

Innovative Business Plan: Navigating the Future - A strategic Business Plan for implementing digital in-tunnel advertising in Lisbon's subway through a partnership with adtrackmedia

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Dedication

I would like to dedicate this achievement to my late grandmother, who always encouraged me to study and stay focused on my objectives. I would also like to extend my gratitude to my parents, sister, girlfriend, and friends for their constant encouragement during this thesis. Their motivation has been critical to my success.

Acknowledgements

Firstly, I want to express my gratitude to Professor Renato Pereira for his important guidance during this master's thesis that was, undoubtedly, the most difficult part of my educational path, but the professors' knowledge and commitment were critical to my success.

I am also very grateful for the support that Lu s Cifuentes from adtrackmedia has given me and for providing data that was very important for the successful completion of this thesis. His help was fundamental for improving the quality and reaching meaningful conclusions for this business plan.

Resumo

Esta tese apresenta um plano estratégico de negócios para a integração de publicidade digital nos túneis do Metro de Lisboa, em cooperação com a adtrackmedia. A ideia é transformar as paredes dos túneis do Metropolitano de Lisboa numa plataforma viva de painéis publicitários que aumentaria o envolvimento dos passageiros e abriria novos fluxos de receitas. Este plano de negócios avalia a viabilidade do projeto através de estudos de mercado, análises financeiras e um inquérito aos passageiros.

Os resultados revelam uma grande aceitação por parte dos passageiros e perspectivas comerciais promissoras, sustentando assim financeiramente a publicidade digital dentro do túnel do metro de Lisboa. Isto seria uma prova da possibilidade de melhorar o desempenho da publicidade através do alinhamento estratégico com os objectivos da adtrackmedia.

Palavras-chave: Metro de Lisboa; Publicidade Digital; Publicidade “Out-of-Home”; adtrackmedia; Transportes Públicos

Classificação JEL: L82 (Entretenimento; Meios de Comunicação), O31 (Inovação e Invenção: Processos e Incentivos)

Abstract

This thesis presents a strategic business plan for the integration of digital in-tunnel advertising at Lisbon Subway, in cooperation with adtrackmedia. The idea is to turn the underground system into a living billboard platform that would increase passenger engagement and open new revenue streams. This business plan assesses the viability of the project through market research, financial analysis and a passenger survey.

Results indicate high passenger acceptance and promising commercial prospects, thus financially sustaining innovative digital in-tunnel advertising in the Lisboa subway. This would demonstrate the possibility of improved advertising performance through strategic alignment to the objectives of adtrackmedia.

Keywords: Lisbon Subway; Digital Advertising; Out-of-Home advertising; adtrackmedia; Public Transportation

JEL Classification: L82 (Entertainment; Media), O31 (Innovation and Invention: Processes and Incentives)

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List of abbreviations and acronyms

AD	Advertisement
DCF	Discounted Cash Flow
OOH	Out-of-Home
DOOH	Digital Out-of-Home

1. Introduction

Lisbon, Portugal's capital, has an infrastructure that connects residents and tourists to the rest of the city. An infrastructure with 56 subway stations and a length of 44.5 km that is one of the favourite ways to move around of any individual who touches foot in the city.

Known for its efficiency and reliability, the Lisbon subway has long been the “backbone” of urban mobility. However, hidden underneath its utilitarian function is a universe of full potential.

It is in this potential that the business plan focuses on, making the Lisbon subway not just a reliable way of transportation but also a brilliant advertising canvas. The main objective of the Business Plan is simple: to provide this underground network with a dynamic approach by offering Digital In-Tunnel Advertising.

A partnership with adtrackmedia, a company focused on digital in-tunnel advertising, will allow access to all the important data and details that will help reaching more accurate conclusions. The business plan is focused in enhancing the experience of the Lisbon's subway users by increasing passenger engagement, as well as creating a new revenue stream that would contribute to the self-sustainability of the Lisbon subway system in the medium-long term.

Based in Canada, adtrackmedia's premium and impacting media system has been validated by prominent global agencies and brands, solidifying this new product sector in the fast-growing transit digital out-of-home (DOOH) media industry.

In the digital age we all live in, thinking ahead is crucial. Passengers, who are customers in this particular case, are tired of the conventional and standard. Imagine pulsing displays of local culture, bright artwork, and engaging interactive content that intuitively weaves its way through passengers' journeys. Digital in-tunnel advertisements will gain targeted audiences with a precision conventional ad can no longer accomplish.

From market research and advertising tactics to revenue predictions and passenger experience enhancements, every aspect will be checked and analysed.

2. Literature Review

2.1. Historical Perspective of Advertising

According to Jefkins, F. W., & Yadin, D. L. (2000). advertising has always been present in one way or another but the true early forms of advertising belong to the modern industrial world. The first steps of advertising refer to the Ancient Empires, investigators say. Examples of that are the papyrus promoting slaves' sales and rewards in Egypt or, in Rome, the "album" where edicts and laws together with promotions of gladiators' fights and theatre representations were published.

Later, in the Middle Ages, Montenegro Morales, D. (2017), appoints that a large number of people were still unable to read, thus signs with images were employed in what may be seen as an attempt to advertise specific locations. Examples include the helix of coloured stripes (barber's pole) and inn signage with a shoe to indicate the presence of a cobbler.

After that, in the 1830s, a French newspaper called La Presse started putting ads in its pages to make more money. This made the newspaper cheaper and more people started reading it.

By the late 1800s, companies like N.W. Ayer & Son were doing everything for advertisers, like planning and creating ads. In France, another company called Havas began helping with ads too. Instead of just selling ad space, they helped companies with the whole advertisement process and this was a big change to the whole industry as this made advertising a real profession.

Also, cheaper newspapers, known as the penny press, became popular because they relied on ads to make money. These papers focused more on local news and depended on advertising, setting a pattern for newspapers today.

While the world was entering into the modernistic phase of the 20th century, mainly based on the rapid advancement in technology, it also came the concept of mass production. It was becoming overwhelmingly difficult for a manufacturer to effectively demonstrate how important his product was in a consumer's life. With growing competition among businesses in the market, the need to differentiate themselves gained utmost importance. That brings us to nowadays advertising power. As per Wright, R. (1999), advertising continues to make a major contribution to the successful functioning of market economies in global economies in almost every part of the world.

From television and radio to newspapers, magazines, and billboards, all of them advertise worldwide, promising benefits if a specific product or service is bought or used.

Exciting new information technology methods are allowing advertisers, agencies, and media owners to be at the cutting edge of advertising corporate and product brand benefits, and thus gain competitive advantage, as potential markets grow in size and geographical spread, and as existing customers become more demanding and worldly.

2.2. Effectiveness of Subway Advertising

Out-of-home (OOH) advertising has always had a strong and visually impressive presence, although being characterised by its immobile nature. Messages were usually printed on large sheets, attached in place, and remained unchanged for days, if not weeks. However, a major transition has occurred over the last decade. With the emergence of digital out-of-home (DOOH), the landscape has shifted dramatically. Nowadays, numerous outdoor venues now boast expansive screens equipped with full-motion capabilities, Wi-Fi connectivity, and large formats, enabling the real-time broadcasting of dynamic images and content that can actively engage and interact with audiences (Andrew, Haines & Seixas, 2019),

That interaction and effectiveness of advertising can vary depending on several factors, including the location, creative content, targeting, and campaign objectives.

According to Sun, L., Yang, Y., Fu, X., Xu, H., & Liu, W. (2020) many advertisers choose to advertise in the subway as its “placement is associated with a great population flow, fixed target audience, and various advertising forms”.

Nonetheless, inadequate supervision, a subway advertising system operating on a single track, and ambiguous pricing standards considerably diminished the anticipated advertising impact and the fairness of advertising quotes.

Advertisers tend to think big rather than thinking strategic. They aim to the advertising with “a high ability to draw attention, high exposure rate, good adaptability, large sizes, with reasonable prices, and in subway stations with large passenger flows.” as explored by Sun, L., Yang, Y., Fu, X., Xu, H., & Liu, W. (2020).

As per Wilson, R. T., & Till, B. D. (2013), OOH advertising has become an important component of advertising campaigns at a time when traditional advertising growth is slowing.

Despite its significance, OOH advertising is sometimes marred by apathy and inadvertent exposure, making it even more critical to relate theoretical frameworks on advertising efficacy to actual marketplace data on the advertised goods and the challenge is exactly trying to find how to reach the correct advertisement recall and brand recognition as almost no research is done on that topic (Bhargava, Donthu, & Caron, 1994; Donthu, Cherian, & Bhargava, 1993), especially regarding subway poster advertising (Chan, K. (1994)).

2.3. Urban Aesthetics and Public Space Concerns

As Durso, H. B. (2011) explains, “subways play a crucial role in our cities’ transportation, but they also act as unique public spaces, with their very own specific design characteristics, governed by powerful state-run institutions, and subject to intense public scrutiny and social debate”.

Having the presence of thousands of people every day (Hackelsberger C. (1997)), Rolf Schirmer from Munich’s subway planning council argued that transit stations should ‘radiate a positive mood’ and this can be controversial in a place with more ads than art as this last one is said to make the network more pleasant.

According to Dixon, J., Levine, M., & McAuley, R. (2006) maintaining order and "appropriate" use of public space have “required the exercise of power, the imposition of a regime of social control that preserves sectional interests and values.” On the other hand, another traditional definition of public space is the forum, which is defined as “a site for oppositional activity, playful deviance, and educative exposure to the full range of people and values that make up a society.” Given these seemingly contradictory criteria, it is hard to imagine how public regulatory agencies control these regions and there is no easy or straightforward solution; rather, regulatory agents engage in ongoing dialectic processes of negotiation and adaptation (Durso, H. B. (2011)). As a result, histories of public spatial administration are riddled with contradictions and current problems.

As advertisements have been marked with critiques of their overwhelming presence and significance, Messin, K. C., & La Valle, N. (2010) state that anti-advertising sentiments surged across the world. In the Parisian subway, this movement resulted in a plethora of various slogans, each expressing distinct styles and messages. These traces, whether institutional or individual, standardised or innovative, demonstrated the variety of voices opposing advertising's domination in public areas. The examination of these traces’ sheds information

not only on the emergence of protest practises, but also on the sociopolitical situation as seen through the eyes of participants. It also shows how the anti-advertising movement altered business and political repositioning in the advertising sector.

2.4. Technology: Digital In-Tunnel Advertising Systems

In the ever-evolving realm of advertising and technology, adtrackmedia revolutionized advertising by merging state-of-the-art digital displays with transportation tunnels.

Adtrackmedia installs vertical arrays of LED's along the walls of subway tunnels between stations and, utilizing the effects of speed and motion as the train passes, displays a vivid 10 second, full-motion video advertisement to passing commuters. The premium rates for in-tunnel media are driven by several factors, including the fact that it has the highest recall among OOH media, targets a valuable urban demographic, uses premium full-motion video, provides an exclusive brand experience, and has a significant visual impact (Dentsu Aegis – Impact and Recall of adtrackmedia In-tunnel systems).

The primary challenge in OOH advertising lies in advertisers facing difficulty engaging consumers. This is precisely where this technology comes in, establishing a novel premium media platform designed to break through the noise and capture audience attention more effectively.

Adtrackmedia is the sole owner of the end-to-end hardware and software platform that forms the foundation of its technological framework. The most recent version of this technology is now implemented and functioning in a variety of commercial applications. This advanced system integrates a modern printed circuit board (PCB) and the most recent system-on-a-chip technologies. Furthermore, an ongoing and methodical research and development programme is in place, with the goal of facilitating continual improvement in both the hardware and software aspects of the system.

2.5. Consumer Behaviour to OOH Advertising

All of the above only makes sense if the consumer reacts positively to the advertising. To understand that, tools have been used in the past decade to understand the consumer behaviour toward advertising.

Studies have been done that offer valuable insights into the effectiveness and impact of outdoor advertising in diverse settings, such as:

Hussain and Nizamani (2011) investigated factors influencing consumer attention in billboard advertising in Karachi, Pakistan. Their research found that attributes such as billboard size, color, location, celebrity endorsements, and images positively capture consumer attention. While the study was specific to Pakistan, its findings have broader relevance to developing economies, including India.

Mustafa et al. (2010) explored the effects of outdoor advertisements on consumers in Turkey, focusing on Sivas city. Their study revealed a generally positive perception of outdoor advertisements, contributing to urban aesthetics without environmental harm. However, awareness of outdoor ads varied among individuals, highlighting the role of content, sensitivity, and effectiveness in shaping consumer views.

Cunningham and Coleman (2003) delved into the effectiveness of outdoor advertising in Baton Rouge, Louisiana. They discovered that billboard advertisements achieved both unaided and aided recall among respondents. Demographic factors, such as gender, age, education, and income, influenced attitudes and attention to billboard ads, underscoring the role of demographics in shaping attitudes.

Bhargava and Donthu (1999) examined sales responses to outdoor advertising by using billboards for a museum. Their research revealed a substantial increase in attendance, with immediate and sustained sales responses, primarily from local areas. This study underscores the potential of outdoor advertising to drive sales and attendance.

Thompson (1998) evaluated the viability of outdoor advertisements for non-adult target audiences, specifically the Fox Kids Network. The study found that outdoor advertising had a substantial impact on children, with higher exposure reported in test markets. This highlights the importance of outdoor advertising, particularly when targeting non-adult audiences, when strategically placed in locations where the target audience frequents.

2.6. ROI for Advertisers

Although advertisers are constantly looking for a single formula or mechanism to quantify the Return On Investment (ROI), there is still no broad agreement on how to accurately capture the influence that the investment has on consumer behaviour. Advertising is considered financially effective if the message is retained by the market audience for an extended period of time. If the message of the advertisement is forgotten before a

panorama shift or the consumer acts, the advertising expense may be worthless. According to Laskey, Fox, and Crask (1995), "the effectiveness of a commercial depends on whether consumers remember the message, understand it, are persuaded by it, and of course, ultimately buy the advertised product."

The crucial point is that OOH advertising is very different since the information is delivered to the consumer in a passive manner, typically while the consumer is distracted. This means that if the impact of OOH advertising is typically measured by attempting to quantify recognition and recall will most likely lead to OOH advertising being undervalued and underrated (Wilson, R. T., & Till, B. D. (2013)).

Yanaze, Freire, and Senise (2013) categorise the process into two variables: return rate and payback period. The first refers to the expected return, and the second to the time it takes for the investment to pay off. The process of calculating the rate of return on investment is the difference between the investment and the return/income obtained.

