Data Analysis in Content Marketing Strategies

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Abstract — **Recently, the importance of data analysis for content marketing has become apparent. However, only a few companies use data as a source of knowledge to enrich their strategies. The application of data analysis in the development of content marketing strategies is still at an early stage of research and still little explored in the business context. However, given the research results analysed, it is a promising and differentiating area for the success of content marketing strategies. In this paper, the main existing approaches related to this theme were analysed and an empirical study was developed through a case study in a company, with the aim of optimising the content production for its blog, regarding digital marketing, using the data analysis provided by the company's software. The study was carried out following an exploratory and qualitative methodology, using content analysis as the main technique for data collection. The results obtained after this work have made it possible to verify and demonstrate the positive contribution of data analysis to the development of content marketing strategies.**

Keywords - content marketing; content production; data analysis; digital marketing.

I. INTRODUCTION

Content marketing is a technique which creates and distributes valuable, relevant, and consistent content, to attract a clearly defined audience and to involve it, with the purpose of leading the customer to perform an action that generates profit for the company [1].

According to Baltes [2], content marketing fits into a communication model with no sales component, since the content created and distributed within its process is essentially of an informative, educational, or playful nature. The essence of this strategy focuses on the credibility that businesses pass on to consumers, helping them to be rewarded with loyalty at a later stage.

One of the main benefits of using content marketing is that the content retains the customer's attention, contributing to the company/brand that provided the most relevant content previously, being the first to be remembered when the customer needs a certain good/service. Lieb [3] reinforces this idea stating that content is bait because it is what attracts attention and generates consumer engagement. According to the author, companies provide content while consumers pay back with their attention. Thus, a good content marketing strategy has the power to create a positive brand image in the minds of consumers, and consequently to attract, engage and retain the desired audience, so that long-term relationships can be developed [4] [5].

Due to the power shown in recent times, content marketing has achieved a prominent position as a marketing tool for companies, especially as we live in the information era, where consumers demand relevant, factual, and useful content to help them in their purchasing decisions. According to Kotler et al. [6], for any strategic approach to content marketing to be effective, well-structured processes and best practices are needed to support its correct implementation. However, there is no formula to ensure success. Each company should architect its strategy considering the business area and the circumstances in which it operates, as different products, markets and needs require different solutions.

A. Content marketing strategy

Content strategy can be defined as content planning and management. According to Nazaret [7], content marketing strategy is the practice of planning, creating, delivering, and managing useful and interesting content for a certain target audience. When content is mentioned, it refers to everything that can be consumed online and is available in various platforms, such as websites, blogs, social media, among others.

For a content marketing strategy to be effective, marketers need to create original content or adopt it from external sources, distributing it through the best combination of channels [6]. According to the same author, the first stage in a content marketing strategy focuses on defining objectives. The contents' objectives can be of two types: sales-related objectives and brand-related objectives. Furthermore, if the objectives are more focused on the brand, it should be verified if the contents are consistent with the identity of the brand.

B. Data analysis in content marketing

Markets are constantly changing nowadays, forcing companies to adapt quickly to new and unknown situations. In

turn, the decision-making process is increasingly dependent on information and communication technologies, and companies are increasingly betting on decision support technologies such as Business Intelligence (BI). According to Turban et al. [8], environmental and external factors create pressure and/or opportunities for organizations, which need to make decisions to define their strategy. In this context, the area of Business Intelligence emerges as a facilitator of the decision-making process, through the provision of knowledge, which serves to support the decision [9]. The concept of Business Intelligence refers to the process of collecting, organising, analysing, sharing, and monitoring information, which supports management decisions. It can give a significant competitive advantage or facilitating the decisions to be taken [10]. The primary objective of Business Intelligence is to allow interactive access to and manipulation of data, providing business managers and analysts with the possibility of carrying out a substantiated analysis [9]. However, the high technological level available to companies has promoted the emergence of huge databases. Thus, besides the relevance for supporting accounting and financial systems, many companies have understood that the knowledge present in their databases is central to supporting the decision-making process also in marketing [11].

