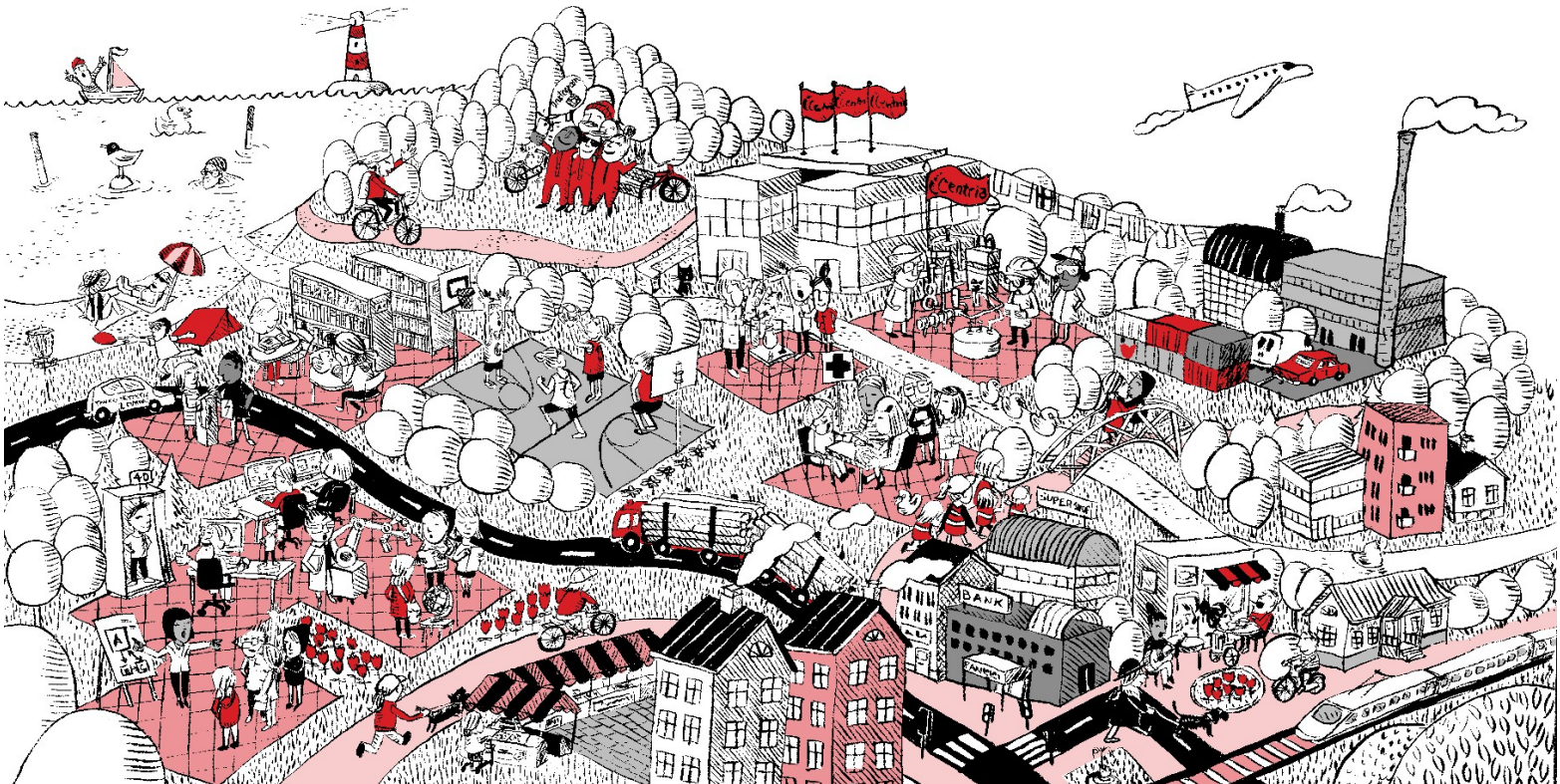


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ADVERTISING, AN EFFICIENT ADAPTABLE TECHNOLOGY THROUGH TIME

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ABSTRACT

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<p>Advertising has been created long time ago, for the first aim to give information. During its timeline, its goal has evolved and taken more place in our daily life, the number of ads and advertising agencies is still increasing. As technology has also improved at the same time, advertising followed the trend, by being more digital for example, because most of the people are using digital devices today.</p> <p>To be more efficient, the process of launching an ad has been improved in many ways, via the use of automation, artificial intelligence, captivating the right audience, creating new jobs, using social media to attract more people and to get data. All of this makes an ad more interesting and efficient for company, not a loss of time or money.</p> <p>This thesis will explain why advertising is an efficient adaptable technology through time.</p>		
Key words Ad, advertiser, advertising, audience, automation, data, efficient, Facebook, target, viewer		

ABSTRACT

TABLE OF CONTENTS

1	INTRODUCTION	1
2	HOW ADVERTISING WAS MADE, AND ITS IMPACT IN OUR SOCIETY	3
	2.1 The aim of advertisement through the years, the origins	3
	2.2 Advertising agencies, a new working field.....	8
	2.3 Difference in the type of budget in Facebook advertising	14
	2.4 The impact of budget allocation on performance improvement	14
	2.5 The automation of budget allocation in Facebook ads.....	15
3	AUTOMATION AND ITS THREATS	17
	3.1 What is automation?.....	17
	3.2 What is artificial intelligence (AI)?	18
	3.3 What is advertising automation?	18
	3.4 Key challenges and limitations of advertising automation	20
	3.5 What is a threat and what does the management of organizations face dueto automation?.....	22
4	DIRECT RESPONSE MARKETING AND FACEBOOK ADS	24
	4.1 What is marketing, direct response marketing and how does it differ from branding in online advertising?	24
	4.2 How is direct response marketing used today and its limitations?	25
	4.3 Facebook, its ecosystem and Facebook Ads.....	26
	4.4 The different objectives and parameters of a Facebook Ads campaign	27
5	FACEBOOK ADS AND AUTOMATION.....	30
	5.1 The history of e-commerce with Facebook ads.....	30
	5.2 How are e-commerce companies leveraging direct response marketing with Facebook Ads?.....	30
	5.3 The role of automation in improving performance at scale in Facebook Ads	32
	5.4 Threats of ad automation to performance marketing teams in eCommerce.	33
6	AUDIENCES AND CREATIVE	34
	6.1 What are the different types of Facebook Audiences?.....	35
	6.2 The impact of Automation on Audience generation.....	35
	6.3 Different Creatives and Ad Formats in Facebook Ads?	36
	6.4 The automation of Creatives Generation for eCommerce businesses and its impact on performance.....	37
7	CONCLUSION	39
8	REFERENCES.....	41
	FIGURE	
	FIGURE 1. Global adspend over the years by medium	12

1 INTRODUCTION

“Advertising is a means of communication with the users of a product or service. Advertisements are messages paid for by those who send them and are intended to inform or influence people who receive them”, as defined by the Advertising Association of the UK.” (EconomicTimes 2021.)

Advertising exists since long time ago as the first ad was made in 1472 and 549 years later it's still present in our life. We all see at least more than one ad per day, on the phone, on computer, on TV, almost on all electronic devices. If you see a slogan or the symbol of a brand it is seen as an ad. Today “Americans (and most folks in modernized countries) are bombarded with advertisements. I'm talking about a tsunami of commercials, print ads, brand labels, Facebook ads, Google ads on your phone or anything a business can produce to get your attention and compel you to buy. Digital Marketing expert estimate that most Americans are exposed to around 4,000 to 10,000 advertisements each day” (Marsgall 2015). To have an idea of how much advertising we can see per day.

Advertising follows each trend and must be efficient, as a principal aim is to make people aware of a brand, a product, or a service. More and more advertising companies are created to help smaller businesses who don't have time to spend or to create it, or the knowledge as well. Plus, its technology has improved so much nowadays that if an ad doesn't target the right potential customer, it will be a waste of time and money.

This subject interests me a lot and will give me much more knowledge about advertising than I have today, of course I want to work in this industry later. This thesis will go through the operation of an advertising, its evolution during the time, and mostly how it can be so efficient for the viewers. Thanks for example to the collection of data or cookies that company uses to find the right person to target when the ad will be launched. We are going to see who the leaders are in this industry and thanks to what they lead this working field, all the details can make a real difference in this industry, the use of the right song, picture, or people too.