3. Methodology

The purpose of this research is to develop a business plan to understand if the implementation of digital in-tunnel advertising in Lisbon's subway system is viable and, to do it, the focus is not only on strategic planning, but also on the strength of the value proposition it provides. To assure the long-term viability of this business plan, a strong process for testing and confirming the value proposition that will support it needs to be developed.

And to confirm the value proposition, the following research questions should be answered:

- How do subway passengers perceive and engage with digital in-tunnel advertising in other countries and how well would this innovative idea be received by Lisbon's subway users?
- What are the challenges associated with the implementation of digital in-tunnel advertising in Lisbon's subway?
- To what extent does the implementation of digital in-tunnel advertising in Lisbon's subway impact public transportation revenue?

In order to provide an answer to each one of the three questions, a research technique that includes a quantitative methodology with secondary data will be used. This secondary data includes books, websites from institutions that are fully related to the main theme of this business plan, and also articles that are related to any of the strands of this thesis. This secondary data was already shown in the literature review section but there is more to present as the Dentsu Aegis Network's "adtrackmedia study" will be consulted and analyzed to gather the essential quantitative data and will be important to investigate different scenarios, evaluate alternative advertisements, and identify the influence on campaign perception.

After that and in order to understand how would this innovative idea be received by Lisbon's subway users, primary data was collected with a survey that aims to obtain information on people's perceptions of advertisements in the Lisbon subway and compare them to other advertising mediums. In addition, the study inquired about respondents' reactions to a video of adtrackmedia running in another country, as well as their thoughts on whether this kind of advertising would be desired in Portugal.

The survey included Likert scale questions designed to assess several aspects, including how effectively current advertisements in the Lisbon subway capture attention, influence product or brand perception, recall products or brands after commute, interact with digital

advertisements (e.g., scanning QR codes), and compare ad recall in the subway to other advertising mediums. The study also included questions to measure familiarity with and receptiveness to new digital advertisements in the subway, as well as whether such advertisements would improve the commuting experience and positively impact the perception of the Lisbon subway as a modern transportation system.

The survey was distributed online, via Whatsapp, Linkedin and Facebook and individuals who frequent the Lisbon subway were the target population, which included both Portuguese residents and Erasmus students studying in Lisbon. While the sample was not chosen at random, the large number of responses collected (191 in total) was considered representative of the population under study.

Data was gathered from May 12 to June 30 and carried out on the Qualtrics platform. Questions were made in a Likert scale items to get more accurate replies, increasing data quality, items that were explored in the External Analysis section.

In regard to the financial valuation of this business plan, the method that was employed was the discounted cash flow method. It's a method that can bring out the present value of future cash flows that an investment generates, thus helping analyse whether it's a viable plan or not.

4. External Analysis

To clarify how subway passengers perceive and interact with this kind of OOH advertisement, digital in-tunnel advertising, it becomes imperative to source data from the countries where adtrackmedia is already in operation, mainly coming from the most similar ones to Portugal.

An example of this could be Madrid's subway from Portugal's "neighbours", Spain.

Adtrackmedia's responsables commissioned Dentsu Aegis Network, in 2017, to carry out a study to measure the impact of its advertising support, which has been installed in Spain in the tunnel of line 8 of the Madrid metro, between stations "Colombia" and "Nuevos Ministerios".

One aspect of the proposed measurement involved determining the influence that the use of the support had on meeting the KPIs of the communication campaigns, as well as the public's view and detailed analysis of this new support.

The universe of people selected was men and women from 16 to 75 years traveling in line 8 of "Metro de Madrid" between the stations of "Colombia" and "Nuevos Ministerios"

The study involved two waves of data collection. In the first wave, two advertising campaigns, Nespresso and Fructis, were alternately shown on trains running on Line 8 from Colombia to Nuevos Ministerios. Fieldwork began on Thursday, April 20, around 12:00 pm and finished in the afternoon of Saturday, April 22, leading to 135 Nespresso interviews and to 164 Fructis interviews. The chance of exposure to each campaign during interviews was calculated by researchers taking into account user recall and train timetables.

In the second wave, the initial measurement was composed only of a campaign (ALIEN movie), between the trains that circulated in Line 8, from Colombia to Nuevos Ministerios. Fieldwork began on Wednesday, May 10th, in the morning, and ended in the afternoon of Friday, May 12nd, leading to a total of 274 interviews. This new wave had, in addition, information about the position in the wagon where the interviewees had been during the trip, as well as the action that was taking place at the time of the trip (reading, listening to music, ...). adtrackmedia also decided not to interview those travelers who were tourists (based on declared information of the interview and used as a filter).

Starting with the Nespresso advertisement, 20.7% of respondents displayed spontaneous recall of the ad, with an additional 5.9% demonstrating induced recall. Furthermore, 21.5% of participants have shown aided recall. These figures collectively indicate that nearly half of the sample population possesses recollection of the Nespresso advertisement, as it can be seen below:

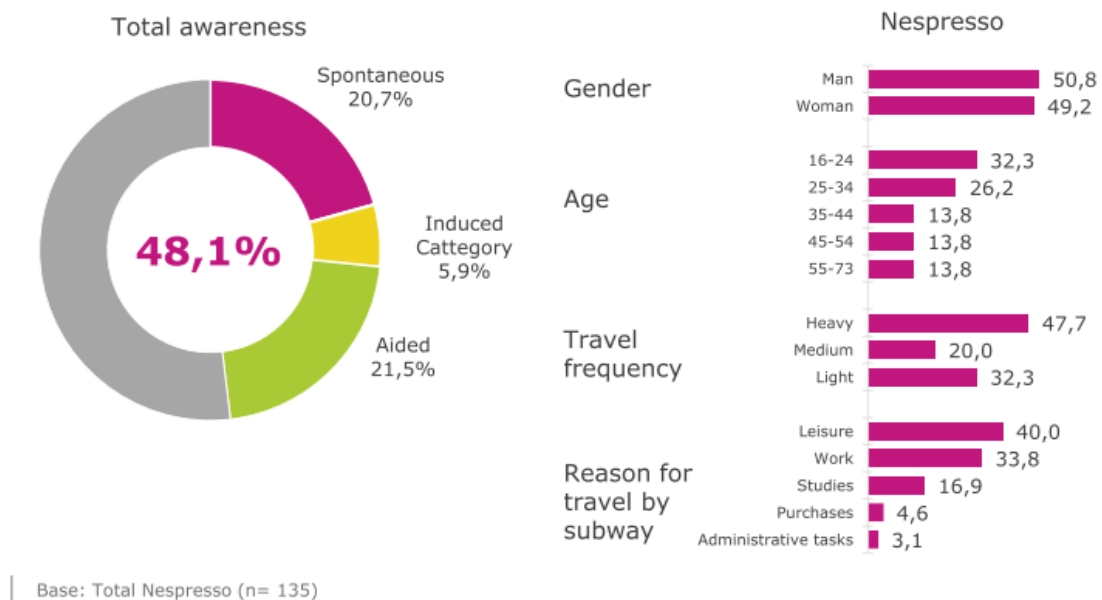


Figure 1 – Nespresso advertising awareness (Source: Dentsu Media Effectiveness Study)

The majority of the sample who reminded the advertising made a clear link between advertising content and the video shown in the tunnel. This data allows us to show the real impact digital advertising has in moulding the entire tunnel experience, emphasising its impact on user engagement.

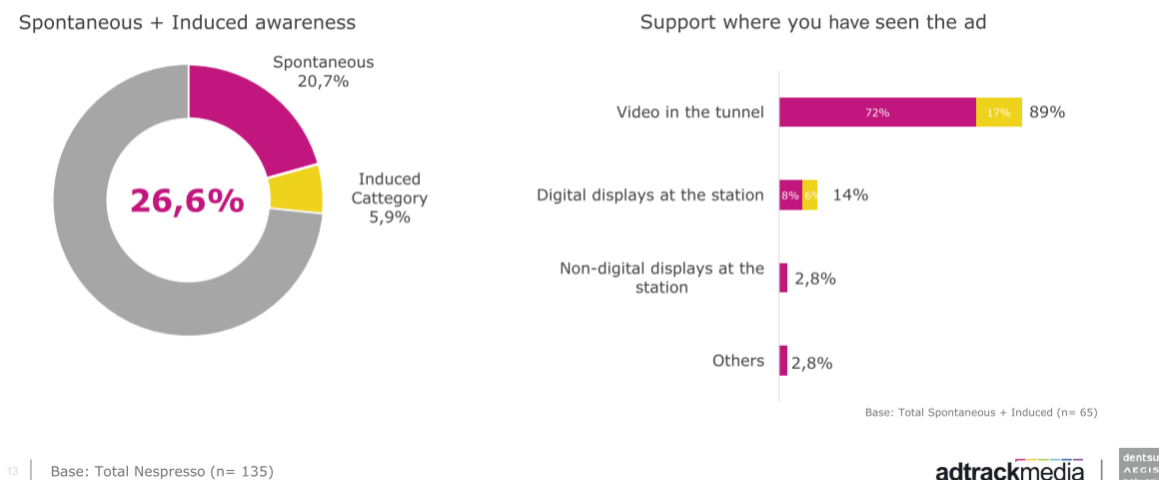


Figure 2 - Support where interviewees have seen the Nespresso ad (Source: Dentsu Media Effectiveness Study)

Another relevant data point in this study of Nespresso campaign awareness in digital in-tunnel is that it has a more significant impact when seen for the first time:

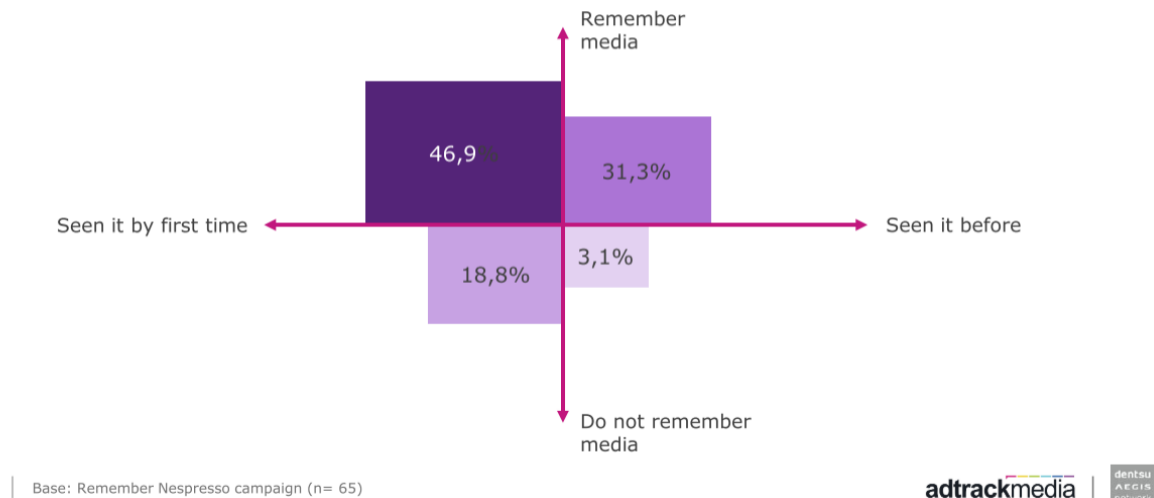


Figure 3 – Impact of the Nespresso advertising (Source: Dentsu Media Effectiveness Study)

One of the important aspects to consider when considering this campaign effectiveness is comprehending its impact on the buying intent. Using a rating scale ranging from 0 to 10, with 0-4 indicating disapproval, 5-7 signifying approval, and 8-10 representing outstanding, over 70% of respondents said that the advertising they viewed not only strengthened their desire to purchase coffee but also increased their likelihood of making a purchase from the brand advertised. The majority of individuals falling into the outstanding category (8-10) were men under the age of 35.

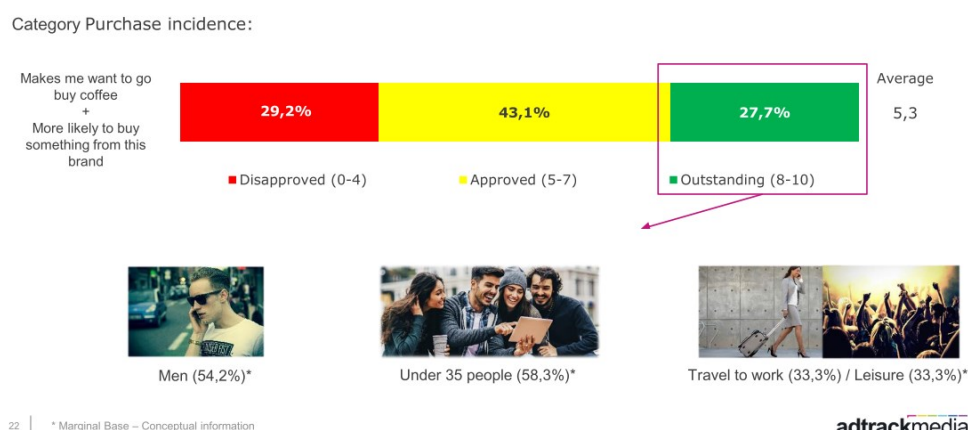


Figure 4 – Nespresso Category Purchase incidence (Source: Dentsu Media Effectiveness Study)

Following the Nespresso ad, it's important now to analyse the second advertisement (Fructis – Shampoo brand from Garnier) to see the similarities and differences between both.

Looking into it, almost 6 out of 10 respondents recalled the ad (the sum of spontaneous, induced and aided awareness) and the spontaneous awareness for Fructis increased by 10 percentage points when compared to the Nespresso advertisement. While the Nespresso ad's recall was practically evenly split between men and women, with the Fructis advertisement it was not the same as 60% of those who remembered it were women.

