of the tracking code is to send the tracking data to Einstein.

The tracking code is able to deliver user identity information and user activity data. User activity data represents the actions made by the user in the online store: viewing products and product categories, adding products to the shopping cart or wish list, purchasing, searching for desired products, rating products. Moreover, by default, the tracking code collects the metadata of the user session and browser information. (Salesforce Trailblazer Community.)

Tracking code is inserted in the website in the following way (Figure 6). In the picture, the tracking script is presented in the minimum. It should be enriched with tracking of custom events mentioned above to implement the user behavior tracking.

```
<!doctype html>
<html>

<head>
<meta charset="utf-8">
<title></title>
<meta name="description" content="">
<meta name="viewport" content="width=device-width, initial-scale=1">          Base script
<script type="text/javascript" src="//[ORG_ID].collect.igodigital.com/collect.js"></script>
</head>
                                    Tracking script
<script>
    window.onload = function () {
    _etmc.push(["setOrgId", "[ORG_ID]"]);
    _etmc.push(["trackPageView"]);
    }
</script>

<body>
<div>
Page content
</div>
</body>

</html>
```

Figure 6. Tracking code insertion in the website.

Collected data is stored in Marketing Cloud in a format of tables. The first results appear immediately. However, several weeks are needed to have actionable volumes of data. The collected data can be further used in various marketing solutions and the personalization of customer experience. Moreover, the analytics can be used to monitor the user behavior in the online store and, consequently, its performance. (Salesforce Trailblazer Community.)

User profiling

Marketing Cloud Einstein creates user profiles based on the collected data about their behavior in the online store. Einstein is able to create profiles for both anonymous and identified users, recognizing returning and new visitors. (Salesforce Trailblazer Community.)

When the user comes to the website for the first time, Einstein tracking code creates a cookie with an identifier and starts building his anonymous profile. All collected activity data is saved in the user profile. When the user returns to the website the next time, Einstein continues tracking his activity and saving the data into his existing profile. This approach allows targeting the visitors with personalized content even without knowing their identity, but simply based on their patterns and interests during the previous visits to the online store. However, the identification of visitors is still highly desirable. When the visitor "raises a digital hand" (provides information such as his email address), his profile stops being anonymous and continues to expand with the new incoming tracking data. (Salesforce Trailblazer Community.)

User profile holds user affinities and is referred to as "affinity profile". Affinities are built with the data available in the product catalog. Einstein uses specific algorithms to create those affinities based on the tracking data by assigning different weights to events such as purchases, clicks, and views. User affinity profile holds the top 5 affinities starting from "the heaviest". Affinities represent user preferences and interests. They are used for picking relevant content for the visitor. (Salesforce Trailblazer Community.)

Product recommendations

Product recommendations are the most obvious outcome of Einstein web tracking. There are two types of recommendations available with Marketing Cloud Einstein functionality - web recommendations and email recommendations.

The most crucial part of product recommendations is their logic. Einstein provides various scenarios for the recommendation's logic: based on the user affinity profile, website statistics or recent activity of the user. For users with the affinity profile already existing, it's possible to leverage it and recommend products according to the interests of the user. For other cases, the scenario may be based on the "wisdom of the crowd", showing the most popular products of the website. In order to cover different situations and ensure that a sufficient number of relevant recommendations is available, waterfall mode can be enabled. Waterfall mode allows to place several scenarios in the desired order, and they will be fulfilled by Einstein upon the availability of the data. (Salesforce Trailblazer Community.)

Figure 7. Waterfall feature example of product recommendations.

Figure 7 provides a visual example of how the waterfall process works. In a recommendations block, which requires 4 items, recommendations are delivered according to the configured scenarios starting from the most desirable and continuing with the following ones until the needed number of products is reached. Such approach ensures a stable user experience.

Moreover, the logic of recommendations can be further specified with rules. Rules allow to emphasize, exclude or include products satisfying the configured condition from the product recommendation area. (Salesforce Trailblazer Community.)

3   Case Project

The technological boom and the rise of connectivity created a challenging environment for the retail business nowadays. To win the competition it needs to adapt to consumer needs. The main requirements are a smooth omnichannel experience and personalization. The Age of Customer and Technology is signed by connectivity, opening a new channel for the retail - web. Moreover, now web presence becomes a must for the business.

Customer relationships in retail have their specialties. On the one hand, retail has direct access to consumers and, therefore, access to large volumes and variety of data about them. On the other hand, a large portion of the audience of importance is potential customers, represented only by anonymous users browsing for products on the web.

The technological revolution had a great impact not only on the life of consumers but also offered solutions to support business in adapting to the new environment. In particular, new volumes of data and a need for consolidating and analyzing it. The modern CRM solutions provide a competitive advantage to companies and help them to manage their customer data in the most efficient manner, to understand their customers and to leverage this understanding for increasing profitability.

3.1   Overview

The goal of this chapter is to introduce the case project. The case project is a practical example to present a path to contributing to understanding the customer audience through tracking user behavior on the e-commerce website. The chapter sets the goals and the requirements of the case project and presents the technological environment where the project is implemented.

3.1.1   About the company

The case company is a large Finnish retail company. It will be further referred to as the Case Company.

The Case Company was established more than 150 years ago. Nowadays it operates in Finland and internationally. Overall, there are 8 department stores and more than 400 fashion stores in 17 countries. The headquarter of the company is located in Helsinki, as well as the flagship store which is the largest department store in the Nordics.

In the last decade, the Case Company expanded its operations online and created its own online store, which is covering several locations.

Despite the Case Company's long history starting at the end of 19 century, the company still attracts millions of visitors nowadays. In order to be in step with time and technology, the Case Company, being a traditional retail company, is working on digitalizing the business. This allows it to provide the customers with the modern customer experience and stay competitive.

3.1.2   Technological setup - CRM

To support large volumes of data the Case Company took into use Salesforce.com customer relationship management products.

Salesforce.com products are cloud-based solutions. For customer management, the Case Company has core clouds implemented - Sales Cloud and Service Cloud, and Marketing Cloud for enabling digital marketing functionality.

Sales and Service Cloud are utilized as the master source and destination of the customer data. There the customer data is accumulated into a customer view, which is fulfilled from various sources - customer service, marketing campaigns, customer profiles, loyalty program, and others.

Marketing Cloud is used for digital marketing. It includes basic marketing communications such as sending emails and newsletters and running campaigns, and more sophisticated solutions. The system is constantly being improved and enriched with new solutions. Figure 8 presents customer relationship management solutions utilized by the Case Company on the Salesforce overall architecture.
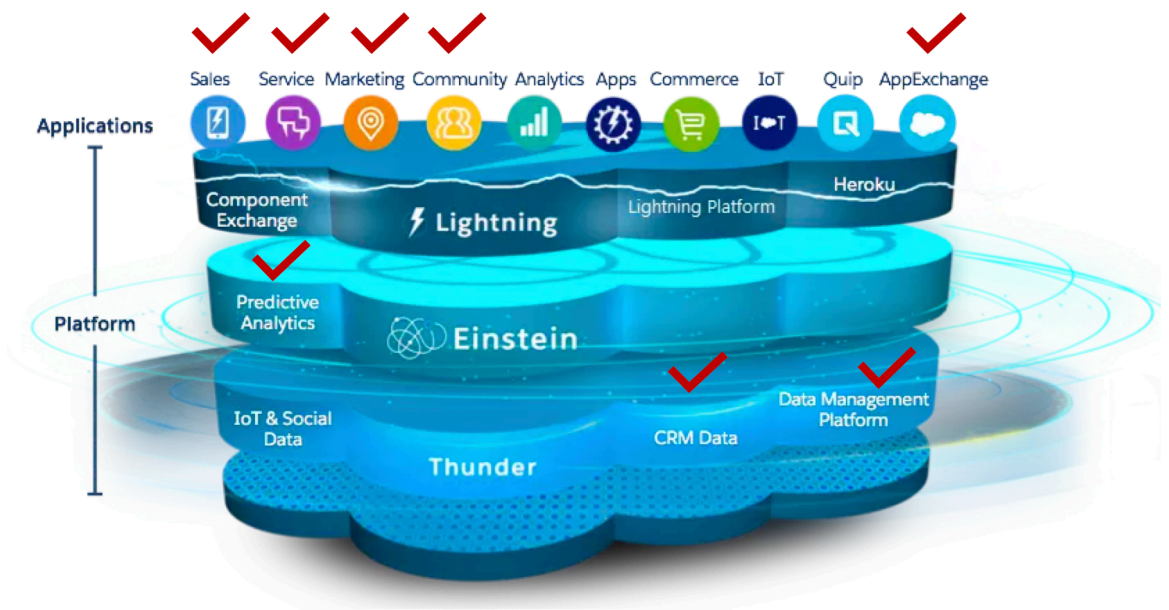
Figure 8. The Case Company CRM infrastructure in Salesforce platform (Salesforce.com Trailhead 2019).

