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SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

**THE PHENOMENON OF PROGRAMMATIC ADVERTISING AND
AUDIENCE TARGETING**

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DICTIONARY OF TERMS USED IN THE THESIS

3Vs of big data: Volume, velocity and variety of data.

Ad Blocker: A piece of software designed to prevent advertisements from appearing on a webpage.

Banner Ad: A heading or advertisement appearing on a webpage in the form of a bar, column, or box.

Behavioural Targeting: Advertising technique to customize types of ads that users see by checking user's previous purchasing behaviour.

Big Data: An extremely large quantity of data that is analysed to reveal patterns, trends – normally related to human behaviour and interactions.

Click-Through: The process of clicking on the advertisement to the advertiser's destination.

Contextual Targeting: Advertising technique that serves you ads based on your browsing behaviour.

Conversion Rate: The percentage of users who take the desired action.

Cookie: A piece of data, sent from a webpage and stored in user's browser up to 30 days.

Cost-Per-Action (CPA): Average cost of a user converting during the campaign.

Cost-Per-Click (CPC): Average cost of user's click-through.

Cost-Per-Thousand (CPM): Price of 1,000 impressions.

Cost-Per-View (CPV): Price you pay for each time your ad has been seen.

Data Driven Marketing: Refers to marketing decisions that are using data related to consumers.

Data Management Platform (DMP): A system for collecting and managing data.

Demand-Side Platform (DSP): Platform that allows buyers to purchase impressions by an automated process.

Display Advertising: A form of digital advertising, where an advertiser's message is shown on a webpage.

First-Party Data: Data gathered from your own website.

GDPR: General Data Protection Regulation.

Geotargeting: Targeting users from a specific geography (country, region, state, etc.).

Hashtag: A tag used on the social networks, to give a short message (Written as #).

Keyword: A word used in performing a search.

Media Inventory: Digital space available to advertisers.

One-To-One Marketing: Also referred as personalized marketing. A type of marketing where the user is targeted with ads advertisers assume he is interested in.

Programmatic Advertising: Using automated systems and collected data to make media buying decisions.

Real Time Bidding (RTB): The process of buying and selling of online ad impressions through real time auctions.

Run-On-Side (ROS): A type of buying where an ad can be seen on all pages within the ad-network.

Second-Party Data: First-party data that is bought directly from another publisher or through DMP.

Supply-Side Platform (SSP): Platform to enable web publishers to manage their advertising space inventory.

Target Audience: The audience you want to reach, usually defined by specific demographics or interests.

The Privacy Paradox: The term to describe the attitude towards valuing the privacy, but giving access to our information.

Third-Party Data: Data gathered from other platforms and websites.

Viewability: An advertising metric that tracks impressions seen by users.

INTRODUCTION

Although advertising has its beginnings a long way back into the past, the use of digital advertising is not that old. Nowadays, while browsing the Internet, users are being bombed with dozens and dozens of ads showing up from every corner. They are used to opening emails that contain different ads, skipping advertisement at the beginning of the YouTube video, closing ads that jump out of the article they are reading, and scrolling through the new Louis Vuitton bag that suddenly appears on their Instagram. Due to this overcrowding of ads that follows them at every step, users do not pay attention to them. This is why advertisers had to come up with new, more innovative ways to bring their ads closer to users and to make sure users will notice them. This is how audience targeting and programmatic advertising were invented. To make the process of buying media space faster, cheaper and more efficient, people came up with the idea of programmatic advertising. This, explained in a simple way, means a process of media space buying with the help of sophisticated digital algorithms. Specific software is used to automate the buying via bidding system, where the final price is defined by the highest price offered by the buyer. The application of artificial intelligence ensures that the bid can be placed in order to help advertisers get the desired media space (Rogers, 2017). Through this programmatic environment specific ad-targeting methods are being used. This enables advertisers to target the users that are most receptive for their product or service. With the help of collecting user's data, advertisers can target audience based on their location, behaviour, contextual behaviour, and many more (Digital Marketing Institute, 2017).

Nowadays, the use of programmatic advertising and audience targeting are becoming more and more popular, and the estimated spend in the next few years is growing higher and higher. Programmatic advertising in Europe is increasing extremely fast, and Slovenia, with one of the leading positions, is no exception. Despite this digital phenomenon, the knowledge of programmatic advertising and audience targeting is very limited (eMarketer, 2017a). According to the Interactive Advertising Bureau (IAB) that sets the standards for best practices in the interactive advertising and their report *Attitudes towards programmatic advertising*, published in November 2017, programmatic advertising market has reached a market value of more than €8 billion, and even though display and mobile campaigns are the most common ones, the number of video campaigns is rapidly increasing as well. According to the same report, programmatic video revenues have increased by 155 % in 2016 (Interactive Advertising Bureau, 2017).

The purpose of this thesis is to explain the programmatic advertising, audience targeting, and why this caused such a boom. I will explain how programmatic advertising and audience targeting influence users and how the future will change its usage and the advertising itself. This is why my main objective will be to find out what are specific reasons that force the advertisers to use this type of advertising, its benefits and downsides, how advertisers target their target audience, and what kind of changes are to be expected in the future. Furthermore, I will explain the basic concept of advertising and programmatic advertising, its beginnings,

types of programmatic buying and what is specific for each of them. Since one of the most important factors in programmatic advertising is access to qualitative and relevant data, an immense focus will be put on the existing data, how they can be accessed, and in what way they should be used for the optimization of the advertising strategy. I will also explain the concept of privacy paradox which makes people question sharing their personal data, and explain in detail the 2018 General Data Protection Regulation (GDPR), which was designed to harmonize data privacy laws across Europe, to protect and empower all EU citizens data privacy, and to reshape the way organizations across the region approach data privacy, and which brought one of the biggest changes in the last two decades in the world of digital data (EU GDPR, 2017). At the end, I will present possible impacts of programmatic advertising and audience targeting on the future, and my recommendations for companies moving towards it.

To be able to compare the theoretical concepts of programmatic advertising and audience targeting to real life examples, I prepared 16 open-ended questions about this topic and, in November 2017, talked to 4 experts from a multinational American newspaper, which is one of the leading companies when it comes to the use of programmatic advertising. Questions were sent to the participants in advance, which gave them the opportunity to think about the topic prior to the interview. Before the interview, I also explained them the purpose, aim and theme of our conversation, and stated the approximate duration of the interview. I created a list of questions and the participants were able to choose the questions they wanted to answer according to their best knowledge. Even though the questions were written in advance, these were conversational type of questions, in order to remain as open and adaptable as possible to the interviewee's nature and priorities. To present the theory with real-life examples from the company, these parts of the interview will be split to be included in the theoretical parts that best coincidence with the topic of the thesis. The interview, with all questions and answers, will be provided in the final part of the thesis as Appendix 2.

To receive answers to all questions for the interview, I organized several meetings with the following New York Times' experts in different positions:

- Sara Badler, Global director of programmatic advertising.
- Anne Bouttier, EMEA director of programmatic advertising.
- Meagan Lopez, International director of sales planning and ad operations.
- Lucy Silver, Digital Media Associate.

Each of them gave me an insight into the type of work they do and answered some of the questions about programmatic advertising, audience targeting and data collecting at the New York Times (NYT). As the digital team is split between New York, London and Paris, the interviews with Meagan Lopez and Lucy Silver were held in person, while the interview with Anne Bouttier was made through a Hangout call, and answers from Sara Badler were taken at one of the company's monthly global meetings. Doing interviews one-on-one, enabled me to ask some additional questions to truly explore in-depth and breadth of the

programmatic advertising and audience targeting at the NYT. Meetings with Anne Bouttier, Meagan Lopez and Lucy Silver each lasted around one hour, and included visual presentations for past or future conferences and their own learning materials.

1 PROGRAMMATIC ADVERTISING

1.1 Evolution of advertising

To fully understand the concept of programmatic advertising and audience targeting, it is necessary to first understand the concept of classical form of advertising, its beginnings and development. Simply said, advertising is a form of communication with the user of a product or a service. Different experts of course explain it differently. British Advertising Association defines this term as a messages paid for by those who send them and are intended to inform or influence people who receive them (Bullmore, n.d.). According to George E. Belch and Michael A. Belch (2003), advertising is defined as a form of paid and non-personal communication. It means that the space and advertising message is normally bought and that advertising normally involves mass media and is therefore non-personal. According to them, advertising is one part of promotional mix. This is tools used to accomplish organization's communication objectives.

Throughout the history, there were 4 channels that strongly shaped the advertising industry: printing/press, radio, television, and the Internet. The earliest mentions of advertising can be traced to the Phoenicians who had painted commercial messages on rocks. The Gladiator contest announcements are regarded as first real examples of advertising. Soon after this, people started spreading their word with the help of so-called town criers, announcing ships with cargoes coming to town. The invention of printing press in 1440 by Johannes Gutenberg brought the advertisers a new way to reach people, and the first print advertisement was dated only 37 years later. It was a handbill written by William Caxton and hanged on the wall of the church. In 1704, the local American newspaper published the first paid ad, selling a real estate. People soon started to realize that advertisement is shaping the future, and the first advertising agency was established in 1840. A man named Volney B. Palmer bought a large amount of space in different newspapers at a discount price and resold it for a much higher price (The National Museum of American History, n.d.). In 1894, an Italian inventor built the first radio transmitter, and the first paid advertisement of an apartment complex was broadcasted on it in 1922. Soon afterwards, big companies started to sponsor whole programs (McDonough, 2012).

The next big step in the history of advertising was the invention of television, which at that time was perceived by people as a radio with picture, and in 1941 a company called Bulova Watch presented the world's first TV ad. Even though we mostly connect digital advertising to the use of the Internet, this presented the first digital ad. It meant the birth of the digital advertising. Digital advertising is mostly defined as a marketing media that is displayed

online. It exists on many different channels, among which the most common are the Internet, smart phones, tablets, TV, and billboards (Emma, 2017). Television soon became the most popular and most efficient form of advertising, until the invention of the Internet and its first ad (Poggi, 2016). It was 27 October 1994, when the first banner ad ever, shown on figure 1, was launched on the webpage known as HotWired, for the company called AT&T. The banner only said: “Have you ever clicked your mouse right HERE? YOU WILL” (Singel, 2010).

This type of advertising soon became widely known, started the whole digital revolution, and brought millions and millions of dollars of revenue. Even though many users hated it, this revolutionized advertising (Myers, 2011). For the first time, advertisers were able to see how many people are able to see the ad, where these people are, and even if they have interacted with the ad or not. Due to its novelty, the ad was an absolute hit, and 44 % of all viewers actually clicked on it, which in comparison to today's 0.6 % means that click-through rate nowadays has enormously decreased (McCambley, 2013).

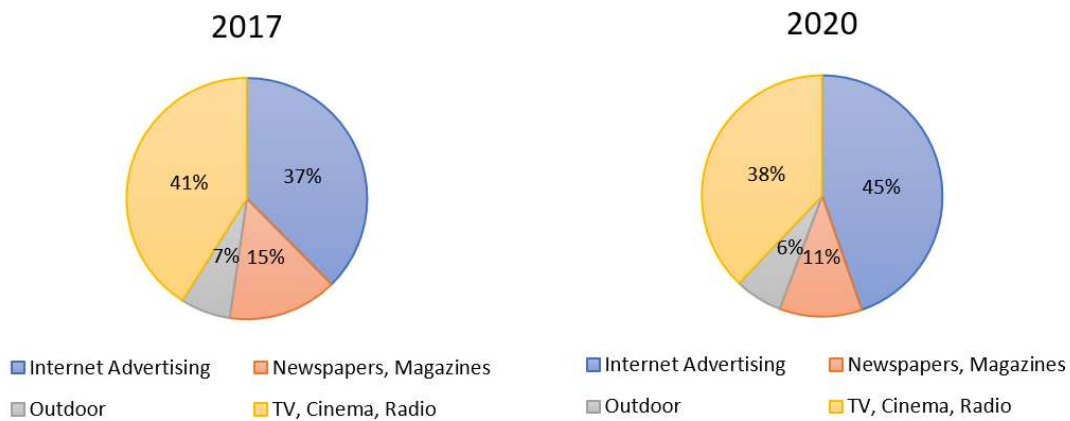
Figure 1: First Internet ad



Source: McCambley (2013).

According to Zenith's Advertising Global Intelligence report in 2018, internet advertising accounted for 38 % of all expenditure on advertising in 2017, which is more than any other media. Counting in 16 % of it in 2010, it was expected to account for 40.2 % of total ad spend in 2018. The ten biggest ad markets are: USA, China, Japan, UK, Germany, Brazil, South Korea, France, Australia, and Canada. By 2020, online advertising is expected to reach 44.6 % of all global ad spend (Zenith the ROI Agency, 2018). According to their Advertising Expenditure Forecasts in 2017, the revenue of newspaper ads in print, on the other hand, is continuously decreasing since its peak in 2007 and in 2019, and it is supposed to reach the level that was last seen in 1985 (Rao, 2017).

Figure 2: Share of global ad spend by medium [%]



Adapted from Zenith the ROI Agency (2018).

According to Hosting Facts' Internet Statistics 2017, there are more than 3.74 billion Internet users in the world, compared to 3.26 billion in 2016, where Asia as a continent and China as a country are taking the first place. The same report also shows that nowadays there are more mobile than desktop Internet users (Stevens, 2017). According to eMarketer's latest report called "US Time Spent with Media: eMarketer's Updated Estimates and Forecast for 2014–2019"(See figure 2), an average adult person in the US spends 12 hours and 7 minutes per day surrounded by major media, with digital media representing 5 hours and 50 minutes, followed by TV with 4 hours and 4 minutes, radio with 1 hour and 26 minutes, print with 25 minutes, and other type of media with 21 minutes per day. In their research, digital media presented the combination of Internet, smartphone and other connected devices (eMarketer, 2017b). These statistics show that people spend more and more time online which has already become a big part of their everyday life. It is also becoming hard, if not even impossible, to imagine browsing the Internet without the presence of dozens and dozens of ads. Due to this reason many users are simply not paying attention to it. It is something we are facing every day in this digital era.

1.2 Programmatic Buying

After understanding the concept of advertising, its beginnings and development, I will focus more deeply on programmatic buying and advertising itself. Programmatic advertising typically refers to an automated, technology-driven method of buying, selling or fulfilling ad placements, by the use of digital software. Simply said this means using machines, instead of humans, to buy ads (Fisher, 2016). But programmatic advertising is rapidly increasing and it is here to stay. Due to this reason it is very important to understand the difference between the classical and programmatic advertising. While classical display advertising is

purchased through negotiations and relationships made between companies and their clients, one of the biggest differences with programmatic advertising is its automation. There is almost no manual work involved anymore and digital space is bought through designed software (Econsultancy, n.d.). Sometimes people – media buyers – get sick, make mistakes, are unreliable, or simply need to sleep. Programmatic buying with the use of special digital software does not need any of it and this is why some people call it a super-efficient tool. By removing people from the buying process it also eliminates unnecessary costs. But programmatic advertising is not only about automation of the buying process, but includes also targeting. It uses digital software to check users' behaviour, register it and later target this audience more precisely, depending on their demographic, psychographic and/or digital behaviour (Kennedy, 2016).

Figure 3 presents a classical process of display advertising, where there is a direct relationship and negotiation made between the advertiser and the publisher. The ad space, so-called inventory, would normally be sold on a Cost-Per-Thousand basis, also known as Cost-Per-Mille or CPM. This means the price is set for each 1,000 impressions sold.

Figure 3: The process of online display advertising



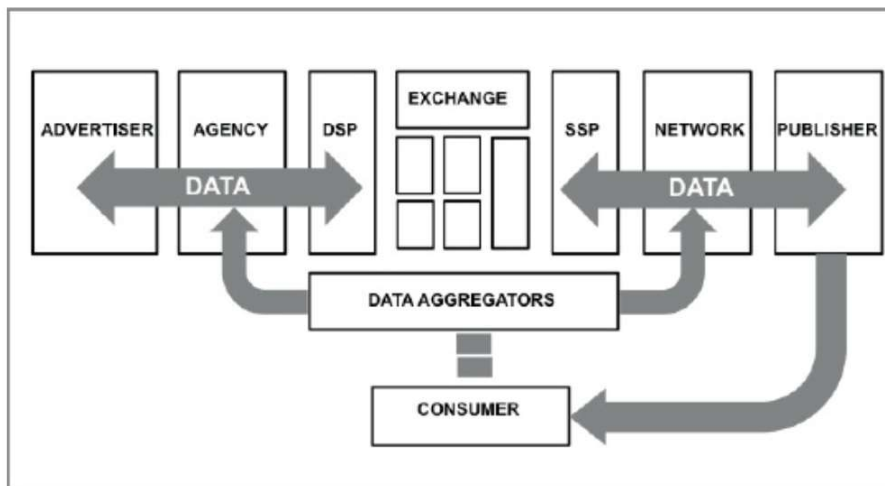
Source: Sweeney (2015).