The thesis will be based on what makes the advertising more effective nowadays than before, thanks to all the software and tools that we can use today. To answer this question, there will be a lot of online documents, YouTube videos, Webinar event, E-books and of course a huge number of articles which will explain all the information that we need.

In the second chapter will demonstrate how was made the first advertising and what advertising has brought in our society by talking of its history the budget of it, its aim with all the details around it, based on true facts of course. After that, the third chapter will go through the automation and its threats, what it has brought to the advertising's world. The fourth chapter will be based on direct response marketing and Facebook Ads, because it has improved the advertising, make it much easier and more efficient. Then, for the fifth chapter of the thesis will go through the Facebook Ads and automation, two connected things that will make an ad even better and faster. The use of Ecommerce and its history will be helpful to understand it. The sixth chapter will be based on the Audiences and Creatives, which is an important data that advertisers use to target the right people that will watch the ad. Plus, it's important for them to be adaptable depending on the user's device.

Lastly, there will be a conclusion that will respond to the thesis subject with the resume of this thesis, all the big points that have been talked. Then, all the sources will be showed to have access to all the documents that have helped to discuss this subject.

2 HOW ADVERTISING WAS MADE, AND ITS IMPACT IN OUR SOCIETY

Advertising has brought a lot of changes and evolution through the decades, it has been adaptable and has created new work industry, with a constant competition between business. This chapter show how it has been introduced to our society since its beginning.

2.1 The aim of advertisement through the years, the origins

The first advertising was made back in 1472 in England by William Caxton, it was a printed ad that has been put on a church door. Its goal was to bring more people at the church to be more known. It was already improved back in 1704 in the U.S, writer started to publish advertising on the newsletter. It was used to make people buy a “Long Island Estate”, so its aim it’s to make people aware of this offer and to find the right potential buyer. As the technology was still evolving, billboard was created and the first one was printed in 1835 by Jared Bell to make the communication of a circus. It was easier to make people aware of this just by showing up a big poster larger than 50 feet to bring customer. The use of images and colors it’s successful to attract a customer intention, a new kind of advertisement.

Advertising became so successful that more and more companies started to invest in it, the amount of production was very large. So, the idea of creating companies that will take care of advertisement came. In 1841, Volney B. Palmer opened the first advertising agency called “V.B. Palmer’s”, a company that will take care of making advert on newspaper for other companies that will need him. Making ads for companies needed to be more recognized and to earn more money by making them. “The commission model” was established in 1868 by “Francis Wayland Ayer of N.W. Ayer & Son” in order to charge advertisers of commission for which after that it became their payment methods for several years.

Ten years later, in 1878 the modern agency appeared thanks to J. Walter Thompson who defined it. Its aim was to modernize it by creating management inside the agency

and being more creative with media, for example with the use of slogan which will put some creativity and originality to the advertisement and all of that under one company. Few years later in 1882 the brand Ivory soap has used its tests to show the purity of their products to prove that they are good to use, which make them a good advertisement and would have increased their sales and of course the brand image. At the end of the 19th century in 1892, a new evolution appeared, the direct mail. Introduced by Sears, it was used to make more personalized ads and make them produce a lot of advertisement campaign, “When they launched their massive direct mail campaign in 1892 with 8,000 postcards, it produced 2,000 new orders.” (Hubspot 2021a)

At the beginning of the 20th century, advertisement has another utility, the recruitment of people. In 1900 Ernest Shackleton a polar explorer made what was called “the best ads of the century” by posting on the newspaper an announce to recruit a person. Recruiting became a part of advertising. During this time which started in the early 20th century, Cadillac Motor Company made an advertisement about Leadership. In 1915 they posted an announce on “The Saturday Evening Post” it was called “Penalty of Leadership”, in this post this company explained what it is to be a leader and the attitude and the behavior to adopt in being a leader. The ad began with “In every field of human endeavor, he that is first must perpetually live in the white light of publicity. Whether the leadership be vested in a man or in a manufactured product, emulation and envy are ever at work”.

At the end of the first World War, the U.S army needed forces. James Montgomery created a symbol if the USA, a poster with a man called “Uncle Sam” he created him in 1917 with patriotic colors and with the message “I want You for U.S army”. Advertising created a symbol that is still in our mind today.

In constant evolution, radio was a new channel to make advertisement, the first one was made in 1922 by WEAf a radio station that created NBC (National Broadcasting Company). It was the first radio that was offering 10 minutes at \$100 to let other company make advertisement. Five years later, Music took a part on advertising by putting a post on a newspaper in the United Kingdom. The headline was written by John Caples and said, “They Laughed When I Sat Down at the Piano but When I

Started to Play!” (Hubspot 2021b). A new aim for new field the music industry made a promotion for a home-study music school course.

In 1930 Rosser Reeves gave the idea of introducing advertising with the same message or slogan every, which will give to company a way to identify themselves by giving something that make people recognize them by reading the same message. The companies that will use this technique should bring them above the competition, in being more innovative than other companies.

In the same decade, in 1935 an important event appeared for the advertising. Indeed, the market research, which is still an important method for business today, its definition today is the following, “the collection and examination of information about things that people buy or might buy and their feelings about things that they have bought” (Cambridge Dictionary 2021). Back in its beginning Georges Gallup created this method to make advertisement more effective, by evaluating the best target to who the ad will be shown.

As the first electronic television was invented in 1927, it was a new kind of channel for advertiser to publish their ads. This first opportunity was taken by Bulova, a company that was selling watch, that ad was nine second long and only one sentences was said. Brand had to pay \$9 per minute to appear on tv.

At the beginning of the second World War, a lot a men and fathers had to go fighting, during this time some families were left without any man, so women and mothers had to take more power and leadership. As the feminist movement appeared a symbol of it has been created in 1939, this following sentence is probably known all over the world “We can do it” with a woman showing her biceps. It showed that woman is strong too, and Rosie The Riveter became the feminist symbol by defending the independence of the women and her important role in the working field.

One year before the end of the World War 2, in 1944 a preventing ad has been launched to prevent woods fire. “Smokey the Bears” became an icon in the U.S forest because of the precedent fire which caused a lot of damages on animals and human life. The message behind this is to prevent people to bring water in fire camp just in case there is a mistake done.

Furthermore, jewelry was an industry that became more and more known, so first advertising was made in 1947 by Frances Gerety who created the slogan "*A diamond is forever*" for the company De Beers Group. This was to make people aware of the value that diamond could have, and to prove its lifetime, it will be with you during all your life.

From 1960 to late 1980, it was the golden age of advertising, the campaigns of Volkswagen are a great example of that. As Germany was an enemy of a lot of countries during the World War 2, launching campaign to promote a German car was very daring, but it was working as the quality of their products was very good, they continued to launch campaign and sold more and more cars. Advertising took more amplitude in the business. People became more innovative which more new ideas.

As an example, we can use David Ogilvy who was defined in 1963 as "the father of advertising", a British man who never worked before in this industry, took the opportunity to create an advertising agency in the U.S called "Ogilvy & Mather". The value of his work was the respect of his customer, the quote that credited him was "The customer isn't a moron, she's your wife." Which prove that he put respect and interest into his customers. Thanks to this value, his agency become quickly one of the largest in the world and of course the most respected.

In 1964, the Planning circle was introduced by Stephen King. It represents a development guideline of advertising, and this target plan was a mixed between a market research and the opinions of customer to help company being more creative and effective. This plan was made of 7 questions and one helping tip.

Those are the questions:

- 1: what is the opportunity and/or problem which the advertising must address?
- 2: What is the role of advertising?
- 3: Who are we talking to?
- 4: What is the key response we want from advertising?
- 5: What information / attributes might help produce this response?
- 7: Are there any media consideration?
- 8: This could be help...xs

(AAAA 2021a)”

Each of these points have an answer it this T plan to help other company being more effective and innovative.

