Changes in the Production Flow and Structure of Writing Digital Age News Content; From Inverted Pyramids to Algorithmics
(Case Study of Pikiran Rakyat Media Network, Regional Media Group in West Java, Indonesia)

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Abstract

Keywords

Mass communication that has dominated many histories and civilizations is print media. Print medium as part of mass communication has unique properties. Print media in Indonesia is still in the adoption stage of media convergence. Print media seeks to improve content without considering strategically growing their business. (Saragih & Harahap, 2020).

However, due to technology advancements that push print media to transition to internet or online formats, the print media business is currently in decline (McKenney, 2018). This is inextricably linked to changes in readers' consumption habits brought on by communication and information technologies (Aminuddin & Hasfi, 2020; Hasni et al., 2019).

Media convergence and integration between print, electronic, and online media is the greatest alternative to survive in the press business with the goal of strengthening its resources, despite the dynamics and problems that are developing in the world of the press and print media industry (Nurliah, 2018; Restendy, 2020).

In the editorial room, the preparation of news in print media or conventional media is written according to the inverted pyramid "formula" (H. Po¨ttker, 2013). This kind of structure is one of the most prominent approaches chosen by journalists. Since most of the important and related facts are placed at the beginning of the article, this structure allows the reader to pick up important details with minimal effort.

Information placed on the back is supporting information and will have comparatively less impact on the main theme of the story. Also, if the article is too long, the editor can easily omit unnecessary facts from the end of the article.

Furthermore, every news article must convey answers to 5W + H, namely Who, What, When, Where, Why and sometimes How (IR Sabanti, 2018). The answers to these questions contribute significantly to the main theme and context of the news article. Therefore, it is important to identify these areas during the news article creation process.

When print media journalists consider the Inverted Pyramid Structure, there is a direct mapping between the placement of news points and the main theme (TAV Dijk, 1985). The points are prioritized and

sequenced in such a way that the less important points support the theme of the story.

However, media transformation from print to digital platforms is not a simple matter. In terms of news flow and structure, there is a fundamental difference between writing news in print media and the same thing in online media .

Today, the internet is the primary source of news and information for most individuals. The production, distribution, and consumption of news material on digital (online) platforms have changed as a result of the internet. From a production standpoint, news may be updated and adjusted whenever and wherever, and the worth of the news is probably determined by the volume of clicks or the algorithms used by news aggregators.

In terms of content delivery, the press is no longer the exclusive source in the online news landscape. While news media businesses generate and distribute newspapers in the offline world, most of the news information they produce online is remedied by news aggregators (Lim, 2006).

The media has developed into a source of news material as well as an aggregator platform where people can consciously expose themselves to news material that closely aligns with their preferences or interests. The abundance of information accessible online has made people's attention a valuable resource, making it more challenging for news organizations to draw attention to their news material.

The largest newspaper in Indonesia with a lengthy history and a strong sense of cultural identity is *Pikiran Rakyat* Daily News (Dewi, 2011). The Pikiran Rakyat Daily News, particularly in West Java, Indonesia, has developed into a forum for people's ambitions since 1950.

For decades, the newspaper *Pikiran Rakyat* has become acatalyst for thinking about democracy and public space (Tim Pikiran Rakyat, 2019). However, with the development of digitalv technology, many print media, including the *Pikiran Rakyat* Newspaper, are unable to survive (Leksmana et al., 2020) (Supadiyanto, 2020). Until now, the newspaper *Pikiran Rakyat* is still published, but only for subscribers. Retail sales have been closed and production has even declined dramatically.

Pikiran Rakyat Daily Newspaper has tried to adapt by launching various forms and formats of print media

including launching an online news portal built on a networked model within the Pikiran Rakyat Media Network (PRMN) container.

In practice, the flow and structure of news writing by PRMN can no longer be done conventionally or in other words "adherence" to the inverted pyramid pattern that has been the standard in journalistic news writing. The internet, which gave birth to social media, means that news writing must also amplify what is sticking out and "viral" on social media.

This is in line with various studies related to this. The use of social media platforms by news organizations has grown to the point where they are now essential to the industry (Newman, Dutton, and Blank 2012). Due to the opportunities for news distribution, it offers, some academics view social media platforms like Twitter as news or information media (Kwak et al. 2010; Bernstein, Luther, and Andre's 2012; Hermida's 2013; and Al-Rawi's 2017)

This research is directed to reveal how changes in the flow and production (writing and distribution) of news content produced by the newsrooms of the Pikiran Rakyat Media Network from conventional to digital styles. This is a form of transformation from conventional (print) media which has so far adhered to the inverted pyramid writing structure into a flow and structure based on social media virality and connected to content aggregator platforms as a consequence of changes in the media business ecosystem.