Figure 4 presents the programmatic advertising ecosystem and its automation of the classical display advertising. In this ecosystem, there are 2 sides, the buying and the selling side. The buying side presents the side between the advertiser and demand-side platform (DSP), while the selling side presents the side between the publisher and supply-side-platform (SSP). To better understand the process, I will explain these roles in this process – from the buying to the selling side.

- **Advertiser:** A person or a company that advertises a product or a service by using advertising inventory.
- **Agency:** Organizations that specialize in programmatic media buying.
- **DSP:** A demand-side platform allows buyers of the inventory to manage multiple data and inventory exchanges through only one interface.

- **Ad Exchange:** A digital marketplace that allows advertisers and publishers to buy and sell advertising inventory. Publishers sell this inventory using SSP, and advertisers buy it using DSP.
- **Data Aggregators:** A digital tool to gather information from different sources in order to create a combined datasets for data processing.
- **SSP:** A supply-side platform is practically the same as DSP, but from the publisher's side. It maximizes the prices that inventory impressions are sold at.
- **Ad Network:** Ad network clusters publisher's inventory and then acts as a broker between the supply and demand sides.
- **Publisher:** The one who gets money for showing advertising on his site.

Figure 4: The programmatic advertising ecosystem

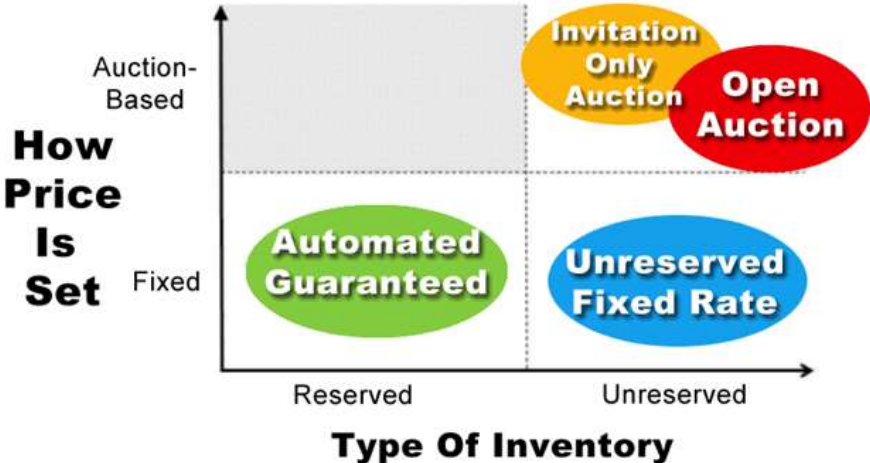


Source: Martínez-Martínez, Aguado, & Boeykens (2017).

There are four types of programmatic buying which are known under many different names. Programmatic guaranteed is for example known under at least two different names, such as automated guaranteed and programmatic direct, which can easily cause confusion. They do not depend on the use of platform, but differ in a way we buy space. One of the most common confusions in the programmatic world is to think that programmatic is the same as real time bidding (RTB), which is not true, as RTB presents only one type of programmatic buying – the type of buying ad impressions in real time and at one impression at the time. As the industry is quickly evolving, it is more important than ever for people to distinguish between the two. To avoid the confusion, all 4 types of programmatic buying are presented below, with the description of their most important elements. IAB has made a general distinction

between them, based on the inventory and pricing. The inventory can either be reserved or unreserved, and the price either fixed or auction-based. To better understand the concept, they have created ad quadrant based on these 2 criteria, which I will in detail explain below in figure 5 (Murugan, 2016).

Figure 5: Types of programmatic advertising



Source: Interactive Advertising Bureau (2017).

1.2.1 Type of inventory

1.2.1.1 Reserved

When the inventory is reserved or guaranteed, the space or section on a specific website is reserved for specific advertisers, for a specific-fixed price. In this case, it means we are dealing with the so-called **automated guaranteed type of programmatic buying**. Due to the guaranteed inventory and fixed price, this is the closest to the traditional direct sale process and the relationship between the publisher and advertisers needs to be established. Advertisers usually decide to use this type of buying when they know exactly which publisher they want to choose and where to advertise to best accomplish their campaign goals. In this case, the time period of the ad, its size and frequency are normally determined in advance (Murugan, 2016). With this type of buying, buyers and publishers receive a complete transparency over the whole process, which represents a big advantage for both of them.

1.2.1.2 Unreserved

When it comes to unreserved or unguaranteed type of inventory, we distinguish three types of advertising, depending on how the price is set. If the inventory is not reserved, this means that the available space is not reserved only for a specific advertiser, but can be bought through third-party ad exchanges and ad networks. These three types of programmatic advertising that fall into this group are open auction, private auction, and preferred deals (Murugan, 2016).

1.2.2 Price setting

1.2.2.1 Fixed Price

Fixed price normally presented a classical form of ad purchase, where the price was fixed through the human interaction and negotiation. As the name already explains, in this case the price is fixed before the purchase is made. There are two types of programmatic buying with a fixed price. These two types are programmatic guaranteed and preferred deals that differ in the type of inventory which can be either reserved or unreserved (Digiday, 2016).

1.2.2.2 Auction-Based Price

The other way of price setting is through auction bidding. In this case the inventory is available for advertisers to bid on in real time auctions, where each impression is sold individually. This is the reason why the inventory is unreserved or unguaranteed. Like in the fixed price setting, here also exist two types of programmatic buying: an open auction and a private auction that differ in the number of people invited to this auction (Digiday, 2016).

After the basic concept of how types of programmatic buying are distinguished between each other is clear, it is important to understand the difference between these types of buying and what each of them means in the digital world. There is a lot of confusion caused by many different names for the same type of advertising. Therefore, I will start by listing them with some of the most common names they are known by and continue by describing each type separately.

1.2.3 Four types of programmatic buying

There are four types of programmatic buying, which are known under many different names:

- Programmatic Guaranteed (also known as Automated Guaranteed & Programmatic Direct).
- Preferred Deals.
- Private Auction (also known as Private Marketplace & Closed Auction).
- Open Auction (also known as Real Time Bidding & Open Marketplace).

1.2.3.1 Programmatic Guaranteed

One of the most recent types of programmatic properly came to the market only in 2017, and therefore still causes a lot of confusion even between advertisers itself. The reason for introduction of this deal is to eliminate all back and forth games between the buyer and the seller, which saves time and consequently money to both parties. It enables the buyer of programmatic inventory to devise the ID with the publisher and pre-agree to buy the inventory at a fixed price. This goes through the publisher's data management platform (DMP) that helps match the right target audience, based on previously gathered and processed data about the audience. This way the advertisers can target specific audience they want to target with their campaign, but with much less manual work included. On the other hand, the buyer is guaranteed a certain level of commitment from the advertiser's side. This type of buying is the most similar one to the traditional direct sale. The media space and price are fixed and guaranteed, and the priority of the ad is the same as other direct deals in the ad server (Interactive Advertising Bureau, 2017).

According to the study made in 2018 by Boston Consulting Group (BCG), which included 23 advertisers, agencies, and publishers from APAC, programmatic guaranteed is more than 30 % more efficient for advertisers and more than 50 % more efficient for publishers, compared to the traditional buying process (Rosenzweig, et al., 2018).

This type of inventory is normally associated with special events, when the company wants to secure a publisher's top inventory, during a specific period, for a budget agreed on in advance. If the company wants to associate their brand, for example, with the top C-suite audience interested in global news, The World Economic Forum (WEF) could be a perfect time to advertise on a page where these news are being published. As this is a well-known and big event, publishers can expect that inventory connected to this news will be very popular between highly educated and well-positioned readers. But it also means that it will be highly popular for other advertisers as well, who have the same idea of targeting very highly positioned individuals, and therefore sold very fast. By using programmatic guaranteed, the publisher can guarantee the advertiser to get access to this highly valuable inventory, and that their client will be front-and-centre on all WEF content during a certain period.

1.2.3.2 Preferred deals

In this type of buying, sellers offer advertising inventory via bidding at or above negotiated price. It is normally offered to a buyer as a preferred opportunity, before the space becomes available on the open auction. This happens if buyers decide not to bid or bid below the negotiated fixed price, but in this case these bidders are not able to participate on the open auction later. In case there are more buyers who are bidding at the highest price, one of the bidders from the set is randomly chosen. Normally these deals are made through negotiating with a specific buyer to whom you want to offer pre-defined inventory available for a fixed negotiated price. As already mentioned, if this inventory is not sold, publisher can still offer it on the open auction afterwards. Even though the bid can be higher than the negotiated fixed price, the inventory is still offered at that price (Support Google, n.d.a). As this normally offers premium inventory to a selected advertiser, before offering it to others, this deal tends to have a higher cost-per-thousand impressions (CPM) than others. This way the publisher has more control over the deal and knows exactly the advertiser he is dealing with and the price he needs to pay (Google Support, 2017a).

An example of the use of preferred deals when buying programmatically is when the company wants to be sure they will only target the right audience for them, but is flexible when it comes to the availability of impressions, which means impressions do not need to be guaranteed. For example, we have a company that has a very specific audience: women between 40 and 50 years who like to travel, have visited Paris in the last 2 years, and are highly interested in attending luxury fashion shows. The company wants to create a campaign created specifically to target their target audience made from these demographics. To achieve this, they are willing to target it across many different sites. As this is only a small segment of audience on each of their chosen sites, they buy only impressions available on each of them by using preferred deals.

1.2.3.3 Private Auctions

Buying programmatic through a private auction means that the auction was opened only for certain advertisers and not for everyone, a so-called “Invitation-only”. It means that if the advertisers get invited to this auction, they can bid for the available inventory. If they are the highest bidder, they win the available impressions. From the buyer's perspective, this means that they can access the inventory which is not available to most of the buyers or that they can access this inventory before everyone else. Advertisers normally do this through the demand-side platform (DSP), and not through a direct sale with publishers. The reason for advertisers to do this is to have more control over where their ad will run. If there is no buyer in the private auction, the available impressions are normally offered on a public auction, except if specifically blocked. But if a buyer does not bid on a private auction, he loses the right to bid for it on a public auction. The price on the private auction is generally higher than the price on the public one. The name itself already tells us that the price in the private

auction is not fixed, but the buyers pay the applicable minimum price or higher. Buyers are normally notified by an email to know that they had been invited to the private auction and must accept the invitation if wanted. Normally, buyers can access publisher's first party data during that time (Interactive Advertising Bureau, 2017).

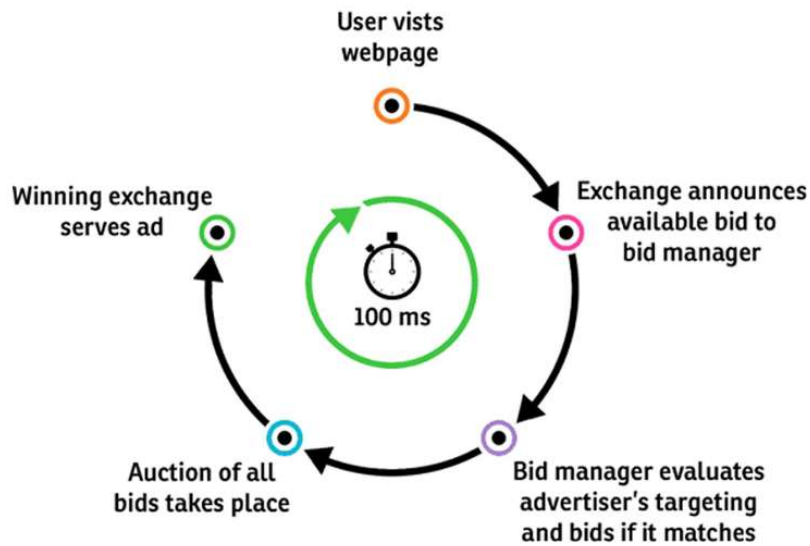
An example would be inviting a company to bid for the available inventory: Neli Couture, a small luxury company, wants to reach potential customers interested in luxury fashion with their new summer collection of 2019, but only has a small media budget available. Luxury News is an international website that creates daily news about luxury fashion. Knowing that Neli Couture is a promising and trendy brand, they invited them to participate on their private auction and give them the opportunity to bid on its premium inventory available. Neli Couture wants to take this opportunity before the space will be available to all other competitors, and bids on the inventory with the price within their budget.

1.2.3.4 Open Auctions

This type of programmatic buying enables publishers to expose their inventory to the highest number of potential advertisers. The buyer and the seller normally do not have any direct relationship and sales happen through the demand-side platform (DSP) that is connected to the supply-side platform (SSP). There is no fixed price, since it is determined through the bidding system, which means that the advertiser who offers the highest price gets the inventory. The inventory is bought blind, which means that advertiser does not know where exactly the ad will be placed, but it can choose the category of the site. The sale typically happens within 100 milliseconds. Figure 6 below shows all of the steps in 100 milliseconds of the process of real-time bidding (RTB) (Aarki Encore, n.d.).

An example would be a news company that does not really have any preferences for advertisers buying the inventory, and offers its inventory on an open auction. This means the inventory is open to all the advertisers that want to participate in it, except if they are put on a blacklist. In general, there is no direct relationship with the buyer. On the other hand, the advertisers normally book the impressions through supply-side platforms (SSP) and most of the time do not know where they are buying the impressions. Advertisers who decide to participate in the auction bid against one another for the available media and the highest bidder wins the impressions.

Figure 6: The process of real-time bidding



Source: Omnicore Agency (2018).

To better understand the type of clients that normally decide to go programmatic, how the company started dealing with programmatic advertising, and which types of programmatic buying are the most popular, I discussed this topic with Meagan Lopez, the international director of sales and ad operations at The New York Times, who said that the biggest amount of campaigns come from the fast-moving consumer product goods (FMCPG) and retail stores. They are normally a little bit more open to innovations than for example high-end luxury brands, which are very concerned with their brand image. They are often still afraid that their ads will end up on pages that could give a bad perception about their brand. But even this is slowly changing, and high-end luxury brands are more and more deciding to start using programmatic advertising as well.

Even though programmatic buyings in 2018 are a very big part of The New York Times, this has not always been the case. According to Meagan Lopez, the NYT was very late when it came to adapting to programmatic advertising compared to some other publishers. Only in April 2013, the company hired their first programmatic ad director, which was a steep learning curve, and a year later programmatic became part of a total yield-management practice. They launched with a programmatic platform called Google AdX and started doing test placements. At first, programmatic was not very successful, and a big part of it was because users were simply not ready for it. In September 2015, a new head of programmatic was hired in New York, as well as programmatic team that took care only of programmatic buyings. The rest of the sales employees only took care of print and classical digital ads. After that, programmatic buyings slowly became a big part of their everyday advertising,

and at the end of year 2015 the company switched to DoubleClick for Publishers (DFP). DFP, run by Google, is an advertisement platform that streamlines the whole process of advertising. In order to reduce latency, NYT chose to implement a server-to-server header bidding integration, rather than the more commonly used client-side execution. The difference between the two is that the client-side header bidder is used by publishers to make calls to multiple ad exchanges simultaneously, while a server-to-server header bidding looks pretty much the same, except that instead of the bidding happening in the users' browser, it happens on the server of a third-party vendor. Although a server-side setup processes bid faster (which leaves the buying side more time to return bids before the auction ends, thereby increasing bid density and publisher revenue), publishers still cap the time they are willing to wait for exchanges to return bids. In 2017, the NYT finally decided to train all sales employees to be a part of programmatic selling as well. Now, clients buying inventory through programmatic buying are not managed by the team dealing only with that, but are managed by the account manager of each specific brand.

When the New York Times started with programmatic advertising, everything was in the open exchange. There was no real strategy and they were still trying to figure out how programmatic buying really works. Preferred deals and private auctions lead to higher quality ads, better performance, and higher CPMs. Today the company's objective is less open auctions, more preferred deals, programmatic guaranteed, and private auctions.

As mentioned before, the use of programmatic advertising is increasing rapidly, and the New York Times is no exception. Even though the company adapted the strategy quite late, this now cannot be noticed. In 2016, they had more than \$206 million¹ of digital advertising revenue, and according to Sarah Badler, Global director of programmatic advertising, programmatic advertising was definitely an important part of it.

1.3 Advantages of Programmatic Advertising

Programmatic advertising is very quickly becoming an essential component of every company dealing with digital advertising. Even though the minimal human interaction involved does not always give the best impression, programmatic advertising has numerous advantages. Below are the top four benefits of programmatic advertising that are most often also the reason why companies are moving towards programmatic advertising (Oracle, 2016):

- Cost efficiency.
- Reaching a wide audience.
- Ads that are targeted more to the user.
- Transparency.