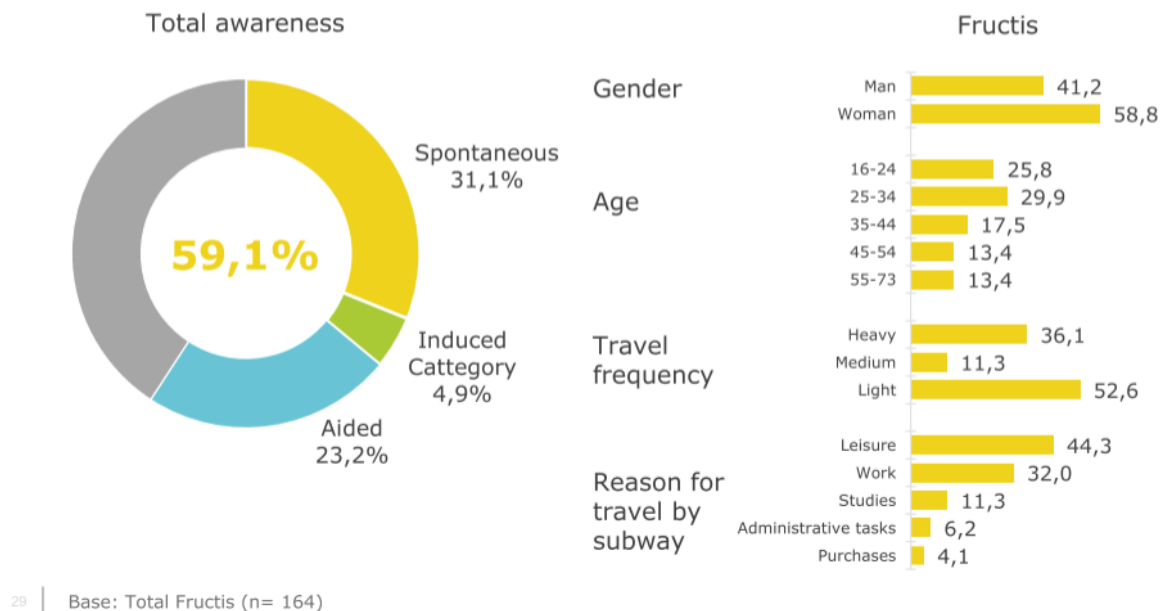
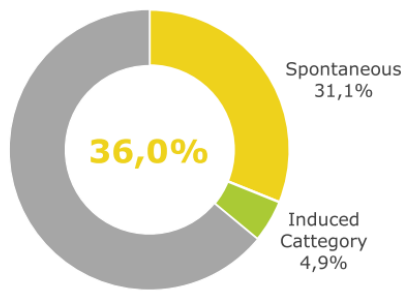


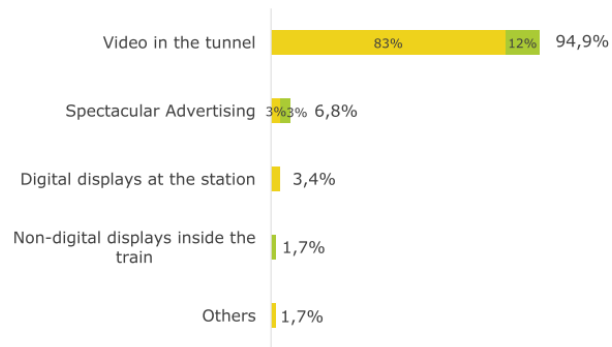
Figure 5 - Fructis advertising awareness (Source: Dentsu Media Effectiveness Study)

Again, as with the Nespresso advertisement, the majority of the audience (34.9%) who recalls the ad associates it with the video in the tunnel, demonstrating the impact that this support has in comparison to other methods of advertising, an actual game changer as it can be seen below:

Spontaneous + Induced awareness



Support where you have seen the ad



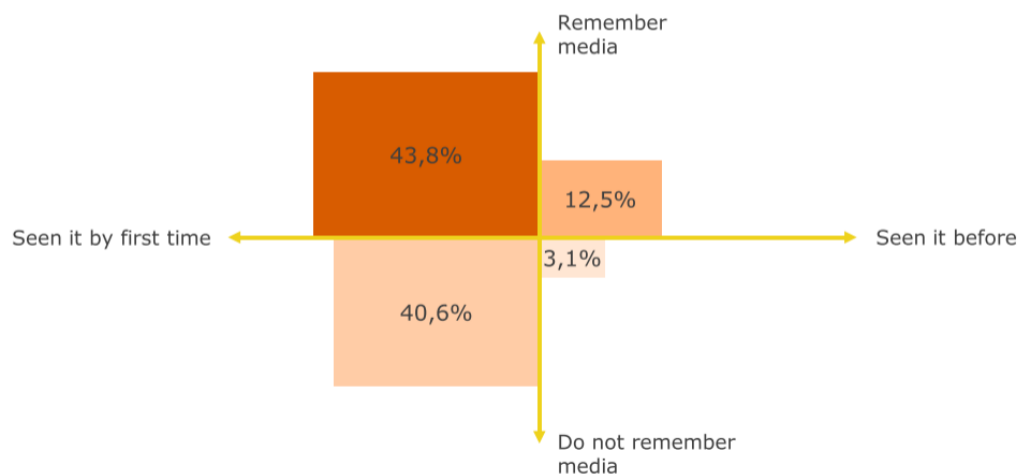
Base: Total Spontaneous + Induced (n= 60)

28 | Base: Total Fructis (n= 164)

adtrackmedia | dentsu AEGIS network

Figure 6 - Support where interviewees have seen the Fructis ad (Source: Dentsu Media Effectiveness Study)

When examining the Nespresso's campaign, a relevant information appeared, being it the way the digital in-tunnel advertisement has more impact when seen for the first time. The Fructis advertisement follows the same trend, having a higher effectiveness when the sample sees it for the first time, as seen below:



Base: Remember Fructis advertising (n= 97)

adtrackmedia | dentsu AEGIS network

Figure 7 - Impact of the Fructis advertising (Source: Dentsu Media Effectiveness Study)

Using a rating scale exactly like the one used in the Nespresso campaign, now adapted for the Fructis campaign on a scale of 0 to 10 (0-4 indicating disapproval, 5-7 indicating approval, and 8-10 representing outstanding), the findings show that more than 35% of respondents, particularly women under 35, expressed a strong desire to purchase shampoo after viewing the advertisement. This majority group says that it is more likely to make a brand-specific purchase, demonstrating a preference for the Fructis brand.

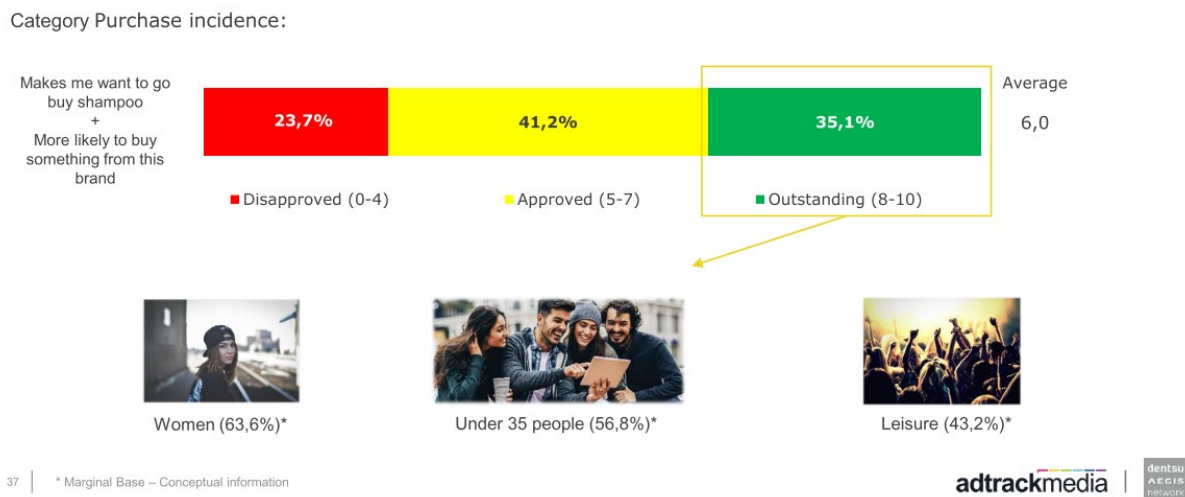


Figure 8 - Fructis Category Purchase incidence (Source: Dentsu Media Effectiveness Study)

Going onto the wave 2 of interviews, more particularly into the Alien movie advertisement, the results show us that comparing with the Nespresso and Fructis advertisements, the Alien ad gets the highest total awareness with a total of 64,4% recalling the ad, with a highlight for the 31,8% of spontaneous awareness, as shown below:

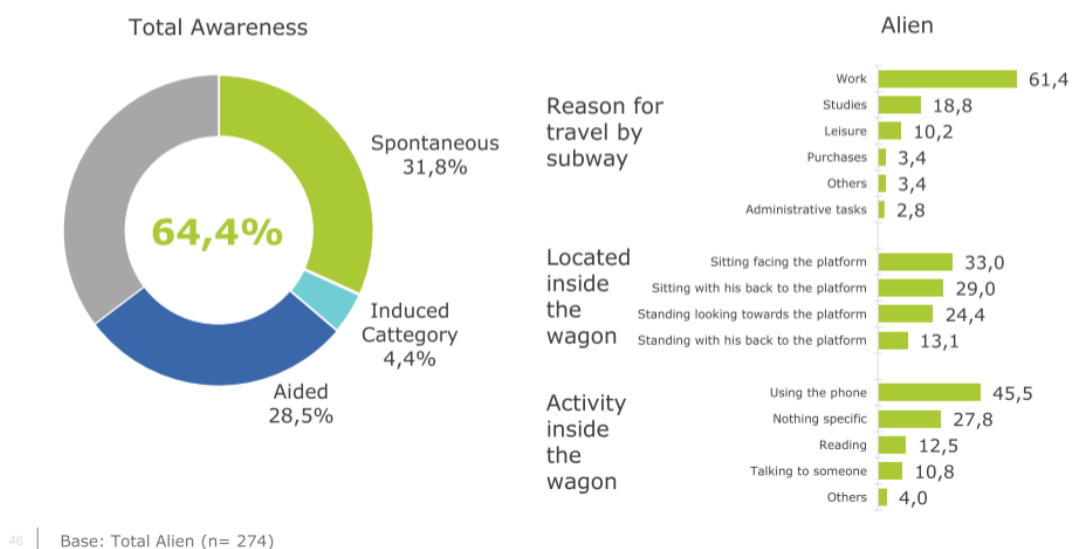


Figure 9 – Alien movie advertising awareness (Source: Dentsu Media Effectiveness Study)

Among the 64.4% of those who recall the Alien advertisement, a total of 176 people, the group in which the advertisement had more impact belongs to people who had previously seen the advertisement in other media and can remember it, reflecting 33% of the total.

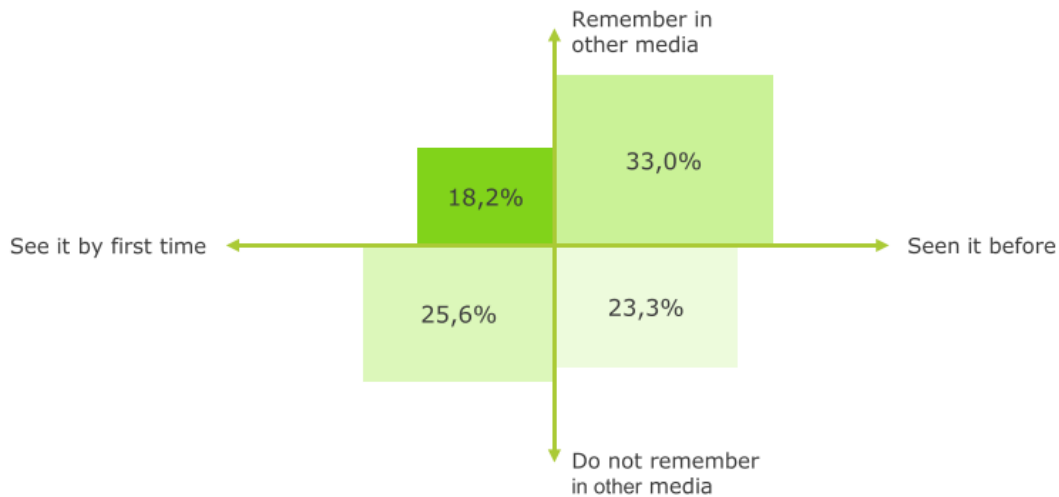


Figure 10 - Impact of the Alien movie advertising (Source: Dentsu Media Effectiveness Study)

In terms of purchase intention, which refers to the desire to go to the cinema combined with the appeal of the film itself, the following scale shows that people under the age of 35 who use the subway for their work were the most influenced.

Category Purchase incidence:



Figure 11 – Alien Movie Category Purchase incidence (Source: Dentsu Media Effectiveness Study)

Regarding format performance, across the entire sample (the 573 total interviews for the three separate brands), comments concerning novelty receive higher scores, with an average of 7.8 using the previously described rating scale, from 0 to 10, saying this format of advertising surprises and innovates, as shown below:

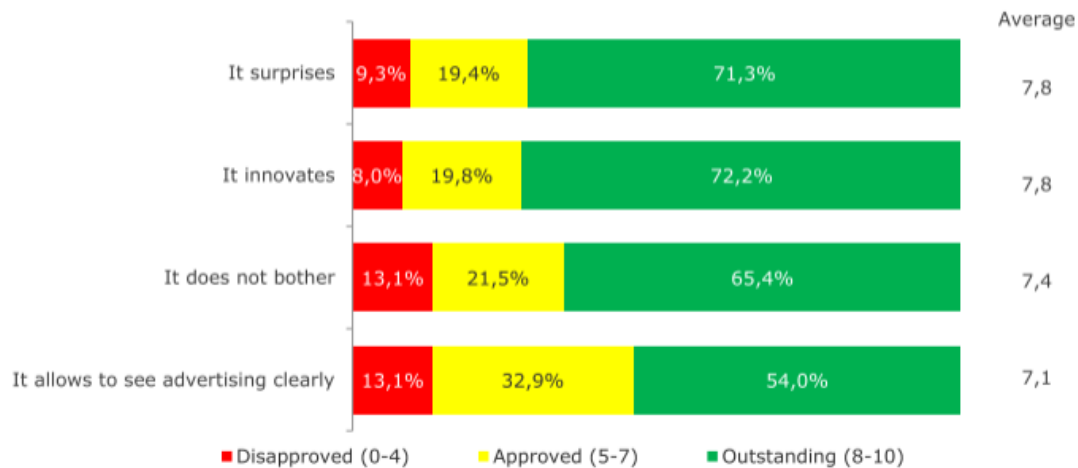


Figure 12 – Advertising format performance (Source: Dentsu Media Efectiveness Study)

Continuing reviewing the complete sample and all three advertisments, 71.3% of the audience believes this form of advertisement is surprising. Further examination into the demographics of this 71.3% reveals that the majority are women, heavy users, and under 35 years old.