Eight years later, “the world’s most famous ad” appeared, a commercial ad from Coca-Cola. This ad brought hope for people, by touching them via showing happiness and hope. In this advertisement a famous sentence has been said, “I’d Like to Buy the World a Coke”, the use of young people and with different “races” which were providing hope and happiness. Plus, to touch more the viewer of the ad, the first lyrics of the music used to say, “It just felt like I heard a voice from somewhere saying, I’d like to be able to do this for the whole world. (AAAA 2021b)”

Advertising started to use more innovative ways to stand out of the crowds by using actor or other famous people. The use of music was also important, because by hearing a special song you’ll remember the brand who used it. But in 1987, a legal fight has been done between the company Nike and the famous crew The Beatles. As the number one in athletic shoe industry, for their campaign of the famous model of Nike Air they use the legend Michael Jordan to promote it. The use of a legend of the NBA will bring to the company a new icon, these peoples will refer the brand to him. At the same time, when Nike wanted to use the song “The Revolution” for which they paid \$500 000 to Michael Jackson who owned “the masters to The Beatles Catalog”. It led to a legal fight because the surviving members of the English crew didn’t Nike to use their song, after that a lot of others crew and house producers put label on their songs, which oblige advertiser to give them money via a legal contract to use music.

Let’s talk more about Nike and its famous slogan “Let’s Do It”, brought in 1988 by Dan Wieden from Wieden + Kennedy. This sentence was said by a murder, “It was based on the defiant utterance of a murderer when asked if he had any final thoughts before his execution, “Let’s do it.”. Wieden used it to make athletes who used Nike challenge themselves, a motivation beyond the brand, which is still present nowadays.

New Channel came into world, in 1993 digital was more and more used by student from young mother, to do some homework on services American Online or Prodigy.

Advertisers didn't miss this opportunity as today companies spend money every month on online. Facebook, the leader of social media launched its own ads platform in 2008, called "Facebook ads", to help business launching their campaign online.

We've seen that advertising has evolved a lot during its timeline, and it's still evolving. It has been adapted by innovative people using different methods, to be more in touch with its viewer, which will make the ad more effective. Plus, when new channels came, such as radio, electric television or also internet with social media, advertiser took the opportunity to follow each trend and adapted themselves for each of those channels.

2.2 Advertising agencies, a new working field

The first advertising agency opened in 1841, named "V.B. Palmer's", created by Volney B. Palmer in Philadelphia. It took him one year to acquire new customer, but it was solid when he had them. Palmer was not only local as he occupied 7 states, the following ones "Pennsylvania, Maryland, New Jersey, Kentucky, Missouri, Tennessee, Alabama". Eight years later, its production has increased a lot as he was "claimed to be the sole representative of 1,300 of the estimated 2,000 newspapers published at that time" (DesignHistry 2011). Its expansion was massive, thanks to his professional work he was the monopole of the advertising agency. The fact that he was taking care of all the process and giving his best trying to target the right person that will see the publication.

Advertising was more commune and it created new jobs as advertiser and a new working field with the communication which is of course linked with marketing. The creation of several advertising agency proved that they are helpful and efficient for the society, from creating a job to giving a great service to business. Within ten years, from 2011 to 2021 the number of advertising agency has exploded, it has increased by almost 74% in the U.S with 1 449 agencies in 2011 to 5 585 in 2021.

The effectiveness of their works is one of the reasons that this sector is hugely growing, but also, more and more people are created their own company, and the communication to be known or to develop itself is needed.

Advertisement is used in different way, depending on how or what the company wants to use it. Globally, ads have different meaning, the first one is to inform, which is also known as “informative advertising”. How a company can be known with having people aware or being informed that they exist? Advertise is the best way to inform people. Through time, different way of information has appeared, the newspaper is the oldest, that’s why people used it to get their company known, to inform potential customer of their existence. Later, when a brand is already famous, they are still using this kind of advertisement, to make customers aware of a new launched product, or a discount on a special article.

“Informative advertising is especially relevant in the pioneering stage of a new product category. The objective is to build primary demand. To support this objective, informative advertising provides information about the features of a new product or service in order to initiate the decision-making process of consumers. For instance, the yogurt industry initially had to inform consumers of the nutritional benefits of yogurt.” (Maximilian Claessens 2018a)

Then, when the informative part is done, there is the persuade part, also called “persuading advertising”. People can be aware of a product or a service, but it doesn’t mean that there is only one model of this product are service. That’s why advertiser have to persuade their public to make them buy the good needed. Marketing is a good way to learn how to persuade people, the use of specific words or color which will make the potential customer looking for this product, because this good or services has this particular thing that will make him or her wanting to buy it.

“Persuasive advertising becomes relevant in the competitive stage. The company’s objective is to build selective demand for a particular brand. It has to persuade consumers of the fact that its products or services offer more value than competing products or services. For instance, BMW attempts to persuade consumers that its cars deliver more driving pleasure than Mercedes-Benz cars.” (Maximilian Claessens 2018b)

The last part of advertising aim is to make people remind the ads, this stage is called the reminder advertising. Its aim will be more about giving a specific aspect or feature

that will make the customer feels that the offering product or service is better than the competition, the brand Coca Cola does it to remind their customer to buy Coca Cola instead of Pepsi for example. Of course, a brand will use different strategies depending on their notoriety, or the value of the service or good. "As you may have already recognized based on the different aims of advertising explained above, the advertising objective should emerge from a profound analysis of the current marketing situation. For instance, if the product is mature, the company is the market leader, but brand usage is low, the appropriate aim of advertising should be to stimulate more usage (persuasive advertising). On the other hand, if the product is rather new to the market, the company is not the market leader, but the product is superior to the market leader's product, then the appropriate aim of advertising should be to inform the market of the brand's superiority (informative advertising)". (Maximilian Claessens 2018c)

Through the time, its aim hasn't changed, to make more profit to a company by selling their goods or services, but the way to do it has evolved. As before the technology wasn't as developed as nowadays, companies must adapt themselves to be the most performant and advertising agencies has to follow or to be higher than this performance, to be even greater and offering the best ad. Behind the aim of an ad, there is the strategy put inside it to target the right people, the most potential profile that will be interested in the offering product or service. It's important for a business to make research on who they will show their advertisement, social media are used by many people and a very good place for company to collect information, data to collect information.

To achieve this aim, a business can use marketing strategies that will mostly match to their expectation. To better understand its use, here is its meaning "A marketing strategy refers to a business's overall game plan for reaching prospective consumers and turning them into customers of their products or services. A marketing strategy contains the company's value proposition, key brand messaging, data on target customer demographics, and other high-level elements. A thorough marketing strategy covers "the four P's" of marketing: product, price, place, and promotion." (Adam Barone 2021a)

Why does a company need to have a marketing strategy? It will provide them a competitive advantage that will inform precise the customer's need depending on other already existing product or service. "The ultimate goal of a marketing strategy is to achieve and communicate a sustainable competitive advantage over rival companies by understanding the needs and wants of its consumers. (Barone 2021)"

Once the marketing strategies is done, a company should follow their task by doing the marketing plan "a document that details the specific types of marketing activities a company conducts and contains timetables for rolling out various marketing initiatives. (Barone 2021b)"

Through the time, human being evaluated and his habits too and this due to the constant evolution of the technology at the time. It offers new things to do, new interest and it will make people change their habits. For example, more things are done nowadays by digital things, because it's faster, easier to understand but not for everybody. Young people are born in this environment so it will be easy and normal to learn how digital device works, but for some senior people it makes things harder, because the global population has evolved and the market too. That's why advertisers and marketing strategies have to be precise and performant for each range of age. In the early 80's most of the advertisement were present on newspapers, because it was the device the most use with a global of \$30 Billion spend in this year. After that, television became more modern and common which caught the attention of marketers and advertiser, twenty years later during the year 2 000 Television became the device with the most ad spend with a global amount of almost \$103 Billion, a bit higher than newspaper that was at almost \$97 Billion at the same time. During this period, those two devices were the most used, but it doesn't mean that it was the only channels where money were spent.

