THE NEW PARADIGM OF COMMUNICATION. INFLUENCING THE ALGORITHM THAT CONTROLS THE SPREAD OF INFORMATION

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Abstract: *The media channel's audience was determined by the circulation or the coverage of radio and TV stations. The digital age has changed these milestones. The news reaches readers mainly through digital platforms, and media institutions are no longer broadcasters but content generators. We will analyze how specific technical parameters influence the audience. Some technical parameters affect the spread of information more than its quality. Some algorithms decide the spread of the news, and those are secret due to commercial laws. The algorithms that determine what information will be viral are the property of the companies operating the digital platforms that are ruling at this moment information industry. They seek profit, and the rules of the algorithms are profit-oriented. We will try to see what parameters are essential and how they influence the spreading of the news. We will take a closer look at the metrics of the most influential newspaper in Romania and the UK to find a relation between some technical facts and the news audience. The central fact analyzed in this research is the backlinks connecting a specific website to the worldwide web. This parameter remains one of the most crucial factors that influence the spreading of an article's news and newspaper audience.*

Keywords: *social media; fake news; algorithm; journalism; information.*

Introduction

Some studies show which news performs better on social networks. Monika Bednarek and Helen Caple showed that on Facebook and Twitter, information about personalities (33%), events near the reader (29%), and those that personalize (29%) perform best (Bednarek, Monika; Caple, Helen 2017).

The same study indicated negativity as having a share of 26% in the analyzed news. Tony Harcup and Deirdre O'Neill, included 711 posts from ten UK publications in their analysis (Harcup, Tony; O'Neill, Deirdre 2017).

As Kasper Welbers pointed out in 2015 (Welbers, Kasper; Atteveldt, Wouter van; Kleinnijenhuis, Jan; Ruigrok, Nel; Schaper, Joep 2016), journalists are beginning to choose their information and write their texts based on how the news performs online. A 2019 (Chakraborty, Abhijnan; Ghosh; Saptarshi; Ganguly, Niloy; Gummadi, Krishna P. 2019) study indicates that readers have different opinions than publishers because the news reaches them through social media. Thus, news considered unimportant to publishers is much more read by the public and vice versa. One reason is that many people read news through digital platforms (Shearer, Elisa; Matsa, Katerina Eva 2018).

Basically, in addition to subscribers, circulation, or coverage of the broadcast, the number of followers on social networks is an essential factor of performance (Rajapaksha, Praboda; Farahbakhsh, Reza; Crespi, Noël 2019).

1. Distribution of news by digital platforms

The way in which digital platforms deliver certain news to a particular audience is determined by an algorithm that tries to provide the consumer with precisely that type of information for which he has shown interest at some point (Perra, Nicola; Rocha, Luis 2019). The study also shows that algorithms can distort public perception of specific topics.

A search engine uses a crawler to gather data about each page, and based on that data, the customer search also provides individual results. At the beginning of the digital age, algorithms placed a page higher or lower in the search results of an engine depending on the number of links that referred to it (Brin, Sergey; Page, Lawrence 1998). This parameter remained important, according to a study conducted in 2017 (Krrabaj, Samedin; Baxhaku, Fesal; Sadrijaj, Dukagjin 2017). Researchers point out that the algorithm used by search engines is not public, and assumptions are made based on codes of good practice published by corporations (Yuniarthe 2017).

The importance of reference links has remained with time and the introduction of several parameters in the algorithms that underlie the search and distribution of news on digital platforms (Sharma, Dilip and Sharma, Ashok 2010). Sharma describes the most important criteria that underlie the digital hierarchy: the links that link to a particular page, the length of the title, the user's behavior, and the time a user spends on one. Accurate knowledge of an algorithm causes certain pages to be designed specifically to meet the demands of search engines. Thus, by stimulating the search engines, you get a better position in the hierarchy and, implicitly, higher traffic.

2. Case study – audience vs. reference links

As we have seen, the number of backlinks is essential for the growth of the search engine hierarchy. We will analyze the relationship between the number of backlinks and the traffic made by the prominent publications in Romania to identify a correlation between them. Backlinks are links from other pages to a particular page. They naturally appear when an author wants to quote certain information from a specific newspaper to emphasize an opinion they support. The nature and the number of backlinks are also related to the age of one particular site.