¹ Approximately €183 million, on March 13th, 2019

1.3.1 Cost Efficiency

This presents one of the biggest benefits of using programmatic advertising. Contrary to the classical digital advertising, programmatic advertising drastically decreases human work. Now, people create digital algorithms that do most of the work themselves. Instead of manually creating campaigns people can now spend this time working on something else, which can cut costs tremendously. Most of the time programmatic buying is sold using the cost-per-thousand impressions model (hereafter CPM). According to Sabrina Blaustein, a content marketing specialist, the cost of programmatic CPM is within the \$0.50 to \$2 range, while the CPM of a direct buying on average costs \$10. This means that the costs of the programmatic buying are cheaper compared to the direct buy, which finally improves ROI (Blausteinon, 2017).

1.3.2 Reaching a wide audience

There are many existing programmatic platforms, which are often connected between each other. This creates a large spider web of connections, which makes it easy for brands to reach users across multiple and diverse publishers. Potentially the advertiser can target any given user of the Internet. As a result, the publisher can reach their ideal target audience and deliver a greater ROI. After the campaign has been delivered, they can also easily find out how many people have looked at it, who those people were, where do they come from, and a lot more. This gives them a great insight into how their audience functions and later helps them reach the right audience for the chosen campaign (Kashyap, 2018).

1.3.3 Ads targeted more to the user

Due to all the data available for publishers, there can be created very specific criteria to target only specific segments of users – advertiser's ideal customers. These very accurate details can significantly increase user engagement. Users are not anymore pressed with the so-called one-size-fits-all messaging, but are exposed to the one-on-one personalized marketing. They are targeted exactly at the right time, on the right place, and with the right message, which improves the effectiveness of the advertising and campaign itself (Choozle, 2018).

1.3.4 Transparency

With the use of platforms for programmatic buying it is easier than ever to measure how the campaign is running. There is the possibility of a real-time measuring, which gives advertiser and a publisher the possibility to make adjustments and optimizations if needed. The digital work does not just end when the campaign is online. It is important to always keep an eye on it, measure it and check its performance in order to optimize for a maximal success. With the optimization of the campaign the publisher makes sure that the campaign is running at the maximum efficiency (Choozle, 2018).

1.4 Disadvantages of Programmatic Advertising

Major disadvantages of programmatic advertising are the following:

- Lack of human control.
- Ads ending up on a wrong page.
- Risk of frauds.

1.4.1 Lack of human control

Decrease in human presence is rapidly decreasing from year to year, and programmatic advertising is no exception. Beside the creation of digital algorithms, there is not much human presence involved anymore. Therefore, it is often hard for companies to control where the ad is actually running, and they often do not know it until the moment when the ad is actually online. This can soon lead to the next disadvantage, ads ending up on a wrong webpage (Digital Marketing Institute, 2017).

1.4.2 Ads ending up on a wrong page

As already mentioned, companies often do not know where the ad will run until the very last moment, which causes a risk of hurting company's brand image. The ad might run on an inappropriate webpage or just next to inappropriate article which could be extremely harmful to the brand. This presents one of the most significant risks of using programmatic advertising. A very typical example of an ad ending up on a wrong place is an online ad for Malaysia Airlines running next to the article that describes how their plane crashed into the sea. Some of the recent examples of inappropriate ad placement were ads placed at the beginning of YouTube videos, showing extremist situations and other controversial videos. Sometimes the article or page itself can just be in contrast with company's values. This does not only make the campaign ineffective in terms of sale, but can even badly damage the brand image. To avoid or at least lower the risk of this happening, companies have come up with the idea of whitelisting and blacklisting certain pages. On one hand, whitelisting means defining good sites, where the company wants to advertise, and putting them on a list, while blacklisting on the other hand means putting unwanted sites on a list and banning them from company's places of advertising. Taking this into account, according to AdWeek, only 14 % of marketers' whitelist sites (Johnson, 2017).

1.4.3 Risk of frauds

The ease of programmatic buying and selling means there is a high risk of frauds. Two of the most common frauds are the so-called non-viable ads and bot traffic. Non-viable ads are ads that are buried somewhere in the feed, thus the user never actually has an opportunity to see them. Bot traffic presents non-human automated clicks and views. According to

Incapsula's bot traffic report in 2016, 28.9 % of online activities were marked as bad traffic. Both frauds of course mean the campaign had no visibility and created no effect with it (Lewis, 2016). According to Mediative, a digital marketing company, the bot fraud would cost digital advertisers \$6.5 billion in 2017 (Maynes, 2016).

There are many different advantages that programmatic advertising can bring, and of course, also some disadvantages. To know what is actually the most common reason in the real world for companies moving towards programmatic advertising, and what is the main reason not to do that, I asked about it Anne Bouttier, EMEA director of programmatic advertising, and Sarah Badler, global director of programmatic advertising. According to them, the main reason for companies deciding to move towards programmatic advertising is the ease of operational process. There is much less people involved in the whole process. The campaign is pre-set in the system and the clients only need to approve it and upload the visuals they want to use in their campaign. As this is handled by the system, there is no need for a paper called insertion order (hereafter IO), direct billing or manual reports that only slow the process and can create mistakes. This saves a lot of time and consequently money. Buying through the system gives the client also a much bigger control of the campaign. They can start and finish it at a desired time, and it gives them the opportunity to see both – their and publisher's part of the process – better. Programmatic advertising also gives a great opportunity to access the right data for the campaign, which optimizes the campaign and helps target the audience that is most suitable for the brand, campaign and the success of the company.

On the other hand, programmatic advertising can also cause some inconveniences. Sometimes things are just not working as they should have, and sometimes the problem is that the publishers do not know what is happening on the client's side as they do not have the insight into it through the system. Another reason why clients are still deciding to book the campaign through the classical process is because they think that their advertising could end up on a page which could hurt their reputation or their brand image. Clients used to be scared to try it, and this used to be one of the biggest challenges companies had to face. Clients were used to the traditional type of advertising where they made a deal directly with the seller, by signing IO which made the deal official. Another challenge the company still faces sometimes is the scale of available impressions during specific campaigns. This normally happens with more local campaigns, where there is just not enough inventory available for a specific market.

According to Sarah Badler, the technology platforms and executions are always changing and it is continuously a transition phase. The NYT is also working in the industry with continuous changes and is therefore also no exception. But during this transition, the company tries to figure out the main points and challenges. From the publisher's side, Sarah Badler believes the NYT is 100 % ready to transact programmatically in the same way they do directly.

“We believe that when clients run with us programmatically, they are getting access to the best inventory in real time, across our best ad formats. We truly believe that programmatic is just another way to transact in an automated way. And if we can turn the process on its head by offering premium CPMs in a premium inventory, next to some of the best journalism in the world, then we can truly work with advertisers to create outstanding work.” (Meagan Lopez, International director of sales planning and ad operations at the New York Times, 2017)

2 DATA COLLECTION AND PROCESSION FOR PROGRAMMATIC ADVERTISING

Domo, a computer software company specialized in business intelligence tools and data visualization, has released that 2.5 quintillion bytes of data is created every day and that more than 90 % of the data ever created was created in the past three years. In their last research, they showed that every minute of the day (Domo, 2017):

- 3,607,080 searches are made.
- 46,740 Instagram pictures are being posted.
- 15,220,700 messages are sent.
- 103,447,520 spam messages are sent.
- 4,146,600 YouTube users watch videos.

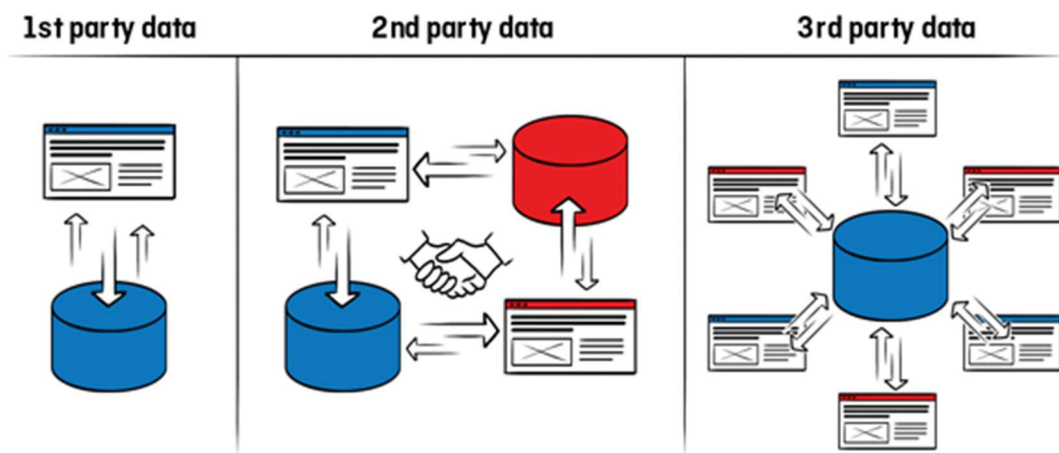
Even though the term of big data is widely used, it still causes confusion when it comes to actually describing it. In 2001, an American analyst Doug Laney came up with an interesting definition of the term big data. His concept is described by the use of 3Vs that stand for extreme volume of data, the wide variety of data types, and the velocity at which the data must be processed.

According to Laney, the exact definition of Big Data is (Arora, 2017): “Big data is high-volume and high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision-making, and process automation. Big Data analytics find insights that help organizations make better business decisions.”

Data like this can be collected through different ways, used for different purposes and can be either raw or processed (TechTarget, n.d.). All gathered information get stored on servers all over the world and can be used for future marketing. Huge amounts of data were already available before, but computers with software and digital spaces have made it possible for us to actually collect these data and use it much faster than ever before. For marketers big data also means an opportunity to gather data and create analytical tools to reach their targeted audience at the right time, through the right channel and the right device (Roell, 2014).

How exactly programmatic buying fits into all this is a common question between publishers and advertisers. Programmatic binds these different data together and makes it usable for marketing. After creating bounds of usable data, specific rules are created to make decision based on the data. Companies use it to create personalized marketing that will attract existing and potential users of the product or service or for predictive analysis (Roell, 2014). Depending on how we gather the data used in programmatic buying, we differ three types of data: first-, second-, and third-party data. Figure 7 shows how the data is being collected.

Figure 7: 1st, 2nd and 3rd party data



Source: IAB Southeast Asia & India (2016).

2.1 First-party data

First-party data is the data company gets from their own audience/users. This is the most valuable data for the company. As this data is gathered directly from their own users, it has the highest quality and it is the cheapest – basically for free. First-party data includes data gathered from users' browsing history, their subscription information, data gathered from web browsers and apps on their phone, all information users share with the company, and information users share while using the webpage. It includes their past behaviour and, if used right, it can be a great indicator of their future behaviour. It gives the company a direct insight into their own current situation and opportunity to reach potential future customers and improve their strategy. Missing to collect this data is a lost opportunity for the company. As a result of a direct relationship with a customer, there are two types of first-party data: advertiser's data and publisher's data (Corporate Prudential, 2017). The real question is how to actually collect this useful data. Most companies do that by creating a pixel, placed on their webpage that tracks the individual's behaviour, follows them through the page, and creates different segments of people that they can later target with the most suitable strategy.

They normally work in pairs with cookies, registering when a particular person visits a particular site. Cookies are small files, stored on user's computer, in order to hold data specific to the user and website. Without the help of the cookie, pixel could not recognize the site the user is on. Many companies on the other hand use different analytical tools, called data management platforms (DMP) that collect and organize these data for them. Besides that, these platforms also make sure that the data is ready for use in other tools and programs used for audience targeting of advertiser's choice (Lotame, 2018).

2.2 Second-party data

What the first-party data is for one company, it is basically a second-party data for another company that is getting it directly from that source – without a middle company or a person. As well as the first-party data, also the second-party data is very powerful and extremely important for a successful audience targeting. This way the publisher can directly choose the data they think will bring the most benefits to optimize the campaign. As there is no middle person, this means they can negotiate directly with the source of the information. Second-party data is normally used by huge companies that strike a deal with some competitors. It is a great option for top-spending clients and strategic partners that can mutually benefit from a partnership (Lotame, 2019).

By ingesting second-party data into publishers' DMPs, advertisers are able to target specific individuals on their webpage that may already be existing customers. This is quickly becoming a popular request from large, premium advertisers who want to market specific segments of their consumer base:

- Existing customers: up-selling or retaining existing customers.
- Suppress customers: targeting away from advertisers' current base of customers.
- Sub-Groups & Prospects: people who might have been interested in advertiser's product or service, but have not actually made the purchase.

To better understand the second-party data and its integration in the actual business, I decided to give a short insight into the internal integration process of second-party data of the publisher. This is the process explained to advertisers when informing them how programmatic advertising works, and how the company could use the advertiser's own data together with the publisher's own first-party data.

Step 1: The advertiser sends their data file to a data connecting company for a data analysis.

Step 2: Analysis of the data overlap has to be made. In this analysis they compare the overlap of cookies from the publisher's and advertiser's page. A high match rate (usually around 40

%) signifies high potential for engagement and conversion, as marketers are targeting known prospects on publisher's webpage.

Final step: The publisher creates a new, custom made audience segment that is used to optimize client's campaign. This way the publisher can target the most reciprocal customer that exists, and therefore maximizes the purpose of the campaign.

This way the NYT has for example all information regarding their own users. They know which types of articles are being read by each age group, what are the most common times to read the news, which devices are most widely used, and other. On the other hand, they do not have information regarding the actual buyers of the products. They do not know the customers that are most likely buying that product, in which period, or from which country. When gathering publisher's and advertiser's data they can get an extremely powerful combination of new data. This way they can create a new segment of people, those that are the target group for buying the product, and are at the same time targeted through the device and at the time best for them.

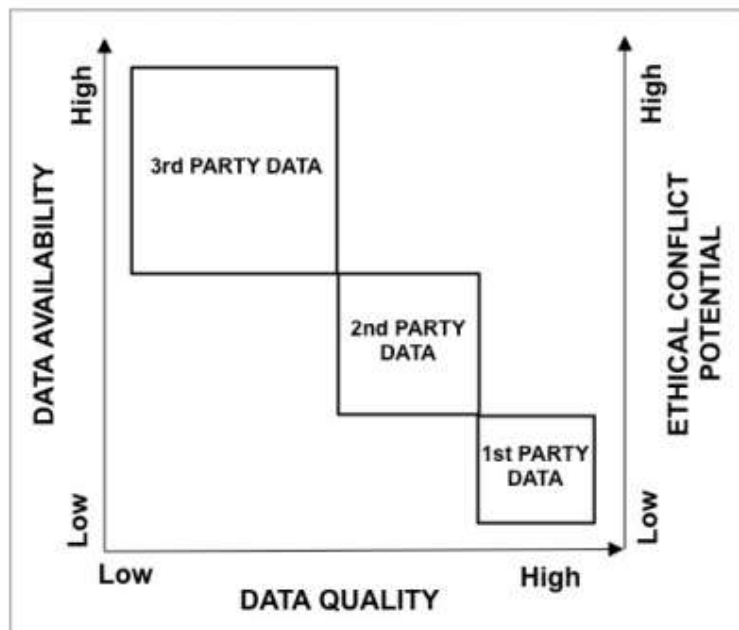
2.3 Third-party data

Third-party data is the same kind of data, but collected by a third party that does not have a direct relationship with the consumer. When companies would like to access more information than they can get from their first-party data, they normally decide to buy third-party data. This way they can buy pre-collected data. Third-party data can definitely ensure the depth and breadth when creating an optimized campaign. Companies that collect these data are called data management platforms (DMPs) and are generally creating segments of people by collecting their tags (so-called “hashtag technology”), a server to server integration, and via application programming interface (API). API is a set of protocols, definitions and tools for building an application software. Some of the biggest third-party data marketplaces are: Adobe Audience Manager, Oracle BlueKai, Clickagy Audience Lab, Krux, Neustar PlatformOne, and others (Martech Europe, 2016).

Figure 8 presents how data quality and data availability are changing with the type of data we use. As previously mentioned, third-party data is the most available from all three. There are many companies whose business model stands on collecting other's data, processing it together, and later on selling it to other parties. It is highly accessible and sometimes also very expensive. However compared to first-party data, third-party data does not always have the highest quality data for the company. Using the first-party data shows the advertiser who his clients are, how they behave, and where they come from. The company has a clear look on how the data was collected, which methods had been used, during which period of time, how old the data is, and other. This way the advertiser can make sure to actually have the best data possible. As using company's first party data means gathering information from company's own users, this presents the lowest potential for ethical conflict. The users

normally agree by themselves to accept company's tracking of their behaviour, while they do not necessarily agree with the company later selling that data to a third-party (Lotame, 2018). This is why buying third-party data from a data collecting company presents the highest ethical conflict, which will be described more in detail in the sub-chapter *The privacy paradox*.