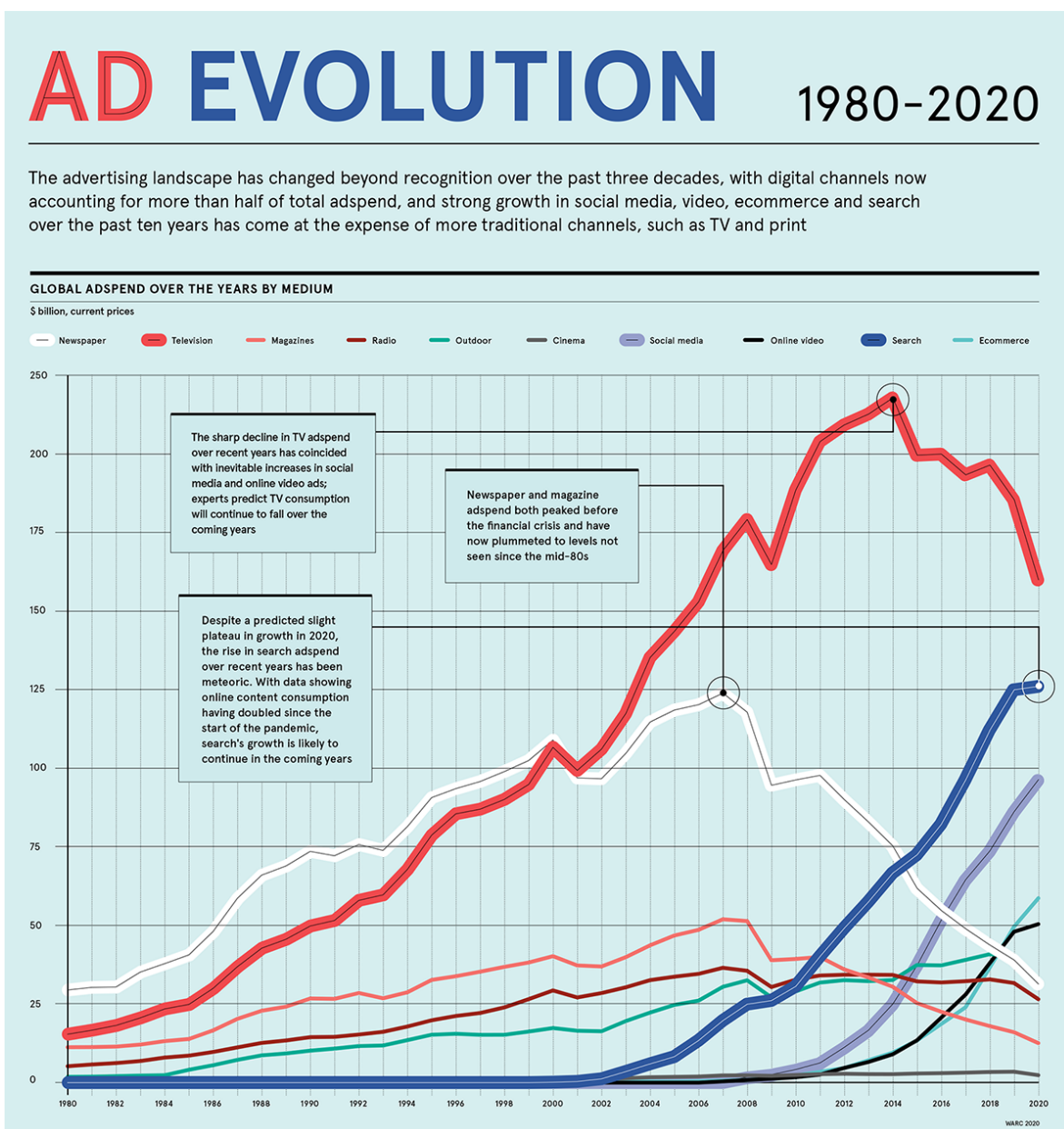


FIGURE 1: Global ads spend over the years by medium (Warc 2020)

Globally, 10 channels were used at that time, they are the following ones: “Newspaper, Television, Magazines, Radio, Outdoor, Cinema, Social Media, Online Video, Search and Ecommerce (Raconteur 2021a)” some of them appeared later in the timeline, because it was created later thanks to the evolution of the technology and the creation of new channels which will offer new device for ad spend. From 1980 to 2001 six of those channels were used, “Newspaper, Television, Magazines, Radio, Outdoor and Cinema (Raconteur 2021b)” with a bigger interest for Newspaper and Television, then Magazine with a medium amount of ad spend around \$25 Billion followed by Radio

which was more around \$15 Billion of ad spend during the same time. Outdoor advertising appeared a bit later in the 80's, from 1984 to 2001 it began at \$0 of money spend to around \$15 Billion of ad spend. The Cinema channels doesn't have a major role in the ad spend, as since 1980 it is still the lowest channel where advertiser spend money, around \$3 Billion.

In the early 2 000's, digital device became more a part of our daily life, which attracted advertiser attention. "Social Media, Online Video, Search and Ecommerce (Raconteur 2021c)" have grown very fast and strong, for example social media started at \$0 Billion of ad spend in 2008, compared to almost \$100 Billion of ad spend in 2020, which prove a constant evolution and interest in this kind of device. Internet has an important role in our life, we use it to chat with people, sharing things, searching information or just spending time on it to see what's interesting. Advertiser didn't miss this opportunity as in 2019 an amount of \$299 Billion has been spent in internet advertising, in 2015 it was only at \$156 Billion, a huge evolution in 4 years. Plus, the majority of the people will spend more time on their smartphone or computer instead of spending time on Television and this can be explained because of the easy way to use smartphone or computer, more liberty and choices to watch or do whatever we want, and advertiser can collect data thanks to this, which will make their ad even better as they will have more facilities to target the right people. Some worldwide event changed our habits too, for example COVID-19 have a big impact on digital advertising, people cannot go out shopping as before so they spend time on their smartphone and computer, which will make them more vulnerable to buy online. At the beginning of this worldwide crisis, people were spending around 3 hours and 17 minutes on their daily routine online, compared to 6 hours and 59 minutes later in 2020. Of course, it has impacted the online advertising field, which at the same time has grown with an extra of \$183 Billion of money "to be spent online by customer (Raconteur 2021d)" due to the Corona Virus and the online advertising has increased too by becoming 53% of global ad spend.

Advertising major aim is to make more profit to a business via sharing the information of new or already existing good or service. This can be done through different channel and must be adaptable for each of the available device. That's why advertiser must be flexible and aware of each trend to be the most efficient possible.

2.3 Difference of Budgets type in Facebook Advertising.

Facebook Ads allows advertisers to allocate budget to certain campaigns and audiences to spend their marketing budget effectively in audience which perform better for them. There are two main budget types which are available in Facebook Ads: Lifetime Budget and Daily Budgets.

- **Lifetime Budget:** A lifetime budget is an advertising budget value set on the ad set or campaign level. The value defines how much an advertiser wants to pay in total from the day the campaign launches until the campaign stops. Facebook delivery system will pace your spending effectively during that period to spend all your budgets while getting the better conversions.
- **Daily Budget:** A daily budget is an advertising budget value set on ad set or campaign level. The value of this budget will be considered and relates to how much an advertiser wants to spend on an audience per day. The Facebook delivery algorithm will then pace the budget in order to spend those budgets every day and get the maximum of conversions.

2.4 The impact of Budget allocation in improving performance.

Usually, advertisers have several campaigns running per account. They usually structure their campaigns by type of funnel so for instance: top of the funnel is going to be brand awareness with branding videos aiming to educate the users about your offering, then comes prospecting which will have more direct response kind of content with products and their prices with discounts etc... And finally, is the bottom of the funnel which will gather remarketing and upsell / cross sell campaigns in order to get users who didn't convert with your products but took relevant actions on your website to convert. Now within those campaigns advertisers are segmenting their audiences and applying a different budget for each of those.

Facebook provides best practices in order to get the most out of your advertising budget. Now let's take the example of a mobile app ecommerce trying to acquire new

app users and get them to purchase on my app. I could segment my audiences into several ones with one audience having male and female android users and male and female iOS users. After a few days of my campaign running, I gathered a lot of data already in terms of how those two audiences behave with my ads. I'd be able to see that for instance Android users don't install my app as much as iOS users and they're more expensive to convert. Also, when Android users install my app, they usually purchase less than the iOS users. If my campaign budget would be split 50/50 and those would be the results after the few days, I could clearly see that my budget is not being spent effectively and that I'm spending too much on Android users while missing additional opportunities with iOS users. This is why Facebook provides best practices to always allocate more budget to the audience that performs the best in order to capitalize on them and not waste advertising efforts on audiences which are expensive and don't convert. In other terms, allocation budgets from audiences that don't perform well towards the best performing ones. If not allocated from another budget, Facebook still recommends, depending on your objective, to increase your advertising budget in audiences that convert and that have an acceptable CPA/ROI for your business.