Table no. 1. Audience of Romanian newspapers – May 2021

SITE	IMPRESSIONS	VISITS	UNIQUE VISITORS	BACKLINKS	DOMAINS
www.libertatea.ro	33452668	18980702	7406012	50.160.884	41.652
www.adevarul.ro	35789953	17629072	6342317	68.243.439	39.745
www.hotnews.ro	34052330	17522912	5672828	41.163.122	37.994
www.fanatik.ro	24884045	16648365	4266989	27.641.528	27.752
www.stiripesurse.ro	40640849	15471488	3764430	23.547.777	5.186
www.ziare.com	24931315	10521994	3453727	18.906.962	13.233
www.mediafax.ro	14348526	8609347	3548952	18.896.712	13.952
www.impact.ro	13035400	7066479	2473229	13.629.203	20.861
www.g4media.ro	11756277	7040413	2755686	2.296.900	14.597
www.gandul.ro	6923313	4381085	2276598	2.294.710	9.609
www.newsweek.ro	5638916	4222095	2092096	756.189	3.610
www.ziaristii.com	1323361	998850	427284	41.157	1.726

(Source: Romanian Circulation Audit Office - www.brat.ro/sati/rezultate)

Table no. 1 shows the number of impressions, the number of visits, and the number of unique customers for May 2021, as reported by the Romanian Circulation Audit Bureau.

The number of backlinks and domains that generate these referral links is determined using Ahrefs' Backlink Checker, an application with 25.4 trillion links from 170 million domains. It updates the database by scanning 6.21 billion pages every day. The order of the table depends on the visits made during May 2021. We can observe from the table that the number of visits recorded by each site is very closely correlated with the number of backlinks and the number of visits.
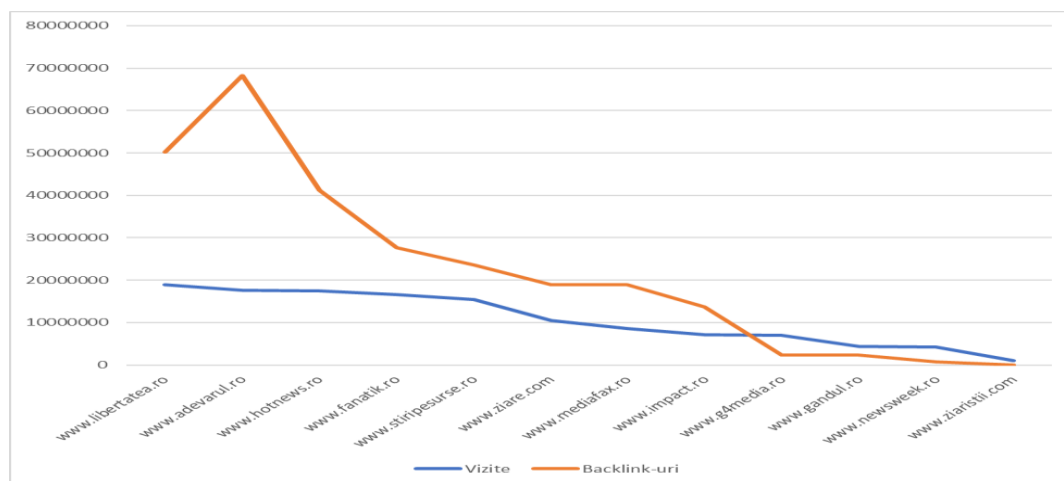
Figure no. 1. Correlation between visits and backlinks for Romanian newspapers
(Source: Table no. 1)

There is an irregularity between the number of backlinks registered by Adevărul and the number of visits by the same publication. The peculiarity is that the number of referral links is much higher than that of other sites, and the audience does not notice a similar difference. This can also be explained by the fact that traffic is influenced by factors other than referral links. In general, search terms, and topics, have a small share, given that all current publications news that is generally the same every day, they represent the majority of articles. The correlation between the number of links that refer to a particular site and the number of visits is also evident in the graph. The order of visits or the number of backlinks is almost identical.