Figure 8: 1st, 2nd and 3rd party data characterization



Source: Martínez-Martínez, Aguado, & Boeykens (2017).

2.4 Choosing the right data

One of the most difficult questions when it comes to data is which type of data to choose. This is a question every company is asking itself when going programmatic, but does not have a direct answer. In the programmatic world, it is generally believed that the more data you have, the better it is. Which is mostly true, but it of course depends also on the quality. Not all data is the same, and the depth and breadth of it are very important, and is one of the most critical factors in the potential success of the campaign. This is why choosing the right data provider is crucial. Two of the important questions publishers need to ask the data provider are where the data comes from and how old it is. Gathered data in general has a very short life and even though a 6-month-old data might seem new at first sight, this is not true. Any data older than 30 days might not deliver the desired outcome (Eyeota, 2017). Next, depending on the interest, the company needs to clearly specify what kind of data they

are looking for, which are the channels being used, and what the purpose of the campaign is. These make a difference in choosing the type of data most suitable for a successful campaign.

To see how the New York Times is accessing data, I had a conversation with Lucy Silver, a digital media associate, who deals with this during her everyday work. I was specifically interested in the process of collecting the audience data and ratio between the first-party data and data gathered from other sources. As the campaigns distinguish a lot between each other, this was a hard question for her to answer. According to Silver, it all depends on the audience the client wants to target. The NYT is using their own base of user's data, but due to many privacy laws they are not able to gather too many information about their users. As their model is subscription-based, this means users need to register to access daily news, and this gives the company a bit deeper insight into their IP address. This way the company can easily see where the person is coming from, what kind of news they like to read, how much time they spend on each page, where on the screen they spend the most time on, and other data. If the client wants to target more behaviourally, and see where users often shop, what kind of sports they like, and similar things, then this is the moment for the company to access the third-party data. This gives it the possibility to be more precise when it comes to users' previous purchases, salaries, hobbies, and others. As already mentioned above, data about company's users is gathered by using first-, second-, and third-party data. In the case of the NYT, first-party data is gathered directly from users visiting the website. With the use of cookies and device ID, company marks sections and subsections previously read by users, descriptive keywords on the page they visited, authors of articles they read, and the frequency of their visit. Afterwards, they can easily create segments of NYT readers who often visit the most frequently sold-out sections. This allows clients to target audience who read the most popular sections, but are not necessarily in the section when the ad is served.

To better answer questions of who readers are, what they read, and where are they, the company created a data visualization tool called Readerscope, which helps them explore the following questions about the New York Times readers. It identifies which topics are of most interest to target audiences, and helps advertisers understand who is reading what and where. This tool helps explore these insights about key audience groupings, or segments from their DMP and layers in additional behavioural data mined by the Data Science team. It helps the company find the non-obvious audience for their advertisers. Graphical example of how this tool actually looks like is shown in Figure 9.

Figure 9: The New York Times Readerscope



Source: Coughlin (2017).

In case of a specific campaign where the client would like to use their own data, this is possible by combining it together to create segments of users most suitable for the optimized campaign. Normally, the company combines their own first-party data with a purchase of third-party data. Currently they use demand-side platform (DSP) called Krux, but are in a process of changing to BlueKai, which is one of the industry's leading cloud-based big data.

2.5 Understanding demand-and supply-side platform

Without the computer software, like demand-side platform and supply-side platform, there would be no programmatic buying possible. Demand-side platform is a software that allows

advertisers and agencies to buy available inventory/ad placements online in real time. They are on the opposite side as the supply-side platform (SSP), which is a software used by publishers to manage their advertising space inventory and sell it at the maximum price possible. Demand-side platform allows buyers direct real-time bidding (RTB) access to multiple inventory sources and offers the automation of digital media buying process. It gives advertisers the ability to optimize their campaign by targeting their ideal audience while they are browsing the web. This process was used to be made by humans, which made it expensive and sometimes prone to mistakes. On the other hand, SSP is the same, but from the advertiser's side. DSP is used to buy ad impressions as cheap as possible, while SSP tries to sell ad impressions as expensive as possible (Marshall, 2014).

2.6 The privacy paradox

Nowadays, people are getting more and more concerned with their privacy. They are changing passwords every three months, carefully looking into the bank account statement, and whispering to the cashier when buying something more private. But on the other hand, people share everything about their life on Facebook, give access to tracking devices on their phone, and share their data without even knowing. This inconsistency in personal behaviour is often described as the “privacy paradox”. According to many studies, most of the people do not ever read terms and conditions before giving company the permission to access the data (Stone, 2008). But what is the acceptable level of sharing and using all personal information? This is the question people are asking themselves and a question that nobody can really answer. Audience targeting is definitely a process that can go deep into the history of online behaviour and can use these data to target users on one-on-one basis (Stone, 2008). This leads to the next topic I will discuss – a topic that causes a big buzz around companies who deal with these kinds of data and a topic that is every day changing the world of data as we know it at the moment.

2.7 General Data Protection Regulation (GDPR)

On 25 May 2018, a new EU regulation came to use, after which organizations could face extremely high fines for not following it. The EU General Data Protection Regulation (GDPR) was designed to harmonize data privacy laws across Europe, to protect and empower all EU citizens' data privacy, and to reshape the way organizations across the region approach data privacy, and that brought one of the biggest changes in the last two decades in the world of digital data (EU GDPR, 2017).

GDPR contains strict new rules around individual data, including customer consent and their “right to be forgotten”. With this right the user can have their historical data removed from the database. Simplified, the endless pages of “Terms and Conditions” are gone and consumers have to be presented with simple and understandable terms of how their data is being used (Goddard, 2017). There is no requirement to accept these terms in order to

proceed with the purchase. This basically means the end of unrestricted use of cookies gathered from user's computers, and could mean the end of programmatic advertising as we know it. Even though this is the EU based rule, it applies to the data of every EU citizen, even if the user's data is stored or used outside of EU. So if the company is for example based in the US and operates with the EU data, they will still need to follow this law or they can face fines up to €20 million or 4 % of their annual global turnover – whichever is greater (EU GDPR, n.d.). This will mean a significant change in the programmatic world, where most of its success comes from the data that companies collect and later use for their targeting.

Companies need to move themselves a little bit away from the third-party data and refocus on engaging directly with their audience to obtain the first party data. From that moment on companies need to offer easily understandable policies accompanied by easily accessible controls that put customers in charge of how they allow their data being used. It might also be a way to enter a long lasting, more personal relationship with users (Rose, 2017).

Due to the way of using the data, companies most at risk are:

- Companies reliant on targeted profiling and advertising
- Retargeting companies.
- Demand-side platforms.
- Digital advertising intermediaries.
- Data management platforms.
- Data brokers.

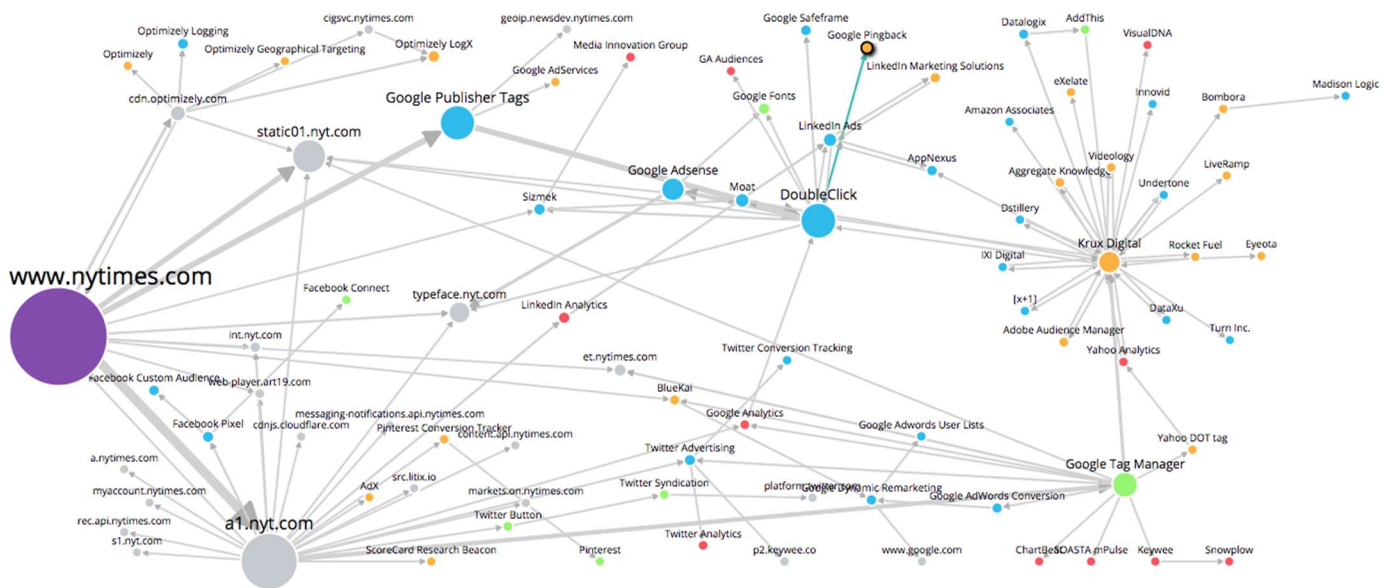
As this is a very big topic in all companies dealing with user data, I was curious how this will affect the use of programmatic advertising, audience targeting and the use of data at the NYT. According to Lucy Silver and Meagan Lopez, the company has a whole team of seven experts, dealing only with this topic. They help the company understand how to approach the change and find the best way to still access the most data possible. According to Lopez, the process was difficult and when the day would come they would just had to deal with the situation and make the best out of it.

One of my assumptions was that with this new regulation the third-party data will become more expensive and harder to access, but as the NYT is now changing to the new DMP, called BlueKai, the company during their last meeting assured that the GDPR will not affect the quality and amount of data the publisher can access on their platform. As the site is subscription based, there should not be any increase in the price either. But according to Lucy Silver, the NYT will probably not be able to target the audience that deeply anymore, but will have to come up with different ways to target the audience in the way the company wants. Their first-part data will for example need to be gathered more in depth and the way of targeting will need to adapt to the data available. By creating attractive questionnaires for

users the company could for example receive additional useful information that could help them target in a best way to maximise the result of the campaign.

To see the spread of data coming from the NYT and how to face the situation when the GDPR starts, the data team at the NYT checked how companies are directly and indirectly accessing data from the webpage. Currently, more than 2000 companies are accessing these data, most of them without the knowledge of the company. Figure 10 shows the spread of the data coming from the NYT webpage.

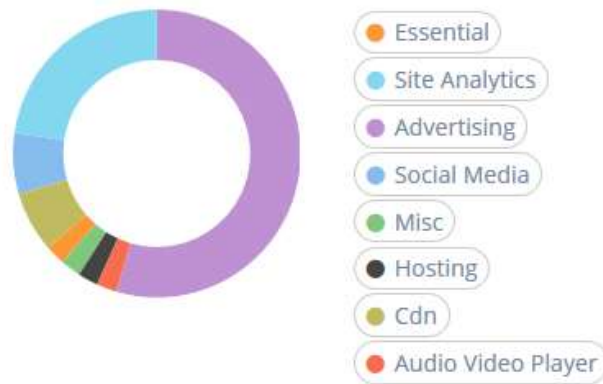
Figure 10: Spread of data from the New York Times



Source: The New York Times (2017).

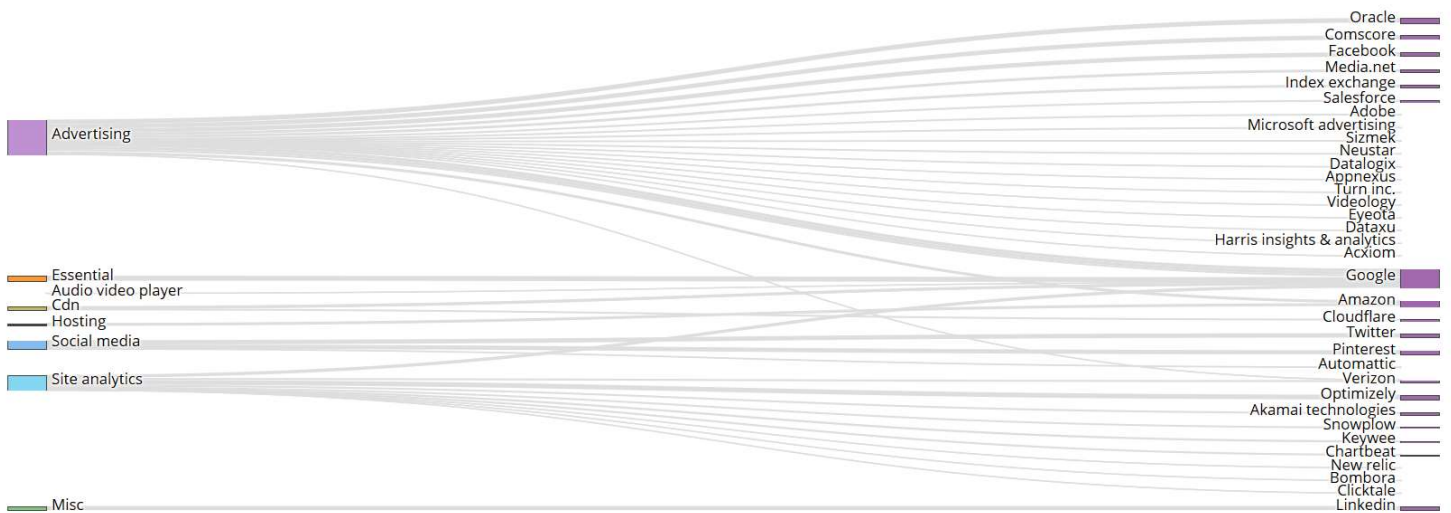
Furthermore, I decided to investigate even more in detail the trackers following the NYT website users. Trackers are small pieces of data set on user's computer in order to track his online behaviour. Normally, when the user visits the site a small text file known as cookie is left on user's computer. This text file later on keeps records of user's last visit, sites he visited, time on each session spent, and so on. While accessing the NYT webpage, on average there are 14.9 trackers loaded on each page, where 76 % of all existing pages present pages where tracking actually occurs. There are normally 0.6Mb of user data gathered per tracker per page. On average, there are 10 tracker requests per page load. Figure 11 and 12 show where these trackers are coming from. The majority of trackers comes from advertising, followed by site analytics, content delivery networks, social media, and others (Whotracks.me, 2018).

Figure 11: Tracker categories and tracking companies



Source: Whotracks.me (2018).

Figure 12: Trackers seen on www.nytimes.com webpage – by category



Source: Whotracks.me (2018).

With the beginning of the GDPR, this is one of the first things that needs to be addressed. Better information security practices need to be established and the company must become a brilliant housekeeper for the users' data. It is not only important that the company itself uses the data in the right way, but needs to also make sure that other companies that are collecting data from this company use them in the right way. In case of abuse, all companies in the chain can be punished. One of the most important issues that GDPR is addressing is the provision of individual's rights. To make sure the company is consistent with all the GDPR regulations, they need to acquire user's approvals in different forms such as:

- Acquisition of approvals in digital environments such as different online forms (newsletters, online registrations, user's accounts, etc.).
- Acquisition of approvals in non-initial environments such as written applications and business cards.
- Acquisition of retrospective approvals such as data received from individuals in the past, but which are now not compatible with GDPR. (Even though the person might have already given the permission to use their data, this might not be any more consistent with the GDPR and the company needs to acquire client's permission again.)
- Ensuring that users who have already given the permission have the rights such as insight into the data given, data modification, data transfer, and the right to be forgotten.

To meet these requirements, it is most efficient if the company first creates a list of all channels where consents need to be collected and all necessary data. To show an example of a list of approvals and uses of personal data, I created Table 1, which could give a company an example of how to follow the necessary approvals. With it they could track the places where they need to collect consensus, ways on how they are collecting them, what they need consensus for, until when this consensus will last and some special notes if necessary (FordX, 2018).