2.5 The automation of Budget Allocation in Facebook Ads.

Once again, as stated above, eCommerce advertisers have extremely complex and heavy setups when it comes to campaign structures and audiences. Optimising the performance day-to-day and making the right changes have become a big challenge for advertisers. They were looking for ways to automate the optimisation of performances of audiences and campaigns at scale and making better choices than they would actually make themselves. That's where automation could again add value in optimizing advertising performance at scale.

3rd party software and Facebook Marketing Partners saw the opportunity and started building tools in order for eCommerce advertisers to leverage those features. Smartly.io for instance provides a feature called Predictive Budget Allocation. Predictive Budget allocation is an advanced artificial-intelligence feature that continuously moves your budget between ad sets or campaigns based upon their

performance in order to maximize the number of future conversions and minimize CPA levels.

In short, the science behind the feature is based on Bayesian multi-armed bandit. If all ad sets have plenty of conversions, most of the budget will be allocated to the ad set with the lowest CPA (or highest ROAS). The predicted changes in CPA levels, caused by the budget increases or decreases, are also taken into account.

The advertiser only needs to define, what does he want to optimize, either conversion or revenue and for which conversion event. The advertiser can then decide to scale his budget based on a CPA performance target and set some limits of minimum and maximum budgets in order to scale their advertising budgets if the CPA is still at an acceptable level.

3 AUTOMATION

As we know, advertising is a very adaptable device, some big company and engineer found a way to make it even better and faster than a human could do, thanks to the automation.

3.1 What is Automation?

Automation can be defined as a process of machines, programs and applications aiming to perform tasks done previously by humans. Its main objective would be reducing the amount of manual and repetitive work and eventually maximizing the output of a certain task more efficiently. Automation is mainly used in areas such as heavy manufacturing, transportation, defense, operations, and technology. In the past, automation was used to perform very manual and repetitive tasks done by humans, however as of today, automation has improved in terms of capabilities and is able to perform more advanced tasks that would have required more human thinking. According to Ravin Jesuthasan and John Boudreau (2017), we could categorise automation as it is used today in 3 main areas where automation would bring different value and would have a different role: “robotic process automation (RPA), cognitive automation, and social robotics.”

- **Robotic Process Automation (RPA):** The focus and added value of Robotic Process Automation is in automatically performing tasks which are usually done in large volume and which are of low complexity. Its output is usually a gain of efficiency and a task done in more accurate way as human errors are eliminated by advanced programs.
- **Cognitive Automation:** The added value and focus of Cognitive Automation would be on taking more complex tasks by having a much deeper understanding of the certain pattern of a range of different tasks. It could complete tasks such as “scanning purchases and processing payments” that would require more understanding of those two different tasks on their own and how they could be achieved.

- **Social Robotics:** This kind of automation usually aims to “collaborate or interact” with humans by mixing different algorithms, different technologies, and Artificial Intelligence with mechanical robots. In that case the tasks are usually done cooperatively by machines with humans. The human task would be mainly monitoring the work done by the machine and append corrections where and when needed. The value here is that this kind of automation constantly learns as time goes by, humans will always communicate and point out areas to improve on, the machine will then recognise it as an error, correct it, and learn from it in order to not reproduce it in the future.

3.2 What is Artificial Intelligence (AI)?

According to Bernard Marr (2018), AI can be defined today as machines, algorithms and programs aiming to think and act “like humans”. Its goal would be to learn characteristics and attributes which can be found in human thinking in order to imitate it as accurately as possible later on and eventually ending up making better decisions on behalf of humans.

Eventually, the Oxford dictionary defines AI as “the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.”

3.3 What is Advertising Automation?

The concept of Automation remains the same as before, it is just simply applied to a more specific area which is Advertising. Advertising is the promotion of a certain range of products, services aiming, for instance, to increase brand awareness in a new market, or grow sales revenue at a large scale. Today Advertising Automation is mainly used in online advertising using digital tools and programs. Online advertising gathers different areas such as: Search Engine Advertising, Display Advertising, Programmatic Advertising and Social Advertising for example. It is in Online Advertising where automation started to soar mainly due to the very advanced tracking capabilities that online advertising provides in comparison to traditional

media buying (TV, print etc...) where you would pay for example, a few millions of dollars on one billboard campaign and don't really get any actionable data over its performance. You would rather get a rough estimate of how many people came across your ad, however you wouldn't be able to determine the incremental results this ad would have provided in terms of additional sales. In other words, you don't really know what you get from the money invested in a certain ad campaign. At the same time online advertising and its advanced tracking capabilities are able to determine how much in average advertisers are paying for a purchase conversion (CPA or cost per action) and how many of those conversions were attributed to my ads using different attribution models (click-through and view-through across different timeframes). By gathering and leveraging this actionable and more granular data, automation is able to have a greater impact in improving performance.

Another example shared by Susan Krashinsky and Shane Dingman (2017), show that advertisers moved from buying ad space on a certain website's spaces by calling on the phone to eventually use "Automated exchanges" for ad buying and ad delivering. It instantly "gave advertisers more control, offering auctions where buyers could bid on an audience with certain characteristics, as well as a particular website's space". This is just an example of where automation changed past practices drastically and played a major role in terms of how ads were displayed, bought at a larger scale and more efficiently.

Today in Online Advertising there's a lot of different ways to purchase and deliver ads across many different ad exchanges, channels, bidding type and media type. For the sake of simplicity, we will focus mainly on the two most important channels which generate the most revenue in terms of ad sales: Google & Facebook. According to a study conducted by GroupM (2017), these two companies shared in 2017 a staggering 84 percent of global digital ad spending globally (excluding China). Google & Facebook provides a lot of different tools and products which allow advertisers to promote their products at scale based on certain attributes such as keywords, interests, gender, age, political interests or more advanced audience types such as persons who actually took a range of different actions on your website or audiences such as Lookalike Audiences which would be auto generated by

Facebook to be as similar as possible as your current customer's database for example.

Based on the findings above, automation in advertising is therefore, the process of automating the purchasing, delivering of ads at a larger scale based on predefined characteristics such as which audience I want to target/bid on, how much I am willing to pay for an impression/click/conversion, with which kind of ad. The creation and management of ad is already quite automated but what if those predefined parameters could be chosen straight away by a machine which would make the decision on your behalf based on past performance data. That is exactly what the Facebook machine learning algorithm does as it gathers more and more data across its user base, it is able to better predict the behaviour of its users and deliver ads that would be the most relevant to them according to their behaviour.

3.4 Main Challenges and Limitations linked to Advertising automation

While advertising automation provides a lot of different opportunities such as automating manual and repetitive tasks, eliminating human errors and make choices to improve the performance of ads at a larger scale in terms of volume and cost of conversions - automation still has a lot of limits as of today.

For instance, automated tracking poses worries in terms of user privacy. Taking the example of Facebook, they have their own automated product that allows Facebook to track a user's activity across different website. It is simply a small piece of code integrated into a company's website that would track what did that person do, what products did they see, how much products did they add to their cart, what is the value of the combined items that this person purchased. All those things are trackable with the Facebook pixel so in the end Facebook gathers data not only based on your activity within the Facebook ecosystem (Facebook, Instagram, WhatsApp, Audience Network, Messenger) but across every website which has a pixel installed. The issue is that those data are gathered sometimes in a misleading way as most users are not even aware, they're tracked by Facebook outside of Facebook. They however accept

the terms and conditions when signing up to Facebook, but the lack of transparency could be disturbing for some users.

Another example was a breach in the Facebook marketing API which caused the Cambridge Analytica scandal. According to Josh Constine (2014), until 2014, in the Facebook API - advertisers were able to fetch the Facebook personal data of friends of users who for instance shared their personal data with Facebook for instance to log in to a certain app with their Facebook Account. Any app that had access to this data were able to get the same personal data from the friends of each single persons who granted access to their own data. According to The New York Times - this same data was then sold illegally to 3rd party providers which then use this “illegally” obtained data to target users for a presidential election. Those privacies issues are gaining more and more importance in the public debate and it is why incentives such as the GDPR (General Data Protection Regulation) was launched by the European Union and has be effective the 25th of May 2018. It aims on regulating and checking how businesses gather data of their own user and therefore giving more power to people in finding out how their personal data is handled by getting more information on how it is actually fetched.

According to Lisanne Bainbridge (1983), we could argue that another limitation linked to Automation is the fact that some sort of human’s work would still be needed in order to check if the machine, algorithm his performing its task in the right way or if it is performing correctly as predefined for instance when launching a campaign. So, in the end automation would not be performing its main role to eliminate and reduce manual work but would actually spread and increase processes to check if the machine is performing its task correctly.