Table no. 2. Top of Romanian newspapers by visits and by backlinks – May 2021

SITE	VISITS	SITE	BACKLINKS
www.libertatea.ro	18980702	www.adevarul.ro	68.243.439
www.adevarul.ro	17629072	www.libertatea.ro	50.160.884
www.hotnews.ro	17522912	www.hotnews.ro	41.163.122
www.fanatik.ro	16648365	www.fanatik.ro	27.641.528
www.stiripesurse.ro	15471488	www.stiripesurse.ro	23.547.777
www.ziare.com	10521994	www.ziare.com	18.906.962
www.mediafax.ro	8609347	www.mediafax.ro	18.896.712
www.impact.ro	7066479	www.impact.ro	13.629.203
www.g4media.ro	7040413	www.g4media.ro	2.296.900
www.gandul.ro	4381085	www.gandul.ro	2.294.710
www.newsweek.ro	4222095	www.newsweek.ro	756.189
www.ziaristii.com	998850	www.ziaristii.com	41.157

(Source: Romanian Circulation Audit Office - www.brat.ro/sati/rezultate)

We can consider the difference between the position one occupied by Libertatea in the ranking after visits and the exchange of places with Adevărul in the ranking after Back-Links because the number of domains referring to Adevărul is lower (39,745) compared to the number of internet domains leading to Libertatea (41,652).

We notice that g4media.ro, impact.ro and newsweek.ro are at the top of the audience. The three publications are relatively recent. G4Media - March 2018, December 2019 - Newsweek, and January 2019 - Impact.

Impact.ro has achieved 13 million backlinks in two years, six times as many as G4Media.ro in an almost similar period. The same site has 17 times more backlinks than Newsweek in the same period.

It is quite possible that this website achieved such performance through the techniques described above. These techniques use software robots that automatically enter programmed texts on specific websites containing links to the website that has to be promoted.

Figure no 2. Random links to the impact.ro site
(Source: Ahrefs' Backlink Checker)

We randomly chose six of the backlinks that refer to the Impact.ro site, and we can see, in Figure 2, a site from Japan, a publication from Belgium, a page of poems from Spain, and two blogs that present self-generated content. Such a practice can lead to severe disturbances in public perception. Automatic back-link generation can influence search engine rankings for specific individual articles.

Thus, when searching for the name of a politician or a company, most of the results generated by the search engine algorithm may have a negative connotation. Conversely, a politician or company who has to hide certain negative aspects can influence search engine algorithms to show positive results between the first articles.

3. Algorithm anomalies

We analyze the verification by analyzing the top online publications in the United Kingdom to verify the reasoning. We used data published by IPSOS Mori, the institute that collects this data about British publications. We considered the data from July 2021 for news sites or applications based on a traditional newspaper.

Table no. 3. Audience of British newspapers – July 2021

	READERS million	BACKLINKS million	DOMAINS million
Mail Online	4,1	160,4	0,67
The Sun	3,7	72,1	0,61
The Guardian	3,5	370,7	1,23
Mirror	3,1	41,6	0,26
Metro	1,6	39,3	0,47
Daily Express	1,6	32,1	0,21

(Source: IPSOS Mori - https://www.ipsos.com)

It can be seen that the direct link between the number of readers and the number of backlinks can be easily observed in the six publications analyzed. Basically, multi-linked publications get more readers.

There is the exception of The Guardian, which has an impressive number of links, 370 million. The number is more than double the number of links to Mail Online. However, the number of readers is higher for Mail Online. The same goes for The Guardian and The Sun. The first has 370 million backlinks, and the second five times less. However, The Sun is read by 3.7 million readers, and 3.5 million readers read the Guardian.
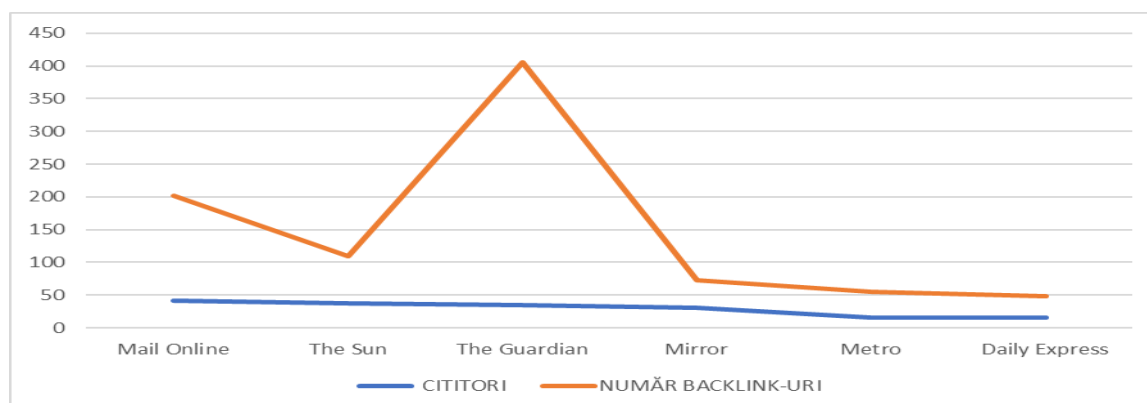
Figure no. 3. Correlation between visits and backlinks for british newspapers
(Source: Ahrefs' Backlink Checker)