The Case Company owns a multi-location online store, running on the e-commerce platform Magento. The e-commerce website is a large source of data for marketing and customer relationships management, as it is demonstrated in the thesis.

3.2 Case description

The case retail company has been looking for a solution to provide insight into their audience and to target them with personalized content through different channels, including emails and their e-commerce website.

In particular, The Case Company was interested to leverage the Marketing Cloud functionality as the product recommendations engine, which was the initial motivation for considering the project. Good product recommendations help customers find products they might want to purchase and improve their online shopping experience while increasing sales. However, providing relevant and personalized product recommendations require learning preferences and interests of the online store visitors. Therefore, tracking user activity in the online store has to be taken into use as a new source of customer data. The online store attracts large volumes of users with various goals in mind: shopping for products online, browsing them before making a purchase in the department store or simply searching to learn more about products of interest, comparing prices and checking availability. Nevertheless, all of them leave the information about their interests as a footprint of viewed, searched and purchased products. Undoubtedly, tracking their behavior creates a large source of data, and opens a broad horizon of opportunities to take advantage of it.

The technological setup allows implementing the solution utilizing the functionality of the existing products and systems: Sales Cloud, Marketing Cloud and the e-commerce platform. Sales Cloud plays the role of the master solution for gathering and storing customer data. It accumulates data from various sources and solutions into one customer view. Most of the project is reliant on Marketing Cloud, in particular, its components called Personalization Builder and Einstein, which enable implementation of user tracking, user profiling, and generating product recommendations. In addition, other tools such as Google Tag Manager and Google Optimize are available to be used to support the solution implementation.

3.3   Project Roadmap

Successful achievement of the results is impossible without establishing a solid ground for the project. It consists of the formation of realistic goals and expectations, along with a clear understanding of the process and the efforts required to achieve them. The project roadmap is created to address this need. It demonstrates the way towards personalized customer experience through gaining insights into the online store audience. Being one of the deliverables of the thesis, the roadmap supports answering the questions of the research.

The high-level roadmap (Figure 9) presents the process of implementation of the connected commerce practice for improving customer experience.

Figure 9. Connected commerce high-level roadmap.

The project consists of six high-level stages: motivate, explore, prepare, collect, process and act. The stages represent the main milestones of the project implementation process and communicate the goal of each. The starting point of the project is finding the motivation for the effort. It includes defining the project goals and purpose. When the need is identified, the current environment for building the solution, along with its specificities and limitations, should be explored and evaluated. After the first two stages focused on planning are completed, the actual implementation of the user web tracking takes place in preparation and collection stages. Obtaining user activity data is the outcome of the stages. Further, the data can be processed to bring meaningfulness and actionability to it. The last stage is dedicated to acting on the data for personalizing the customer experience.

Each high-level stage of the roadmap can be logically divided into detailed steps. The detailed project roadmap is presented below in Figure 10.

Figure 10. Detailed project roadmap.

The structure of the project is relatively linear since consequent stages are dependent on the previous ones. However, when necessary, a certain level of flexibility and agility can be applied to the process. Moreover, the stages and tasks can be revisited and improved further in the process.

Below the process is described in further details, explaining contents of each step and highlighting challenges related to it. The report follows the outlined above project roadmap.

3.4 Motivate and Explore

It is impossible to overestimate the importance of thinking about the end solution first. Therefore, the initial phase of the project consists of motivation and exploration. It targets to create a basis for the project - clearly define the motivation for it, its goals and scope, and evaluate the environment for building the project. In this subchapter the following questions are answered: why the project should be started, what data is needed and collected, where to retrieve it, and how to achieve the desired result.

Why – Motivation for the Project

First of all, the business motivation is defined in the form of project goals. In the frame of the case project, motivation is defined by the ambitions for collected data utilization and answering the question "why do we collect the data?". Personalizing communications with customers is proven to influence the profits of the business positively, which makes it a good high-level motivation for undertaking the efforts for the project. Going into more details, the goals of the project include particular solutions. The Case Company is interested in replacing the current product recommendation engine, and, therefore, implementation of product recommendations is one of the initial motivations for the project.

What – Data Requirements

Next subject of the exploration is the data needed for enabling the planned solutions and achieving the desired outcome of the project. The current project involves two types of data - product data (prerequisite) and collected data (outcome), and both types should be a part of the exploration. Product data is the metadata about the products of the e-commerce website. User activity data is the outcome of web tracking. Collected data is the ground for personalization through creating user profiles, identifying their affinities and understanding their behavior. Web tracking of users in the e-commerce website allows collecting product page views, category page views, shopping cart items, purchases, search terms, and user identification.

Where – Data Sources

The product data needs to be retrieved and modified to be in a required format from data lakes, databases, e-commerce platform and other sources. Website data is used for tracking user activity. What kind of page is visited? What is the product displayed on this page? Which items are added to the shopping cart or purchased? What has a user just searched for? Those questions the website data is required to be able to answer in order to track the user browsing the pages.

How – Methods and Implementation

At the exploration stage the question "how" does not require a detailed answer. At this stage, only the outline of the implementation should be created. Which high-level steps should be taken during the implementation? What do they require? It is a good idea to draft the approaches and solutions in order to anticipate the requirements and the timeline. Moreover, thinking about the business logic of the end result should start already at this point. Which products in which places of the website or email topic are relevant to be recommended to the user? What are the suitable scenarios for those recommendations? What kind of leads we can identify from their online activity data, and how those leads are going to be nurtured? Which segments could be retrieved from the data and how? Which content should be personalized?

Project environment evaluation

Placing the project into the current business and technological environment allows to evaluate the defined goals and requirements by filtering them through the prism of the context. It helps to enrich or adjust the scope accordingly. The first subject to evaluate is the capabilities of the e-commerce platform and data sources. Which data is available and how complex is to retrieve and modify it? When is the data available? What are the volumes? Further, the important subject is the website audience. Since the project is focused on

learning about the online store customers, they should be in the center of the project. How many visitors does the website receive? What is the ratio of identified visitors? What are the current sources of identification - registration, newsletter subscription, purchase verification?
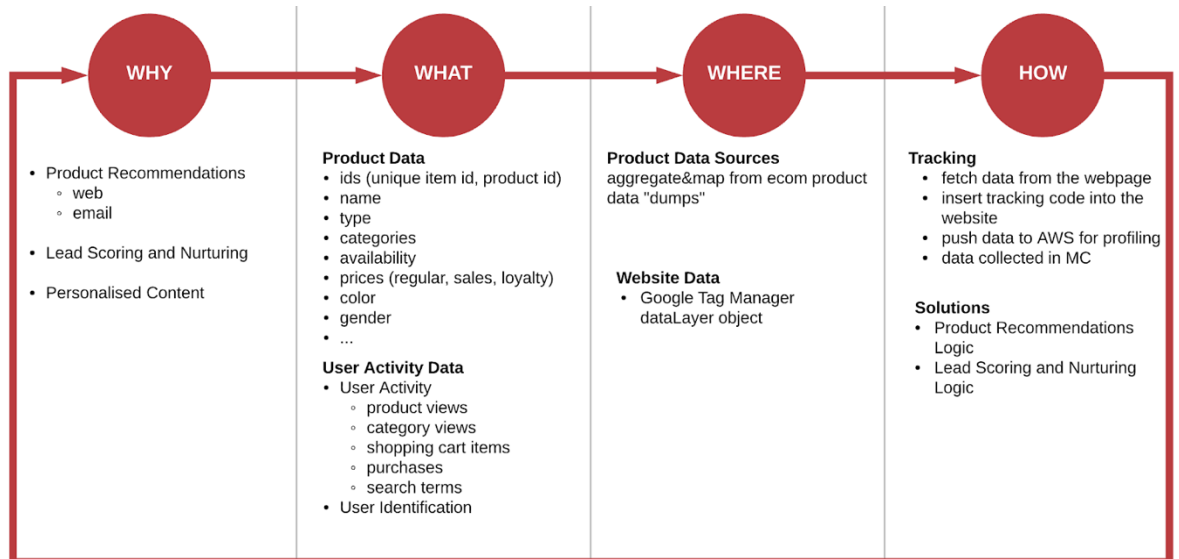
Figure 11. The Case Company exploration stage results.