On the other hand, Pikiran Rakyat as an established media and has a long history in the national press industry must still be able to generate reporting patterns based on journalism standards, as so far known through the inverted pyramid writing structure. That is, how the pattern of algorithmic journalism in the digital realm must still maintain its quality, is also interesting to study.

Literature Review

1.   The Origin of News

The most crucial component and the foundation of journalism is news. The Old Age English word "newes" or "niwes" is where the word "news" etymologically originates (Zelizer and Allan, 2010). The first time this lemma was used was in 1432, and it wasn't until 1500 that it started to become widely used (Claridge, 2010).

"News," according to the *Oxford Dictionary of English*, is defined as "information that has recently been received or is deserving of attention, especially with regard to current events" (p. 177). News is defined as "reports about current events or events in newspapers, on television, radio, or websites" in the media industry (Danesi, 2009, p. 212).

This definition ties the activities of event reporting to the range of media resources that are accessible in each society.Reah (2002) explains that what makes news different from all the information that may be received every day is the significant factor of the issues reported by an event related to a large number of people and the impact it has on their lives.

This definition leads to the conclusion that the purpose of the journalism profession in every society is thus created through the creation of news, because while reporting the important information, journalists give the public the opportunity to think about issues or events that ought to be disregarded.

The process of developing contextualized stories is known as newsmaking. News is not just a made-up story; it also involves justification, elaboration, and, most importantly, narrative construction in accordance with a set of accepted professional standards. The reporter doesn't bore the reader with recorded facts by using a storytelling format; instead, they are invited to become part of the story. This is the justification for writing a "news story," which emphasizes how the event's recorded "story" is presented as a structured account (Reah, 2002).

There has been a lot of interest in the study of news writing. Trying to suggest just one method for using this important tool in journalism would leave out some of its most important components. Given its significant role in information dissemination, discourse on news has drawn the interest of academics from a variety of fields, including communication theory, semiotics, sociology, psychology, media studies, and linguistics.

The purpose of this paper is to discuss the unique characteristics of news as seen through the prism of journalism's fundamental elements and other independent discourse forms. The researcher makes an effort to introduce some of the key ideas and distinctions pertinent to this research topic.

2. Inverted Pyramid Writing Structure

When teaching journalism at the collegiate level, news writing strategies are crucial. practice and page numbering have been emphasized in journalism programs at American universities since the second half of the 20th century (Traquina, 2002). Then, this spread, even into Indonesia's journalism education.) Saragih, A. , 2018).

As a practical-theoretical introduction to news writing and journalistic styles and genres, the news writing techniques course is still required for undergraduates pursuing a degree in media studies today.

One of the fundamental methods in this discipline is the "inverted pyramid" method. Simply put, the most pertinent information is presented first in the structure of news writing using this formula. Additional information is presented after the responses to the questions What, Who, Where, How, When, and Why, and is organized in blocks of descending importance.

During the American Civil War, also known as the War of Secession (April 12, 1861–May 26, 1865), this structure for news writing first appeared. Because the telegraph allowed journalists to send daily war reports, the "inverted pyramid" writing structure was a technological innovation at the time. However, the technology was not entirely dependable, and to make matters worse, telegraph posts were a favorite target for troops, a tactic that frequently rendered the system inoperable.

The first paragraph of each journalist's text would be sent, followed by a second round of transmission in which each journalist would telegraph their second paragraph, and so on (Fontcuberta, 1999).

This rule requires journalists to modify their traditional method of creating headlines. Journalists started grouping facts according to their news value rather than reporting events in the traditional chronological order. They began linking the most crucial information early on in the text to ensure that their newspapers would receive the most crucial information.

This history eventually inspired Edwin L. Shuman first used the term "inverted pyramid" to describe the technique in his book Practical Journalism (Salaverria, Ramón, 2005, p. 109). Since then, it has grown in popularity as one of the field's more well-known

guidelines. However, despite their effectiveness in conveying news quickly and succinctly, using this technique can make news work into a routine.

The fact that this newswriting method has long been controversial may be due to the fact that it leaves little room for creativity and consequently makes reading less engaging.