The number of readers of a publication does not come only from the digital platform Google. However, studies conducted in 2021 (UK Online Measurement Company 2021) show that Alphabet (Google, Gmail, YouTube, etc.) and Meta (Facebook, Instagram, etc.) reach 99.5%, respectively 97.5% of the UK market and are in the first two places and the number of minutes spent by British online users. For this reason, we considered it worthwhile to analyze the performance of the six British sites on Facebook, Meta's leading digital platform. Using the digital tool provided by the digital platform, we entered the six accounts in a database. We obtained data on the total number of subscribers, the number of posts in a week, and user interactions with those posts.
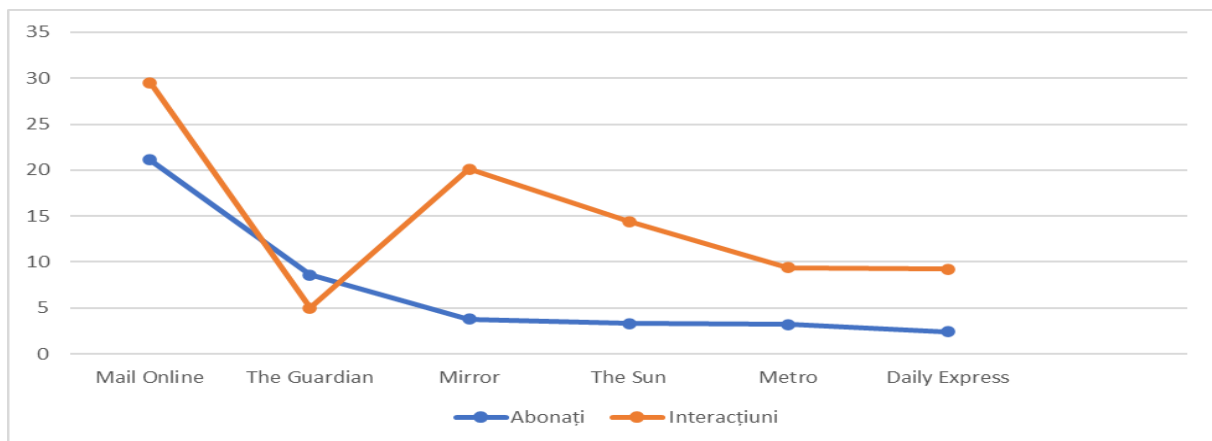
Table no. 4. Subscribers vs. interactions –Facebook -UK publications

	Subscribers (million)	Interactions (million)
Mail Online	21,1	29,5
The Guardian	8,6	5
Mirror	3,8	20,1
The Sun	3,3	14,4
Metro	3,2	9,4
Daily Express	2,4	9,2

(Source: Facebook.com)

In five publications analyzed, the ratio between the number of subscribers and the number of interactions is approximately logical. The publication with a significant number of subscribers gets a higher number of reactions. There are minor inaccuracies in comparison between The Sun and Metro. Both have an equal number of 3.3 million subscribers. However, The Sun recorded 14.4 million reactions in the week under review, while Metro received only 9.4 million reactions.

We can interpret these differences because of the content or the emotional load of the materials published by the two newspapers on their Facebook pages. The same cannot be said of The Guardian, which has a considerable number of subscribers compared to The Sun or Metro but received only 5 million reactions. With 8.6 million subscribers, The Guardian exceeds four of the publications analyzed, but all this surpasses the number of reactions recorded in one week by The Guardian. Practically, the materials published by The Guardian did not reach the 8.6 million subscribers insofar as the materials of the other publications reached their subscribers.

Figure no 4. Comparison between the number of subscribers and the number of interactions – UK publications – Facebook
(Source: Table 4)

Meta does not make the impact of a post available to the public. The impact is the number of people who saw that post. The number of interactions of a publication, which appears in public, is made up of the number of people who opened the article for reading, opened the article's picture, expressed emotions about the article, commented on the post, and distributed the post.