To summarize, the project should be started with defining the motivation, exploring and evaluating the environment and setting realistic and achievable goals and scope of the project. The outcome of the exploration should be the clarity on the scope and efforts required. The results of The Case Company exploration are presented in the picture above (Figure 11).

Planning plays a truly crucial role in the project because it clearly demonstrates the effort needed to complete the project and achieve the desired results. It brings all stakeholders and members of the project to think about the end solution and the way to go to reach it, sets realistic expectations and allows to prepare the needed resources.

3.5 Preparation

The preparation stage creates the foundation for tracking implementation by ensuring that the prerequisites are met. The main prerequisites are related to the product data and the online store audience. This chapter discusses the preparation stage and the challenges and solutions it incorporates.

3.5.1 Product data

The product data is shaped in the form of a product catalog. It is of the highest importance to create a correct product structure with the comprehensive metadata, since it establishes the material for the whole tracking solution and all the solutions built upon it, and, consequently, affects the quality of the outcome data.

The product catalog is imported daily into Marketing Cloud from the FTP server, where it is automatically delivered beforehand.

Catalog fields

Product catalog consists of fields representing product features. The fields of the product catalog are presented in Appendix 1. There are several mandatory fields, which are required for the catalog import: SkuId, Product Code, Product Name, Product Type, Product Link, and Online Availability. SkuId is the unique identifier of a product variation, and product code is the identifier of a product item. SkuId and Product Code fields are explained in more details below. Online Availability field determines the availability of a product in the online store for purchasing and recommending it to visitors. Then, the catalog has categorization and other metadata fields providing details about the product and its features, such as Brand Name, Gender, Color, Keywords. In addition, the data needed for displaying the product recommendation should be included: pricing, image link. The product catalog has two custom logic fields that were decided to add - Data Complete and Marketing Cloud (MC) Online Availability. Those fields ensure that the product has all the required data to be displayed to the user. Data Complete field indicates that all the needed fields have correct values, resulting in Y(yes) or N(no). MC Online Availability is a combination of the actual Online Availability of the product and Data Complete field value, setting products with incomplete records in the catalog to not available.
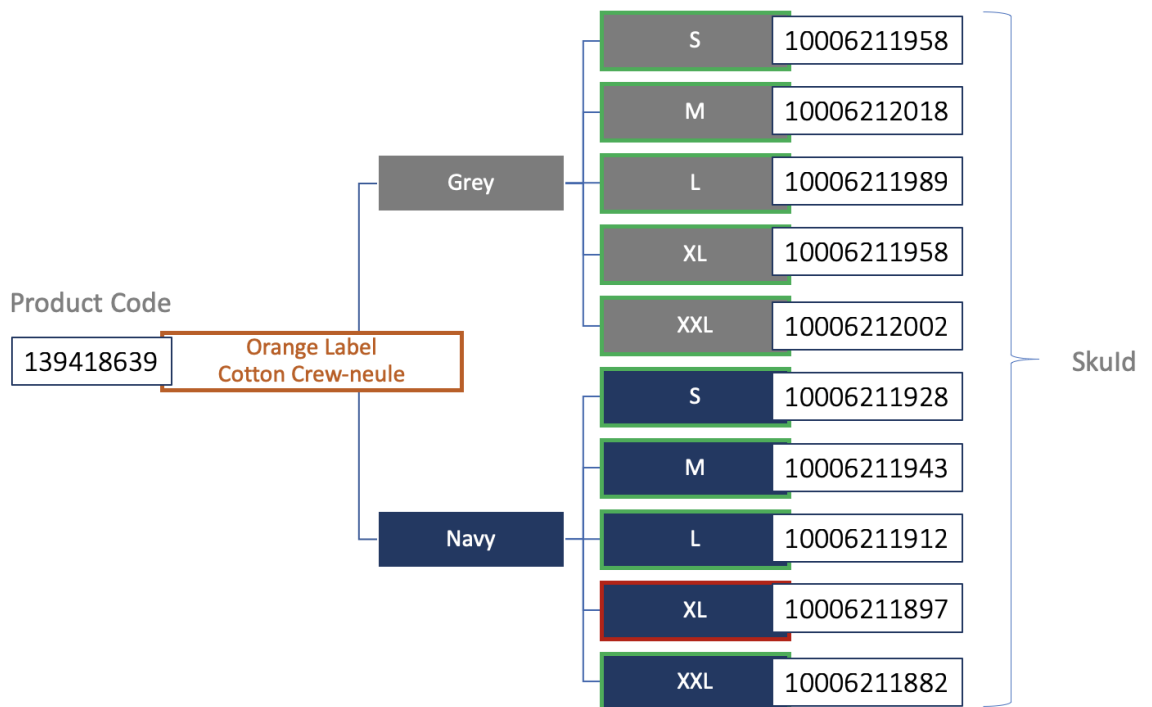
Product hierarchy

The hierarchy of product variations is also reflected in the product catalog. Each product variation is presented in the catalog as a separate record with a unique identifier (SkuId), grouped by the parent product using the product code. The best way to explain the required data structure is with a practical example.

The sample product for the example is this Superdry sweater. The product exists in two colors and in various sizes. The product belongs to the following categorization: Men/Clothes/Knitwear/Sweaters.
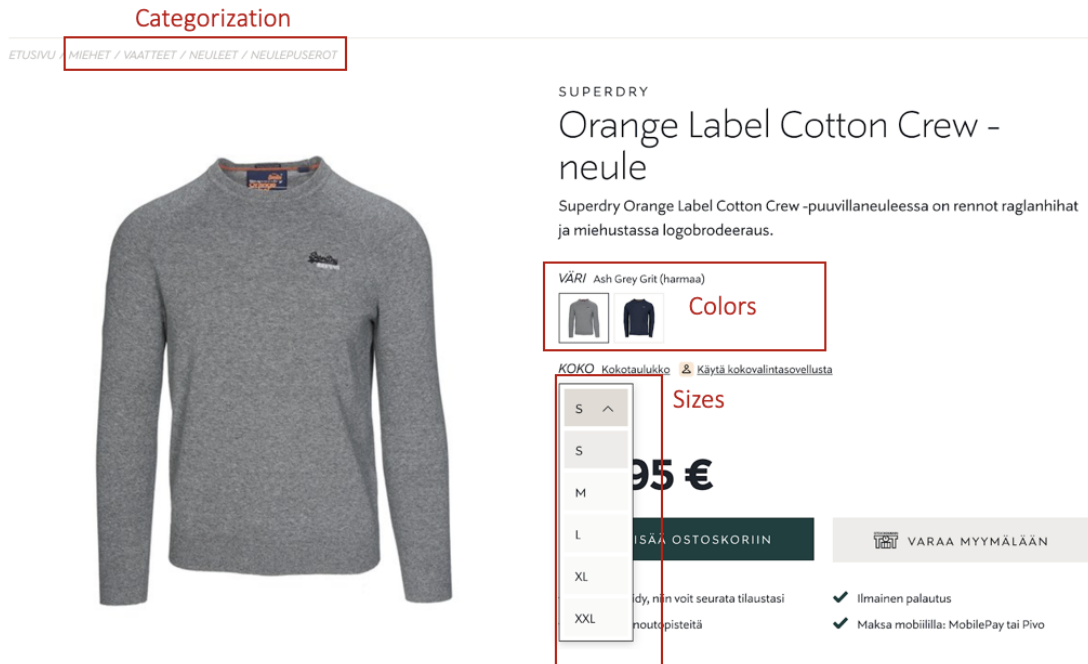
Figure 12. Product metadata overview.

With the above information (Figure 12), the hierarchy of the product variations can be presented in the following way (Figure 13). The parent product determines the product code value, and the unique identifier (SkuId) is assigned to each variation of the parent product. In the picture (Figure 13), availability is marked with the colored borders to add visuality: green for positive availability and red for negative.