Thus, according to Moro [9], the focus of companies' databases has moved from simply collecting large amounts of data (big data) to using and making them profitable, through processes based on database technologies, such as database marketing. In this line of thought, marketing analytics emerges as a subdomain of the data analysis area. According to Spais & Veloutsou [12], marketing analytics can be defined as a set of processes involving the collection, management, and analysis of data - descriptive, predictive, and prescriptive data - to obtain insights on marketing performance, to maximise the effectiveness of marketing control tools, and to optimise return of investment (ROI). To Rackley [13], marketing analytics consists in the process of identifying valid metrics considering the defined objectives, which allow tracking, over time, the marketing performance, using the results to subsequently improve the company's functioning. Nowadays, marketing analytics is vital for the good development of the marketing area in organizations, as the exploitation of the generated insights provides companies with competitive advantage. Within the universe of companies that have already embraced their role as content creators, few have yet adopted the analytical and intelligent use of data to optimize their content marketing strategies [14]. According to Moura [15], it is estimated that only 12% of the data produced is being used by enterprises, thus leaving about 88% of the existing information available to be further transformed into valuable content. It is therefore imperative for organisations to understand what forms of content enrichment big data analysis can offer them, as well as its advantages. First, by presenting evidence-based arguments, companies convey greater credibility and transparency to the reader, while demonstrating authority, and the reader sees them as a reference in the matter [14].

Thus, the first and most obvious advantage resulting from the use of big data analysis tools is the ease and speed of access to data which can be used to create richer and more relevant content that will enable the company to achieve success with its audience. Another relevant point is the possibility of working with large volumes of data and integrating them into the contents in a visual way: data visualisation. Rock Content [14] The author states that content with graphics and other elements of information display are more efficient and attractive to the public, as the human brain processes images faster than text. This brings advantages, such as a possible growth in access to content, an increase in the number of interactions with the content and it can also boost the consumer's chances of remembering the company later thanks to that content. If the company wants to go even further, it can offer the reader the possibility to manipulate and interact with the data visualisation. In this sense, interactive infographics appear as a more complete form of data visualisation, and it is possible to establish different ways of exploiting the data and to add various layers of information [16]. In addition to being extremely attractive, interactive infographics further assist in content retention and engagement with information. Therefore, the use of data not only allows the creation of attractive and distinct content, but also has the advantage of making the experience of visitors, leads or customers unique. Apart from using the data as a raw material, it can also be used as a tool for monitoring, analysis, and optimisation of the content marketing strategy. Rock Content [14] points out that, usually, those who produce content are only aware of the potential of the data as a starting point for producing personalised and segmented content. However, it is important to mention the potential of data analysis for those who want the greatest possible ROI. Today, consumers share a lot of information with companies through landing pages or social login, allowing them to compile, track and store all this data in their databases. Based on a careful analysis of all this information obtained about consumers, to which the company had access, and constant monitoring, it is possible to transform all this data into insight for the optimization of content. Before starting to develop the content, it is also important for companies to define the subject to be addressed and analyse the content already published by competitors to understand what they are doing better and worse in relation to the proposed subject [17]. In addition, it is also relevant to make an analysis of the most widely used keywords to choose the ones which produce the best SEO (Search Engine Optimization) results. The advantage here, therefore, is that companies can devise more creative, efficient, and cost-effective data-based strategies. Although the focus on data analysis in the context of content marketing is still limited, there are some Portuguese companies that have already realized its importance and value and are therefore currently using big data analysis solutions to develop a more efficient content marketing strategy.