It can be seen from the graph that there are significant differences between the ratio between the number of subscribers to the channel of a publication on the Facebook platform and the number of reactions obtained.

The last four publications in the Mirror, The Sun, Metro, and Daily Express subscriber rankings have between 2.4 million and 3.8 million subscribers. These publications received between 9.2 million and 20 million reactions in the analyzed week. We calculated the average reactions for each subscriber to these four publications, and the average was 4.1 reactions for one subscriber.

Table no. 5. Subscriber interaction analysis - facebook - UK publications

	Subscribers	**Interactions**	**Interaction/subscriber**
Mail Online	21,1	29,5	1,4
The Guardian	8,6	5	0,6
Mirror	3,8	20,1	5,3
The Sun	3,3	14,4	4,4
Metro	3,2	9,4	2,9
Daily Express	2,4	9,2	3,8

(Source: Facebook.com)

An anomaly can generate the significant differences between the last four publications and the first two in the algorithm used by the digital platform to present the information to the users and implicitly to the subscribers. There is also the possibility that the first two publications were the target of online attacks that artificially increased the number of subscribers with fake users.

There is a significant disadvantage for the two publications and the readers from the UK in the booth situation. We can somehow calculate the economic damage suffered by the two publications because the circulation is disturbed. We cannot compute the collateral damage created because a vast potential public is not informed.

If it had kept the average response of 4.1/Mail Online subscribers and The Guardian would have reached the number of interactions recorded with 7.1 million subscribers in the case of Mail Online and 1.2 million subscribers in the case of The Guardian.

Conclusions

There are a growing number of technical parameters that influence how information reaches readers. More people read the news through digital platforms, and the information considered necessary by these platforms reaches the population. Algorithms are not known, but codes of good practice give clues about important parameters. Backlinks seem to have the most decisive influence on the audience of publications.

On the one hand, multiple backlinks to an article may cause the algorithm to present that article in the article suggestions in the "News" section of the search engine or may cause the algorithm to submit that article among the first when a user searches for a specific term on the search engine.

By manipulating backlinks, a greedy businessperson can promote certain types of information, or certain types of data can be hidden by a corrupt politician. The domains that generate those backlinks also matter, but their number influences the most the search algorithms.

The activity on social networks also influences the audience, but this aspect must be studied separately. At the same time, keywords, technology, and user behavior are parameters that have an unknown weight in the algorithms used by digital platforms.

Bibliography

Bednarek, Monika, şi Helen Caple. 2017. *The Discourse of News Values.* Editor Oxford University Press.

Brin, Sergey, şi Lawrence Page. 1998. „The anatomy of a large-scale hypertextual Web search engine." *Computer Networks and ISDN Systems* 30, 107-117.

Harcup, Tony, şi Deirdre O'Neill. 2017. „What is News?" *Journalism Studies* (Routledge) 18, 1470-1488.

Krrabaj, Samedin, Fesal Baxhaku, şi Dukagjin Sadrijaj. 2017. „Investigating search engine optimization techniques for effective ranking: A case study of an educational site." *2017 6th Mediterranean Conference on Embedded Computing (MECO).* 1-4.

Perra, Nicola, şi Luis Rocha. 2019. „Modelling opinion dynamics in the age of algorithmic personalisation." *Scientific Reports* 9 (May): 7261.

Rajapaksha, Praboda, Reza Farahbakhsh, şi Noël Crespi. 2019. „Scrutinizing News Media Cooperation in Facebook and Twitter." *IEEE Access*, 1-1.

Sharma, Dilip, şi Ashok Sharma. 2010. „A Comparative Analysis of Web Page Ranking Algorithms." *International Journal on Computer Science and Engineering* 2 (November).

Shearer, Elisa, şi Katerina Eva Matsa. 2018. „News Use Across Social Media Platforms 2018." *Pew Research Center*, September.

UK Online Measurement Company, U. K. O. M. 2021. „Digital Market Overview – September 2021." *Digital Market Overview – September 2021.* Editor Ipsos Iris. 15 October.

Welbers, Kasper, Wouter van Atteveldt, Jan Kleinnijenhuis, Nel Ruigrok, şi Joep Schaper. 2016. „News selection criteria in the digital age: Professional norms versus online audience metrics." *Journalism* 17, 1037-1053.

Yuniarthe, Yodhi. 2017. „Application of Artificial Intelligence (AI) in Search Engine Optimization (SEO)." (IEEE) September, 96-101.