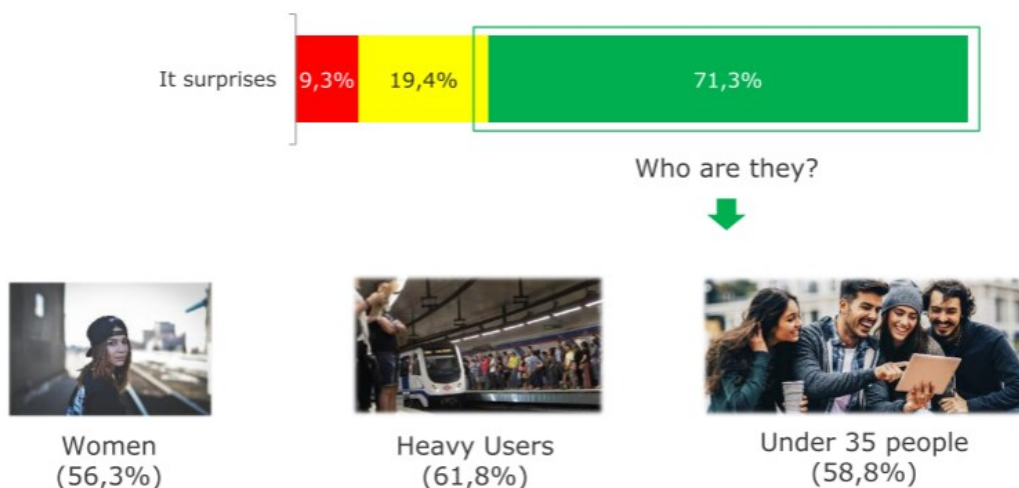


Figure 13 – Surprise effect on interviewees (3 advertisings combined) (Source: Dentsu Media Efectiveness Study)

The audience who appreciates the innovation are women, heavy users who travel using their phones.

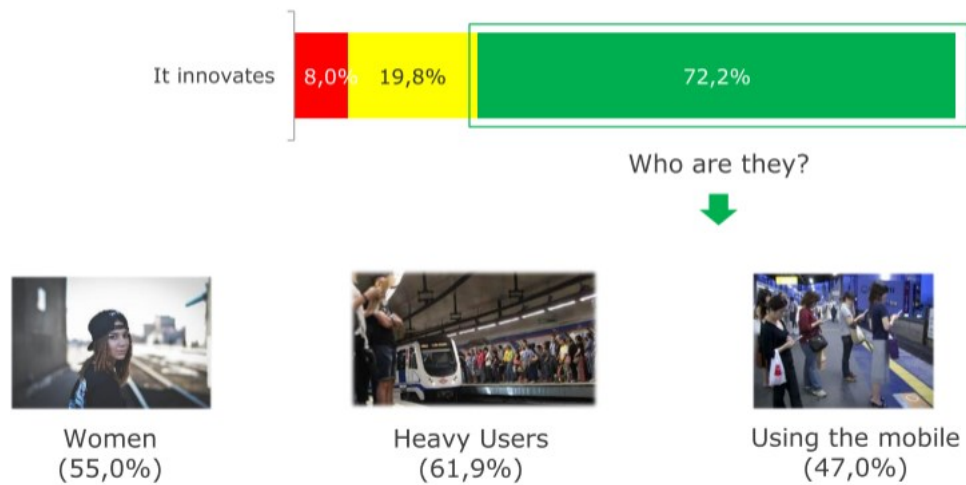


Figure 14 - Innovation effect on interviewees (3 advertisings combined) (Source: Dentsu Media Effectiveness Study)

Constituting 65.4% of respondents who express no disturbance towards this advertising format, we are looking into heavy users, under 35 years old who use their mobile while traveling.

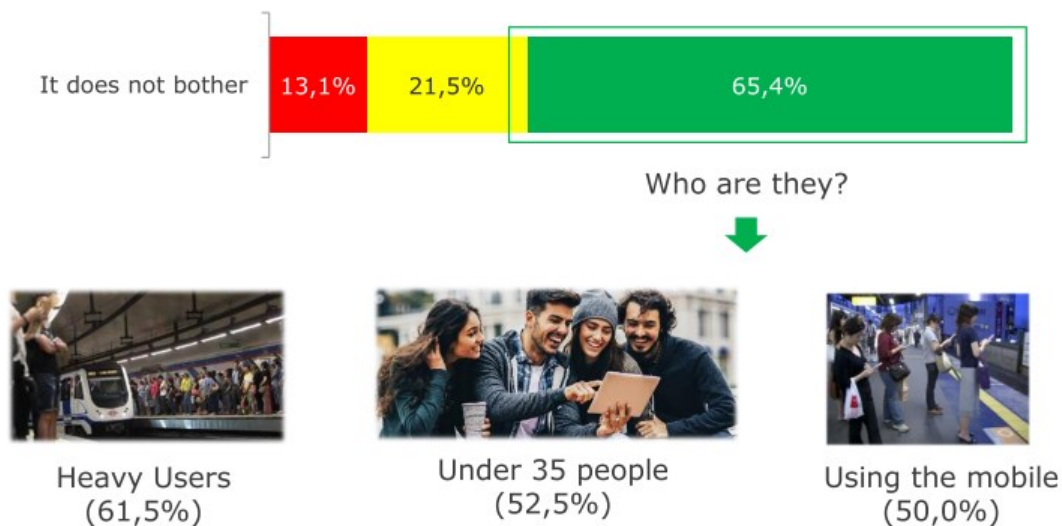


Figure 15 – Interviewees to which the advertising format does not impact their trip negatively (3 advertisings combined) (Source: Dentsu Media Effectiveness Study)

Lastly the 54% who assert that this format facilitates clear visibility of advertising are categorized as heavy users, under the age of 35, who utilize their mobile devices while traveling.

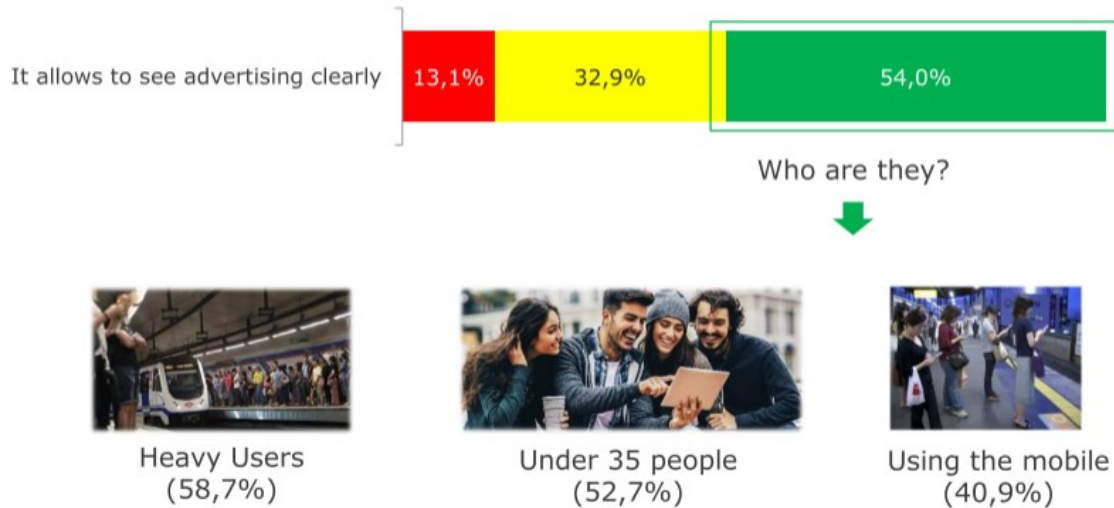


Figure 16 – Visual performance of the advertising format (3 advertisings combined) (Source: Dentsu Media Effectiveness Study)

Compiling this study composed by the two waves, there are many takeaways that we can have:

- Regarding recall, the Alien movie advertisement achieved the highest total awareness among the three advertisements, with a significant amount of the respondents recalling the ad, especially those who had previously seen it in other media;
- In regard to Nespresso and Fructis advertising, it had a great influence on purchase intention among males under 35 in the case of Nespresso and females under 35 in Fructis' advertisement. The advertisement for the Alien movie increased the intention to attend a cinema for this film, with higher rates noted in people under 35 years.
- The advertising format was well received, receiving positive feedback from most of the audience, across all three brands, being seen as surprising and innovative. The originality and surprise factor will be reduced as time passes and as this format of advertising becomes more common, which means that this kind of advertising needs to be constantly worked on in order not to lose its relevance in the long term;
- Campaigns are theoretically remembered more when the images catch the eye, while campaigns with dark backgrounds could potentially diminish the impact or

effectiveness of the advertising campaign (which did not happen with the Alien ad as it had flashes and images with high contrast, which attracted much attention).

As stated in the Methodology section, a study was conducted in Portugal to determine how people responded to this sort of advertisement. Initially, participants were asked demographic and basic information, such as their age (annex A), in which we found that 77% of our respondents were between the ages of 16 and 34, and their gender (annex B), with 58.6% male and the remainder female.

Following that, the focus was understanding how often did the respondents use the subway, concluding that out of the 191 present on the sample, 48.1% used the subway more than 16 days per month and 69.6% more than 6 days per month (annex C), which means that our further details regarding advertising in the subway will be aligned with what people that frequently use the subway think or feel.

When asked what their major reason for taking the subway was, 38.7% indicated they go to work, 30.4% for leisure activities, and 28.8% to school, universities, or their studies in general (annex D).

Regarding the current Lisbon subway advertising, 79.6% have voted negatively on whether the commercials exhibited capture their attention in the way they are presented (annex E), while 79.1% believe that the advertisements have no influence on their perception of products or brands (annex F).

The majority of the sample, 86.4%, do not interact with digital advertisements (e.g., QR Codes) (annex H), and only 17.3% think that they will more likely recall an advertisement seen in the subway rather than viewing it in another mean of communication (annex I).

In the final stage of the survey, respondents were asked to carefully watch a video including adtrackmedia in-tunnel advertising and answer questions concerning this method of advertising.

More than 70% claim to be familiar (annex J) with the in-tunnel digital advertising strategy, and 54.5% say they have definitely been in a subway line where adtrackmedia is present throughout the world (annex K), indicating that it was not a completely new concept.

Regarding the possibility of including innovative digital advertisements in Lisbon, more than 95% see it favourably (annex L), while 67% believe that new digital advertisements would definitely positively influence their perception of the Lisbon Subway as a modern transportation system (annex N).

Finally, when asked if the presence of new digital advertisements in the Lisbon Subway would make respondents more curious about the products or services being advertised, 29,8% said probably yes, while 65,4% said it would definitely make them more curious (annex O), with 66% saying it would definitely improve their commuting experience (annex M).

The survey suggests that implementing adtrackmedia's digital advertising into the Lisbon subway will increase its popularity among the commuters. While current subway advertising does not engage 79.6% of users, the doors are open to a change, with more than 95% seeing the implementation of new digital advertisements positively. Additionally, 67% believe these in-tunnel advertisements would help modernising the subway, while 65.4% believe they would be more willing to buy and more interested in the advertised products/services.

After understanding how people perceive and engage with digital in-tunnel advertising it is important to understand what are the challenges associated with the implementation of digital in-tunnel advertising in Lisbon's subway.

The first challenge that occurs pertains to the expenses associated with both the in-tunnel panels and their installation. Depending on the country and labor costs, the total expenditure typically falls within the range of 600,000€ to 700,000€ per line and adtrackmedia fully covers these costs.

The integration of digital advertising technology into existing operational systems of a subway is a difficult challenge. However, adtrackmedia has the background experience, reliability and requires minimum maintenance on its infrastructure. Factors like dust, humidity, and wear-and-tear from high traffic volumes have little to no impacts on the infrastructure's performance as it was built to deal with various condition scenarios and to function across different tunnel types.

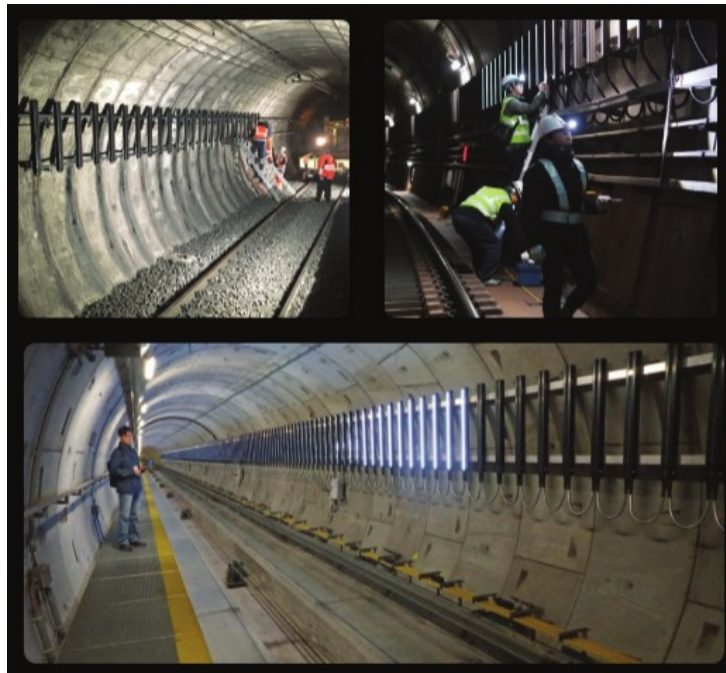


Figure 17 – In-tunnel panels installation (Source: adtrackmedia Business Overview Presentation)

In the digital era we are living in, it is very important to be always aware and ready to act when it comes to potential cyber threats. Given that adtrackmedia's platform deals with very sensitive data, guaranteeing the integrity of adtrackmedia is necessary.

To make sure of that, adtrackmedia has its global AD network operations based in Canada. This way adtrackmedia operates them remotely via a secure, encrypted centralized Network Operating Centre, thereby minimizing the risk of incidents.

The inclusion of adtrackmedia in-tunnel advertisement system in the subway system of Lisbon raises some questions in regard to the financial effects and the revenue stream intrinsic to it. This detail needs to be analysed in order to understand whether the business plan is viable or not.