Table 1: List of approvals and uses of personal data

Serial No.	Consensus for communication	Place to collect consensus	Consensus for	Until	Place to collect consensus	Notes
1	Registration to the newsletter	Newsletter	Email	Cancelation	www.nelicouture.com	Shows only to anonymous site visitors
2	Transfer of documents	Transfer of the document; Newsletter; Personalization	Name and surname; Email; Company; Position; Phone number	Cancelation	www.nelicouture.com/documents/top-fashion-styles-of-2018	/
3	Registration to the event	Events; Newsletter; Personalization	Name and surname; Email; Company; Phone number; Notes	Cancelation	www.nelicouture.com/events/fashion-show-2018	Same type of registration for everyone
4	Notifications on new seminars	Newsletter	Email	Cancelation	www.nelicouture.com/seminars/how-to-start-a-fashion-brand	/
5	GDPR – Demo	Newsletter	Name and surname; Email;	Cancelation	www.nelicouture.com/GDPR	/

			Company			
6	GDPR – Quiz	All about the test; Newsletter	Email	Cancelation	www.nelicouture.com/GDPR-quizz	/

Source: Own work.

To get a consent to receive and store data of users browsing the webpage, companies used to write pages and pages long terms and agreements which users had to accept before being able to purchase an order or see the full content available. With the new GDPR, companies need to change their approach when it comes to receiving users consents coming from the digital environment. New terms and agreements need to be more simple, short and understandable. There are certain elements that are mandatory to be explained inside:

- Where did the company get the consent?
- When did the company get it?
- Validity of the consent.
- That the consent was obtained explicitly and unequivocally.
- That the acquisition was not conditional (unless other legislation dictated differently).
- That the intended purpose of the consent is specific and not general.
- That the purpose of the consent was not united with consents from other purposes.
- That there is a possibility of withdrawal of consent, which is in proportion to its acquisition.

The main transparency requirement under the GDPR is the individual's right to be informed about the collection and use of their personal data. But once the individual's consent is obtain, the individual still has many rights such as (Information Comission's Office, n.d.):

- The right to be informed: One of the key rights under the GDPR is the user's right to know the company is collecting his data for future purposes.
- The right of access: Every user has a right to access his already existing personal data.
- The right to rectification: After having an insight info user's personal data, the user has the right to change this data if it is inaccurate, or complete it if it is not yet completed.
- The right to erasure/the right to be forgotten: Every individual can make a request to erase all their personal data. However, this right is not absolute and only applies in certain circumstances.
- The right to restrict processing: Users can restrict processing of their personal data, when believed the data is not accurate.
- The right to data portability: This right allows the user to obtain and reuse his own personal data for other purposes.

- The right to object: Users have the right to object to the processing of their personal data in certain circumstances, such as use of the data in direct marketing.
- Rights in relation to automated decision making and profiling: Often user's data is used to profile users in a purely automated way, without any human involvement. With this right the users has the right not to be a subject to a decision based only on automated process.

3 AUDIENCE TARGETING

Audience targeting is one of the forms of advertising that became a very common practice in the past years. It uses sophisticated digital methods to target the audience that is most receptive for a certain product or service that the company is trying to promote. Not all receivers are the same and may not respond the same way to the same type of advertising. Taking this into account, targeted advertising uses certain traits to place particular ads before specific groups that are made from consumers who would be most likely be interested in this information/ad and consequently in buying this product or service (Plummer, Rappaport, Hall, & Barocci, 2008). Simply said, audience targeting is a way to be more accurate when choosing who sees your ads, which can help you reach the right customers.

The New York Times defines audience targeting as customer segmentation to understand customers' unique characteristics and behaviours, so the company can come up with a marketing message that communicates with them effectively. It also helps advertiser spend his money reserved for marketing wisely, using only those vehicles that can reach their identified segments.

According to the New York Time's internal study material, they evaluate their customers according to the following five criteria:

- Type of customer: Defining the customer according to their position in the sales funnel (potential customer, new customer, impulsive customer, discount customer, loyal customer).
- Geography: Defining the customer according to his geographical location (continent, country, region, city, population, etc.).
- Demographics: Customer's characteristics (gender, age, income, education, etc.).
- Psychographics: Customer's personal values and attitudes (social class, values, opinions, etc.)
- Beliefs and lifestyle: Customer's lifestyle patterns (degree of loyalty, user status, etc.).

To achieve the greatest results, the publisher first needs to clarify what the goal of the campaign is. For example, the company wants to increase brand awareness or increase their sale of a specific product. Next, it is necessary to define who the audience is – does the

company want to target all visitors, only those who have already visited their webpage or users with specific interests and characteristics. This will highly increase the success of the campaign, as users prefer to see and click on ads connected to topics they are actually interested in. For example, if the company is trying to sell an expensive baking supply to a man who never cooks, this will probably not be very successful. On the other hand, a regular user of cooking recipes could be highly interested in seeing and potentially buying it. Targeting that has meaning increases users' conversion rate as it delivers experience relevant to each user. Therefore, it can potentially also increase the company's ROI (Google Partners, 2016).

3.1 Types of audience targeting

With the use of first-, second-, and third-party data there are various ways to target the chosen audience. These are some of the most common types of audience targeting that are more in detail explained in the subchapters below.

- Behavioural targeting.
- Retargeting.
- Contextual Targeting.
- Cross-Device targeting.
- Geotargeting.
- Demographic Targeting.

3.1.1 Behavioural Targeting

Behavioural targeting (also known as interest-based advertising) is one of the most common types of audience targeting, where the publisher targets audience depending on their interests and preferences. This way the publisher can offer information about products and services to users who are actually interested in seeing this information. It is normally based on specific information about the user such as previously browsed webpages, time spent on a specific webpage or ad, clicks made by the user, recency of user's visit, and his overall interaction with the site. The purpose behind it is to surprise viewers by showing them ads in unexpected places, but for products or services they are highly interested in (Plummer, Rappaport, Hall, & Barocci, 2008). This personalization of the ads the user is seeing will mean a higher level of interaction, click-through rate, and potentially reaching the campaign's goal (Internet Advertising Bureau, 2017).

Behavioural targeting is often purchase-based, which is one of the newest targeting approaches in the digital world. It serves ads to those users of the pages who fall into the brand's target market according to their previous purchasing behaviour. This type is highly effective as it drives a high increase in media productivity. This is due to the fact that the

impressions are not sent to all consumers who fit in certain characteristics, but rather to those consumers who are most likely to actually buy the product or service.

According to IHS Markit, a global information provider, and their study made on behalf of the Interactive Advertising Bureau Europe (IAB Europe) and the European Interactive Digital Advertising Alliance (EDAA), 86 % of programmatic advertising in Europe in 2016 had used behavioural data, while in non-programmatic advertising this represented 24 %. In the same study, they also concluded that behaviourally targeted ads have on average 5.3 times greater click-through rate than the standard run-of-network advertising which does not use behavioural data (IHS Markit, 2017).

According to the Wall Street Journal, one of the first companies that used behavioural targeting in online advertising was Pepsi – in 2007, for their launch of Aquafina Alive, a vitamin-enhanced water. For the first time, the campaign did not just run everywhere, but only on sites they knew would be visited by people interested in healthy lifestyle. According to their research, this campaign attracted three times the number of consumers who normally clicked on the ad (Steel, 2007).

3.1.2 Retargeting

“Half the money I spend on advertising is wasted. The trouble is I don't know which half,” was a famous quote by John Wanamaker, an American merchant and a political figure from the 19th and the 20th century. The quote basically indicates that a very small proportion of company's current and potential customers accounts for a very large proportion of their profitability (Bradt, 2016). Based on this, it is often more profitable for the company to simply focus on those individuals.

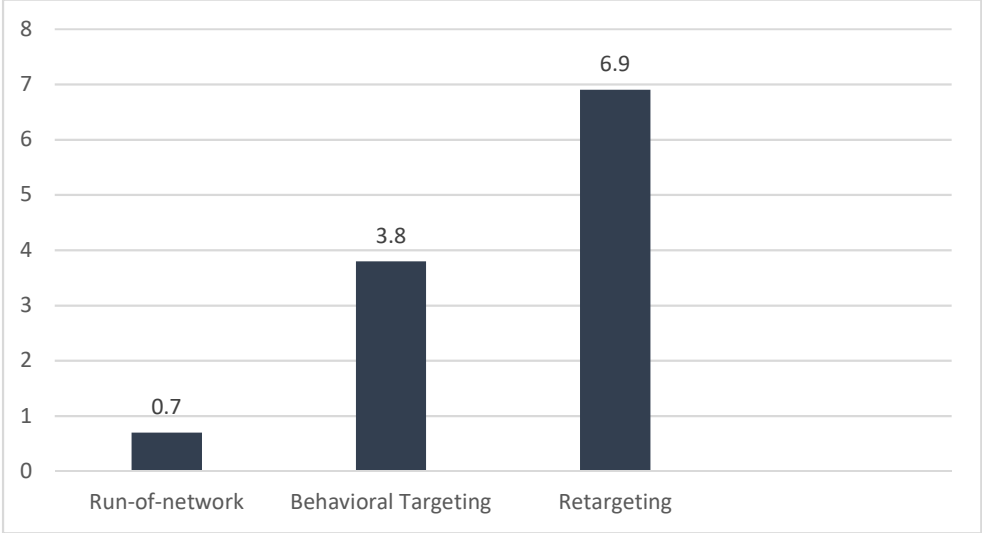
Retargeting (also known as remarketing) is a way to target the so-called window-shoppers, users that visit the online store or a webpage, but end up leaving empty handed. Retargeting keeps track of these people and displays ads again while they visit other webpages. It is a very successful way of targeting as it targets only people who have previously already showed interest in the brand (ReTargeter, n.d.). This is the reason why many of those customers later decide to come back to the webpage and actually purchase the product or service.

Barilliance, a website that offers personalized eCommerce, made many studies around cart abandonment statistics. In their study in 2016, they came to the conclusion that on average 77.24 % of carts were abandoned, while this number increased to 78.65 % in 2017. According to the same study made in 2015, some of the most common reasons that more than 3/4 of shoppers left their carts empty were: unexpected shipping costs before paying, having to create a new user account, deciding to buy the product later, concerns about payment security, long and confusing checkout, the shopper could not find a coupon code, and no express shipping available (Serrano, 2018).

Despite that, studies have detected that shoppers return. According to the study conducted by SeeWhy-SAP and National Retail Federation, the average return of customers is 8 % without retargeting, and 26 % when using remarketing programs. But according to Charles Nicholls, a SAP market analyst, cart abandonment should not be seen as a problem, but as a part of the buying cycle. Purchasing is supposed to change from a single-track to a multi-track, where people simply stop and continue multiple times (National Retail Federation, 2017).

According to the HIS Markit survey, the click-through rate is 10.8 times higher when used to retarget people who have previously already paid attention to the product or a service advertised, and 1.8 times higher than just using behavioural targeting (See Figure 13) (IHS Markit, 2017).

Figure 13: Average conversion rates display banner advertising



Adapted from IHS Markit (2017).

To better understand the use of it in practice, I checked how the New York Times created one of their campaigns for Nestle Waters, in which this type of targeting had been used. This was a paid post campaign (sponsored article), where the publisher had created three sequences of paid posts during a certain period. A certain code was created, which was placed as a pixel on user's page. This code gave the insight into who saw the first paid posts and who did not. When the second paid post was launched, the NYT was able to retarget users who had already seen the first part, and to offer them advertising for the second part. On the other hand, they were also able to see who has not yet seen the first part, and again started advertising that to them. After these users read the first part, they started seeing advertising for the second part, and so on. Retargeting can therefore work in both directions

– the company can retarget users who have already seen the product or a service, or exclude those and target only the ones who have not seen it yet.

3.1.3 Contextual Targeting

Contextual targeting (also known as in-text advertising or in-context technology) is advertising that depends on the context of the webpage where the ad is seen. If the user is for example browsing through a travel section, he will receive ads referring to hotels, airline companies, holiday bookings or everything else connected to traveling. It means there is an actual direct relationship between the ad seen and the page where the ad is placed. Some pages with a very popular and relevant content for certain ads can be therefore booked months and months in advance, because advertisers know the content will be highly read, which will result in a successful campaign. It is also highly believed that the content itself affects how the ad is actually seen (Belch & Belch, 2009).

Seeing an advertisement for jewellery worth €50,000 at the New York Times' Best at Oscars will definitely not have the same effect on the client as seeing it in a free magazine distributed at the metro station. This way of targeting is normally used to narrow target their audience. Targeting is normally achieved with the use of keywords used on the user's current webpage, where these words are connected to ads that are highly relevant to that content (Simpli.fi, n.d.).

To successfully build a contextually targeted campaign, the publisher needs to (Google Support, 2017b):

- Define the desired group of advertising: Describing themes according to company's product or service. If the brand is strong enough the best is to use branded keywords – keywords that normally include the name of the brand.
- Create keywords: Each ad group normally has between 5 to 50 different keywords related to the theme.
- Create negative keywords: This helps ads stay away from appearing on irrelevant pages.
- Implement tracking: To have an insight into the conversion rate, the company needs to implement a tracking tool.
- Optimize the campaign: After some time, it is necessary to check the performance of the campaign. If necessary, the publisher can add extra keywords or negative keywords in order to create a better final result.

Lately, a popular way of contextual targeting is combining advertising with an actual story. The publisher can write a so-called branded or sponsored content, where they do not only buy advertising inventory, but sponsor the whole story that is a part of the ad. While working in the team of creative strategists at the New York Times, I can say we often worked on crafting stories that would best engage the audience. The so-called “Paid Posts” were written by editorial department, but in close collaboration with the sales department of the

advertising brand and the brand itself. The paid post can be for example written as a direct connection to the brand, as for example interesting beginnings of Coco Chanel, and later of course connected to the Chanel brand. The story can either include the famous Chanel products and potentially link to their online shop, or just tell a story which has an advertising at the end. It could also be just a travel diary of a family that went on a yearly adventure and be paid by a tourism board of one of the countries they have visited. Options are wide and often depend on the target audience and the aims of the campaign. The purpose is often not to directly increase the sale, but mostly to increase the brand awareness by telling a story that engages the reader. According to the New York Time's statistics, these paid posts have a very high engagement and click-through rate, especially when the audience is engaged in the article itself – by taking a quiz, by engaging them to click on certain pictures to discover another part of the text, and so on. Due to the client confidentiality, these results are of course forbidden to be shared with others.

3.1.4 Cross-Device Targeting

Cross-device targeting is a strategy that targets users with consistent advertising through all devices the user uses: desktop, mobile, app, laptop, and others. Nowadays, users are constantly switching between different devices, and non-synchronization between these screens can mean an unsuccessful campaign. Publishers normally match devices to the same user by their login information or their IP address. It gives publisher the opportunity to reach the same users on all devices they are using (Lotame, 2017). Cross-device targeting is important mostly because of two things: It gives the opportunity to reach the customer on more places. If users are only reached on one of the devices they are using, the publisher is missing out the opportunity to catch their attention on all other devices and potentially someone else can do that instead. Using cross-device targeting also gives the opportunity to do something else – it gives the opportunity to build sequential narratives, which permits the publisher to target users through the channel they are using exactly at that moment of the day, but with the same message on all devices.

One of the users is for example highly interested in summer holidays in Spain and will take his Sunday afternoon to check out latest offers. At the moment, the user is not yet sure what to book, but the publisher wants to make sure they book through their page and not through the page of somebody else. That is why the publisher wants to retarget the user on the next day – to remind them about the current offers. Doing that on Monday at 9 am through users' PC will probably not make sense as they might be on the metro going to work. That is why the best is to target them on their smart phone, but with the same types of offers that was used on their PC the day before. When the user later arrives to work and opens the Internet browsers, he can again be targeted with the same type of message. This way the user receives exactly the same message, tailored to his current demand, on all used channels. The ad follows users everywhere they go and serves as a constant reminder of the products the user is interested in (Lotame, 2017).

3.1.5 GeoTargeting

This location based targeting delivers content to the user based on his geographical location and presents one of the most important elements in targeting. Normally, this is done by checking users' IP address that is stored in server database or through Wi-Fi/GPS data. This type of targeting is especially common when the goal of the campaign is to increase sale. A very typical example of geotargeting is a sale of an airplane ticket. If for example Adria Airways is trying to increase their sale of tickets for flights between Ljubljana and New York, it makes the most sense to target people who are located in one of these two cities. There is a much bigger chance that a person located around Ljubljana will buy a ticket from Ljubljana to New York than a person located in Tokyo. It has a very powerful effect on finding the seen advertising as actually relevant. Geo-targeted advertising had shown better click-through rates (CTR) and costs-per-conversions than a broad campaign that is not geo-targeted (Springs, 2006).

3.1.6 Demographic Targeting

Demographic targeting is one of the first and simplest ways of targeting audience online. It defines audience according to certain parameters such as age, gender, income, occupation, and other. Depending on these traits the audience is spread into different groups which helps advertising being more precise and accurate. Normally this type of targeting is combined with some other types such as behavioural or contextual targeting (Google Support, n.d.b).