Automation has done a lot of progress in the advertising field in terms of accuracy, reliability and improving ad performance at scale - it is still developing really fast, and the future remains quite exciting for advertisers in the online advertising area. However, some limits and challenges still remain, such as privacy and the need of control by humans. In advertising there’s still no magic formula that would make someone’s advertising campaigns as perfect as possible by generating the maximum of conversions for the cheapest cost. Automation allows advertisers to get rid of very

repetitive and manual tasks in order to save their precious time and allocate it to more strategic thinking which Facebook or Google have not been able to automate yet.

3.5 What is a threat and what does the management of organizations face due to automation?

A threat could be having a different meaning according to which context it is used into. The Oxford dictionary defines the word threat as “A statement of an intention to inflict pain, injury, damage, or other hostile action on someone in retribution for something done or not done” an alternative definition of the word threat would be “A person or thing likely to cause damage or danger”.

When we take the definition of the word threat and apply it to a business, we can identify two categories where a threat could be applied. First, a threat for a business could mean that the financial performance of the business could get worse and make the business more likely to declare bankruptcy. It could also mean that a new competitor enters a market a company is currently operating in, or a new technology that would disrupt the value proposition of a business. It could also be applied to the organizational level, how a business is managed. Technology is constantly challenging how things are being done, managed in the business world and automation is no exception. In the next part, the threat of automation for organizations will be covered and explained in more details.

We defined above the three main areas where a business could be threatened, however there is a strong area where the focus is at the moment and which is relevant to this subject. One could wonder, how will management change and adapt to the new way of doing things due to the rise of automation. Companies are now asking themselves if they should either: keep their traditional ways of doing things, keeping hiring humans to complete the tasks manually or taking the risk of going fully automated and complete tasks in a more rapid, efficient and in the long-term cheaper way. Truth is that this subject isn't new. Humans have always innovated across history where we made life more efficient, work processes much better and time

saving, some tasks became irrelevant to do for humans and some became jobless. However, humans have always seemed to adapt and find new roles, new jobs in order to keep being relevant to the job market or world they're living in.

However, facing the truth, a lot of the tasks that currently needs less "qualified" persons to perform will most likely be automated first and as time goes by and technology improves, technology will be able to automate more and more tasks which required more advanced intellectual capabilities. The threat is that some employees, might become jobless and their skills might not become relevant for the time being anymore. On another side, organisations could try to reduce the amount of headcount in teams and use automation technology in order to be more efficient and more time saving. However, sometimes, automation goes wrong, and you most likely need a person which would have to understand the technology. We could argue that the teams of people usually doing more operational tasks will be replaced by teams of engineers which could monitor and control the machines in order to make sure everything runs at least as good as before.

4 DIRECT RESPONSE MARKETING AND FACEBOOK ADS

Advertiser always try to find a way to improve their work with new strategies and tools. Facebook, the most powerful social network has its own way to launch ads campaign for business, which is its first source of revenue, we will we see in this chapter what is a direct response marketing and also what is Facebook ads.

4.1 What is marketing, direct response marketing and how does it differ from branding in online advertising?

The American Marketing Association, define Marketing as “An organizational function and a set of processes for creating, communicating, and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders.” It is indeed a very broad term gathering different subjects and not only, for example, the advertising of product and service which usually people mix with Marketing. Marketing is the whole process from defining which product or service should we produce to provide more value in a certain segment than others have done before and how to promote those in order to benefit the whole company in the most efficient way possible.

Usually in online display advertising you would be able to achieve two main objectives which we could categorize in Branding and Direct Response. Vural Aksakalli (2011), separates branding from Direct Response by defining their different objectives that those two kinds of practice would aim to achieve.

Branding would be defined as “long-term advertisement investments with goals such as boosting brand awareness, generating new customer lead, and improving customer relationship”. The advertising industry likes to call Branding practice in online advertising as “long term Direct Response”. It aims to achieve goals which are on top of the funnel or so called “soft metrics” such as Ad Recall, Reach, Video Views etc.

Whereas Direct Response Marketing is mainly focusing on achieving “a measurable, direct, and immediate response”. Here, the focus is centered more around “hard

metrics” such as conversion rates, amount of purchases, ROAS (return on ad spend), Cost per Actions etc. These kind of advertising campaigns use more measurable metrics and are able to optimize those results thanks to the data provided after the ad run. A good example would be, I see that iOS users provide usually more conversions to my business at a cheaper cost than Android users, so I'll allocate more of my advertising budget into iOS user in order to maximize the output of my advertising campaign and spend my budgets more effectively.

4.2 How is Direct Response Marketing leveraged today and its limits.

After defining above Direct Response Marketing as a practice to run ads which provide trackable, measurable and quantifiable insights, it aims mainly to be beneficial to businesses which actually can measure effectively the performance of their ads. Therefore, this practice of Direct Response or also called “Performance Marketing” has mainly been used by early adopters in online advertising which would be historically Gaming and eCommerce. Mobile Gaming and eCommerce businesses are often the very early users of any Alpha, Beta features that Facebook or Google provide in terms of advertising. Due to being born as digital companies, they usually have the means, talent, infrastructure to track a user's activity within their own app, website or mobile game. By accessing this very granular and actionable data over the behavior of its users, eCommerce and Gaming companies are able to leverage it by optimizing their online advertising budgets by always bearing in mind their most important objective: Maximizing the volume of conversions (Purchases, App Installs etc...) at a lowest cost (Cost per Action) in order to maximize their ROAS (Return on Ad Spend).

The limitations of Direct Response Marketing simply lie in the fact that it can't be used online by any kind of business, the business would need to be able to fetch data, which is measurable, trackable and with results can be attributed to ads that were run on behalf of the business on online platforms.

4.3 Facebook, its ecosystem and Facebook Ads

Facebook is a social network service platform created in 2004 by Mark Zuckerberg (current CEO of the firm). Its main objective was to connect and share better with friends and families across the world. It is a free to use service where anyone would be able to sign in with an email address. However, when we're talking about Facebook Ads and Facebook in general, it gathers actually much more than just Facebook. The Californian company is now owning different other Social Media platforms such as Instagram, WhatsApp or even Facebook Messenger. It therefore has access to an extremely large data base and pool of users. One might argue that how can a business survive with a free to use service. When digging a bit deeper and trying to understand better Facebook's own business model, we'd quickly spot that actually Facebook gets most of its revenue with Advertising.

Facebook Ads is Facebook's own product that allow advertiser to run native ads on its different placements. According to NBC News, Facebook generated \$39.9 billion in ad revenue, this figure definitively show that Facebook became one of the market leaders with Google in terms of ad revenue and that the platform is trusted and used at scale by many advertisers across the world.

Facebook Ads provides a range of different placements where advertisers could run their ads in Facebook Ads such as: Facebook News Feed, Facebook Right Hand Side, Audience Network, Facebook Messenger, Instagram Feed and Instagram Stories. It has therefore a large and diverse selection of ad space where advertisers could get a lot of value in terms of acquiring new users online or increasing brand awareness.

Also, thanks to its large database of users Facebook can leverage that information linked to user behaviors or interests and sell that to advertisers in order to allow them to buy, deliver and target their ads in order to get the best returns out of their advertising efforts. For instance, with Facebook's Dynamic Product Ads, one would be able to efficiently retarget users that abandoned a product to cart by deliver an ad of the exact same product. The relevance and efficiency of that practice is optimal as users already communicated intent in the past to a certain product.

4.4 The different objectives and parameters of a Facebook Adscampaign

Facebook Ads have been developing quite fast over the years where Facebook tries to constantly innovate in terms of new features that would answer any business needs online. Optimally Facebook would want that a retailer, an online travel agency, a B2B business or an eCommerce get as much value as the other and would allocate a significant part of their marketing budget to Facebook Ads as it would yield great results. However, as of today, Facebook Ads provide more value in some vertical than others for very different reasons which are going to be explained later on with case studies highlighting how companies in certain verticals and more particularly in e-commerce could leverage Facebook's products in terms of ads possibilities.

As said above creating ads and a campaign in Facebook could be extremely easy to very complex. The range of possibilities is that large that a small SMB could do a Store Visit campaign targeting everyone around 5 km of his store or a global e-commerce like Zalando advertising at scale across many different countries using very complex structures and practices. In order to get a better understanding of what we would be able to do with Facebook Ads, we are going to list in a clear and concise way, the different objectives and parameters you would need to create a campaign on Facebook.