In order to be able to understand the real magnitude of adtrackmedia's impact on Lisbon's subway revenue, it is necessary to first understand how they function both with advertisers and with the subway system. This understanding will help address the question of the potential impact of this implementation on Lisbon's subway revenue. To begin, adtrackmedia's weekly base rate card to clients ranges from 6 to 12.5 thousand dollars. This value variation is due to the country, city, and specific line, considering that each line has different affluence. This can, in turn, be translated to monthly values between 24 to 50 thousand dollars. There are 6

advertising positions available throughout the 7 out of the 8 existing lines worldwide that use adtrackmedia's in-tunnel systems. Assuming all the ad slots are filled, therefore the above values can be multiplied by 6, giving from 144 to 300 thousand monthly.

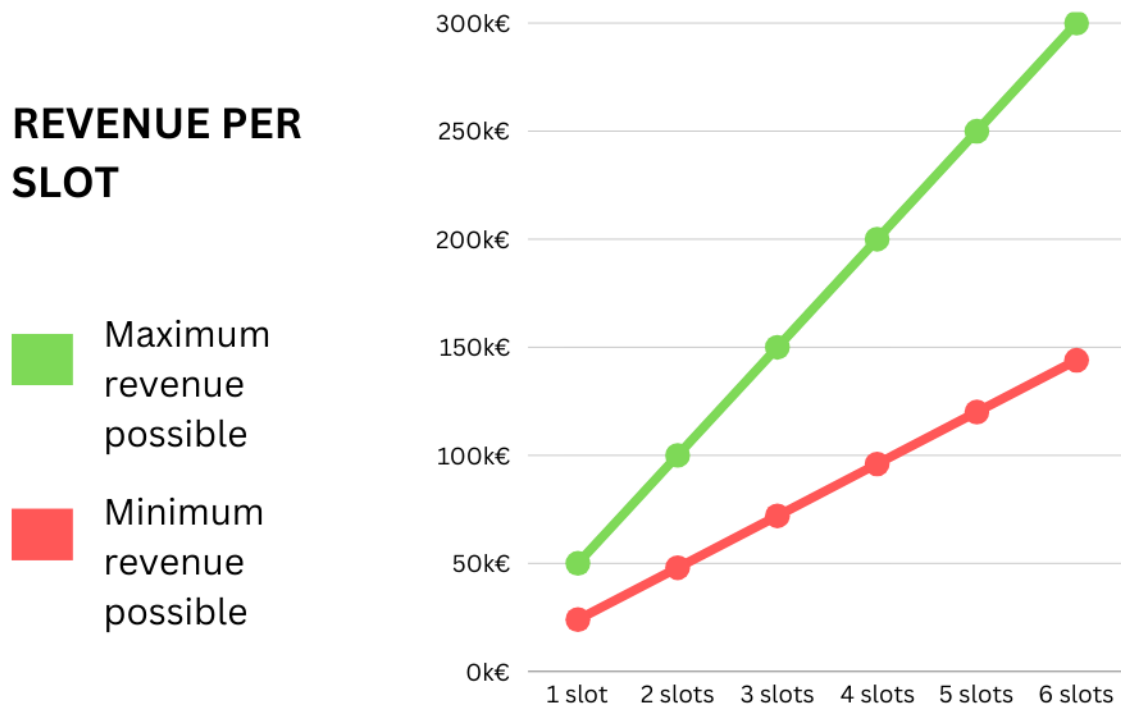


Figure 18 – adtrackmedia's revenue per slot (Source: Self-elaboration)

The values presented above are just for the existence of adtrackmedia on one line of the subway, as is now happening in the Netherlands (Rotterdam), and in Italy (Rome).

On the other hand, in Spain (both Barcelona and Madrid), in Canada (Vancouver) and in Switzerland (Zurich), adtrackmedia is present in two lines of the subway.

Using again the Spanish scenario as the most comparable one to Portugal, the result of the maximum & minimum revenue to adtrackmedia is as it is shown on the figure below:

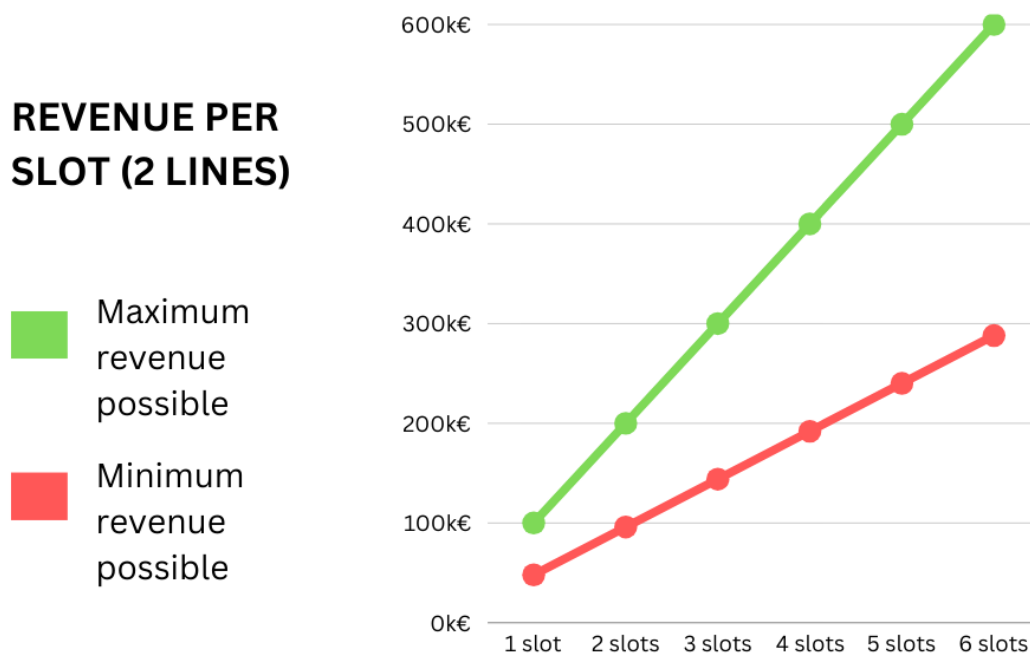


Figure 19 – adtrackmedia's revenue per slot (2 lines) (Source: Self-elaboration)

Transitioning from one line to two changes the maximum monthly income for adtrackmedia to the double, increasing it from 300 thousand to 600 thousand euros, when utilizing all six advertising slots. Clearly, these figures favour adtrackmedia, but it is essential to go deeper and analyse in what way the digital in-tunnel advertising in Lisbon's subway affects public transportation's overall revenue and not only the company itself.

Adtrackmedia, as a company, determines whether to provide a fixed amount per line or a percentage of the revenue earned on a monthly basis.

Normally for the subways working with adtrackmedia and to ensure fairness, a distribution based on a percentage of the earned value proves to be more equitable for all parties involved.

That percentage to the subway goes around the 15% mark, which would mean the below revenue monthly for the Lisbon Subway (considering again the 2 lines) as in comparison to Spain.

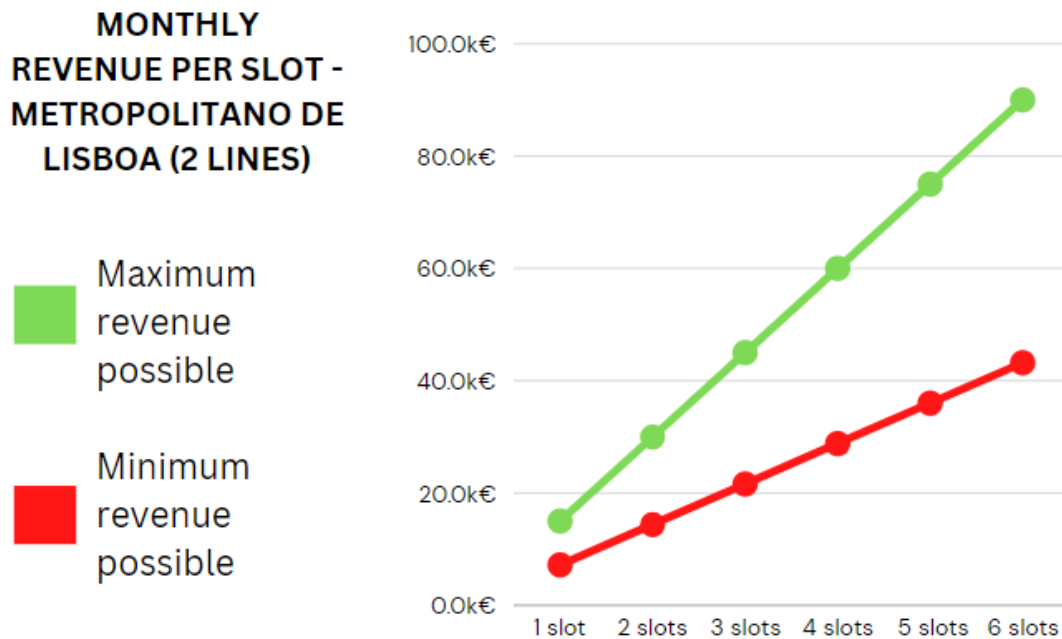


Figure 20 – Monthly Subway Direct Revenue (Source: Self-elaboration)

In summary, considering the example in Spain, adtrackmedia's one-week base rate is consistently 9,500 dollars on three out of four lines. When you utilize both lines, all six slots, throughout the entire year, it amounts to 5.47 million dollars. Applying the 15% share to the subway, this translates to over 820,000 dollars per year, nearly 750,000 euros, being slightly over the mean of the minimum and maximum marks for 6 slots (Figure 20).

The infusion of 750,000€ into Metro de Lisboa will occur passively, allowing the organization to cover certain annual expenses.

Looking to Metro de Lisboa's Activity Plan and Budget 2023, approved in the 15th of May 2023, we can understand what kind of categories this income could cover, and that would be:

- In terms of personnel expenses:
 - Remuneration of board members (284,785€), professional training (310,758€) could all be paid and would still have an approximate surplus of 155,000€.
- Cost of Goods consumed:
 - The estimated expenses for transportation passes are 573,684€, and for the remaining Cost of Goods Sold and Materials Consumed expenses, it is

689,859€, meaning they could be paid individually with the income adtrackmedia brings in.

- External Supplies and Services:
 - These are costs that the income adtrackmedia provides cannot, single handedly, pay. But, just to put in proportion all the vigilance and safety in the subway is estimated to cost 6,834,600€ (11% could be covered annually by the adtrackmedia income); regarding the cleaning, hygiene and comfort it is estimated to cost 5,352,238€ (14% of it could be covered by adtrackmedia's income); specialized work with an estimated expense of 2,919,003 (income from the in-tunnel digital advertisements could cover more than 25% of this entry).

These examples highlight the challenges that the subway has, with very high expenses to cover and with not much sources of income other than their main source of income, subway tickets and passes. In an environment where the need for new revenue streams emerges, adtrackmedia appears as a strong solution.

Determining the income earned by subway advertisements over the past few years is necessary for a more accurate comparison to what adtrackmedia can bring in (750,000€ in revenue into the subway). With the exception of 2021, the previous five financial reports from Metropolitano de Lisboa's website (spanning from 2018 to 2022) showed a quite stable annual advertisement revenue. The COVID-19 epidemic resulted in severe restrictions on public transit use, which consequently impacted the OOH advertising income, being the subway also largely affected. In 2021, the revenue crashed to around 150,000€, the same revenue that had been consistently between 1.3 and 1.5 Million euros per year in the previously mentioned years and as indicated in the below bar chart:

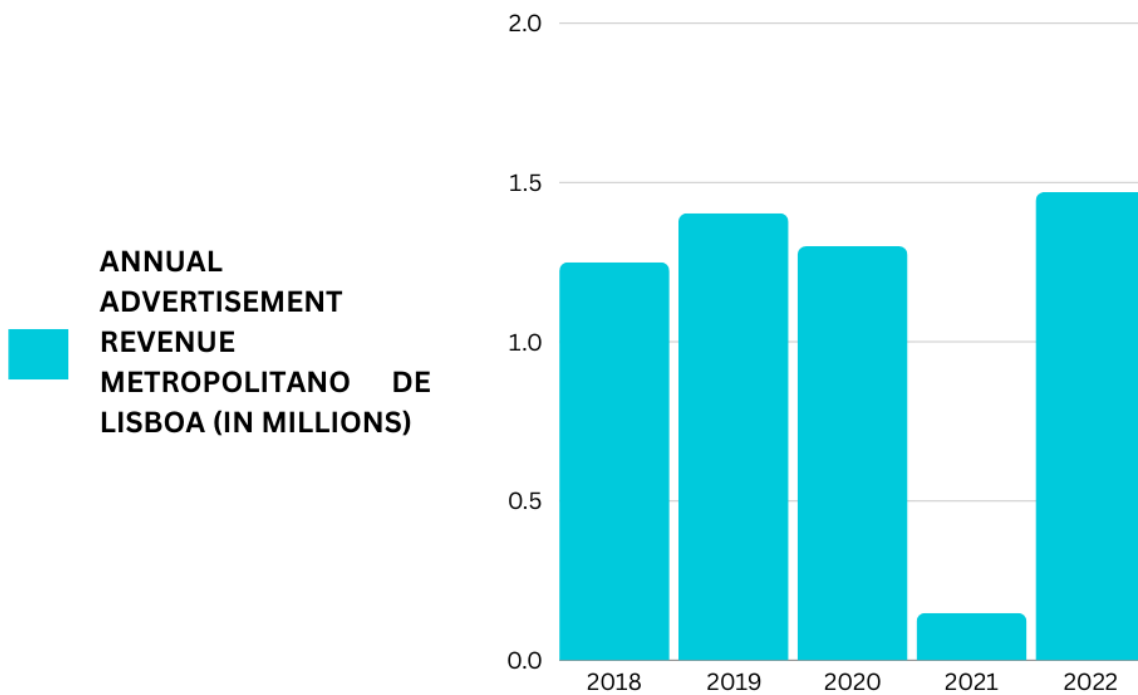


Figure 21 – Annual advertisement revenue (Lisbon’s Subway) (Source: Data from Metropolitano de Lisboa Official Website / Bar chart: Self-elaboration)

This demonstrates that with the existence of only two in-tunnel advertisement panels across, this way of advertising makes more than half of the revenue that comes from all the advertisements in every single station (56 metro stations) throughout a year, thus showing massive potential and a way that allows the subway to increase its earnings.