II. METHODOLOGY

As mentioned above, the content production planning stage is essential for an effective content marketing strategy, as it is during this stage that all aspects inherent to the content to be produced are considered and selected to best meet the audience's needs and expectations. This study was carried out through the practical application in the company Best Content, which provides services in the area of analysis and content production. To perform the data analysis, the company has its own software that tracks all content written only in Portuguese from Portugal, from small blogs to large publications. In total, the platform

tracks about 966 blogs and 75 news websites, making a total of 1041 data sources. As the Best Content software is collecting a large volume of information daily, it was felt that it would be interesting to analyse this data to obtain valuable ideas and insights for the development of the company's own content marketing strategy. That is why Best Content has felt the need to integrate into its platform features that allow its customers to have access to crucial data, to be able to carry out a good planning of its strategy. The "Keywords", "Contents" and "Mentions" functionalities, mentioned above, make it possible to have access to various types of data, which allow the optimisation of the contents to be produced. Since the analysis of this data is useful and relevant to its customers, it was felt that it would be important to use this resource to outline the company's own content marketing strategy. Thus, this study arises from the need to plan the contents that will be produced for a blog that Best Content will integrate in the future in its website, which will focus on the topic of digital marketing, since this is the business area of the company. With the production of its own content the company aims to generate authority in the market and to be seen as an example. Therefore, the research carried out focuses on the analysis of data provided by the Best Content platform about digital marketing, to obtain relevant ideas and insights to optimise the production of content on the subject.

A. Goals

The main objective of this study is to optimise the production of content on the topic of digital marketing through the analysis of data provided by the Best Content platform. At the end of the study the aim is to obtain valuable information that will enable the company to produce relevant and, above all, efficient content. In addition, it is intended to demonstrate the importance of data analysis in the planning of content marketing strategies. To achieve the purpose described, the study was based on the following specific goals:

- Collection of data obtained from the "Keywords", "Contents" and "Mentions" functionalities.

- Selection of relevant variables for content production.

- Construction of analysis grids and processing of the respective data.

- Analysis of selected variables.

- Obtaining ideas and insights on the subject under study.

B. Sample

For the elaboration of the study all the contents published between January 1st, 2019 and December 31st, 2019 were collected and analysed, containing the keywords "digital marketing" in the body of the article. All references to the same keywords on the social networks Facebook, Instagram, Twitter, and YouTube were also analysed during the period from November 17, 2019 to December 17, 2019. The sample size covers 1000 items and 318 entries, making a total of 1318 analysed data. In addition to these, all the data presented for "digital marketing" concerning the Search Engine Result Pages (SERP) analysis that the platform performs were also analysed. Since all data to be analysed comes from the Best Content platform, it was first necessary to access it and login. After that

step, the planning tab and the "Keywords" functionality were opened. A search was then made for the keywords digital marketing, activating the elaboration of the report for the keywords in question which, once completed, presents the results of the SERP analysis on the keywords search in Google Portugal. As for the data concerning the published contents, the "Contents" functionality was opened in the Best Content Platform (see Figure 1) and it was searched for the same keywords used previously. To make the results more precise, the search was filtered so that the contents presented had the keywords in the body of the article and had been published only in the last year.
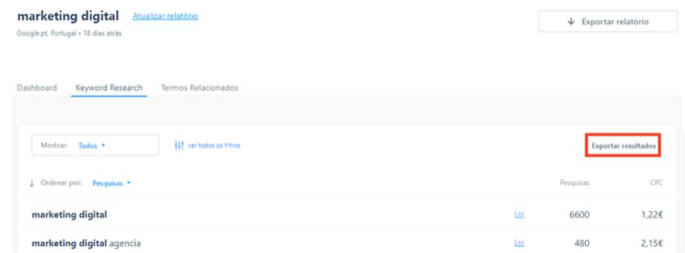

Figure 1.   Best Content platform.

As for the data concerning the published contents, the functionality "Contents" was opened, and it was searched for the same keywords used previously. To make the results more precise, the search was filtered so that the contents presented had the keywords in the body of the article and had been published only in the last year. After the results were obtained, they were extracted back into a Microsoft Excel® file using the "export results" function. Finally, the "Mentions" function was opened and the "export results" function was activated to obtain a Microsoft Excel® file with all the data (see Figure 2). In this functionality it was not necessary to perform a search for the words.
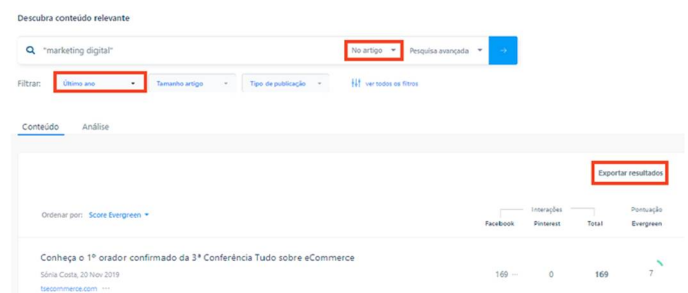

Figure 2.   "Contents" report for digital marketing.