Usually, the first step that you'd need to take on Facebook is to decide which is the objective of my campaign. Facebook allows you to choose different objectives across different step of the funnel (Awareness, Consideration and Conversions) :

- Brand Awareness: Facebook would deliver your ads "to people who are more likely to pay attention to your ads and increase awareness for your brand".
- Reach: Facebook would deliver your ads to the maximum amount of people you're targeting in your campaign.

Mid-Funnel (Consideration)

- **Traffic:** This objective would allow you to drive the maximum amount of people on and off Facebook's destination such as your own website. It usually optimizes and deliver ads to users who are the most likely to click on your ad.
- **Engagement:** For this objective the goal is to get users to engage (like, share, comment) on your post or page and maximizing engagement.
- **App Install:** Facebook would deliver your ads in order to maximize the number of users who would download your app.
- **Video Views:** Maximizing the number of views for a certain video which you'd promote. Could also be working for top of the Funnel users who'd need to be educated about your offering.
- **Lead Generation:** Maximize the amount of lead information from users that would be interested by your business.
- **Messages:** Get people to interact with your business via Facebook messenger. This is usually great when you have a team or a chatbot managing those incoming messages for support and / or sales.

Low Funnel (Conversion)

- **Conversions:** This objective is to drive users to take actual actions such as purchasing a product or adding products to cart on your website or app. This objective can be used with the Facebook Pixel in order to track and measure those conversions
- **Catalog Sales:** Otherwise known as Dynamic Ads, this would basically automatically show products to a target audience. For instance, a user added a pair of Nike shoes to cart but didn't purchase, the catalog sales objective will allow me to automatically show that user an ad of those same Nike in order for them to purchase the product.
- **Store Visits:** This objective will deliver your ads to a range of people around different store locations.

As you can see above, there's already a lot of possibilities in terms of options on Facebook Ads, and it is no surprise it is now competing harder with Google. We could take the example of AdWords and their Search product, you'd target users who already showed intent by searching for keywords on the search bar. Whereas where

Facebook is doing great is that they provide a tailored solution for each step of the funnel: Awareness, Consideration and Conversion.

5 FACEBOOK ADS AND AUTOMATION

This chapter will be a better understanding of the Facebook ads with E-commerce, which improve again the efficiency of an ad. Plus, the automation technology is present in the Facebook ads, and make it even better and more efficient than a human work could do.

5.1 The history of eCommerce with Facebook Ads

As explained earlier, eCommerce were early adopters in terms of using and leveraging the power of Facebook Ads. Mainly because the possibilities of Facebook Ads evolved over time to answer the needs of eCommerce businesses in order to help them achieving their business goals in terms of acquiring new users and retaining existing one online.

In the very early days around 2013-2014, Facebook had a very limited number of possibilities in its Ad Product. eCommerce was mostly buying likes and run branding campaigns in order to get their brand known on Facebook. The metrics which were followed were really “soft metrics” where impressions, reach, likes, shares, comments or event responses data were provided by Facebook.

However, the needs of eCommerce businesses changed, the eCommerce industry was keen on discovering where did their advertising budget go and what were the results due to those investments. They wanted to measure how much they were paying per conversions and how much revenue did their advertising on Facebook provided to the company. It ended up having the different companies like Zalando that switched from buying likes and following soft metrics to a more ROI focus approach and started doing Direct Response Marketing on Facebook, optimising their advertising budgets for conversions and maximise their return on ad spend.

5.2 How do eCommerce business leverage Direct Response Marketing with Facebook Ads

As said earlier, most eCommerce advertises online in order to acquire new users, re-engage new ones in order to generate as much revenue as possible from it and maximize the lifetime value of a consumer. There are many ways that eCommerce leverage Facebook Ads in order to drive performance on the paid social channel, here are below a few ideas how they do it:

- Different Ad Formats and Mobile First content: Facebook allows you to advertise quite effectively and provides a large range of possibilities in terms of native ads and which ad format you'd like to use. You can use Photo Ads, Link Post Ads, Videos Ads, Carousel Ads, Collection Ads, Canvas Ads etc...

There is a format that is basically a mix of a photo or video on top of the photo and on the section below you'd be able to promote items from your product catalog. The mobile format is an excellent way of promoting your products to audience who have not yet been in contact with your business. It is therefore a good way to educate your prospecting audience with a video on top telling about your brand, products, offering etc. and then get them to purchase products once they click on the ad and get access to your product catalog.

- Powerful retargeting capabilities with Dynamic Ads: Dynamic Ads is a solution which allows advertisers to retarget users based on their behavior and past activities on a website. You'd need three main things to make Dynamic Ads work: A Product Catalog containing all of your product's data such as price, name, product category, URL, image URL etc. Then you'd need the Facebook Pixel installed on your website in order to track user's activities and populate the retargeting audiences which you want to target later on in your retargeting campaigns. Where Dynamic Ads are powerful is that they will recommend the same product that someone e.g. added to cart 5 days ago but if you e.g. use a carousel ad format it will promote products which the user is most likely to engage with

If someone would have added to cart 5 days ago the "Layered Drape Jersey Beach Dress", he or she would have received this ad with different product cards which the

user would be most likely to convert with based on its past data with the website but also with any other data which Facebook might have gathered regarding the user.

By leveraging the power of mobile, different ad format, and having a solution which provide value for each step of the online funnel, Facebook Ads allow eCommerce businesses to literally run any kind of campaign, for any type of objective paired with an extremely powerful Facebook algorithm which allows advertisers to very often find users interested in your products.

5.3 The role of Automation to improve performance at scale in Facebook Ads.

First and foremost, major eCommerce businesses have extremely complex setups when it comes to advertising on Facebook. They're usually present in a lot of countries, have products catalog which change very often, have to advertise for different segmented audience based on the funnel step etc... Not only you need to launch the ads, but you then have to actually manage it in order to increase performance by stopping ads which don't convert well or are too costly, allocating budgets to audiences which convert better, testing new ad formats, doing A/B tests in terms of bidding strategy etc. These tasks represent a lot of manual work for the advertising team. With Automation those teams are able to actually spend more time in thinking and sharing about how they could strategically be better in their social advertising, how to improve their creative performance instead of doing repetitive tasks everyday which would take a significant amount of time.

Another great example would be to create Ad Creatives at scale. An eCommerce might have millions of items in its product catalog however it would be very unlikely that the designer team of those companies would be able to actually create a single ad for each of those millions of products. With product data such as discounts, price, availability changing constantly it would be impossible to have an ad for each product which would be up to date. With the help of Facebook Marketing Partners, 3rd party software that allow you to run campaigns on top of the Facebook algorithm, you can design an ad with the help of a template and mix there static and dynamic content.

Dynamic content here would be price, image url, product name all taken from the product catalog which would be connected on a Facebook Business Account. You could then as a result have a designed and personalized ad for each single product of your catalog and would spend much less time (around an hour depending on how much you want to design the ad) than having to design a million ad.

So, by leveraging automation capabilities with Facebook or other 3rd party providers (known as Facebook Marketing Partners) - eCommerce are able to save money as machines are less error prone than humans, save time and spend more time thinking about more strategic work. Since the programs are making better decisions, in an automated way it is much easier to scale to other markets or ramp up your advertising budget as you would need less persons, time to actually launch and manage more ads to different countries etc...

5.4 Threats of Advertising Automation for Performance Marketing teams in eCommerce

As we categorized earlier threats due to automation, we see here two main areas where automation could threaten the performance or organization of an eCommerce business. First one would be that automation would actually still require monitoring and not being reliable enough to let it run by itself which would cause errors and ads to be not run anymore. Another scenario would be that the automation of the performance would not be as efficient as a human would do and therefore conversions and ROI would go down. And on the organizational side, as an advertiser, you'd probably feel threatened to be replaced by this automation technology as it would make your skills not relevant anymore considering the technology improvements. The management of these organization would need to define what could and will be automated and which tasks are essential to manage for those advertising team. Another would be to decide how to adapt and basically switching from a team of marketers to a team of engineers which would understand the technology, automation algorithms and make it run effectively and better than humans would do.