There are many different types of audience targeting, and according to Lucy Silver, a digital media associate, the most common one at the NYT is general geotargeting, followed by behavioural targeting. At the NYT, behavioural targeting is a technique used by companies to serve ads that may be relevant to an individual by using information collected from their webpage browsing history. This type of personalization can increase the probability of engagement with an ad. Companies pay to reach only potential customers who have previously shown interest in their product or content around their product, making it a cost-effective and a high ROI option for advertisers.

Who would be a target user for the New York Times? This is of course a hard question to answer as the audience is quite broad. However, the general potential client would probably at least have a bachelor's degree, be affluent and have an annual income higher than \$100,000. The user would be someone who is from a big city such as New York, Paris, London, Sidney, and similar, or someone who is very cosmopolitan and/or travels a lot. However, of course there are different target groups for different goals.

To be able to target the right audience, the NYT uses the first-, second-, and third-party data, therefore the current migration of DMP presents one of the biggest challenges at the moment. Even though in Lucy Silver's opinion BlueKai is much better, offers much more data and is just user-friendlier than Krux, this will mean a big change for everyone who use it on a daily

basis. The process of learning to master the program will be long and she is certain that in between they will face many problems and unknown situations.

3.2 Advantages of Audience Targeting

It has always been believed that reaching exactly the right audience with the right message at the right time is a dream come true in marketing. Hitting every person alive, just to deliver the ad is most of the time not a very good idea. Applying certain filters allows the company to narrow the market and focus on the specific customer or client types that are most desirable. After deep analysis of the audience, it is necessary to have a good understanding of what the audience likes, what is the best place, time and way to approach them and to make the campaign much more effective. Targeting audience in the right way can bring many different advantages such as:

- Customization of advertising and ability of behavioural targeting.
- Increase in cost-efficiency and increase in ROI.
- Allowing the publisher to create a marketing calendar.
- Ability to innovate.

3.2.1 Customization of advertising and ability of behavioural tracking

Through behavioural targeting, companies have been able to improve the online consumer experience, and to learn consumers' preferences and interests based on their previous online behaviour that also remains customized for their preferences (Esteban & Hernandez, 2007). It has made the marketers and advertisers target a more focused audience. Consequently, this has increased the efficiency and effectiveness of ad placements provided to the users and therefore improved the consumer experience. Targeted advertising has created a transition from generic ads for products and services to ads that are tailored directly to consumers' interests, which consumers find less annoying as compared to generic ads due to their interest in a specific topic showed to them through the ad. With behavioural targeting publishers, marketers and advertising firms have been able to use the gathered behavioural data in a strategic manner to benefit both: consumers and company. This has benefited the readers who can enjoy the content they are interested in, whereas the publisher is able to improve brand awareness of its products. Most of the consumers and organizations find it useful since it represents an economic win-win situation (Saunders, 2017).

3.2.2 Increase in Cost-Efficiency and increase in ROI

One of the best competitive advantages the company can have is to know the audience and their needs very well. This enables them to personalize company's offer to customer's specific individual needs. Personalization ensures that value for the targets remain

appreciated as it only directly focuses on certain things clients can use and value by themselves. Targeted advertisements lead to higher results for lower costs since the company is more knowledgeable about the needs of company's target audience and hence can make better use when making profit. This mostly comes out for the ideal customer in company's targets, which means the company does not spend money advertising to people outside their perspective segment. Therefore, if the targeting is made well, they can only focus on a much smaller group of people that is only filled with those people that are seen as potential clients. Therefore, these companies are effective since they reach the right consumers with messages that show applicability and do not waste their time and energy to those that do not show any prospects (U.S. Patent No. 6,505,168 B1, 2003).

3.2.3 Allowing the publisher to create a marketing calendar

By really knowing who company's clients are and what is their purchasing behaviour, companies can get to know which clients to target in different periods of time. It allows them to create some kind of a seasonal calendar, which enables them to maximize their efficiency. For example, if the client receives the salary at the beginning of the month and normally participates in online purchases at that time, it might not make sense to target him at the end of the month, when they have already spent all of their money. Companies can also learn, for example, when people mostly book holidays, and during that time of the year target these clients with ads for holidays instead of automotive ads.

3.2.4 Ability to innovate

When the company knows their customers really, really well, they get an amazing insight into their behaviour and needs. The company might already know when they wake up, what they like to eat and drink, and what functions they use on their smart phones. This does not only give the opportunity to track their behaviour and target them with the most suitable advertising, but it also permits the company to innovate according to their clients' needs. It gives a great insight into what to change and what is still missing, and enables them to innovate in order to create a product or service even more perfect. People change their minds and needs very fast, and tracking their purchasing behaviour can be a very big indicator of this behaviour. It is a lost opportunity to not use this in order to create or improve company's product or a service (IBM Institute for Business Value, 2014).

3.3 Disadvantages of Audience Targeting

Beside all advantages that audience targeting can bring, there are however also some disadvantages such as:

- Violation of users' privacy.
- Audience targeting is expensive.

- It is time consuming.
- Exclusion of potential customers.

3.3.1 Violation of users' privacy

Through categorizing and tracking consumers by the ad-networks, most people have complained that targeted advertising tend to violate the privacy of users, which has caused a big debate about the future use of targeting. People do not like to be followed on every step of their way and trust is becoming an issue. Even though targeting companies claim that they are highly responsible for these data, this is not always the case. Companies target consumer profiles based on the data collected, by recording consumers' geography, social networks, purchase history, browsing history, and search history. These pieces of information gathered can be linked with the real identity of the user (Adweek, 2017). With the new European data regulation GDPR coming into use in May 2018, the current spread of user's private information has been changed a little.

According to Harvard Business review, the purchasing interest is 24 % lower for those who feel like they are exposed to unacceptable sharing of their information, even though the ad seen was exactly the same. To avoid this problem, many publishers included a small “Why am I seeing this ad?” feature where the user can check according to which criteria he is targeted with this ad (John, Kim, & Barasz, 2018).

3.3.2 Audience targeting is expensive

Most small companies end up spending huge amounts of money on this mode of marketing because they have to conduct critical researches to determine whoever buys their products (Smith & Cooper-Martin, 2017). The technique even becomes more expensive when the business has to service regional or other national markets in the process. On the other hand, individuals selling to multiple markets can never identify credible or reliable target audiences even in conducting surveys. Under these circumstances, small companies point out the target markets or clients through market research which is normally expensive to conduct and even more to sustain. According to IAB Europe, ads that are behaviourally targeted have a click-through rate 5.3 times higher on average in comparison to a general run-on-network advertising, which does not include behavioural targeting. In case of retargeting, the click-through rate is 10.8 times higher (IHS Markit, 2017).

3.3.3 It is time-consuming

In the case of lead times, it is apparent that target market materials can prove longer than other forms of making adverts. It then means that one can take a lot of time allocated for business while writing content related to the target market, producing and printing relevant images, and securing discounts (Smith & Cooper-Martin, 2017). In all of these attempts, this

marketing strategy proves problematic as far as allocation of time becomes a serious concern. In another perspective, most businesses face uphill tasks when it comes to the identification of target audiences, analysis of data gathered from researches, and other development campaigns used to reach the clients. Therefore, when most of the small companies use market segmentation to determine their target consumers, they have to integrate various processes such as demographic profiling of zones and markets. Subsequently, the marketers determine the size of their audiences through a time-based approach that takes a lot of time to actualize (Larsen, 2010).

3.3.4 Exclusion of potential customers

While targeting only the customers who fall into all of your targeting characteristics can have a great result, it can also consequence in potential omission of other customers who do not seem to be the perfect fit at first sight; but could be highly interested in buying the product. A known example of this is a company that was selling cereals and was mostly targeting kids, leaving out thousands and thousands of grown up people who still enjoy a bowl of cereals as a quick snack. Kids might be their primary audience, but the company can potentially leave out a big part of the market which can result in lower sales and profit.

3.4 Segment Creation

Due to the enormous amount of data, the collection and analysis of data is not possible to be done manually. Many publishers and marketers use a data management platform (DMP) to organize and facilitate its activation. DMP, the so-called data warehouse, is a piece of software that collects and stores user's data and consolidates cookies/device IDs to an individual user. Later on, DMP enables publishers to create audience segments and to connect these segments to the ad server to enable audience targeting. This normally happens by using the company's first-party data or, if these data is not sufficient, with the use of second-party data, or with the purchase of third-party data. By creating different segments, companies can set up audience segments for people interested for example in skiing, food, and pets. In addition to these interests, segments can be also centred on age, hobbies, demographics, or any other given factor. The segment size does not necessarily affect the overlap with other segments made in the system. Two segments with 100 million cookies each could have a relatively small overlap. Conversely, two small segments with 1 million cookies each could have a large overlap. Even though you can create custom made segments for clients who wish to do that, there are a few factors around which you do not create segments. These factors are normally race, religion, ethnicity, and very granular targets. While the DMP is used to collect and analyse data, the demand-side platform (DSP) is later used to actually buy advertising based on that information. But nowadays the line between these two platforms is starting to blur and many companies offer both at the same time, which eases the whole process (Digiday, 2014).

Lucy Silver, confirmed that types of the so-called forbidden targeting mentioned before really fall into some of the most common mistakes when creating segments and targeting audience. During her work, she often came across clients who wanted to target very granular segments. If a client for example wants to target single mothers who work in a bank, have a cat and buy Palmolive hand soap, this would result in a very small scale of people who would actually fall into the segment and would not bring a desired result of the campaign. As mentioned before, around some factors you just cannot create segments. But according to Silver, these are apparently quite common requests in the business world. Clients often come with request to target characteristics such as race, ethnicity, religion, and similar, which Silver is not allowed to do. Although this is not permitted, she tries to find a way to come around it by targeting users that for example speak a certain language, come from a specific country, and similar. She explains that this is not exactly the same, but by finding the right characteristics, she can come pretty close to the company's original request.

4 FUTURE OF PROGRAMMATIC ADVERTISING AND AUDIENCE TARGETING

According to Boston Consulting Group (BCG), programmatic spending in 2017 was more than \$25 billion, while it is estimated to exceed \$43 billion by 2020, when programmatic penetration of the digital ad market will be 63 %. In 2017, programmatic presented 49 % of global display and video ad spend, in comparison to 51 % of traditional direct buying. This means that programmatic buying is estimated to increase by 14 % until 2020. The strongest factor in this growth presents the type of programmatic buying called programmatic guaranteed. In one of their most recent researches of programmatic spending, BCG came to the conclusion that programmatic guaranteed was more than 50 % more efficient regarding the time saved for the publishers and almost 30 % more efficient for the agencies (Rosenzweig, et al., 2018).

With such a fast increase in the programmatic spending forecasted to happen in the next years, there are many novelties predicted to happen or to become more commonly used. Some of these are:

- Linking of data.
- Programmatic TV.
- Header bidding.
- Ads created specifically for the user.
- Programmatic storytelling.
- Use of blockchain to enhance programmatic buying.
- Augmented and virtual reality.

4.1 Linking of data

It is common for businesses to link all of their data together, especially in ecommerce. It is predicted that in the near future more businesses will embrace the same technique of linking their data, which will enable the target audience to effortlessly share the information through all possible avenues. These small fragments of data linked together give the target audience detailed and in-depth information regarding the company. The more data the target consumers have about the company, more likely they are to purchase and share the data with their friends and family. Linking data does not only broaden the customer base but also markets the company reaches through the customers (Stevens & Bachér, 2016). Clients trust companies that provide substantial data about themselves, and linking data does exactly that.

4.2 Programmatic TV

The traditional method of marketing and advertising using the TV has been ineffective. The process involves paying large sums of money and booking a time slot for the advert to appear, which is quite tedious. All types of communication are shifting digital in this century, and advertising has not been left behind. The use of programmatic TV solves the gaps and disadvantages relayed by the traditional TV advertising. The existing ad inventory is mainly composed of cable companies that are local but in the near future the international cables are bound to join (Casale, 2015). This prediction has been made based on the upsurge in competition for programmatic TV by major players in the industry such as Amazon, ITV, and Sky. Types of advertising through video-on-demand and internet-based streaming services will soon be a thing of the past, and programmatic linear will be ushered in successfully. According to eMarketer's report, in 2016, programmatic TV in the U.S. would count for \$4.4 billion, which was more than ever before, but would still count for only 6 % of total TV ad spending in the US (eMarketer, 2016).

4.3 Header Bidding

This technique is also known as an advance bidding or pre-bidding. The purpose is to let multiple demand sources bid for the same inventory at the same time making calls to their ad servers. It offers to publishers a much greater yield. This is one of the most cutting edge programmatic types of advertising. The method is mostly employed by publishers despite a few challenges associated with its accessibility and functionality. It is almost certain that the publishers and advertisers will recognize the immense benefits of this complex technique and find a solution to these few glitches. If the technique is successfully embraced into the industry, it will be more effective when used on videos than when used in presentations (Hubble, 2017).

4.4 Ads created specifically for the user

Adverts are being made specifically for a certain group of people or for people who want a certain item. People tend to make purchases when the advert identifies with their particular need or want. In the near future, it is more likely that the advert will be created in such a way that it seems like it has been specifically made for each user (Church & Iyer, 2014). The magnitude of personalization is expected to be much higher in days to come. With proper innovations in this technique, such as including the geographic position and age limits, this erudition will take advertising to another level (Hubble, 2017). But to truly personalize the advertising, companies need to move further away from demographic characteristics and move closer to their psychographics. In order to really understand their clients, companies need to not only conduct big surveys and researches, but start understanding the actual human behaviour.

4.5 Programmatic Storytelling

Advertising by using stories has become a trending thing. The programmatic storytelling is very distinct from the methods of traditionally advertising. When the story is relevant and compelling, it convinces the target audience that it needs to become part of the brand. Consumers in the present day want to experience something that someone else has experienced through the use of a certain item or service. They want to identify with the brand first, and then make informed purchases (Schulz, 2016). The programmatic story gives the potential consumer the data they need to know about the product and the company.

Programmatic storytelling is one of the most popular types of advertising at the New York Times recently. It does not only give the client an easy way to buy something they wish to have, but actually creates this wish through the background story that engages the client.

4.6 Use of blockchain to enhance programmatic buying

Blockchain technology itself already caused a big boom in the past few years across many industries, and advertising sector is no exception. The use of it in the programmatic buying could bring many advantages to both, the advertiser and the publisher. Blockchain could reduce the risk of frauds by providing receipts of transactions, and it would increase transparency over expenditure. This way advertisers could clearly see where their budget was spent and could analyse the transaction. On the other hand, the publisher could carefully follow where the data is coming from and avoid potential GDPR fees for wrongly handled users' data (Zhang, 2018).

4.7 Augmented and Virtual Reality

Augmented and virtual reality have already started changing the advertising as we know it, however the big boom is still yet to come. Many companies have rapidly started to invest in this type of technology as they are sure this will make advertising much more interactive and will make clients experience advertising in a new way. Until now, augmented reality (AR) and virtual reality (VR) have mostly been used only in gaming, and Pokémon Go in 2016 was definitely a big breakout. But in the past few years, companies have also started bringing this to their daily advertising. Those who know it well say the beauty of it is that it can happen anywhere and at any time. It can transform the traditional passive way of advertising into an extremely engaging digital experience (Petrock, 2018).

A famous example of using augmented reality in marketing was for an American home improvement brand, called Home depot. They created an AR technology app that helped users check how their furniture, paints and other products would look like in their actual apartment. The app even took into the account the structure of the space, already existing objects and even shadows in the room (Homedepot, 2015).

To know the innovations that The New York Times is facing and expecting when doing programmatic advertising, I had a discussion with Lucy Silver and Anne Bouttier. According to Silver, one of the innovations that excite her the most is the use of pixels, small algorithms used to drop cookies on your computer that track user's behaviour that is later used for advertising. After that comes retargeting, which according to Silver is already a very exciting innovation and will be even a bigger hit in the future. The NYT has used it in only two campaigns so far, but she is sure it will become more and more common when targeting audience in the future.

Bringing programmatic advertising into print has been one of the predictions of programmatic advertising in the past few years. To know if the NYT is planning to adapt this strategy, I asked about it Anne Bouttier, who thinks that the process of buying advertisement in print would be automated in the future as well, but she does not believe this would be called programmatic advertising. As print actually needs to be printed in advance and later distributed to customers, she believes that programmatic buying that happens in an instant would not be possible at this stage.