After all the data necessary for the preparation of the study had been collected, they were processed. Since the platform exports all data in Excel format, it has become more convenient to use this tool for data processing. Before starting the analytical treatment of data, the variables considered most relevant for the empirical study were selected, considering its purpose. This step was crucial as it allowed for a more objective and targeted analysis, avoiding the waste of time with irrelevant data analysis

for content marketing strategies. Thus, the variables selected for analysis were those presented in Table I.

Data source (Functionality)	Selected variables
Keywords	• Researched keywords • Monthly research volume • Competition level • Cost per click • Most frequent related terms
Contents	• Title of the article • Article's URL • Total of interactions • Publication date • Time of publication • Content format
Mentions	• Source/Social media • Publication date • Time of publication • Mention's URL • Extract from the text of the publication • Name of the author of the publication • Reach of publication

TABLE I.   VARIABLES SELECTED FOR THE STUDY (SOURCE: OWN ELABORATION).

Analysis grids were then created to make it possible to conduct a simpler and more objective analysis of the data relating to the published articles and mentions. The analysis grid created to assist the analysis of the content of the articles extracted on digital marketing is presented in Table II.

Num ber	Date	Time	Inter actio ns	Author	Type	Th em e	For mat
1	01/01/19	12:30	346	blog.hot mart.com	1	3	1
2	01/02/19	13:03	50	wisdom.c om.pt	1	7	1
…	...	...	...	...	...	...	...
1000	31/12/19	11:48	24	belodigit al.com	1	2	1;4

TABLE II.   ANALYSIS GRID USED TO CODIFY THE "CONTENTS" STUDIED (SOURCE: OWN ELABORATION).

To facilitate the monitoring of the total number of units analysed, each article analysed was numbered sequentially. The data concerning the variables date, time and total interactions were already in the format presented when the data were extracted from the platform and were therefore only copied to the analysis grid. In addition, the identification of the author was taken from the URLs of each article. Regarding the type of author, all articles were classified, considering the entity that manages the blog or website where the content was published, in the following categories: 1 – marketing/communication agency; 2 – company; 3 – educational institution; 4 – press; 5 – marketing professional and 6 – other. Regarding the themes, the articles were classified according to their general theme as follows: 1 – definition of concepts; 2 – trends; 3 – employment; 4 – social media; 5 – training; 6 – tips; 7 – interviews; 8 – economics; 9 –news from agencies/companies; 10 - events and

11 – other. Finally, in terms of content format it has been classified as 1 – text, 2 – video, 3 – lists and 4 – questions. In this case, as it is possible for articles to include text and video simultaneously, there are articles with more than one classification. Regarding the mentions, the following analysis grid has been prepared to facilitate the analysis of the data (see Table III).

Nu mb er	Source	Date	Tim e	Reach	Autho r	Ty pe	the me
1	Instagram	17/11/1 9	02:1 6	591	babelte am	3	6
2	Instagram	17/11/1 9	12:2 5	396743	dicasdi gitais	5	6
…	...	...	...	...	...	...	...
318	Twitter	17/12/1 9	22:4 6	5061	Nuno Valinh as	6	6w

TABLE III.   ANALYSIS GRID USED TO CODIFY THE " MENTIONS " STUDIED (SOURCE: OWN ELABORATION).