Figure 13. Product variations hierarchy.

Further, the hierarchy, consisting of the sweater as a parent product and its variations, is translated into the following data structure in the product catalog (Table 1).

Table 1. Product variations in the product catalog.

SkuId	Product Code	Color	Availability	Size
10006211958	139418639	Grey	Y	S
10006212018	139418639	Grey	Y	M
10006211989	139418639	Grey	Y	L
10006211973	139418639	Grey	Y	XL
10006212002	139418639	Grey	Y	XXL
10006211928	139418639	Navy	Y	S
10006211943	139418639	Navy	Y	M
10006211912	139418639	Navy	Y	L
10006211897	139418639	Navy	N	XL
10006211882	139418639	Navy	Y	XXL

Challenges

Product catalog creation appears to be one of the most challenging parts of the project for the companies. At this stage, the stakeholders tend to realize the bigger complexity of the project than it was anticipated. Siloed data, data quality, reliability, and on-time availability are the biggest challenges met.

The first challenge becomes obvious when the team starts looking into the available sources for the catalog data. Product data can be distributed across multiple systems, which are using different product identifiers and data formats. The Case Company product catalog was gathered from at least 5 product sources applying complex logic for data mapping.

Moreover, the systems might have different data formats and time of data being refreshed and available, which has to be taken into consideration when scheduling the refreshment of the product catalog. The issue is visible in cases like changes in product availability or end of the campaign and changes in prices. Those changes should be reflected in the product catalog as soon as they occur in the online store to preserve consistency between recommendations and product information in the website.

When the data is brought together into the product catalog, data quality can be evaluated. Data quality directly impacts the end result of the project, and, most visibly, product recommendations. Product recommendations require the most up to date and reliable data since they are displayed to the visitors of the online store. Therefore, incorrect values in the catalog fields will inevitably result in poor user experience. The examples of such issues with pricing are visible in the picture below (Figure 14): the hat is wrongly considered to be on sale, and the coat has a price of zero euro.

Figure 14. Product recommendations issues due to faulty product catalog data.

However, product catalog creation for the purposes of this project opens the visibility for the company and stakeholders into the product data quality issues. Data quality is often a pain point for companies. This aspect may affect the business in many ways - starting from logistics and ending with customer experience in the online store and marketing. Therefore, its improvement should be on the agenda of the companies.

To conclude, the product catalog might become a challenging part of the project. However, those challenges can be viewed as the opportunity to see the need for the overall data quality and architecture improvement. The product catalog data quality presents a solid reason to do it since it provides a clear example of the feasibility of the effort.

3.5.2 Audience

Website audience is another crucial variable in the equation when it comes to connected commerce. At the preparation stage, the aspects to focus on are volumes of visitors and their identification.

Einstein is creating user affinity profiles even for anonymous visitors and it is able to recognize them returning. This makes the unidentified audience a valid and valuable source for tracking user behavior in the online store and personalizing the experience. However, it is desired to gain identified users because this opens wider opportunities for marketing. It allows targeting users not only with the personalized product recommendations in the online store but also with other kinds of personalized marketing such as nurturing the customer with emails. Moreover, knowing user identity allows preserving this information better across browser sessions, browsers, devices, and systems.

There are various ways how the user can identify himself in the online store. The most common ways are registering or logging in at the website, subscribing for the newsletter, providing the contact information when purchasing products online or being redirected to the website by clicking the link in the email. Therefore, those sources of identification should be leveraged.

The first and the simplest scenario to identify the user is when the user arrives to the website from the email link. The identity of the user is already known in the email. In order to bring this information also to the website, the solution is to enable automatic attachment of the user identifier as a query parameter to every link in every email sent. On every page load, the website should be checking whether the URL contains the user identifier. The user identifier value is delivered to the user identification tracking code and send to Einstein. The solution works well and delivers high volumes of identification. However, email content plays a key role in the success of this solution - emails should contain clear and attractive calls to action, motivating the user to visit the online store. The solution is visually presented in Figure 15.

Figure 15. User identification with email redirect.

The next step to take in the improvement of the amount of identified Einstein profiles is to take advantage of any digital hand raised by the user on the website. It could be any action where the user provides his email address. For instance, subscription to a newsletter, registration or sign in, purchase order. The solution to fulfill this scenario is shown in Figure 16 below. The challenge is created by concerns around user personal data. An email address is a form of personal data and it is recommended to avoid unnecessary exposure of it to the web. Therefore, it is preferable to implement user identity tracking using the user id key instead of the email address. User id key has to be retrieved from the CRM as the source of customer master data. The solution is to implement a microservice. It will use the email address to fetch the required data (user id key) from the CRM and return the data to the website for further use. It is worth noting that the approach of bringing the data about user preferences into the website creates broad possibilities in addition to Einstein user identification. It allows customizing the website behavior according to what we know about the visitor. The Case Company widely utilizes Google Tag Manager in the online store. Therefore, the best place to have the data is the Data Layer object where it can be fetched from the cookie on each page load.
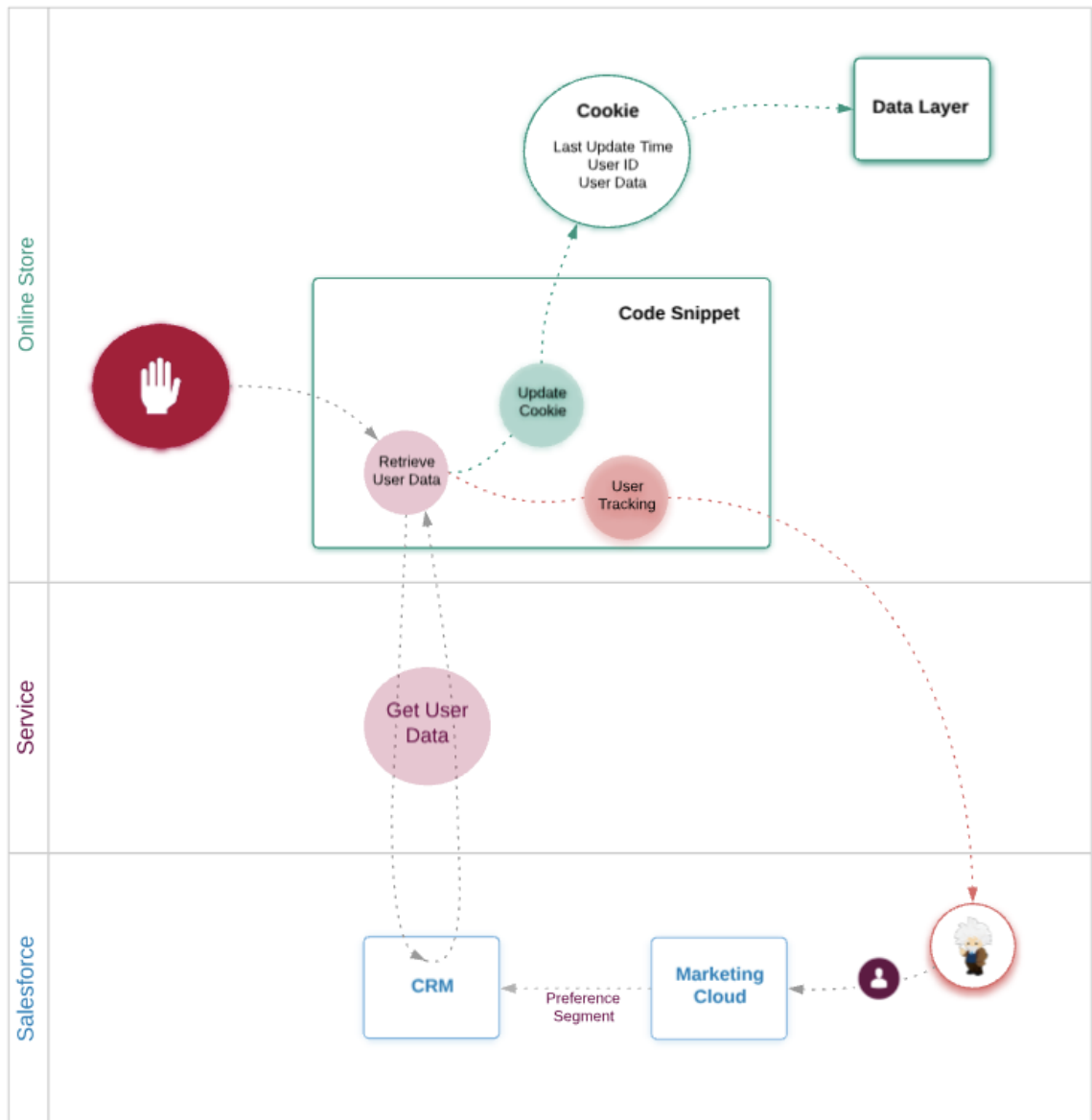
Figure 16. Extended user identification solution.