5. Internal Analysis

5.1. Lisbon's Scenario

In order to ensure a lucrative and efficient business, not only external factors should be evaluated, but also internal components in order to improve the business's strengths on the inside while addressing its weaknesses.

Assess the resources of Lisbon's Subway system and adtrackmedia, including technology infrastructure, financial resources, and human capital and check the synergies that can be created.

There are two main projects being developed by the Metropolitano de Lisboa, both with the objective of expanding the subway line.

The first one, the expansion of the red line of the Lisbon Metro to Alcântara, where the station will serve as "a new important transport hub," connecting with suburban railway services, aims to improve mobility in the Lisbon Metropolitan Area, this will result in a 405.4 Million euros investment by the Portuguese Government, most of it provided by the European Union under the framework of the PRR - Plano de Recuperação e Resiliência (304M€), which can be interpreted as a Recovery and Resilience Plan, with the objective to implement a set of reforms and investments that will enable the country to increase the competitiveness of the economy and its resilience.

Realizado por		Cofinanciado por	
			
Designação do projeto	Expansão da Rede de Metro de Lisboa – Linha Vermelha até Alcântara	Data de aprovação	Setembro/2021
Código do projeto	TC-C15-i01	Data de início	2021/T1
Objetivo principal	Mobilidade Sustentável, melhoria dos sistemas de transporte coletivo, descarbonização do setor dos transportes, investimento do prolongamento da Linha Vermelha do Metropolitano de Lisboa (ML), que atualmente liga a estação do Aeroporto à estação de São Sebastião, Alcântara constituir-se-á como um novo importante interface de transportes, articulando com os serviços ferroviários suburbanos, o qual irá contribuir para a melhoria significativa da mobilidade na Área Metropolitana de Lisboa.	Data de conclusão	31/12/2025
Região de intervenção	Lisboa, (Amoreiras, Campo de Ourique, Infante Santo e Alcântara)	Custo total elegível	405 400 000 €
Entidade beneficiária	Metropolitano de Lisboa, E.P.E.	Apoio financeiro da União Europeia	304 000 000 €
		Apoio financeiro público nacional/regional	101 400 000 €

Figure 22 – Project to expand Lisbon's subway red line (Source: Metropolitano de Lisboa Official Website)

The other project, called the circular line, has the objective of extending the Metro line by 1,900 meters. It will connect Rato to Cais do Sodré and create a new Green Line, with two new stations: Estrela and Santos. The Yellow Line will link Odivelas to Telheiras. This Circular Line will allow densification of the metro service within Lisbon, reducing travelling times within the city at the same time.

The circular line will cost around 331 Million euros, co-financed by the Environmental Fund (137M), the Cohesion Fund/POSEUR (103M), and national/regional financial support (91M).

Realizado por		Cofinanciado por	
			
Designação do projeto	Expansão do sistema do Metropolitano de Lisboa	Data de aprovação	20-12-2019
Código do projeto	POSEUR-01-1407-FC-000054	Data de início	06-11-2018
Objetivo principal	Apoiar a transição para uma economia com baixas emissões de carbono	Data de conclusão	31-12-2023
Região de intervenção	Estrela, Santos, Cais do Sodré e Campo Grande – Concelho de Lisboa – Portugal	Custo total elegível	331 000 000 €
Entidade beneficiária	Metropolitano de Lisboa, E.P.E.	Apoio financeiro do Fundo Ambiental	137 000 000 €
		Apoio financeiro do Fundo de Coesão/POSEUR	103 000 000 €
		Apoio financeiro público nacional/regional	91 000 000 €

*Figure 23 – Project to expand Lisbon’s subway turning green line into a circular line
(Source: Metropolitano de Lisboa Official Website)*

Lisbon’s mayor, Carlos Moedas, as used as his “main flag” the power of innovation and the power that it could create in the city he plans to develop as one of the most innovative cities in the world. The power of innovation was what had given Lisbon the position as the European capital of innovation in 2023, mostly due to the Unicorn Factory that had been created in Lisbon. Adtrackmedia’s goals go hand in hand with Lisbon’s ones, as adtrackmedia could change drastically the way OOH advertising is implemented in Lisbon’s subway with its innovative and differentiating factor while, at the same time, providing a new way for obtaining additional revenues that contribute to the sustainability and to possible expansions like the ones showed above.

5.2. SWOT Analysis

A SWOT analysis provides a framework for assessing the internal factors that could impact the success of implementing a business plan, in this case, the implementations of adtrackmedia in-tunnel advertising in Lisbon's subway. In order to ensure the business plan effectiveness, these variables must be all considered and strategies developed to capitalise on strengths, with eyes on the opportunities and fix weaknesses while minimizing threats.

As strengths, were selected as most relevant the following points:

High foot traffic: Lisbon's subway system experiences significant daily passenger traffic. In the accumulated first two months of 2024, the Lisbon Metro recorded 27 million passengers, surpassing the same period in 2019 (pre-pandemic) by approximately 792 thousand validations, representing a 3% increase in demand compared to that same period, and a 7% increase compared to the same period in 2023.

These data demonstrate an increase in demand and a trend towards a return to pre-pandemic levels of 2019.

Modernization opportunity: Implementing adtrackmedia will give the subway a modern image as many of its commuters want and improve the overall passenger experience, taking one of the most used public transports in Lisbon to another level of innovation.

Revenue generation: In-tunnel advertising can generate additional revenue for the subway system, offsetting operational costs.

Looking into what could be a potential weakness of the business plan we find the aesthetic concerns: some passengers can look at advertising in the tunnels as intrusive or far from visually appealing, thus affecting their perception of the subway environment.

The opportunities that adtrackmedia have in comparison to other types of OOH media are:

Targeted advertising: it becomes even more precise with adtrackmedia; advertisement variables like time of the day and passenger demographics enable maximizing the efficiency of marketing campaigns.

Portugal/Lisbon promotion: In-tunnel advertising can be used as a way of contributing to the country's and city's overall tourist strategy through advertising of businesses and attractions tourism-related.

As threats this business plan may find:

Regulatory challenges: adtrackmedia implementation may find regulatory constraints regarding the type and placement of the advertisement.

Competition from alternative advertising companies: adtrackmedia competes with other advertising companies that may want to create similar initiatives but more concretely with MOP UP as they have currently the rights to explore the subway.

Public places advertisement: If in-tunnel advertising is viewed as an invasion of the public space, passengers may protest (similar protests have already occurred in France due to unwanted advertisements on public places), which will result in unfavourable press and less companies wanting to invest in this kind of advertisement.

Economic downturn: During economic downturns, companies lower their advertising spending which will consequently lead to a worse revenue potential of in-tunnel advertising campaigns.

All of the above needs to be taken seriously in order to maximize the strengths and mitigate the weaknesses. While reflecting on this, synergy continuously created between adtrackmedia and various stakeholders comes to the fore. Getting regular feedback from subway management, passengers, and advertisers would go a long way towards keeping the system fine-tuned with changing demands and preferences.

It is also important to highlight how adtrackmedia would revamp the subway system while enhancing the passenger experience. The preceding argument is only relevant if the advertisements in the in-tunnel system are attractive and engaging. Therefore, there ought to be constant supervision and set mechanisms that enable passengers to give feedback on the ad content and placement.

6. Competitive Analysis

In Portugal, OOH advertising is dominated by four big companies: "MOP", "dreamMedia," "JCDecaux," and "Cemark".

JCDecaux is the global leader in the outdoor advertising market, operating in over 80 countries and working with many partners for a better management of the public space advertisement.

JCDecaux's general manager of Portugal hailed the green light from the Lisbon City Council for a concession contract related to advertising space. Lisbon is going to receive 8.3 Million euros yearly in this initiative that will include 2.000 bus shelters, 900 street furniture displays (250 of them digital), and 125 digital panels operated by JCDecaux and MOP, with MOP guaranteeing 40% of the positions.

After this tender, dreamMedia accused JCDecaux and MOP of cartel practices in the procedure of Lisbon City Council for the installation and operation of structures intended for advertising in the city. According to dreamMedia, the tender has been affected by collusion among competitors with price-fixing and division of the market purposes, which could stand for an infringement of the laws of competition. A complaint was lodged with the Competition Authority of Portugal (Autoridade da Concorrência), requesting that it conduct an investigation into the alleged anticompetitive conduct.

Turning the attention into MOP, responsible for advertising operations in subway transportation in Lisbon, it's important to underline some of their pillars as an OOH advertising company:

- Scale: MOP's differentiation to other OOH companies comes from a combination of quantity, diversity, and quality in their advertising offers.
- Innovation: MOP is one of the pioneering forces behind the adoption of digitization, thus helping a brand communicate and engage with its target audience in a much better way.
- Inclusion: Intended to be more accessible, current and responsive, MOP seeks to engage its readers.

As responsible for the advertising operations, MOP has plenty of options to explore advertising in Lisbon's subway.

Currently they are operating in nine different ways directly related to the subway, examples of those are turnstiles, MUPI, Digital MUPI, TOMI (designed to provide useful and interesting information to tourists and city residents, in an easy, fast, and integrated manner), outdoor's (inside the metro station, out of the metro line), digital triptico, led screens, metro stairs and cornices.

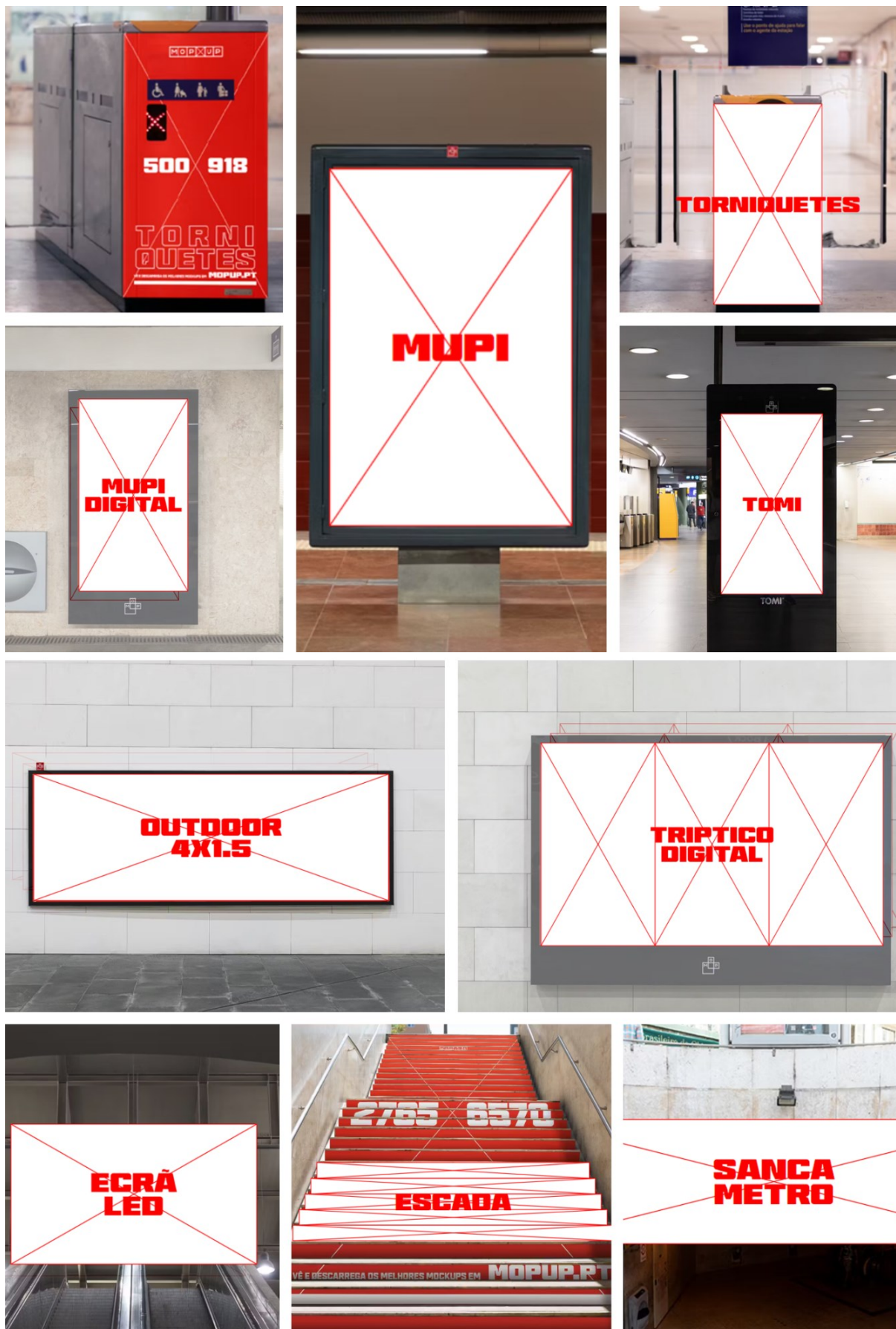


Figure 24 – Advertising possibilities in Lisbon's subway (Source: MOP UP Presentation)

7. The goals

The principal aim of this thesis is to transform the appearances of the advertisement scene in the Lisbon subway system into one powered by Digital In-Tunnel Advertising. This effort seeks to turn regular commutes into entertaining, interactive, and visually beautiful digital advertisements that would increase passenger experiences. The plan is also to raise cultural exposure of the passengers and their interaction with it by retaining elements of local culture and art within the advertising content.

This business plan aims to prove if adtrackmedia's digital advertising can make an impactful revenue for the Lisbon subway system and if it is viable for all, adtrackmedia, Lisbon Subway and subway users, only the synergy between these three will allow us to reach concrete answers. Getting a diversified pool of advertisers will also be critically important, and this will be achieved by articulating the unique benefits of digital in-tunnel advertising in effectively reaching a very targeted audience.

This way of advertising can cement Lisbon's subway as a modern and vanguard way of urban transportation.

8. Development of the strategy & Implementation Plans

8.1. Phases of the Implementation Plan

As a normal procedure in order to make a market entry, adtrackmedia follows a process that has four big points:

1. Identification of Markets of value (in this case we are focused on Lisbon's Subway and understanding the feasibility of the implementation of adtrackmedia services in this subway)
2. Market Research
 - Gauge Market Potential
 - OOH Demand and Scale
 - Identify System Locations
 - Validate Market Pricing
3. Contract with Metro
 - Enter Bi-Lateral Agreement
 - Submit RFP Proposal
4. Market Rollout

- Hire local Sales team
- Organizational Structure

Next step should be looking in-depth to the current scenario of the Portuguese OOH Market, in which there are many takeaways that are replicated in Lisbon.