3. Algorithmic Writing Structure

Discourses about the use of computers and software for news content collection, distribution, and publication go by a variety of names or titles (Clerwall, 2014). "Computational journalism" is one term that captures it broadly and is defined as "the combination of algorithms, data, and knowledge from the social sciences to complete the accountability function of journalism" (Hamilton and Turner, 2009, p. 2). Other phrases include "algorithmic news" and "automated content" (Anderson, 2013, Bunz, 2010, Levy, 2012), as well as "robot journalism" (Clerwall, 2014, Dawson, 2010, Van Dalen, 2012).

Due to the hybrid nature of news content creation technologies in newsrooms, computational and algorithmic journalism has the potential to reshape cultural practices of newsmaking. Anderson (2013) contends that matter is partially intentional and that people are partially obstinate. The effect of algorithms and data on journalism has therefore been receiving more attention.

Recent research has centered on computational journalism using textual analysis and qualitative interviews. Young and Hermida (2015) discover that organizational norms, practices, content, identities, and technologies that produce new products interact and evolve in a (dis)continuous manner, resulting in the emergence of computational thinking and techniques. Carlson (2015) makes an argument against the rise of the practice of automated news content creation, both in terms of how it alters journalists' working methods and how it affects the public's perception of what journalism is and how it ought to function.

The interaction between journalism and data is the subject of another study. The material objects that underlie the journalistic process (such as interviews, documents, human observations, or other objects), according to Anderson (2015), must be taken into account. Anderson (2015) first looks at the historical relationship between journalism and big data. In Parasie (2015), the issue of whether processing extremely large data sets enables journalists to produce new kinds of revelations based on an epistemological approach is explored.

Algorithmic power is something that computer journalists interested in accountability should examine, according to Diakopoulos (2015). He makes an effort to demonstrate how the use of a newsroom algorithm can be used to effectively comply with journalistic standards. The use of algorithms in the production of news stories is not a recent development. The use of news writing software, on the other hand, is a relatively new development (Clerwall, 2014). Self-generated articles have not received as much attention as traditional articles have, especially in empirical studies. This is because they are a new phenomenon.

Since the emergence of news articles that are automatically generated by algorithms, experts have tried to evaluate their quality. In Sweden, Christer Clerwall (2014) conducted the initial study. In comparison to similar content written by a journalist, he examines how readers react to software-generated content. Due to the small sample size (46 respondents), there were no statistically significant differences, but the experiments produced intriguing and inconsistent results.

Similar content is perceived as being more educational, objective, accurate, and trustworthy, in contrast to software-generated content, which is seen as being more descriptive and duller. In this study, participants were also asked to rank whether a journalist or a computer wrote the text. Ten of the 27 respondents who read the computer-generated text believed it had been written by a journalist, while 17 believed it was computer-generated. 10 of the 18 journalists believed it was written by software, compared to 8 who believed it was written by a journalist. In other words, whether the article was written by a journalist or a computer, the respondents did not sufficiently evaluate its author. In general, the journalism produced by an algorithm in this experiment is not, or is essentially invisible to, the journalism written by the journalists.

According to a different study (Van der Kaa and Krahmer, 2014), journalists and news consumers in the Netherlands were compared to determine how credible

algorithmically generated news articles were perceived to be. 168 Dutch native speakers and 64 Dutch journalists participated in this study and were asked to rate the level of expertise and reliability of news articles (sports and financial news) written by algorithms. Consumers of news perceive the level of expertise and trust in algorithms and journalists equally, as in earlier studies (Clerwall, 2014).

The fact that there is no discernible difference between content produced by algorithms and articles written by human journalists (Clerwall, 2014; Van der Kaa and Krahmer, 2014) may be taken as a sign that either the software or the journalist is performing well, or that both are performing well (or poorly).

Method

This research is case study type research . Case study is a method that exists in group analysis of work and individual experience and institutional behavior. Case study is a qualitative analysis strategy and method that emphasizes special cases that occur in the object of analysis.

Using the phenomenological paradigm as a framework, case studies concentrate on a single object that is raised as a case to be studied in depth in order to shed light on the reality underlying the phenomenon. Examining what seems to be visible knowledge is the task of the case study researcher.

Pikiran Rakyat Media Network was chosen as the subject of the case based on the consideration that apart from being one of the well-established media groups and having a long history in the print platform, this news portal media is a concrete actualization of media convergence (Hamna, 2018: 70).

Starting from its main media, Pikiran Rakyat Daily News, for more than 50 years producing news content with a long history and is characterized by a strict inverted pyramid structure of news writing. mainstream and conventional mass media.