The extended user identification solution is an optional step. Most of the mentioned scenarios where a user provides his email address will result in sending emails to the user. Therefore, the user can eventually be taken along the path of the first solution - identification from the email. However, the above-presented solution makes user identification immediate and makes the data available in a convenient place in the online store for other solutions to utilize.

Currently, The Case Company has only the first solution in place. The online store identification rate of the Case Company is satisfactory. It could be increased by improving the attractiveness of the email content and implementation of the second solution as well.

3.6   Collecting User Behaviour Data

User tracking implementation is done in two steps - first, fetching the data from the website and, second, implementing the tracking code script to send the data to Einstein. Therefore, to enable tracking, the product and webpage metadata has to be available on the website, having each product in the online store resembled as the record of the product catalog.

Implementation

The Case Company made a decision to collect data about users, product page views, category pages views, shopping cart, and purchase activity. The tracking code in the website collects the data about the mentioned events and by default metadata about user browser and session.

The Case Company takes great advantage of utilizing Google tools in their online store. The tool that was most useful in this project was Google Tag Manager. It enables easy insertion and adjustment of the tracking code in the website. The Data Layer object of Google Tag Manager is a source of the product and page metadata in the e-commerce side. When the event such as user identification, product or category page view, cart activity or purchase occurs, the data becomes available in the Data Layer object as macros. The data is retrieved from the Data Layer and delivered to the tracking code. Tracking of different events require different data to be collected. The described process outline is visually presented in Figure 17.
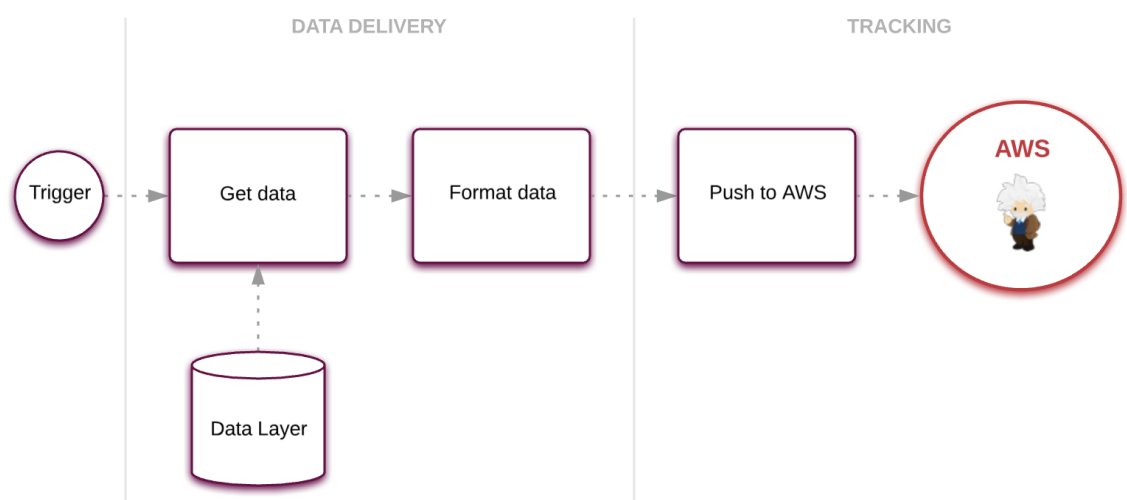

Figure 17. Web tracking process outline.

Figure 18 illustrates the process behind tracking a product details page view. When the user opens the product page, the product data becomes available in the Data Layer macro. The product is retrieved from the macro and the product code, matching the one in the product catalog, is delivered to the tracking code.
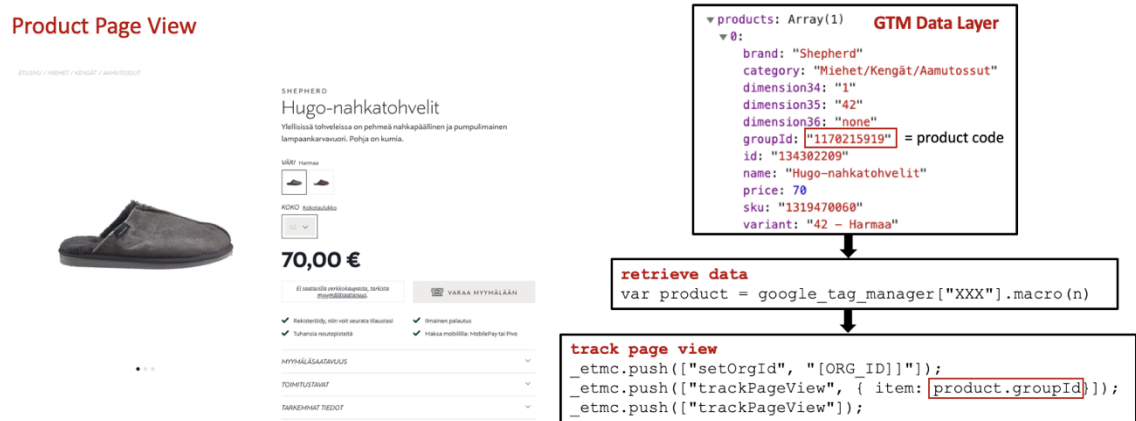

**Figure 18.** Tracking product page view.

Challenges

User activity tracking implementation on the online store side is a rather straightforward process. In our case, the convenient tools were available. The e-commerce platform in combination with the Google tools was able to support the process well. However, it is worth noting that the biggest challenge to anticipate is the availability and the accessibility of the required data about the events which are desired to be tracked.

3.7 Processing the Collected Data

The collected user activity data is a valuable asset for the business. However, to enable the data, it has to be enriched with meaningfulness. This chapter will describe several ways to do this – user affinity profiles, lead identification, and segmentation of the audience.

3.7.1 Lead identification

Identification of potential leads is one of the solutions to be built on top of the collected data. One of the use cases to benefit from the solution for the Case Company is creating and nurturing loyalty program leads. Loyalty program is the campaign which offers special benefits and discounts to loyal customers. The goal of the solution is to identify users, who are potentially interested in becoming loyal customers and attracting them to enter the program. The solution is designed to be proposed to the Case Company for the future development of the results of the project.
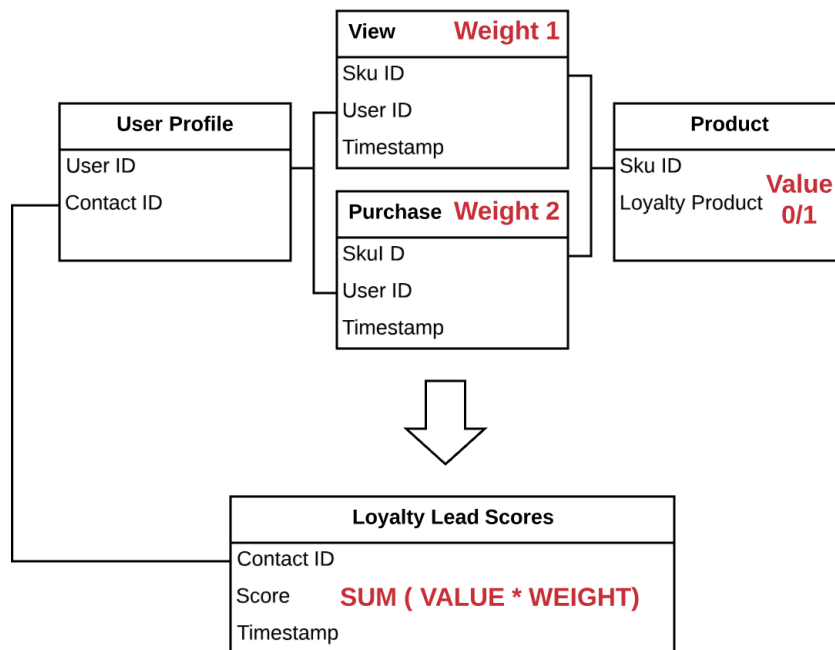
**Figure 19.** Loyalty program leads identification.