8.2. Market Research

According to Statista, in 2024, Portugal's OOH Advertising market is anticipated to reach 104 Million euros, being the largest segment the Traditional OOH Advertising at 76.14 Million euros. Comparatively, China leads globally with 8,900 Million euros in ad spending. Per capita spending in Portugal's OOH Advertising market is expected to be 10.17€ in 2024. In addition, this Portugal sector is associated with an increase in digital signage investments, which are targeted to result in more interactivity and better targeting capabilities. A study made by the IPG Mediabrand group shows that investments in television represent around 45% of the total advertising market, followed by digital (34%), OOH (14%) and radio (5%).

“Forecasts for 2023 point to a 2% decrease in investments in TV, while radio should maintain its revenues and OOH should continue to grow (23%) and gain market share”, says the report.

Also, JCDecaux says that “with the economic context we are going through, brands must strengthen trust, loyalty and engagement by integrating the consumer experience on and offline. In this field, OOH is a medium of impact and credibility, allowing the crossing of various platforms, particularly mobile with OOH and the interactive experience.”.

Still in the market research point, there is a major point here that need to be aligned with the main goals of this implementation which is generate the most engagement possible with the ads. For that the location selection is crucial as adtrackmedia will extract higher rates by installing in high profile locations throughout the Lisbon’s subway.

There are currently a total of 56 metro stations separated in 4 different lines (Blue, Yellow, Green and Red).



Figure 25 – Lisbon’s subway lines and stations (Source: Metropolitano de Lisboa Official Website)

According to official Metropolitano de Lisboa data, in 2020, the subway recorded over 85 million passengers. For comparison, during the pre-pandemic year of 2019, the ridership hit approximately 175 million passengers. Recent data, from 2022, indicate a big increase in demand, with passenger numbers reaching almost 150 million.

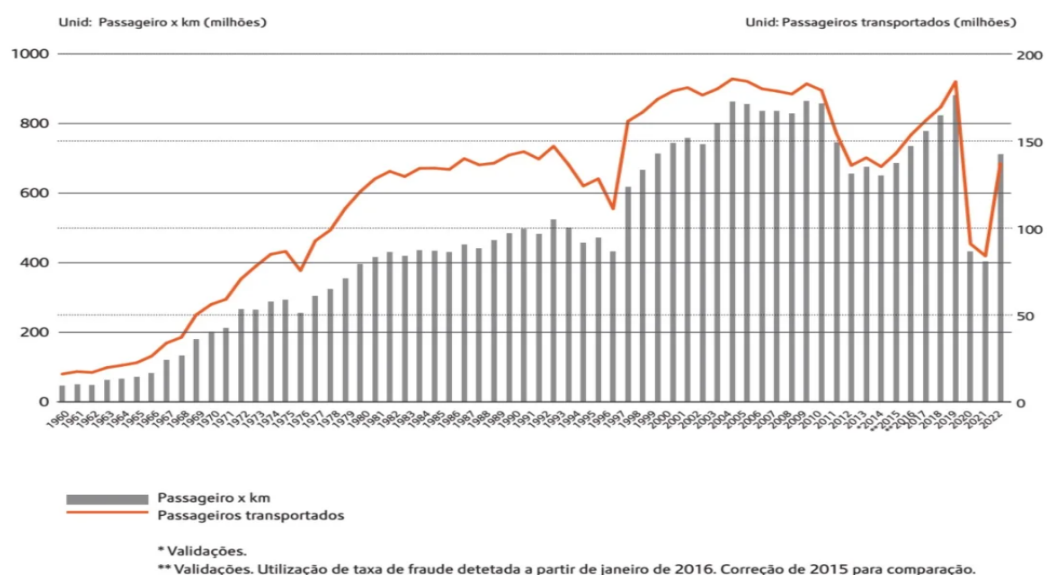


Figure 26 – Subway passengers across the years (Source: Metropolitano de Lisboa Official Website)

Among the most important stations in Lisbon's subway system are those that guarantee connectivity to other transportation modes by providing the main interchanging places between trains, buses, and ferries, and hence giving rise to a bigger passenger flow. This category of stations plays a very fundamental role in facilitating easy connections and changes between various transportation networks to improve mobility within cities.

Example of those are pinned in below figure as it is the case of the Lisbon Airport, Oriente, Santa Apolónia, Sete Rios, Cais do Sodré and Campo Grande)



Figure 27 – Subway stations with a bigger flow of passengers (Source: Metropolitano de Lisboa Official Website)

Examining the housing landscape in Portugal and Lisbon, concerning the rapid rise of the rental prices, many individuals who work within the city choose to reside outside its limits. Consequently, they will most likely need to transit through one of these six stations on their daily commute. Considering the influence of tourism, even though some of these stations aren't situated near attractions or tourist destinations, subway commuters are likely to pass through these key stations to reach their destinations.

Each of the locations listed above offer distinct potential to attract the attention of commuters and travellers. Next, a quick analysis to examine the probable impact of each placement.

1. Between Moscavide and Oriente: This will be a great position to target passengers from the airport and using it going towards the Oriente station, which is another big transit center in Lisbon. Given the large traffic numbers mostly at the Oriente Station, the ad visibility here might be significant.

2. Between Arroios-Anjos and Anjos-Intendente: Placing panels along this stretch of the green line could be very successful at reaching both tourist and local populations, as the path connects a number of historical locations and other popular tourist destinations throughout Lisbon. Additionally, it will be positioned between two of the largest Lisbon central transportation hubs, Campo Grande and Cais do Sodré.

3. Between Marquês de Pombal and Avenida: a historic roundabout, very central to the city of Lisbon and very uptown, one of the most famous avenues within the city, located where all the most famous and expensive brands have settled upon opening their shops. All this would fall precisely between the Sete Rios station and the touristic Terreiro do Paço and Baixa-Chiado.

By searching through online platforms, the rates for OOH advertising can be explored, providing a rough estimate of pricing. Knowing that each location may vary, some places, of course, will be more popular than others will create a price difference. Outdoor ad spaces, ranging from different sizes like 8x3m, 4x3m, and 2.40x1.70m, typically range from 10€ (2.40x1.70m) to 30€ (4x3m) to 50€ (8x3m) per day in the outskirts of Lisbon. However, prices can increase considerably inside the city of Lisbon depending on the area.

Considering MOP, as visible in the competitive analysis in Figure 24, there are currently 38 "MUPIS Digital" and 19 "Triptico Digital" displays. If an advertiser wants to place the ad on four distinct "MUPIS Digital" screens, the weekly investment is around 500€. However, with more extensive coverage, including 7 "MUPIS Digital" with "TOMI" screens, the cost rises to approximately 610€ each week.

For advertisers interested in the dynamic impact of LED displays, advertising on two of the eleven accessible panels costs approximately €900 per week.

Furthermore, the price information on two fronts of the "Triptico Digital - 3 screens" is roughly 650€ each week.

While it's crucial to have a general idea of the cost of advertising inside the subway system, we don't have a direct comparison for ads presented inside tunnels, where there are fewer distractions and the audience may only be reading or checking their phones. Unlike those

countless digital billboards scattered throughout the subway system, this type of tunnel advertising will capture commuters full attention. To illustrate, advertising on only four of the 38 digital screens (MUPIs) costs €500 each week. In contrast, advertising on adtrackmedia's in-tunnel panels costs €9,500 per week. Despite the increased expense, this premium form of advertising is likely to reach a much wider audience than four digital displays in 56 metro stations, which can be also seen in annexes 13 and 15.

8.3. Contract with the subway

adtrackmedia has been able to break into high-value global markets through two different ways. One way is the "Owned & Operated" model, evidenced by its key city presence in São Paulo, Brazil; Rotterdam, Netherlands; and Vancouver, Canada.

Through this way:

- adtrackmedia enters in direct concessions with metros
- adtrackmedia contracts are normally around the 10-years mark;
- adtrackmedia builds and installs systems at no cost to the metro operator;
- adtrackmedia establishes sales teams in market to sell advertising inventory directly to agencies and clients.

The other way of entering a market is through a License, which has happened in Spain's most inhabited cities Madrid and Barcelona, also in Italy's capital, Rome and lastly in Zurich Airport in Switzerland.

Going into a license or a SaaS (Software as a service), means that:

- adtrackmedia needs to grant exclusive territory licence;
- Revenues will be garnered from:
 - The sale of hardware
 - Ongoing SaaS fees
 - Variable % of media sales
 - Corporate sales right
 - Carried interest in local entity

8.4. Market Rollout (Organizational Structure)

The formal structure includes Ken Bicknell as President and CEO, Drew Craig as Executive Chairman, Jenifer Bartman as Chief Administrative Officer, Paul East as Chief Technology Officer, David Chae as Chief Innovation Officer, and Valerie McIlroy as a Strategic Advisor.

In addition to the board members, Andrew Glancy serves as Global Head of Sales, with commercial directors in each country where adtrackmedia operates or intends to operate. For example, in Portugal and Spain, Luis Cifuentes serves as the commercial director. All conversations with entities such as the Portuguese subway would go through him before reaching the aforementioned executives.

The organisational framework remains consistent with its current form, with the sole change being the extension of the team as indicated in point 4 of the implementation plans, necessitating the recruitment of a local sales team for Portugal as we are speaking of an expansion to a new market with its own particularities.

9. Financial Valuation

In order to be able to make an accurate appreciation and analysis regarding the feasibility of this implementation, the Discounted Cash Flow (DCF) method will be used. DCF is a valuation approach that determines the value of an investment based on its expected future cash flows and it is used to calculate the current value of an investment based on its future return.

The DCF formula has three main components:

Cash Flow (CF): Any earnings or dividends created by the investment, for example, revenues from sales of products or services, or cash generated by the sale of any assets.

The number of periods (n) represents the period of time over which cash flows are forecasted to occur. In this particular scenario is about 10 years, which is usually the average life expectancy of a company but also because adtrackmedia contracts are normally around the 10-years mark.

The discount rate (r) converts future cash flows to present value. It usually is the cost of capital for the company, that is, it represents the minimum return required to justify the investment. Frequently, this rate can also be worked out on the basis of WACC, that is, the weighted average cost of capital, which considers both the interest rate the firm pays for loans and loan repayments, besides dividend distribution to shareholders.

The formula for this valuation method is:

$$DCF = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \dots + \frac{CF_n}{(1+r)^n} \quad (1)$$

Where:

- CF1 = Cash flow of the first year
- CF2 = Cash flow of the second year
- CFn = Cash flow for additional years selected
- r = discount rate

In order to calculate the discount rate, the weighted average cost of capital (WACC) needs to be calculated as both are equivalent in this scenario.

$$WACC = \left(\frac{E}{V} \times Re \right) + \left(\frac{D}{V} \times Rd \times (1 - Tc) \right) \quad (2)$$

Where:

- E = Market Value of the firm's equity
- D = Market value of the firm's debt
- Total Market value of capital (V) = E + D
- Re = Cost of equity
- Rd = Cost of debt
- Tc = Corporate tax rate

Since adtrackmedia is not listed, the choice falls in the calculation of Clear Channel Outdoor Holdings' (CCOH) Weighted Average Cost of Capital (WACC) as a proxy for adtrackmedia's, since their industry and risk profiles are alike. Although adtrackmedia may have its special characteristics, the trends in the industry, market conditions, and risk factors are alike, therefore, an estimation by taking CCOH's WACC will proportionate a fair value.

$$E = \text{Stock Price} \times \text{Shares Outstanding} = \text{Market Value of firm's equity} \quad (3)$$

Outstanding shares = 494,061,048

Share = 1,43\$ (Retrieved on 24/05/2024)

$$E = 1,43\$ \times 494,061,048 = 706,507,298.64\$ \quad (4)$$

Regarding Market Value of the firm's debt we can find it directly in CCOH financial report.

$$D = \text{Market value of the firm's debt} = 5,300,000,000\$$$

$$V = E + D = 6,006,507,298.64\$ \quad (5)$$

After, the calculation of the cost of equity of CCOH is required. Cost of equity demonstrates the return that is expected by an investor from the investment that he has made in a company's stock. It defines the rate of return that a firm had to provide, in order to attract, as well as retain investors. In essence, it is the price the company pays to employ shareholder cash.

To determine it, we can use the Capital Asset Pricing Model (CAPM) calculation:

$$\text{Cost of equity} = R_f + \beta \times (R_m - R_f) \quad (6)$$

R_f = Risk-Free Rate

β = Beta of the Stock

R_m = Expected Market Return

The US Long Term average risk-free rate or 10-year treasury rate is 4.25%, the beta of the stock is around 3.01 according to the Financial Times and to find the expected market return we will be looking into a broad market index, for example, S&P 500 over a long period. For example, in the last 50 years, we would be talking about a yearly return of 11.35%.

Putting this into the formula, that would lead us to:

$$\text{Cost of equity} = 4.25\% + 3.01 \times (11.35\% - 4.25\%) \quad (7)$$

$$\text{Cost of equity} = 25.62\%$$

Regarding the cost of debt, it is the effective interest rate the company pays on borrowed funds. This contains every loan and bond. Since interest payments on debt are tax-deductible, the cost of debt is frequently assessed after accounting for the tax savings. And it is calculated as shown below:

$$\text{Cost of debt} = \frac{\text{Interest expense} \times (1 - \text{Tax Rate})}{\text{Total Debt}}$$

$$\text{Cost of debt} = \frac{421,434,000 \times (1 - 9.9\%)}{5,631,903,000} \quad (8)$$

$$\text{Cost of debt} = 6,74\%$$

T_c = Corporate Tax Rate = 21,00%

Clear Channel Outdoor Holdings, Inc.'s corporate tax rate is based on the US federal statutory rate of 21.0%. Clear Channel Outdoor Holdings, Inc. effectively pays 9.9% of its pre-tax income in taxes. The lower effective tax rate indicates that the corporation benefits from a variety of deductions, credits, and other tax measures that minimise its overall tax liability.

The WACC Formula can now be resolved:

$$WACC = \left(\frac{E}{V} \times Re \right) + \left(\frac{D}{V} \times Rd \times (1 - T_c) \right)$$

$$WACC = \left(\frac{706,507,298.64}{6,006,507,298.64} \times 25,62\% \right) + \left(\frac{5,300,000,000}{6,006,507,298.64} \times 6,74\% \times (1 - 21\%) \right)$$

$$WACC = 0.03 + 0.047 \quad (9)$$

$$WACC = 7,7\%$$

Now that the WACC is calculated, it is possible to return to the Discount Cash Flow method.