In terms of news coverage, print media is superior. The completeness with which facts are presented in the news sets it apart from other forms of media (Kurnia et al. , 2021). The credibility and trust in the information being presented are essential for conventional media to remain relevant. The only way to establish this credibility and public trust is through the professionalism of journalists who uphold journalistic ethics, which include providing information that has been factually and properly verified (Kusuma, 2016; Firmansyah and Agsha, 2020).

However, Pikiran Rakyat Media Network made significant changes to both the news content's writing style and distribution channel in order to keep up with the shift to the digital world. Although not to journalists' tastes, digital technology has changed how newsrooms produce journalism. As corporations and conglomerates take control of news organizations and foray into the journalism world, they import corporate managerial techniques and create fresh approaches to boost the output, effectiveness, and profitability of the news industry (Squires 1993; Underwood 1993; Digger 2000; Downie and Kaiser 2001).

Data collection was obtained through in-depth interviews and observation for 10 months at the Pikiran Rakyat Daily and the Pikiran Rakyat Media Network. This research is not intended to be a comprehensive review of the extensive literature on journalism production lines and writing techniques.

Results And Discussion

One of the most significant changes in journalism in recent years is the infiltration of market principles and marketing initiatives into the editorial department of a news organization. The fictitious wall that divided the editorial and advertising divisions is undeniably slowly falling down. Slowly dissipating and going out, the fire wall.

In his research on news organizations in the 1960s and 1970s, Gans (1979) discovered that editors occasionally allowed access to political figures and solicited their opinions on stories and issues, but --as a central issue in journalistic principles --not to the interests of advertisers or corporations.

When he declared that advertisers should play a significant role in influencing journalistic content in the late 1990s, Times Mirror CEO and Los Angeles Times publisher Mark Willes infuriated the journalism community. Editorial meetings with advertisers and internal marketing staff on a regular basis had become customary by the early 2000s. The editors openly acknowledge their efforts to create a more marketable and lucrative product..

The architects incorporated the renowned separate lifts for management and journalists from the bank into the Chicago Tribune. This removes the historical symbol for the distinction between journalism's sacred and profane sides. Managers at the Dallas Morning News even started giving journalists who could recall and quote the five corporate objectives $100 bills in 2003 (Celeste 2003).
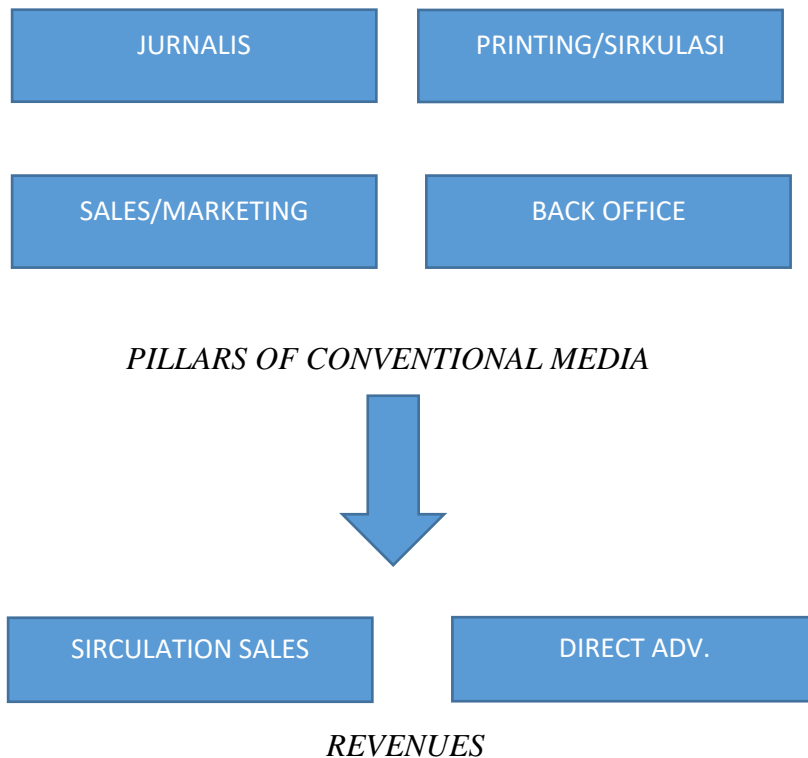
In the context of Indonesia, in this case, this has happened to the Pikiran Rakyat Media Network, a similar thing has become commonplace. In an interview with PRMN CEO Kartono Sarkim and PRMN Managing Editor Yusuf Widjanarko, it was stated that the transformation to a digital platform has accelerated the process of synergy and integration of editorial and marketing policies.