The solution chart is presented in Figure 19. The key idea of the solution is to calculate and assign the lead score to the customer based on his interest in the products which belong to the loyalty program. Marketing Cloud Einstein makes the needed tracking data available in the tables containing user profiles, page views, and purchases. Those tables combined together represent a log of activity history of the user. To keep the lead scores up to date and avoid sending marketing communication to outdated leads, only the recent history should be taken as a source for lead scoring. The suitable period could be three months. The information whether the item in the activity history is a loyalty product can be brought from the product catalog. Loyalty products are represented with the value 1 and non-loyalty products are represented with the value 0. Moreover, purchase of the product and view of the product page have a different logical weight. When the user purchased the product, it is safe to say that he is interested in it. However, simply viewing the product page does not give such assurance. Therefore, weight 2 is assigned to the purchase event, weight 1 to the product page view event. The score for the lead is calculated with the formula SUM(VALUE*WEIGHT). To put the formula into words, for every event record the product value (1 or 0) is multiplied by the event weight (1 or 2), and then the results are summarized. The lead score can be any number starting from 0. Further, the lead classification is applied. Depending on the lead score value, the customer can be classified as cold, warm or hot lead. Lead score data should be made available for utilization by sales, service, and marketing. Leads can be nurtured with marketing communications such as emails, with the goal of converting them to loyalty customers.

3.7.2 Segmentation

Segmentation is a popular practice to personalize content and communications with the customers and to target relevant audiences. Segments can be based either on first-party data or bought from the third parties.

The goal of each business is to grow revenues. This goal can be achieved roughly in two ways: increasing the revenue coming from the existing customers and by attracting new customers. The first one to start with is exploring the existing customer audience.

Although segmentation on a larger scale is better handled by Data Management Platforms (DMP), it is possible also with our project tracking data. Visitors can be segmented by the preferred product type: women, men, children, cosmetics, home. Although the solution does not enable a high level of precision of the segmentation, it allows gaining another view angle on the audience and enabling personalization of the content by taking advantage of the existing tracking data. In addition, such a solution, in contrast to DMP, provides segments to identified users.
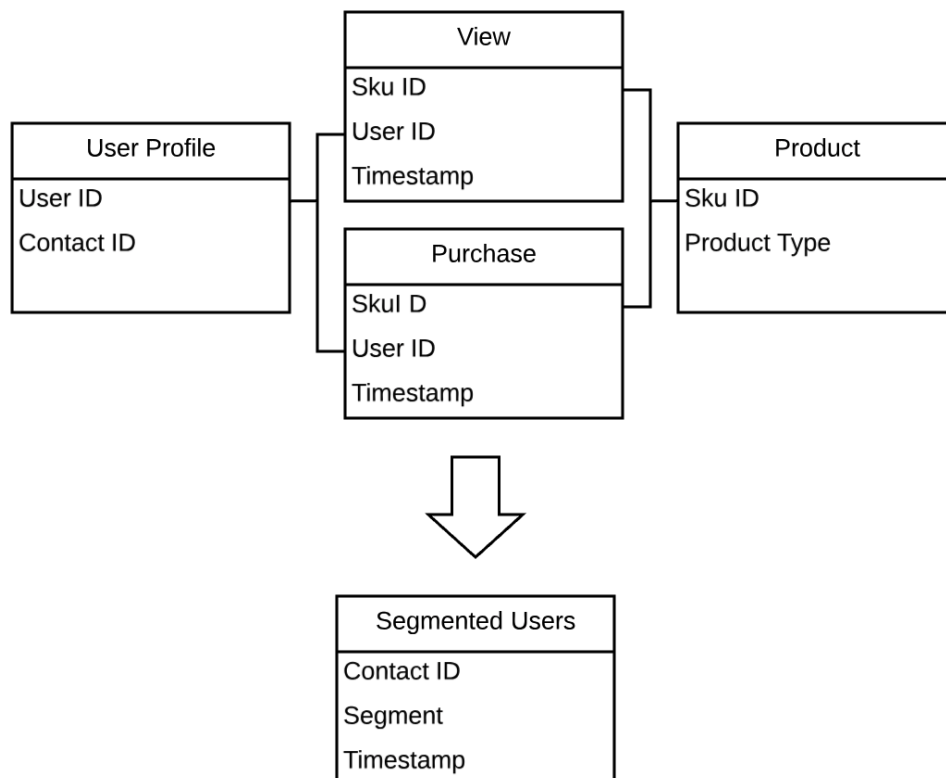

Figure 20. Segmentation.

Segmentation solution is presented in Figure 20. The logic is similar to the lead scoring solution, with the difference in the product data in focus. The user activity log is created in a similar way by combining purchase and view event logs. Further, the data is enriched with the product metadata from the product catalog. The field of interest for segmentation is product type. Based on the aggregated activity history and product data, the product type in which the user expressed the highest interest in recent time can be identified. The solution may be improved by assigning different weights to activity events in order to make the purchase heavier than a view, as described above for the lead identification solution. According to the identified preferred product type, the user can be considered to belong to the respective segment. Segment information can be further brought to the Sales Cloud to enrich customer master data, and to the Data Layer object of the Google Tag Manager to enable the web content personalization.

Segmentation solution described above is the opportunity for the further development of the project, and it is not implemented for the Case Company.

3.7.3 User Profiling

In light of the latest customer relationships trends, segmentation is not enough anymore, and providing a truly personalized customer experience is possible with creating user affinity profiles. User profiling is another way to process the collected tracking data. In the case project, profiling is done by Einstein with the sophisticated algorithms based on the user activity tracking data. Einstein user affinity profile has been explained in detail in the Theoretical Framework of the thesis.

To demonstrate the idea of the user affinity profile, I decided to take mine as an example. Figure 21 below shows my activity history - the products that I have viewed and added to the cart. In this case, I have not purchased any products.
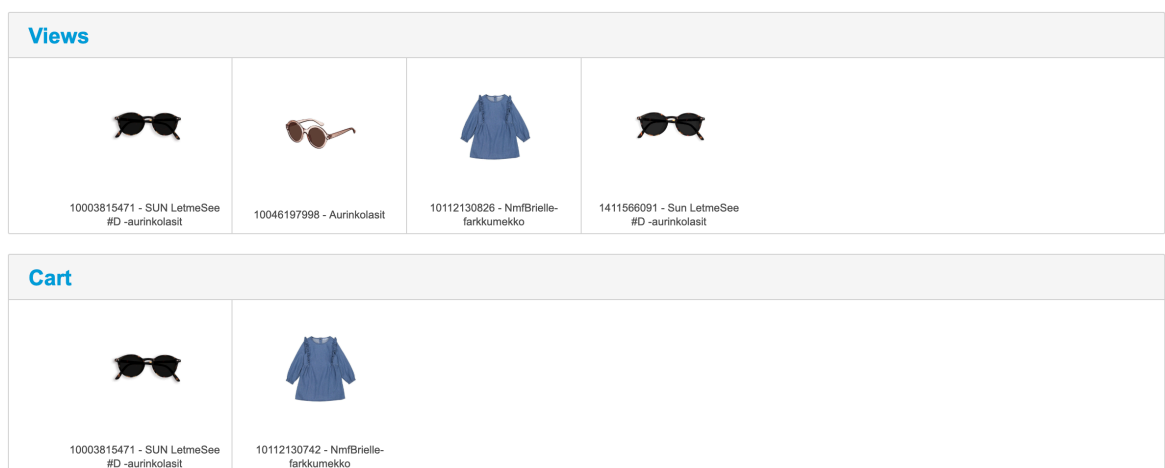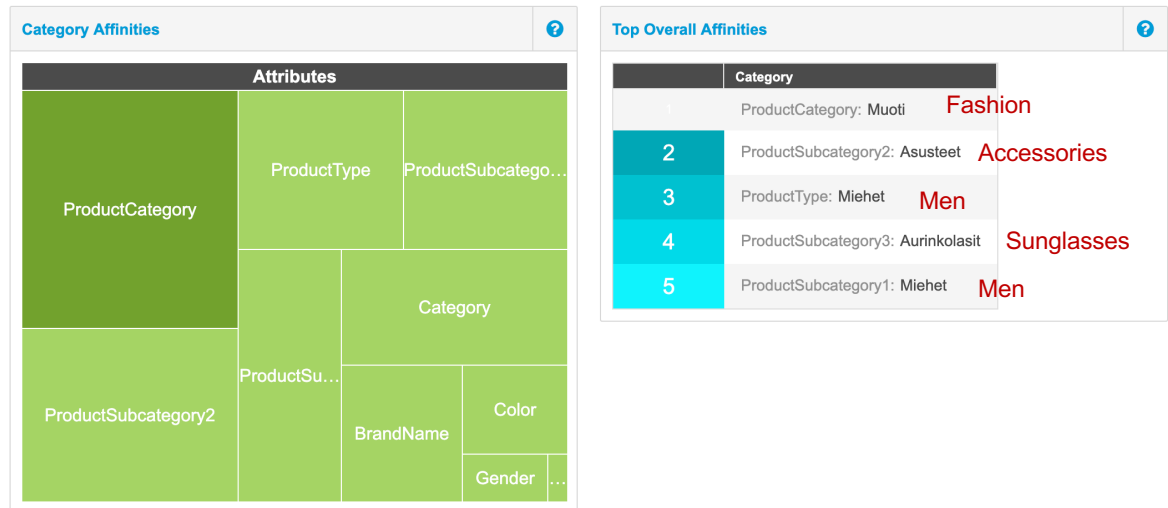