6 AUDIENCES AND CREATIVES

With online advertising, there are a lot of new type of ad, new format, and ways to launch it. The way that an ad will be launch will be very important, because if the format is not correct or the people targeted are not interested it will be a loss of money, time, and retour on Investment for the business.

6.1 What are the different types of Facebook Audiences?

Audiences are Facebook's targeting options gathers a list of different options allowing advertisers to basically gather a set of people to target their ads to. Audiences on Facebook are appended on ad set level.

Facebook offers three different main types of audience's advertisers can leverage: Broad Audiences, Custom Audiences, Product Catalog Audiences.

- **Broad Audiences:** A broad audience gathers parameters which are native to Facebook. With that kind of audience, you could target users based on age, gender, location, language, interests and so on.
- **Custom Audiences:** Within Custom audience advertisers have access to three subtypes of custom audience. Custom Audience, Website Custom Audience and Lookalike Audiences.
 - **Custom Audience:** this type of audience allows advertisers to create audiences based on a list of your customers information (e.g., emails, phone numbers or Facebook user IDs). You can then target your ads to them by creating this type of audience.
 - **Website Custom Audiences:** Website Custom Audiences allow advertisers to create audiences based on user's behavior on their website which then auto populate themselves based on the pixel tracker that eCommerce implements on their website/app. With WCA (website custom audiences) You can, for instance, specify that only visitors of certain pages of your website are included in those

audiences. Advertisers also need to choose the number of days for which a website visit is included in the WCA.

- Lookalike Audiences: Lookalike Audiences are auto-generated audiences from Facebook's end. It is extremely useful in terms of finding new audiences for prospecting campaigns. The logic of those audiences is as follows: The first step is always to select a "seed audience" which could be a list of customers in your own database, Website Custom audiences, users who converted on your campaigns or page fans. After selecting the seed audience, you need to select a percentage. The percentage of a Lookalike audience defines what percentage of the people on Facebook in the target country will be included in the Lookalike to be generated. Therefore, smaller percentage Lookalikes will be closer matches to your origin audience. Larger percentage Lookalikes will allow reaching a broader user base.
- Product Catalog Audiences: These audiences are generated based on the behavior of users linked to your catalog of products. The events are tracked by the Facebook Pixel and then users are assigned into a certain audience such as "Purchased a product in the last 14 days". These are used for Dynamic Ads campaigns to retarget or upsell and cross sell to users.

6.2 The impact of Automation in Audience generation

More specifically in Facebook Ads - automation has provided a lot of value in terms of generation of new audiences. Lookalike audiences has indeed been the most powerful one. Advertisers suddenly were able to automatically generate audiences which are the most similar than the audience they would input as seed audience. This means that if I have a file with my best customers which purchase the most in my website it can suddenly with Facebook create an audience per country which is the most similar to that audience. Let's say I want to create a Lookalike audience of my most loyal customers of a size of 1% in France, Facebook would create an audience which will be the 1% of France Facebook users who are the most similar to my seed audience of most loyal customers. You can use those audiences in prospecting campaigns and always find valuable audiences which convert at a not expensive cost.

6.3 Different Creatives and Ad Formats in Facebook Ads

Facebook always tries to provide more opportunities for advertisers to experiment with different ad formats, creatives and so on. Today, Facebook provides advertiser a large range of different mobile and desktop innovative ad formats in order for them to leverage those different capabilities in order to improve their advertising performance. 8 Ad Formats are available in Facebook Ads and each of them cover different use cases for advertisers.

- **Carousel:** Carousel ads enable businesses to showcase three to ten products within a single ad unit on desktop or mobile. Each product will have its own image, description and click target.
- **Link:** Link Ads are usually photo ads which are of a ratio of 1.91:1. They contain a title, description, image, Link Destination and copy.
- **Photo:** Photo Ads are simple image which are promoted. They contain a copy and an image.
- **Video:** Video ads are a powerful way to help your brand engage with your audience and take your ad performance to the next level. It usually contains a Video, copy, but also can contain a link destination, title and description.
- **Lead Ad:** Lead Ad is an ad format allowing advertisers to gather information regarding a user with his or her consent. Lead ad forms can include up to 18 preset fields the data, if available, will be taken directly from user's Facebook profile. You can also add customized questions in a Lead Ad to gather user data which is relevant to your business. Here's below the standard fields that Facebook allows advertisers to leverage:
 - Email, Full name, First Name, Last Name, Phone number, Street address, City, State, Province, Country, Post code, Zip code
- **Status:** A basic text status could be promoted on Facebook
- **Collection:** Collection Ads are a mobile-only news feed ad format that pairs a hero video or image with a row of four products below to drive a user from inspiration to action within a single experience. The fourth image has a 'More' call-to-action to encourage further consideration. Clicking on the ad - hero, product row or 'More' button opens a Canvas displaying the products from a

selected product catalog. Tapping on a product in the Canvas takes the user to a product detail page on the advertiser's mobile site or app.

- Canvas: Facebook Canvas Ads is a compelling way to tell a story in an immersive post-click experience. Canvas allows you to build full screen, interactive, native interactions without having to wait for web views to load. It provides unprecedented creative control on mobile. Canvas can include text, images, videos, and buttons. You can see this format as a mini, super reactive website highlighting your products.

6.4 The automation of Creatives Generation for eCommerce businesses and its impact on performance

As stated earlier, eCommerce advertisers have very complex and large setup with their Facebook Ads campaign. It is a challenge to always test and micro-manage different aspects of the performance of campaigns (audiences, bids, budgets). One big challenge for eCommerce advertisers is their large product catalogue. Amazon, Zalando or eBay have millions of different products available on their website and promoting them through engaging and beautiful ads is extremely difficult or even impossible. Designing manually ads for each product considering how often the prices, discount percent, availability change, is impossible which is why automation is really needed on that area. Companies such as Smartly.io and other Facebook Marketing Partners saw this pain that advertisers were having generating beautiful and well performing creatives at scale. Therefore, they started developing an automated way of generating creatives.

Smartly.io developed a feature called Dynamic Image Templates. The concept is extremely simple and straightforward for advertisers, the feature allows advertisers to have a photoshop-like image editor where users can select, add, remove, and edit different layers of static (image, text etc...) or dynamic elements (image, text etc...).

Instead of having advertisers only promoting an ad based on the image url of the product, advertisers can customize it with product data such as Name, Price, Rating

and Discount. These changes would be then applied dynamically to all other products available in the business' product catalog. With this feature, advertisers can create millions of engaging creatives only spending a few minutes or hours on the editor. Better creative usually results in better ads performance in terms of Click-Through rate, Conversions, and cheaper CPA.

7 CONCLUSION

This thesis was based on advertising an efficient adaptable technology through the time, we've been through the ad's history, and we saw that advertising had a big impact in our society, in terms of innovation, jobs and opportunities too. Plus, it had been adaptable through each technologic tool. Behind the advertising, advertisers became more innovation via finding new ways and more understanding of their viewers, via collecting data about behavior of their potential customer. Marketing has been more developed too and help a lot of business to improve their communication and brand image for themselves, difference kind of marketing depending on their needs.

Furthermore, E-commerce and business such as Facebook had a major role for advertising, a new big step toward the future of the digital. Using less human work and more trust in computer and software, that can track and understand the habits and behavior of customer, analyze them, and take the most efficient decision, faster and surer than a human one. Plus, the automation has been a great saving of time for advertising, it will launch an ad for the right target at the right moment. But we've seen that there are also threat because of this, computer and machines have replaced a lot of human, because it is cheaper and more trusted than a human work for certain jobs, but people are very adaptable and find most of the time a new replacement job linked or not.

By the same time, the use of machine brought new jobs such as data scientist, data analyst, data engineer, etc.. that will help manager to take decision for the best advertisement.

E-Commerce also changed the function of advertising because advertiser had to offer to business an ad that will match with the right device, which will make the task easier for the customer and will lead him to buy a product more easily. With this online shopping it's also easier for business to collect data, analyze them and treat them in the most efficient way thanks to the automation too. We've seen also that ad can be an asset for big company such as Facebook, for which business use it to sell their product on Facebook Ads, each ad posted bring money to the company, and

obviously it is one of the most effective way to make a product known and sell it, because users share data between friends and family. Those one helps business to find the right audience and to show an ad to the most potential interested public.

Thanks to all this subject discussed above, and new methods learned, we proved that advertising is still efficient in time, and it follows the technology's trend which make it even better and more attractive for the viewer.

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