According to Bouttier, programmatic buying is already becoming more and more mainstream in the world of digital advertising and this will evolve even further in the future. At The New York Times, they are working towards offering all of their available digital formats being booked through programmatic advertising and not only a selection of them as they offer now. There will be also less and less people involved in this process, and it will just become a part of a regular buying of their inventory. They also believe programmatic will become a bigger part in the T Brand Studio, which is their own branded studio that creates content. Beautiful example of cooperation of the T Brand Studio and programmatic

advertising is one of their latest paid posts for a Champagne producing brand called Perrier-Jouët. Paid posts, also known as sponsored brand content, are a big part of the T Brand Studio, but this time they have combined it with programmatic targeting and made an extremely powerful advertising that optimized the client's campaign. Bouttier believes this will become more and more common in the future.

At the moment, the plan at the NYT is to double their digital revenue by 2020 and, while most of the revenue comes from subscription fees, they also have a mission to grow their international programmatic sales operations, especially in two places where they expect the highest growth: London and Singapore. They think programmatic buying is not actually a different form of buying, but rather just a different form of transaction. It has the same value as direct buying, high CPMs and high-impact ad units.

5 RECOMMENDATIONS FOR COMPANIES MOVING TOWARDS PROGRAMMATIC ADVERTISING

The advantages of using the programmatic buying technology are as clear as day, and companies that have chosen to go towards this direction will soon realize that taking advantage of technology and data will improve the company's performance as well as their profits. However, as beginners, many of these companies may find it difficult to decide which platform to use or how to put the program into use (Kantrowitz, 2015). There are a few guidelines and recommendations that will help any business owner to decide whether they should use turnkey platforms or the customized platforms (Shepard, 2014). For advertisers who are seeking a turnkey platform for an advertising solution, it is advisable to choose a simple and laid back platform that is easy to execute. On the other hand, for those seeking advanced customization, it is advisable to select one which has features that will allow them more control of the program. However, these distinctions are not always clear, therefore, more understanding of the features and the control they allow is necessary because the type of business will determine which platform the company needs to choose. Here are a few points to consider that will help during the transformation (Bender, 2016).

5.1 Choosing the right platform

One of the first things to think about when starting with programmatic advertising is to choose the right platform for the company needs. It is important to know how many inventory providers the company wants to use. It is also important to know where the advertiser wants online adverts to appear. According to these two answers, the best is to choose between customizable platforms and turnkey platforms. If there is a need for a lot of control over the available inventory out there and if there are many different types of inventory sources that need to be used, then the best is to choose customizable platforms. If this is not the case, turnkey platforms might be the best choice (Bender, 2016). It is based on the above facts that one notes that simple platforms are often considered as easy to

execute. It is clear that as much as analysts prioritize the need for advanced customization, it is advisable for them to select one which has features that will allow them more control over the program (Li & Guan, 2014). When choosing the platform, it is also very important to see what kind of data they are offering and their ability for pulling in special data according to their needs. Of course different platforms offer different tools. The company needs to make sure to check in advance which tools are most suitable for their strategy, and choose the platform that offers that tool.

5.2 Choosing the right type of targeting

There are many different types of audience targeting and programmatic buying, and not everything works best according to the company's strategy and goal of the campaign. In advertising, relevance is the key. Advertisers need to clearly precise what is the purpose and the aim of their campaign, who is their target audience, at what stage of the buying process this audience is, and what kind of data they have available. According to all this, they can finally choose the type of targeting and programmatic buying that best corresponds with all of it. Not every targeting is suitable for every strategy, and by choosing the right one advertisers can optimize the campaign and increase the ROI.

5.3 Using first-party data

As already mentioned, first-party data can be extremely powerful if used correctly. The company needs to make sure to develop a good relationship with their clients, and with their consensus gather the most data possible. This gives them the ability to have a great insight into their clients, optimize the strategy by targeting the most suitable clients possible, and later the ability to track their behaviour and innovate even further. By using the first-party data correctly, the company can save a lot of money from buying the third-party data, and can also make sure the data gathered is really of the best quality possible. By using these data, they can later optimize company's strategy and increase their profit and ROI.

5.4 Ensuring data usage is consistent with the GDPR

GDPR is a complex regulation in its definition of what comprises personal data and can impose heavy fines for companies failing to adapt their strategy according to it. There might be a lot of work needed to be done, but the company needs to make sure to follow the rules when using technology or data and make sure they follow the GDPR changes. By failing to do so, they could face huge fines, and spreading user's data without their consent, could also damage their brand image (The Programmatic Advisory, n.d.).

5.5 Determining the right benchmark

Setting up clear expectations of where the company wants to go in the future and selecting the benchmarks intelligently is a must for every company that wants to succeed. The company also needs to define the Key Performance Indicators (KPIs) to measure how effectively they are achieving key business objectives and following it to see if the company is hitting the right marks or not. If not, it is necessary to define how to adapt the strategy to be able to reach their aims.

5.6 Knowing the audience and creating the right segments

Knowing the audience is one of the most important and beneficial things when targeting programmatically. That is why the success of programmatic campaigns can only be as good as the data about the user is. Advertisers must be able to clearly define who their targeting audience is and must know their characteristics. The next important thing is to create the right segments. It enables them to target exactly the right audience, at the right time, with the right message. That is why creating this segment from the data available is very important. Companies do not want to create a segment that is too granular or too broad. They also do not want to leave it too wide and spend their marketing money on people who are simply not interested in the product. In general, it is believed to better run multiple campaigns that are highly targeted than one broad campaign.

5.7 Innovating

When the company is using programmatic advertising, it means they already need to have a big database of their users' characteristics. Instead of only using them for different types of targeting, the company needs to make sure they are using these characteristics for future innovations as well. With the help of data gathered they can determine what the client is still missing and what is there to change and make better. Instead of always using the strategy “it worked in the past”, the company should also try new things, monitor the performance, and learn from it. Different models work differently for companies, and by testing company's own results they can find the most suitable strategy according to their needs, budget and availabilities.

5.8 Watching out for frauds

According to Incapsula's bot traffic report in 2016, 28.9 % of online activities were marked as non-human traffic (Lewis, 2016). This still presents one of the biggest fears in the digital world. Many brands had burned themselves when spending a lot of money on advertising that never got into websites and apps they thought they are paying for. The company needs to make sure to choose only the most trustable platforms that offer transparency in performance, reporting, and protection when needed.

5.9 Starting

According to many estimations made, programmatic advertising is a big thing happening and the use of it will even more rapidly increase in the next few years. According to Zenith Media's report, programmatic investments were estimated at \$39 billion in 2016, forecasted at \$64 billion for 2018, and can be expected to reach \$110 billion in 2020. Programmatic is everywhere, it is changing the world of digital advertising and therefore the last moment for companies who have not yet adapted the strategy to finally do it (Zenith Media, 2017).

I asked Anne Bouttier, EMEA director of programmatic advertising at the New York times, to tell me what would be her final advice to clients that are deciding to start with programmatic advertising:

“I think programmatic advertising is a great way of booking campaigns, but you need to do it right. As often believed it is not a way to sell bad/cheap inventory that would not get sold otherwise. The New York Times offer some of their best inventory through programmatic buying as well. And my advice is that clients should really engage with publishers as much as they can, so that the campaign would end up being very successful for the brand.” (Anne Bouttier, EMEA Director of programmatic advertising at the New York Times)

CONCLUSION

According to Hosting Facts' Internet Statistics 2017, there are more than 3.74 billion Internet users in the world (Stevens, 2017), and according to eMarketer's report, an average adult in the US spends 12 hours and 7 minutes per day surrounded by major media (eMarketer, 2017). These statistics show that people spend more and more time online, and it already presents a big part of their everyday life. While browsing the web, they are not only exposed to the content they are searching for, but also to many different ads that are being shown to them.

Beginnings of advertising can be traced a long way back into the past, but the use of digital advertising is not that old. Due to a huge increase in digital advertising, people nowadays no longer pay attention to these ads while browsing the web. To bring users closer to these ads, companies had to come up with new and more innovative ways of showing ads to users. In the past years, a new type of advertising has become very popular in the world of digital advertising, this is the so-called programmatic advertising or programmatic buying. Explained in a simple way, this means a process of media space buying with the help of digital algorithms. By removing people from the buying process, it eliminates unnecessary costs (Kennedy, 2016). There are four types of programmatic buying, based on the inventory and pricing: programmatic guaranteed, preferred deals, private auction, and open auction, all of them also being known under many other, commonly used names. By correctly using programmatic buying, advertisers can increase their cost efficiency and consequently their ROI, reach a wider audience, create specific segments of users, and target company's ideal

customers with the right message, at the right place and at the right time, therefore improve the effectiveness of the campaign and even increase the transparency of the process itself. While programmatic buying can have many great advantages if used correctly, there are also some downsides of its use. While the automation can be a great thing, it can also mean a lack of human control over the process. Ads can end up on a wrong page and can cause an unsuccessful campaign, or even worse, it can damage the brand image and reputation.

2.5 quintillion bytes of data is created every day and more than 90 % of all data ever created was created in the past 3 years (Domo, 2017). This means an unimaginable quantities of data, and programmatic binds these different data together and makes it usable for marketing. Depending on how we gather the data used in programmatic buying, we distinguish three types of data (first-, second-, and third-party data) that differ between each other by the way they are being collected. While collecting data is a very powerful thing, people have mixed feelings about it. It is often criticized for its intrusion of user's privacy, and due to this major issue a new law – General Data Protection Regulation (GDPR) – was designed to harmonize data privacy laws across Europe, to protect and empower all EU citizens' data privacy, and to reshape the way organizations across the region approach data privacy (EU GDPR, 2017).

Audience targeting has been created by using big data. It uses sophisticated digital methods to target the audience that is most receptive for a certain product or service that the company is trying to promote. It is a way to be more accurate when choosing who sees your ads, which can help you reach the right customers (Plummer, Rappaport, Hall, & Barocci, 2008). Depending on the way a company is targeting its users there are different types of audience targeting such as: behavioural targeting, retargeting, contextual targeting, cross-device targeting, geotargeting, and demographic targeting. Audience targeting allows customization of ads shown to each user by using behavioural tracking and can therefore increases cost efficiency of the campaign and company's ROI. It also allows the publisher to create a marketing calendar, and later target potential client at the best time. With a deep knowledge of user's behaviour it also gives the company the ability to innovate according to user's needs. However, if not used correctly, it can mean a violation of user's privacy, which can be very expensive and time consuming, and can even exclude certain potential customers.

According to Boston Consulting Group (BCG), programmatic spending in 2017 was more than \$25 billion, while it is estimated to exceed \$43 billion by 2020, when programmatic penetration of the digital ad market will be 63 % (Rosenzweig, et al., 2018). With such a fast increase in the programmatic spending forecasted to happen in the next years, there are many novelties predicted to happen or to become more commonly used. Some of these are: linking of data and sharing these information through all possible avenues, programmatic TV, header bidding technique, ads that are targeted specifically for the user, programmatic storytelling, use of blockchain to enhance programmatic buying, and the use of augmented and virtual reality in advertising.

The advantages of using the programmatic buying technology are as clear as day. Companies that have chosen to go towards its direction will soon realize that taking advantage of technology and data will improve the company's performance as well as their profits. Still, there are companies who find it difficult to start executing it. In this master's thesis, I had presented more in detail the theory of programmatic buying, data collection for future purposes of audience targeting, the advantages and disadvantages that this method of buying can bring, trends predicted for future years, and some of my recommendations. This was later on connected with some real-life examples from employees at the New York Times. As programmatic buying is rapidly becoming a big part of digital advertising, here are some recommendations for companies still deciding for it or not. For start, it is important to choose the right platform that will suit the company's needs – it is important to check which features and tools the platform offers and what kind of data they are using. Afterwards, it is also necessary to see what would be the best type of audience targeting and programmatic buying according to the company's strategy and aim of the campaign. Advertisers need to clearly precise the purpose and aims of their campaign, their target audience, the stage of the buying process at which this audience is, and the kind of data that they have available. To do this, the company needs to set up clear expectations of where the company wants to go in the future, and select the right benchmark. The company needs to make sure to develop a good relationship with their clients and to gather with their consensus as much data as possible. This gives them the ability to have a great insight into their clients, optimize the strategy by targeting the most suitable clients possible, and later the ability to track their behaviour and innovate even further. While doing so, they need to make sure their data usage is consistent with the General Data Protection Regulation (GDPR). When data is successfully gathered, the company needs to know the audience and create the right segments that will enable targeting exactly the right audience, at the right time, with the right message. While the company already has the data gathered, it is important to not forget to innovate. With the help of gathered data they can determine what the client is still missing and what is there to change and improve. There are many frauds in the digital world, and companies need to make sure to choose only the most trustable platforms that offer transparency in performance, reporting, and protection when needed. My final suggestions for companies moving towards programmatic buying is to do it now. Programmatic is everywhere. It is changing the world of digital advertising, and therefore it the final moment for the companies to adapt their advertising strategy.

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APPENDICES

Appendix 1: Povzetek (Summary in Slovene language)

Po podatkih statistične analize spletnega gostovanja v letu 2016, ki jo je izvedlo podjetje Hosting Facts, naj bi bilo na svetu več kot 3,74 milijarde internetnih uporabnikov (Stevens, 2017). Povprečen uporabnik v ZDA naj bi na dan preživel 12 ur in 7 minut obkrožen z velikimi mediji (eMarketer, 2017). Ti statistični podatki kažejo na to, da ljudje vedno več časa preživimo na spletu in da ta že predstavlja velik del njihovega vsakodnevnega življenja. Med brskanjem po spletu niso izpostavljeni le vsebini, ki jo iščejo, temveč tudi različnim oglasom, ki so prikazani v istem trenutku. Začetki oglaševanja segajo daleč v preteklost, medtem ko sama uporaba digitalnega oglaševanja ni tako stara. Ker je dandanes prikazanih oglasov vedno več, jim ne posvečamo več pozornosti. Da bi uporabnike približala tem oglasom, so morala podjetja najti nove in inovativnejše načine prikazovanja. V preteklih letih je tako v svetu postala zelo priljubljena nova vrsta digitalnega oglaševanja, tako imenovano programatično oglaševanje ali programatično nakupovanje.

Preprosta razlaga za programatično oglaševanje je proces nakupa medijskega prostora s pomočjo digitalnih algoritmov. Z odstranitvijo ljudi iz postopka nakupa se odpravijo možni nepotrebni stroški (Kennedy, 2016). Obstajajo štiri vrste programskih nakupov, ki temeljijo na zalogah in cenah, in sicer so to zagotovljen nakup, prednostni nakup, zasebna dražba in odprta dražba, poleg tega pa so znane tudi pod številnimi drugimi imeni. Z ustrezno uporabo programskega oglaševanja lahko oglaševalci povečajo lastno stroškovno učinkovitost in posledično donosnost naložbe, dosežejo širše občinstvo, ustvarijo specifične segmente uporabnikov in idealne kupce ciljajo s pravim sporočilom, na pravem mestu in ob pravem času ter tako izboljšajo učinkovitost kampanje. Kljub številnim prednostim programatičnega oglaševanja pa obstajajo tudi določene slabosti. Oglasi lahko končajo na napačni strani in povzročijo neuspešno oglaševalsko akcijo ali celo poškodujejo ugled blagovne znamke, lahko povzročijo nezaželeno razpršitev osebnih podatkov ali pa preprosto pomenijo zelo drag proces zbiranja podatkov o uporabnikih.

Vsak dan se ustvari 2,5 exabita podatkov, v zadnjih 3 letih pa je nastalo več kot 90 % vseh podatkov, ki so bili kadarkoli ustvarjeni (Domo, 2017). To pomeni nepredstavljivo količino podatkov in programatično oglaševanje jih lahko poveže med seboj in omogoči njihovo nadaljnjo uporabo za trženjske namene. Glede na to, kako zbiramo podatke, ki se pozneje uporabijo pri programatičnem nakupu, razlikujemo tri vrste podatkov (podatki prvih, drugih in tretjih oseb), ki se med seboj razlikujejo po načinu zbiranja. Čeprav je zbiranje podatkov zelo močna stvar, imajo ljudje mešane občutke glede takšne vrste zbiranja. Pogoste so kritike o varovanju osebnih podatkov. Posledično je bila sprejeta Splošna uredba o varstvu podatkov (GDPR), ki naj bi uskladila zakone o varstvu podatkov po vsej Evropi, z namenom zaščite in okrepitve zasebnosti vseh državljanov EU ter z namenom preoblikovanja načina, s katerim se organizacije po vsej regiji približujejo varstvu zasebnosti podatkov (EU GDPR Portal, 2017).