As in the analysis grid created for the articles, the mentions were numbered sequentially to allow the counting and monitoring of the total number of information analysed. The data regarding the variables source, date, time, reach and author of the article were only copied to the grid as they were already in the format presented when the data were extracted. To classify the type of author, the profile in the social media of each one of them was analysed, being later classified as follows: 1 - marketing/communication agency; 2 - company; 3 - educational institution; 4 - press; 5 - marketing professional; 6 - private user; 7 - recruitment page; 8 - event page and 9 – other. Subsequently, the content of the mentions was analysed, and each mention was classified according to the general theme: 1 - training; 2 - employment; 3 - trends; 4 - tips and 5 - events. Once the analysis grids had been completed, the graphs were constructed and will be presented in the following section.

To study correlation between variables, the Spearman coefficient (R_S) was performed in SPSS v.27 software®. P-values ≤ 0.05 were considered significant.

III.   RESULTS

The initial step in developing a content marketing strategy is to assess the public interest in the topic to be addressed. That is because, if there is no interest in the chosen topic, the whole strategy is weak from the outset and the desired results will probably not be achieved. In this way, the data on the monthly volume of searches carried out in Google Portugal for the keywords digital marketing were analysed first, to understand the level of interest shown by the Portuguese citizens in the subject during the year 2019. The volume of research conducted for the keywords under study is high throughout the year, registering, in most months, values above 5400 searches. However, in August there was a 33% drop in the value of searches compared to the previous month, which may be a consequence of the fact that, at that time, many Portuguese were on holiday and were therefore more disconnected from the online world. Given the situation presented, it can be concluded that Portuguese are in fact interested in the topic of digital marketing, and it is therefore a good theme for the company to

explore in its content. Another important aspect in strategy planning is the selection of the right keywords to generate the most traffic for the blog. In addition to data on digital marketing keywords, the Best Content platform provides suggestions for related keywords, allowing you to understand which ones are the most appropriate and interesting to explore in the articles. Initially, keywords related to the highest average monthly survey volume were selected and ranked, as shown in Table IV.

Related keywords	Average volume of research
digital marketing	6600
digital marketing agency	480
digital marketing course	390
digital marketing course Google	320
digital marketing companies	320
digital marketing Google course	320
digital marketing Porto	320
digital marketing Portugal	320
digital marketing Google	260
digital marketing for companies	260
digital marketing Lisboa	210

TABLE IV.   AVERAGE MONTHLY VOLUME OF KEYWORDS RESEARCH RELATED TO DIGITAL MARKETING (SOUCE: OWN ELABORATION).

The analysis of the data presented shows that the digital marketing keyword presents an average monthly volume of surveys much higher than the related keywords. In addition, it can be seen in Table IV that the keywords related to digital marketing with the highest volume of research are essentially centred around agencies/companies and courses. This allows us to understand that the Portuguese are interested in knowing more about these two themes, and therefore the production of content about agencies/companies around digital marketing and digital marketing courses in Portugal may be relevant. Moreover, the analysis of the level of competition for each keyword is also relevant, as it allows to understand which keywords are being used more by the competitors. For this purpose, the keywords related to the highest percentage of competition were again selected and duly sorted (Table V).

Related keywords	Competition level
digital marketing book	100.0%
digital marketing for companies book	100.0%
how to work digital marketing	100.0%
digital marketing books pdf	96.8%
digital marketing master	86.6%
digital marketing training	85.7%
digital marketing in practoce	85.2%
digital marketing course Porto	83.1%
digital marketing course	79.4%

Related keywords	Competition level
how to make money digital marketing	78.6%
digital marketing	**44.5%**

TABLE V.   LEVEL OF COMPETITION OF KEYWORDS RELATED TO DIGITAL MARKETING (SOUCE: OWN ELABORATION).

As can be seen from the table above, the keywords under study have an average level of competition of about 44.5%. This makes it easier for Best Content to get its blog to the top positions on Google's results page as the competition is not remarkably high. Analysing the data, it is possible to see that the keywords related to digital marketing with a higher level of competition are again centred around courses/training and books related to digital marketing. Based on this information, it can be noted that competitors are betting and exploring these two thematic strands further in their content, thus making it more difficult to compete for a good position for the company. Finally, the related keywords have been selected and sorted considering your CPC (cost per click), which can be defined as the amount charged to the company for each click made on your sponsored ad (Table VI).