Figure 21. User activity history visual example.

All products belong to the Fashion category. Most of the products are sunglasses for men, and they belong to the Accessories category, and one product is a dress for kids (girls). Affinity profile (Figure 22) reflects those preferences. The translations are added to the picture.

Figure 22. Affinity profile example.

The affinity profile holds the data of user interest areas, which can be effectively used for personalization of the content presented to the user. The affinity profile in action will be shown further in the "Product Recommendations" subchapter.

3.8   Customer Experience Personalization Solutions

The last step of the roadmap is acting on the collected user behavior data. Collected and processed tracking data enables various solutions to leverage it. Several of them are described in this chapter. The presented solutions are based on the assets generated in the previous project stages described above.
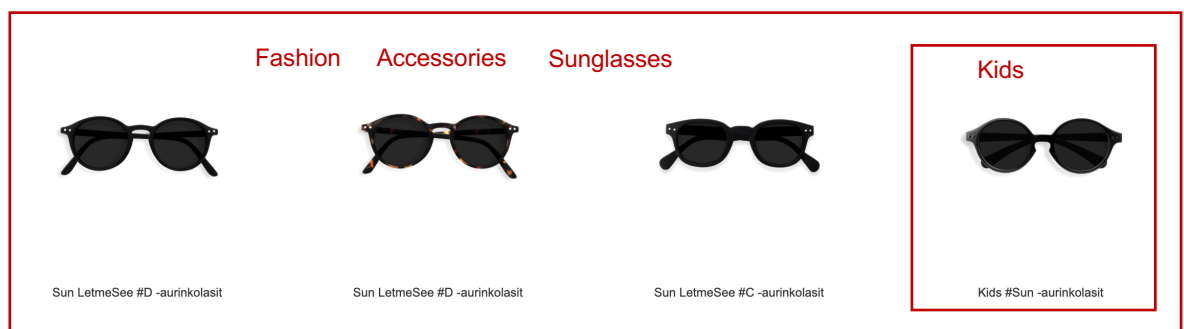
3.8.1   Product Recommendations

Product recommendations are one of the solutions to personalize the content presented to the website visitor, which user tracking enables. They are able to guide the customer in finding the items he is interested in and to lead him to a purchase.

In order for product recommendations to drive revenue increase, the recommendation logic should be thoroughly thought through. User psychology and motivations, context and probability of knowing preferences of a visitor should be taken into consideration.

Product recommendations for the Case Company are created for Home page, Product pages, Cart, Error page, Loyalty Customer page, and Brand pages. These types cover the most visited pages of the online store.

Home page is the entry to the website and the point to catch the user attention and guide him deeper in the website. Moreover, Home page has the largest and most diverse audience. To address these factors, the most applicable scenarios are to recommend products based on the affinity profile of a visitor, in case if he is a returning user, or to highlight the most popular products of the store. For instance, with the above presented affinity profile and activity history, I could be recommended the following products (Figure 23) in the Home page.

Figure 23. Example of affinity profile-based product recommendations.

Product pages should offer recommendations which are related to the product being viewed. It is a relevant place to utilize cross-sell strategy. It can be done by recommending the products that have been bought or viewed by other people along with the item in question.

Loyalty Customer page is meant to convince the user to enter the loyalty program and to advertise the offers for loyalty customers. Therefore, the products of the loyalty program are to be recommended there.

Brand pages attract users interested in a particular brand. Usually, companies owning the brand would set a requirement to recommend only their products on such pages. This requirement should be reflected in the logic.

Error page is a page where a visitor finds himself frustrated about the error. In order to smooth his user experience, products that he likes can be recommended using the affinity profile. Such approach targets to lead him back to browsing the online store.

When the user opens his shopping cart, he is likely to be ready to buy the items in the cart. It is necessary to be careful with recommending other products on the Cart page. The danger is to distract a customer and drive him further from the purchase. However, accessories or discounted products complementing the contents of his cart may lead to extending the value of the purchase.

The logic for product recommendations is the most crucial part of the solution implementation as it defines the interest of the user in the recommendations and, consequently, the conversion rate driven by them. Therefore, it should not be neglected. The recommendation logic should be carefully designed and tuned for better results.

Product recommendations can be beneficially used both on the web and in emails. Product recommendations in emails are able to increase the performance and feasibility of regular newsletters, campaign emails or other communications. Attracted by a recommended product, customer can be led to the website and, possibly, to making a purchase. This makes appealing and personalized email product recommendations a valuable call to action. In addition, it is worth mentioning that email recommendations a source for user identification, which was described in the chapter "User Identification".

3.8.2 Dynamic web content

Segmentation opens broad opportunities for personalization of marketing content and user experience based on the segment to which the user belongs. One of the interesting examples is dynamic web content. The solution allows presenting different website content to different audience segments. Such personalization can be enabled with the utilization of Google Optimize, where website content is configured according to the specified rules.

For the demo case, I have chosen to personalize the banner on the Home page of the online store of the Case Company. The Home page is the gateway into the store and should catch the attention of a visitor. The demo solution utilizes the results of the segmentation solution, which was discussed above in the thesis. It demonstrates personalizing the banner for interest-based segments: women, men, children, home and cosmetics.

First of all, segment data has to be brought into the website. The data could be made available in any convenient way – for instance, as a Data Layer variable or as a query parameter for the webpage URL. For the demo, I have chosen the second option due to more simplicity in implementation and demonstration of the results. Next, website content is customized for each segment in Google Optimize. Versions are differentiated based on

the rules configured. Picture 24 and Picture 25 show the different content presented based on the segment to which the visitor belongs.

BRING SPRING VIBES TO YOUR CLOTHES!

Spring is here!

Shop womens fashion here

Figure 24. Web content personalization for segments – women segment.

COMFORT TO YOUR HOME

Add comfort to your home this spring with our best offers.

Shop for cozy home goods here

Figure 25. Web content personalization for segments – home segment.

Web content personalization can be used to address various scenarios of differentiating the audience segments and types: making relevant offers, showing better targeted marketing messages, filling the page with the most interesting content for every particular user.

4   Discussion and conclusions

Personalized customer experience is a must for customer-oriented business nowadays. Reaching a high level of maturity in digital marketing requires a significant effort to understand a customer audience. The thesis described one of the contemporary ways for a business to know its customer better – tracking user behavior in the online store. The value of the web as a source of customer data is undeniable. Connectivity of people has created a unique opportunity for the company to get an insight into preferences and interests of the online store audience by capturing the data footprint of visitors. The project roadmap is presented in the thesis to demonstrate how to leverage the e-commerce website and user data for personalized and relevant customer experience.

Web tracking has gained vast popularity and utilization nowadays. It has made it a controversial subject for the public. The largest concern is created by having the business capturing the data (including personal data) of online users and using it for its own benefit. Despite many important issues related to the mentioned downside of the practice, web tracking also provides good advantages to web users. It enables personalized, relevant and interesting content. Although the subject has both pros and cons, it is a reality of today's world. The thesis has demonstrated the positive impact of web tracking and connected commerce on customer and user experience.