Veliko podatkov je bilo uporabljenih tudi za oblikovanje tako imenovanega ciljanja uporabnikov. Podjetje z uporabo sofisticiranih digitalnih algoritmov cilja občinstvo, ki je najdovzетnejše za določen izdelek ali storitev, ki jo poskuša podjetje promovirati. S tem načinom so založniki natančnejši pri izbiri ljudi, ki so jim prikazani njihovi oglasi (Plummer, Rappaport, Hall, & Barocci, 2008). Glede na način ciljanja uporabnikov ločimo vedenjsko ciljanje, ponovno ciljanje, ciljanje na sobesedilo, ciljno usmerjanje na vse naprave, geografsko ciljanje in demografsko ciljanje. Ciljanje uporabnikov s pomočjo vedenjskih vzorcev omogoča prilagajanje oglasov, ki se prikazujejo posamezniku, in posledično zvišuje stroškovno učinkovitost oglaševalske kampanje in donosnost naložbe podjetja. Poleg tega omogoča založniku, da ustvari tržni koledar in tako cilja na uporabnika ob najboljšem možnem času. Z globokim poznavanjem vedenja uporabnikov omogoča podjetju tudi nadaljne inovacije po potrebah kupcev. Če se ciljanje uporabnikov uporablja na nepravilen način, to lahko pomeni kršitev zasebnosti ali časovno in stroškovno neučinkovitost, lahko pa celo izključi nekatere potencialne stranke.

Po statističnih podatkih podjetja Boston Consulting Group (BCG) je programatično oglaševanje v letu 2017 znašalo več kot 25 milijard dolarjev, po njihovih ocenah pa bo do leta 2020 preseglo 43 milijard dolarjev. Tedaj naj bi programatično oglaševanje predstavljalo 63 % vseh digitalnih oglasov (Rosenzweig, et al., 2018). Ob tako hitrem povečanju programatičnih izdatkov v naslednjih letih so predvidene tudi številne novosti, kot so povezovanje podatkov in izmenjava teh informacij prek vseh možnih poti, programatična televizija, tehnika zbiranja ponudb, oglasi, ki so narejeni za vsakega uporabnika posebej, programatično pripovedovanje zgodb, uporaba tehnologije veriženja blokov za izboljšanje programatičnega nakupa in uporaba razširjenih oziroma obogatenih in virtualnih resničnosti v oglaševanju.

Čeprav so danes prednosti programatičnega oglaševanja že popolnoma jasne, pa še vedno obstajajo podjetja, ki se tej tehniki oglaševanja ne posvečajo. V magistrski nalogi sem podrobneje predstavila teorijo programatičnega nakupa, zbiranje podatkov za prihodnje namene ciljanja uporabnikov, prednosti in slabosti takega načina nakupa, trende, predvidene za prihodnja leta, in nekatera lastna priporočila. Vse to sem povezala z resničnimi primeri iz ameriškega časopisa The New York Times. Programatično nakupovanje hitro postaja velik del digitalnega oglaševanja, zato sem delo zaključila s priporočili za podjetja, ki se še vedno odločajo za ali proti. Za začetek je pomembno izbrati pravo platformo za potrebe podjetja – pomembno je preveriti, katere funkcije in orodja ponuja platforma in kakšne podatke uporablja. Nato je treba ugotoviti, katera bi bila najboljša vrsta ciljanja občinstva in programatičnega nakupovanja glede na strategijo in cilj kampanje. Oglaševalci morajo jasno določiti namen in cilj kampanje, ciljno skupino, na kateri stopnji procesa nakupa je to občinstvo in kakšne podatke imajo na voljo. Za doseg le-tega mora podjetje jasno določiti prihodnje cilje in izbrati merila, s katerimi bo merilo učinkovitost. Podjetje mora zagotoviti odnose s strankami in z njihovim soglasjem zbrati največ možnih podatkov. Ti podatki jim pozneje omogočajo vpogled v ciljne stranke, možnost optimizacije strategije in poznejše

inovacije glede na potrebe strank. Pri tem mora podjetje zagotoviti, da je uporaba podatkov v skladu s Splošno uredbo o varstvu podatkov (GDPR). Ko so podatki uspešno zbrani, mora podjetje dobro poznati svoje uporabnike in ustvariti prave segmente kupcev, ki bodo omogočali natančno ciljno usmerjenost in ciljanje ob pravem času in s pravim sporočilom. Prav tako je pomembno, da podjetje ne pozabi na nadaljne inovacije. S pomočjo zbranih podatkov lahko ugotovijo, kaj še vedno manjka odjemalcu in kaj je treba spremeniti ali izboljšati. Ker je v digitalnem svetu tudi vse več prevar, mora podjetje zagotoviti varnost z izbiro le najbolj zaupanja vrednih platform, ki zagotavljajo preglednost pri uspešnosti ter poročanje in zaščito, kadar je potrebno. Moj končni predlog podjetjem, ki se odločajo za programatično oglaševanje, je, da to storijo zdaj. Programatično oglaševanje je prisotno povsod in že spreminja svet digitalnega oglaševanja, zato je zdaj zadnji trenutek za podjetja, ki še niso prilagodila strategije, da to končno storijo.

Appendix 2: Interview with the New York Times experts

1. What have been the biggest challenges connected to programmatic advertising over the past few years, that the NYT had to deal with?

One of the biggest challenges with programmatic advertising was that clients used to be scared of it. They were used to traditional type of advertising where they made a deal directly with a seller and by signing a paper called insertion order (IO) which made the deal official.

Another challenge we are still sometimes facing is the scale of available impressions during specific campaigns. This normally happens for more local campaigns, where there is just not enough inventory available in a specific market.

(Anne Bouttier)

On the other hand the technology platforms and executions are always changing and it's continuously a transition phase and we also work in the industry with continuous changes. But during this transition we will try to figure out all the main points and challenges. From the publisher's side I believe we are 100% ready to transact programmatically in the same way we do directly.

(Sara Badler)

2. When was the first time the NYT run a programmatic ad, who was the first client and how did it go?

This is hard to answer for me, as it happened before I started working at the NYT. But I must admit that NYT was very late when it comes to adapting to programmatic advertising compared to some other publishers. Only in April 2013 we hired our first programmatic ad director, which was a steep learning curve, and a year later programmatic became part of a total yield-management practice. We launched with Google AdX, started doing test placements, categories ad PMPs. At first programmatic was not very successful and I think big part of it was because users were simply not ready for it. In September 2015, we hired a new head of programmatic in New York & programmatic team that took care only of that. The rest of the sales employees took care of print ads. After that programmatic slowly became a big part of our everyday advertising and at the end of year 2015 we switched to DoubleClick for Publishers (DFP) and in order to reduce latency, NYT chose to implement a server-to-server header bidding integration, rather than the more commonly used client-side execution. Although a server-side setup processes bids faster (which lets the buy side more time to return bids before the auction ends, thereby increasing bid density and publisher revenue), publishers still cap the time they are willing to wait for exchanges to return bids.

This year we finally decided to train all sales employees to be a part of programmatic selling as well.

When we started, everything was in the open exchange. We didn't have a real strategy and we were still trying to figure it out. Preferred Deals and Private Auctions lead to higher quality ads, better performance, and higher CPMs. Today our goal is less open auction, more Preferred Deals, Programmatic Guaranteed, and Private Auction.

Programmatic video was also something we had held off on for quite some time. We were able to sell our video directly for quite high CPMs for some time, but once we switched from FreeWheel to DFP for our video ad server, we were able to set up deals directly within.

(Meagan Lopez)

3. How do you think programmatic advertising will evolve in the next few years and how will the NYT address these changes?

I believe programmatic is already becoming more and more mainstream in the world of digital advertising and this will evolve even further. At The New York Times we are working towards offering all our available digital formats being booked through programmatic advertising and not only a selection of them as we offer now.

There will be also less and less people involved in this process and it will just become a part of regular buying of inventory.

At the NYT we used to have specialists hired only to sell programmatic and as the demand is increasing we decided to change our system. Now each sales planner is offering programmatic as part of their everyday job as well.

We also believe programmatic will become a bigger part in our T Brand Studio, which is our own branded studio that creates content. Beautiful example of cooperation of T Brand Studio and programmatic advertising is one of our latest paid posts for a Champagne producing brand called Perrier-Jouët. Paid posts, also known as sponsored brand content, are a big part of T Brand Studio and The New York Times, but this time we combined it with programmatic targeting and made an extremely powerful advertising that optimized the client's campaign.

(Anne Bouttier)

4. What do you think are the main reasons for clients moving towards programmatic? And on the other hand, what are the main reasons not to do that?

I think the main reason for companies deciding to move towards programmatic advertising is the ease of operational process. There is much less people involved in the whole process. The campaign is pre-set in the system and all the client needs to do is to approve it and upload visuals they want to use in their campaign. As this is handled by the system there is no need for IO, direct billing or manual reports. This saves a lot of times and consequently money. Buying through the system gives the client also much bigger control of the campaign. They can start and finish it when they want and it gives them the opportunity to see both, their and our part of the process better.

Programmatic advertising also gives a great opportunity to access the right data for your campaign, which optimizes the campaign and helps you target the audience that is most suitable for your brand, campaign and the success of the company.

On the other hand can programmatic advertising also cause some inconveniences. Sometimes things are just not working as they should have and sometimes the problem is that you don't know what is happening on the client's side as you don't have the insight to that through the system.

Another reason why clients are still deciding to book the campaign through the classical process is because they think that their advertising could end up on a page that could hurt their reputation or brand image.

(Anne Bouttier)

5. What was the increase in programmatic advertising at the NYT in the past years? Do you think it will continue increasing and up to which point?

Our plan at the NYT is to double our digital revenue by 2020 and while most of our revenue comes from subscription fees we also have a mission to grow our international programmatic sales operations, especially in 2 places where we expect the highest grow: London and Singapore. We think programmatic is not actually a different form of buying, but rather just a different form of transaction. It has the same value as direct, so high CPMs and high-impact ad units.

In year 2016 we had more than \$206 million of digital advertising revenue and programmatic advertising was definitely an important part of it.

(Sara Badler)

6. What would be your recommendations for companies moving towards programmatic advertising?

I think programmatic advertising is a great way of booking the campaign, but you need to do it right. As often believed it is not a way to sell bad/cheap inventory that would not get sold otherwise. We offer some of our best inventory through programmatic buying as well. And my advice would be that clients should really engage with publishers as much as they can, so that the campaign would end up being very successful for the brand.

(Anne Bouttier)

7. What do you think about the use of programmatic advertising in print? Do you think the NYT will adapt this type of strategy in the future? Why?

I think that process of buying advertisement in print will automate in the future as well, but I don't believe this will be called programmatic advertising. As print actually needs to be printed in advance, distributed to our customers I don't believe that programmatic buying would be possible at this stage.

(Anne Bouttier)

8. What is the rate between the use of programmatic on desktop and on mobile? Do you think this will change in the future?

First I would like to mention that we don't really separate desktop and mobile, but rather desktop and mobile app. If you download the NYT mobile app and read our news there we count it differently than simply accessing our page through Google – either on desktop or through the mobile web.

When we create a campaign the same campaign can target audience accessing the page through web on desktop or mobile. On the other hand we need to create a completely different campaign for our mobile app users.

I think the ratio between desktop and mobile app is around 95% and 5%, but I believe that this will change in the future. Mobile app users are very important for us and I think that there will be more and more campaigns booker for apps as well.

(Anne Bouttier)

9., How do you think the GDPR will affect the use of 2nd and 3rd party data, programmatic advertising as we know it and how is the NYT adapting its strategy to follow this new regulation? Do you think that accessing 3rd party data will be harder or more expensive?

GDPR is now a big thing in every company that deals with user's data and we are still not exactly sure how this will change accessing data and targeting users. We have consultants helping us understand how to approach the change and when the day comes we will just have to deal with the new situation.

(Meagan Lopez)

During our meeting with BlueKai, our new DMP, they assured us that GDPR will not affect the quality and amount of data we can access on their platform. As the site is a subscription based there should be no increase in price to access these data.

But I believe that it might happen that we would not be able to target audience in such a deep way anymore.

(Lucy Silver)

10. How is the NYT targeting the right audience? Which type of targeting is the most popular and why?

We offer many different types of targeting, but besides the general geo targeting, I think behavioural targeting is the most common one.

Behavioural targeting is a technique used by The New York Times to serve ads that may be relevant to an individual by using information collected about their web-browsing behaviour. This type of personalization can increase the probability of engagement with an ad. They pay to reach only potential customers who have shown demonstrated interest in their product or content around their product, making it a cost-effective, high ROI option for advertisers.

To be able to target the right audience we use 1st, 2nd and 3rd party data.

(Lucy Silver)

11. What is the process of collecting audience data at the NYT? What is the ratio between 1st party data and data gathered from other sources?

This is hard to answer as it totally depends on each campaign. It is all based on what kind of audience people want to target. We have our own base of user's data, but due to privacy laws

we are not able to gather too many information about our users. As our model is subscription based this means users need to register to access our news and this gives us a bit more of an insight into their IP address. We can easily see where the person is coming from, what kind of news they like to read, how much time they spend on each page, etc. If the client want to target more behaviourally this is the time when we access 3rd party data. This gives us the possibility to be more precise when it comes to user's previous purchases, salary they earn, hobbies they have etc. As mentioned before we receive data about our users by using 1st, 2nd and 3rd party data.

We get 1st party data directly from users visiting our website. We use cookie ID and device ID, we mark sections and subsections previously read by each users, descriptive keywords on the page they visited, authors of articles they read and the frequency of their visit.

We have also created segments of NYT readers who often visit our mostly frequently sold-out sections. This allows clients to target audiences who read our most popular sections, but are not necessarily in the section when an ad is served. To better answer questions like who our readers are, what do they read and where are they we have created a a data visualization tool called Readerscope, that helps explore the following questions about New York Times readers. This tool helps explore these insights about our key audience groupings, or “segments” from our DMP, and layers in additional behavioural data mined by our Data Science team.

In case of a specific campaign where the client would like to use their own data we can do that too and combine it together to create segments of users most suitable for the optimized campaign. Normally we combine our own 1st party data with a purchase of 3rd party data. Currently we use demand-side platform (DSP) called Krux, but we will soon change to BlueKai, which is industry's leading cloud-based big data.

(Lucy Silver)

12. Do you think behavioural targeting is more effective than other methods of online advertising? How does the cost of behavioural targeting compare with other types of advertising?

This again totally depends on the campaign itself. In general yes, I think behavioural targeting is more effective than regular advertising. But this also depends on the purpose of the campaign – are you trying to increase sales, increase brand awareness, retarget users who already visited your page, but did not purchase anything, target your already existing clients etc. In general also CMP for a campaign that includes behavioural targeting is more expensive.

But nowadays there is almost no campaign that would not include at least some kind of targeting, if nothing else geotargeting.

(Lucy Silver)

13. What do you think are the biggest mistakes when targeting audience online?

I think one of the biggest mistakes when targeting audience is the way clients sometimes want to create segments. Sometimes they want to target a segment of people that is very granular (Example. People who buy Palmolive hand soap) or they want to target a segment with many granular attributes (Example: Single mother AND has a cat AND works in a bank AND buys a Palmolive hand soap) which normally results in a very small scale of people who actually make it into the segment.

Another common mistake is when clients want to target characteristics like race, ethnicity, religion etc. This is not allowed, but we try to come around it for example by targeting users that speak certain language, come from a specific country etc.

(Lucy Silver)

14. What changes or innovations excite you the most when it comes to further development of targeted advertising?

Personally I find the use of pixels and retargeting audience very interesting and I think this will be a big hit in the future.

We have used it in only 2 campaigns at the moment, but I am sure it will become more and more common when targeting audience.

One of the examples was a paid post campaign for Nestle Waters, where we have created 3 sequenced paid posts during a certain period. We created a certain code, which was placed as a pixel in user's page. This code gave us the insight in who saw the first paid posts and who didn't. When the second paid post launched we were then able to retarget users who have already seen the first part and offer advertising for the 1st part to users who have not yet seen it. After these users read the 1st part they started seeing advertising for the 2nd part and so on. It can also work in the opposite direction, so you can for example target only users who have not yet seen the ad.

(Lucy Silver)

15. What type of clients are the ones that most often decide to go programmatic? Why do you think so?

I think the biggest amount of campaign comes from the consumer product goods (CPG) and retail stores. They are normally a little bit more open to innovation than for example high-end luxury brands that are very concerned with their brand image. They are often still afraid that their ads will end up on pages that could give a bad perception about their brand.

But even this is slowly changing and also high-end luxury brands are more and more deciding to go programmatic.

(Meagan Lopez)

16. What have been the biggest challenges connected to audience targeting over the past few years, that the NYT had to deal with?

I think one of the biggest changes at the moment is the migration of DMPs. We are changing from Krux to BlueKai, which I believe is much better, offers much more data and is just more user friendly. But even despite all this, it will mean a big change for all of us who use it on daily basis. The process of learning to master the program will be long and I am sure that in between we will face many problems and unknown situations.

(Lucy Silver)