Related keywords	CPC
how to work digital marketing	10.25€
digital marketing Barcelona	3.34€
digital marketing social media	2.89€
why is digital marketing important to companies	2.87€
digital marketing college	2.85€
digital marketing for companies	2.56€
digital marketing agency	2.55€
digital marketing companies	2.47€
digital marketing pdf	2.38€
digital marketing master	2.19€
digital marketing	**1.06€**

TABLE VI.   CPC OF KEYWORDS RELATED TO DIGITAL MARKETING (SOUCE: OWN ELABORATION).

When analysing the table above, it is concluded that the digital marketing keywords have a low CPC given the values of the related keywords. This is a positive point as it allows the company to carry out sponsored advertisements at a relatively low cost. However, it should be noted that this is the cost per click, which means that the total amount payable will be the result of multiplying the CPC by the total number of clicks made. Based on the data, it is possible to see that the keyword "how to work digital marketing" presents the highest CPC, showing that this keyword has a strong potential and is therefore more expensive than the others. In addition to the keywords focusing on agencies/companies and courses/colleges, there is also a keyword relating to social media. This confirms the idea that the digital marketing keyword, chosen for the study, is undoubtedly the most appropriate and effective as it presents a high monthly research volume, an average level of competition

and a low CPC. Thus, in general, it is concluded that the exploitation of terms less often mentioned in content, such as "digital marketing concept" or "digital marketing strategies", would be a good strategic decision for the Best Content company, as these are likely to be topics less addressed and explored by competitors. Although the interest shown by Portuguese people in digital marketing has already been proven, through the volume of research carried out, it is also important to perform an analysis of the content published by competitors to understand if there is interest in the content on the subject, which issues are addressed, among other aspects. This step is essential as it allows to verify the deductions made previously.

For the related keywords presented on Tables IV-VI, the Spearman coefficient (R_S) was performed between average volume of research and competition level ($R_S = -0.138$; p-value $= 0.510$); between average volume of research and CPC ($R_S = -0.343$; p-value $= 0.093$) and between competition level and CPC ($R_S = -0.380$; p-value $= 0.061$). Note that the values of the coefficients are negative, not significant, which means that the correlation between the variables is weak. However, the correlation is negative, ie keywords with a high volume of searches have lower competition levels and CPC values, which corroborates the findings obtained with the analysis performed. It also allows us to understand that the contents are not being produced considering the themes that generate more interest for Portuguese people.

IV. CONCLUSIONS AND FUTURE RESEARCH

After the study, it was possible to obtain valuable ideas and insights for a content marketing strategy through data analysis, as intended. Based on this analysis it is easier for an organisation to outline its strategy and to plan the production of its contents so that they are as relevant and efficient as possible. Furthermore, it was possible to understand and demonstrate how data analysis is important for the development of content marketing strategies, confirming the value the Best Content platform could bring to companies working in the area of content marketing, since it would not have been possible to obtain the information achieved without the analysis of data made available by this platform. Thus, data analysis presents itself as a powerful tool for companies, since it provides access to various relevant information, allowing them to plan and develop a more assertive and efficient content marketing strategy. Nevertheless, this study has made it possible to define a methodology for this type of data analysis, which can be used and replicated for new subjects to be analysed in the future. The knowledge acquired because of the analysis of data made available by software such as Best Content can even be seen as a source of competitive advantage, as it allows companies to outline innovative strategies different from those used by their competitors.

In future research, it is recommended to use a larger sample so that a more meaningful universe of contents and mentions can be analysed. In addition, it would be pertinent to use other software, in complementarity with that of the company Best Content, to obtain more diversity of data, thus enriching the study. Another suggestion is to conduct a study to test and measure the efficiency of a content marketing strategy based on data analysis. Such a study could effectively prove the veracity of the conclusions drawn from this work. In future work, it is

also intended to develop different content strategies for different platforms, such as content on web pages and on different social networks, using content published organically and others through paid content. Afterwards, the results will be analysed and compared in order to understand how data analysis can help optimize content on different parameters such as interaction, engagement, and other metrics like ROI and conversion rates.

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