The thesis is based on practical project experience. It allowed capturing the realistic picture of the efforts, complexity, and challenges on the way to achieve the desired results. Therefore, the approach ensures the trustworthiness of the results of the research.

The case project was completed successfully, and the primary goals were reached. Product recommendations in the online store and emails have been implemented for the Case Company. For the web, the new solution, which was described in the report, replaced the old less efficient product recommendations engine and brought valuable benefits to the company and its customers. Now customers have an opportunity for a better online shopping experience with more personalized and relevant product recommendations. Product recommendations in emails allowed to raise the efficiency of email marketing by making the content of emails more interesting. In addition, the new solution has significantly simplified the internal processes of utilizing and maintaining product recommendations. However, the achievement of good results required overcoming some challenges. The biggest challenges faced in the project were related to retrieving product data from siloed sources and shaping it in the required format.

User behavior data is a valuable asset for the business. Once the tracking is implemented, the collected data becomes a foundation for various marketing solutions to leverage it. Lead identification, audience segmentation and dynamic personalization of web content were presented in the thesis as suggestions for further development of the project. However, the presented solutions are only a fraction of the wide possibilities that the user behavior data can offer. To take greater advantage of the project and increase its feasibility, more work can be done in the direction of personalized customer experience based on his preferences.

The thesis was a great experience and a learning opportunity for me personally. Even though the subject area was rather familiar for me, it was interesting and challenging to dive deeper into details and to enrich my knowledge with theoretical practices. The goal of my thesis was to provide insight into the process of collecting user behavior data from the online store and using it to personalize the customer experience. It was challenging to ensure clear demonstration of steps, efforts, and expectations involved in the project. Another challenge was related to keeping the scope of the thesis concise. The thesis project was planned, and the timeline was established in the starting phase. The overall timeframe was set to 14 weeks, and it was followed successfully.

To conclude, personalized customer experience is a broad and leading-edge subject for business today. Tracking user behavior is a great and efficient way to enable it by taking a deeper look into the interests of online store visitors. Incorporation of this practice drives revenues for the business, which makes it a hot topic. The subject has wide horizons for future development and will surely gain even larger popularity and efficiency with constant technological progress.

References

American Marketing Academy. 2019. Marketing definitions. URL: https://www.ama.org/the-definition-of-marketing/. Accessed: 5 March 2019.

Anderson, K. 2015. Creating a Data-Driven Organization. O'Reilly Media, Inc.

AppShark. Marketing Cloud blog. URL: http://www.appshark.com/how-to-decide-if-marketing-cloud-is-right-for-your-business-needs/marketing-cloud-banner-650x350/. Accessed: 11 March 2019.

Barratt, S. & Davis, S. 2009, "Connected Commerce: The intersection of e-commerce and e-communication", *Journal of Direct, Data and Digital Marketing Practice,* vol. 10, no. 3, pp. 249-261.

Boumphrey, S. & Brehmer, Z. 2017. Megatrend Analysis: Putting the Consumer at the Heart of Business. Euromonitor International.

Cundari, A 2015, Customer-Centric Marketing: Build Relationships, Create Advocates, and Influence Your Customers, John Wiley & Sons, Incorporated, New York.

Englehardt, S. & Narayanan, A. 2016. Princeton University's WebTAP project: Online Tracking: A 1-million-site Measurement and Analysis. URL: https://webtransparency.cs.princeton.edu/webcensus/. Accessed: 26 March 2019.

Gartner. 2019. Gartner, Inc. URL: https://www.gartner.com/it-glossary/customer-relationship-management-crm. Accessed: 15 March 2019.

Gartner. Gartner's 2018 Magic Quadrant for the CRM Customer Engagement Center. Zendesk. URL: https://www.zendesk.com/resources/gartner-magic-quadrant-crm/. Accessed: 9 March 2019.

Internet World Stats, 2019. Internet Usage Statistics. URL: https://www.internetworldstats.com/stats.htm. Accessed: 26 March 2019.

Jackson, G. & Ahuja, V. 2016, "Dawn of the digital age and the evolution of the marketing mix", *Journal of Direct, Data and Digital Marketing Practice,* vol. 17, no. 3, pp. 170-186.

Kenton, W. 2018. Investopedia. Digital Marketing. URL: https://www.investopedia.com/terms/d/digital-marketing.asp. Accessed: 5 March 2019.

Kotler, P. 2016. *Marketing management*. 15, global edition. Harlow, England: Pearson.

Lennon, R. 2017. What Is Data-Driven Marketing? – Definition, Examples and Case Studies. URL: https://www.makethunder.com/data-driven-marketing-definition-examples/. Accessed: 28 March 2019.

McGinnis, D. 2016. Customers Are Willing to Swap More Data for Personalized Marketing. URL: https://www.salesforce.com/blog/2016/11/swap-data-for-personalized-marketing.html. Accessed: 29 March 2019.

O'Keeffe & Company. 2013. Global Insights on Succeeding in the Customer Experience Era. Oracle. URL: http://www.oracle.com/us/global-cx-study-2240276.pdf. Accessed: 9 March 2019.

Pritchard, M. 2018. The Religion of the Single Customer View. URL: https://www.thedigitaltransformationpeople.com/channels/customer-engagement/the-religion-of-the-single-customer-view/. Accessed: 10 March 2019.

Salesforce 2019. URL: https://www.salesforce.com/. Accessed: 9 March 2019.

Salesforce Trailblazer Community. URL: https://help.salesforce.com/articleView?id=mc_pb_personalization_builder.htm&type=5. Accessed: 11 March 2019.

Salesforce. 2019. Marketing Cloud. URL: https://www.salesforce.com/eu/products/marketing-cloud/overview/. Accessed: 9 March 2019.

Salesforce.com Trailhead. 2019. Get to Know Sales Cloud. URL: https://trailhead.salesforce.com/content/learn/modules/sales-cloud-platform-quick-look/get-to-know-the-sales-cloud-platform?trail_id=discover-sales-cloud. Accessed: 15 March 2019.]

Salesforce.com Trailhead. 2019. Use Data to Get a 360-Degree View of Your Customers. URL: https://trailhead.salesforce.com/en/content/learn/modules/account-data-strategies/use-data-to-get-a-360-degree-view-of-your-customers. Accessed: 10 March 2019.

Salesforce.com, inc. 2017. Personalization in Shopping. Study Report.

Semmelroth, D. 2013. Data Driven Marketing For Dummies.

Sentance, R. 2018. Cloud-based CRM systems – What are the benefits? Econsultancy. URL: https://econsultancy.com/cloud-based-crm-systems-what-are-the-benefits/. Accessed: 9 March 2019.

Technopedia. Metadata. URL: https://www.techopedia.com/definition/1938/metadata. Accessed: 25 April 2019.

What Is My IP Address, 2019. What is web tracking? URL:https://whatismyipaddress.com/web-tracking Accessed: 26 March 2019.

Appendices

Appendix 1. Product catalog fields.

	mandatory		features
	pricing		custom logic
	categorization		other

Field	Description	Value
SkuId	Product variation unique identifier	id
Product Code	Product unique identifier	id
Product Name	Name of the product	text
Product Type	Type of the product (ex.: sweater, sunglasses...). Matched with the product category pages of the online store	text
Product Link	URL to the product in the online store	URL
Image Link	Product image URL	URL
Regular Price	Regular (basic) price of the product	decimal (19.90)
Sales Price	Discounted price	decimal
Loyalty Price	Price for the loyalty customers	decimal
Loyalty Product	Is the product a part of loyalty program?	boolean (Y/N)
Category	Category path	text
Product Category	Parent category (level 0)	text
Product Sub-category	Subcategory (level 1)	text
Product Sub-category 1	Subcategory (level 2)	text
Product Sub-category 2	Subcategory (level 3)	text
Product Sub-category 3	Subcategory (level 4)	text
Brand Name	Name of the product's brand	text
Gender	Gender	text
Color	Color	text
Keywords	Relevant keywords describing the product (new, campaign...)	multiple values ~ separated
Online Availability	Indicates if the product is available for purchasing in the online store	boolean (Y/N)
Data Complete	All required fields contain data?	boolean (Y/N)
MC Online Availability	Field combining Online Availability (OA) and Data Complete (DC) results (=OA*DC)	boolean (Y/N)