To calculate the cash flow for adtrackmedia's first 10 years in business in Portugal, financial projections will need to be done, such as the ones shown below.

Financial Projections and Operational Costs for adtrackmedia in Portugal for the first 10 years:

- **Revenue Projections:**

Estimated Annual Revenue: 5,000,000€ annually (Revenue based on current calculations – comparison done with Spain in the external analysis section amounting to 5,470,000\$)

- **Operating Expenses in Portugal**

1. **Employee Salaries:**

Total Annual Cost: 125,000€ annually

Details: This covers wages for 3 local staff members, including a commercial director and 2 members of a small sales team.

From year 2 onwards, the idea is to implement incentive bonus on the sales team that will lead to an increase of this cost to 187,500€ annually.

2. Professional Services:

Consultant Fees: 30,000€ annually

Details: Legal, accounting, and consulting fees to ensure compliance with local legislation.

3. Business Travel and Client Meetings:

Total Annual Cost: 20,000€ annually

Details: Covers costs for business travel, client meetings, and corporate events.

4. Licensing and Regulatory Fees:

Business Licenses: 805€ annually

Details: Fees for obtaining the necessary licenses to operate legally in Portugal and to publicize in Lisbon.

5. Insurance:

Total Annual Cost: 30,000€ annually

Details: Given the nature of their operations within subway systems, adtrackmedia's insurance expenses in Portugal are projected to be approximately 30,000€ per year. This covers insurance for workers' compensation, property, business interruption, general liability, and professional liability.

6. Technology and Infrastructure:

Total: 28,000€ annually

Details: Software maintenance will be handled by the HQ in Canada.

7. Revenue Shared with MOP (5%), Subway (15%) and with main headquarters of adtrackmedia (10%)

Revenue Share to Subway Advertising Company: 5% of the revenue

Details: Percentage of revenue paid to the company managing subway advertising.
(through informal talks, this is the value that the current company exploring subway would require)

Revenue Share to Lisbon's subway: 15% of the revenue

Details: Percentage of revenue paid to the subway, normally for the subways working with adtrackmedia and to ensure fairness, a distribution based on a percentage of the earned value is given.

Revenue Share to pay license fee to adtrackmedia (Technology Cost - extra technology updates and maintenance on point 6): 10% of the revenue

8. Capital Expenditures (CapEx):

In-Tunnel Panels Implementation: 700,000€ x 2 lines = 1,400,000€

Details: Includes all technology and integration with adtrackmedia's HQ systems.

After the first year there will no longer exist the 1,400,000€ expense of the initial investment.

All financial indicators, including revenue projections and operating expenses, have been thoroughly checked, compared to data from other countries, and checked with adtrackmedia. This ensures the financial model's durability and accuracy, reflecting realistic expectations based on previous implementations and expert insights.

Knowing this and calculating the DCF for the first 10 years of the company operating in Portugal we will have the following calculation.

Revenue:

Year	Revenue (€)	Revenue Share to Subway Advertising Company (5%) (€)	Revenue Share to Lisbon's Subway (15%) (€)	Revenue Share to adtrackmedia (10%) (€)	Total Revenue Share (€)	Adjusted Revenue (€)
Year 1	5,000,000	250,000	750,000	500,000	1,500,000	3,500,000
Years 2-10	5,000,000	250,000	750,000	500,000	1,500,000	3,500,000

Table 1 – Adjusted Revenue for the first 10 years (Source: Self-elaboration)

Operating expenses:

Year	Employee Salaries (€)	Professional Services (€)	Business Travel and Client Meetings (€)	Licensing and Regulatory Fees (€)	Insurance (€)	Technology and Infrastructure (€)	Total Operating Expenses (€)
Year 1	125,000	30,000	20,000	805	30,000	28,000	233,805
Years 2-10	187,500	30,000	20,000	805	30,000	28,000	296,305

Table 2 – Total Operating Expenses for the first 10 years (Source: Self-elaboration)

Cash Flow:

Year	EBIT (€)	Tax (21%) (€)	NOPAT (€)	CapEx (€)	FCF (€)
Year 1	3,266,195	686,190.95	2,580,004.05	1,400,000	1,180,004.05
Years 2-10	3,203,695	672,775.95	2,530,919.05	-	2,530,919.05

Table 3 – Cash flow for the first 10 years (Source: Self-elaboration)

Putting these values into the formula:

$$\begin{aligned} \text{DCF} = & \frac{1,180,004.05}{(1+0.077)^1} + \frac{2,530,919.05}{(1+0.077)^2} + \frac{2,530,919.05}{(1+0.077)^3} + \frac{2,530,919.05}{(1+0.077)^4} + \\ & \frac{2,530,919.05}{(1+0.077)^5} + \frac{2,530,919.05}{(1+0.077)^6} + \frac{2,530,919.05}{(1+0.077)^7} + \frac{2,530,919.05}{(1+0.077)^8} + \frac{2,530,919.05}{(1+0.077)^9} + \\ & + \frac{2,530,919.05}{(1+0.077)^{10}} \end{aligned}$$

$$\text{DCF} = 15,960,560.85\text{€}$$

The calculated Net Present Value (NPV) of adtrackmedia's first ten years operating in Portugal would be 15,960,560.85€, indicating a good investment. The positive Net Present Value implies that the expected returns, estimated, are greater than the expected costs, showing there is potential profit in this investment. The estimate is based on plausible income, with the also relevant fact that the revenue forecasts are based on the Spain rate card for each slot in 2023, which can vary in the following years both up or down, and expense projections with a discount rate of 7.7%, which is the WACC of a comparable company in the business, Clear Channel Outdoor Holdings. This rate holds all the risk elements and return expectations. A detailed cost analysis, operating and capital expenses checked alongside

adtrackmedia, makes sure that all financial variables are accounted for in order to present a solid base for an NPV calculation.

With its strong forecast in revenues and a clear breakdown of the costs, the investment fits well into adtrackmedia's goal to increase its market share in Europe.

10. Conclusion

This business plan evaluated the feasibility and strategic advantages of advertising through in-tunnel digital advertising across the subway system of Lisbon, cooperating with adtrackmedia. All the data shown along this plan, proves that adtrackmedia innovative advertising style has a high passenger engagement together with positive acceptance, showing significant results in advertisement recall and purchase intent for the campaigns studied.

This digital in-tunnel advertising has a very high revenue potential, as indicated by the detailed financial research, and contributes to the sustainability of the subway. With an estimated 750,000 Euros income per year, which would sustain many operational costs and, consequently, decreasing the financial burden on the Metropolitano de Lisboa. Additionally, a NPV of close to 16 Million Euros over a period of ten years shows there is financial attractiveness and potential profitability in the project.

With tested technology and implementations already rolled out in many places around the world, it is likely that adtrackmedia will provide seamless integration into the Lisbon subway system with minimal disruption, if any at all. With solid architecture and secure performance encrypted, it reassures users of the life and maintenance of the advertising panels.

Digital in-tunnel advertising will modernize the Lisbon Subway, increase the passenger experience with unique content, and provide supplementary funding for operational and capital needs. This project assures medium-long term stability for the subway system and puts Lisbon in the spotlight as a modern city, one of the goals of the city of Lisbon for this decade. The relationship with adtrackmedia comes to be the perfect blend of tradition and innovation: using cutting-edge technology to conserve the tradition and embracing the innovation, improving the legacy of the Lisbon subway.

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12. Annexes

Age Group

	Frequency	Percentage	Valid percentage	Accumulated Percentage
16-24	74	38,7	38,7	38,7
25-34	73	38,2	38,2	77,0
35-44	35	18,3	18,3	95,3
45-54	7	3,7	3,7	99,0
55-75	2	1,0	1,0	100,0
Total	191	100,0	100,0	

Annex A – Age Group (Source: Self-elaboration)

Gender

	Frequency	Percentage	Valid percentage	Accumulated Percentage
Male	112	58,6	58,6	58,6
Female	79	41,4	41,4	100,0
Total	191	100,0	100,0	

Annex B – Gender (Source: Self-elaboration)

How often do you use the Lisbon Subway?

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Once a month	31	16,2	16,2	16,2
At least 5 days per month	27	14,1	14,1	30,4
Between 6-15 days per month	41	21,5	21,5	51,8
Between 16-25 days per month	86	45,0	45,0	96,9
Everyday	6	3,1	3,1	100,0
Total	191	100,0	100,0	

Annex C – Frequency using the subway (Source: Self-elaboration)

What is the main reason for you to travel by subway?

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Work	74	38,7	38,7	38,7
Leisure	58	30,4	30,4	69,1
Studies	55	28,8	28,8	97,9
Other	4	2,1	2,1	100,0
Total	191	100,0	100,0	

Annex D – Main reason to travel by subway (Source: Self-elaboration)

Regarding the advertisements inside the Lisbon subway: The advertisements displayed in the Lisbon Subway tunnels grab my attention effectively.

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Strongly Disagree	103	53,9	53,9	53,9
Disagree	49	25,7	25,7	79,6
Neither agree nor disagree	15	7,9	7,9	87,4
Agree	14	7,3	7,3	94,8
Strongly Agree	10	5,2	5,2	100,0
Total	191	100,0	100,0	

Annex E – Advertising success in Lisbon's subway (Source: Self-elaboration)

Regarding the advertisements inside the Lisbon subway: The advertisements in the Lisbon Subway tunnels influence my perception of products or brands.

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Strongly Disagree	86	45,0	45,0	45,0
Disagree	65	34,0	34,0	79,1
Neither agree nor disagree	19	9,9	9,9	89,0
Agree	10	5,2	5,2	94,2
Strongly Agree	11	5,8	5,8	100,0
Total	191	100,0	100,0	

Annex F – Influence of the Lisbon subway adverting in the perception of products or brands
(Source: Self-elaboration)

**Regarding the advertisements inside the Lisbon subway:
I remember the products or brands advertised in the Lisbon Subway after my commute.**

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Strongly Disagree	99	51,8	51,8	51,8
Disagree	54	28,3	28,3	80,1
Neither agree nor disagree	14	7,3	7,3	87,4
Agree	12	6,3	6,3	93,7
Strongly Agree	12	6,3	6,3	100,0
Total	191	100,0	100,0	

Annex G – Products or brands recall after the advertising (Source: Self-elaboration)

**Regarding the advertisements inside the Lisbon subway:
I find myself interacting with digital advertisements in the Lisbon Subway (e. g., scanning QR codes, participating in polls) when possible.**

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Strongly Disagree	96	50,3	50,3	50,3
Disagree	69	36,1	36,1	86,4
Neither agree nor disagree	7	3,7	3,7	90,1
Agree	9	4,7	4,7	94,8
Strongly Agree	10	5,2	5,2	100,0
Total	191	100,0	100,0	

Annex H – Interaction with digital advertisements in the Lisbon subway (Source: Self-elaboration)

**Regarding the advertisements inside the Lisbon subway:
I am more likely to remember the advertisements displayed in the Lisbon
Subway compared to other advertising mediums.**

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Strongly Disagree	93	48,7	48,7	48,7
Disagree	53	27,7	27,7	76,4
Neither agree nor disagree	12	6,3	6,3	82,7
Agree	22	11,5	11,5	94,2
Strongly Agree	11	5,8	5,8	100,0
Total	191	100,0	100,0	

Annex I – Likelihood to remember the advertisements displayed on the subway compared to other advertising mediums (Source: Self-elaboration)

I am familiar with this kind of advertisement

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Definitely Not	34	17,8	17,8	17,8
Probably Not	17	8,9	8,9	26,7
Probably Yes	33	17,3	17,3	44,0
Definitely Yes	107	56,0	56,0	100,0
Total	191	100,0	100,0	

Annex J – Familiarity with the in-tunnel digital advertisement (Source: Self-elaboration)

I have been in a subway that has this kind of advertising inside the tunnel

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Definitely Not	33	17,3	17,3	17,3
Probably Not	19	9,9	9,9	27,2
Might or might not	3	1,6	1,6	28,8
Probably Yes	32	16,8	16,8	45,5
Definitely Yes	104	54,5	54,5	100,0
Total	191	100,0	100,0	

Annex K – Presence on a subway with the in-tunnel digital advertisement (Source: Self-elaboration)

I would welcome the introduction of innovative digital advertisements in the Lisbon Subway Tunnels

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Definitely Not	3	1,6	1,6	1,6
Probably Not	3	1,6	1,6	3,1
Probably Yes	51	26,7	26,7	29,8
Definitely Yes	134	70,2	70,2	100,0
Total	191	100,0	100,0	

Annex L – Reaction to the possible implementation of the in-tunnel digital advertisement (Source: Self-elaboration)

The presence of digital in-tunnel advertisement in the Lisbon Subway tunnels would enhance my commuting experience

	Frequency	Percentage	Valid percentage	Accumulated Percentage
Definitely Not	4	2,1	2,1	2,1
Probably Not	3	1,6	1,6	3,7
Might or might not	5	2,6	2,6	6,3
Probably Yes	53	27,7	27,7	34,0
Definitely Yes	126	66,0	66,0	100,0
Total	191	100,0	100,0	

Annex M – The possibility of this adverting enhancing the commuting experience (Source: Self-elaboration)

I think that new digital advertisements would positively influence my perception of the Lisbon Subway as a modern transportation system

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Definitely Not	4	2,1	2,1	2,1
Probably Not	2	1,0	1,0	3,1
Might or might not	2	1,0	1,0	4,2
Probably Yes	55	28,8	28,8	33,0
Definitely Yes	128	67,0	67,0	100,0
Total	191	100,0	100,0	

Annex N – In-tunnel digital advertising influence on people's perception of the Lisbon subway system (Source: Self-elaboration)

The presence of new digital advertisements in the Lisbon Subway would make me more curious about the products or services being advertised

	Frequency	Percentage	Valid Percentage	Accumulated Percentage
Definitely Not	3	1,6	1,6	1,6
Probably Not	3	1,6	1,6	3,1
Might or might not	3	1,6	1,6	4,7
Probably Yes	57	29,8	29,8	34,6
Definitely Yes	125	65,4	65,4	100,0
Total	191	100,0	100,0	

Annex O - In-tunnel digital advertising influence on people's perception of the products or services being advertised (Source: Self-elaboration)