Business Model Changes

In the conventional media business, the pillars working in a media consist of the editorial/journalist team, then the printing or circulation department, then sales and marketing, and administration or back office. These four pillars support the revenue of a media that relies on two sectors, namely sales of circulation or circulation and direct advertisement.

This can be illustrated in the figure as follows.

JURNALIS	PRINTING/SIRKULASI
SALES/MARKETING	BACK OFFICE

PILLARS OF CONVENTIONAL MEDIA

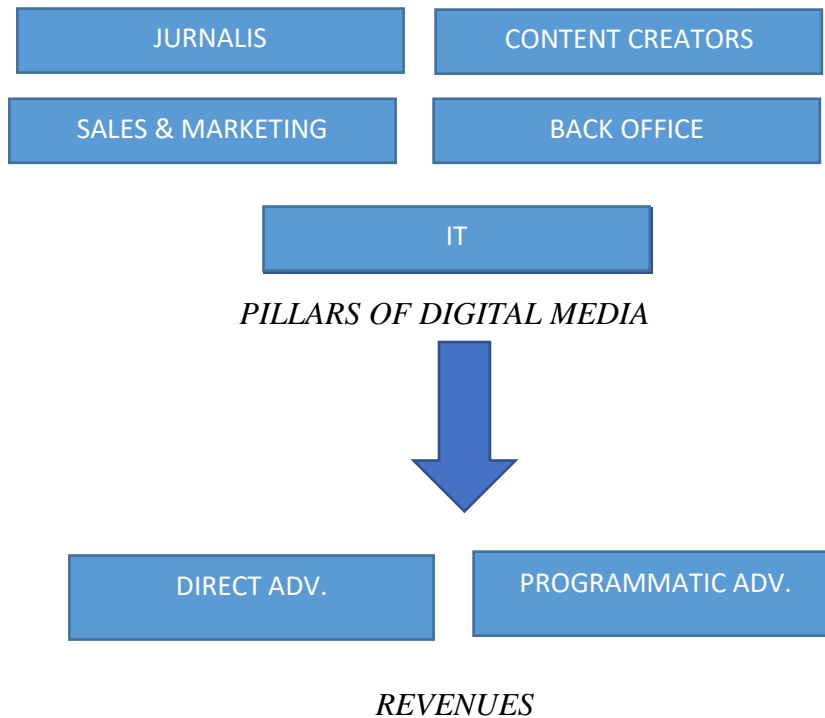| SIRCULATION SALES	DIRECT ADV.

REVENUES

When transforming to a digital platform, there are fundamental differences in the business concept surrounding the media. The pillars supporting the sustainability of the media business in the digital era at least require the presence of several resources in the field of media content. Not only is there a need for journalists, but there are also what are called content creators, namely those who work on any content from the media, not just what is required as a "journalistic product". Then there are resources for the field of information technology (information and technology), apart from of course the field of sales and marketing as well as the back office or administration.

These resources are then directed to drive the achievement of revenue which currently no longer depends on profits from sales of newspaper circulation and direct advertising revenue. There is a new source of income, namely advertising acquisition from programmatic related to the presence of a global aggregator platform that is certain or cannot be ruled out.

So, it can be described in the table as follows:

JURNALIS	CONTENT CREATORS

SALES & MARKETING	BACK OFFICE

IT

PILLARS OF DIGITAL MEDIA

DIRECT ADV.	PROGRAMMATIC ADV.

REVENUES

Programmatic advertising is the use of artificial intelligence and machine learning to advertise in real time and automatically. Programmatic Ads is a method of advertising using the column space provided by the publisher. For example banner space, classified ads, and so on.

Programmatic ads can be a bridge between publishers and advertisers. Publishers are people, organizations or companies that have a website or blog that has been registered and approved by the advertising application manager to place AdSense ads on their website.

Then publishers who display advertisements, for example advertisements from Google, are called Google publishers. Advertisers are people, organizations or companies that advertise their business, the aim is to market goods, services, places of business, and so on.

Changes in Production Flow and Writing Structure

In the programmatic ads or automatic advertising business model, the revenue generation mechanism is measured only based on pageviews. This condition encourages media or publishers to forget about news content and only focus on what their readers want to get as many clicks as possible, without considering the quality of the news.

In turn, this has also changed the flow of content production and the structure of news writing from the conventional inverted pyramid pattern which has become the standard journalism credo to a programmatic or algorithmic structure because it follows Google's algorithm patterns.

Media Partner Manager at Pikiran Rakyat Media Network M Bayu Pratama explained that the flow of news content production at PRMN starts from the content creator/writer creating an article with a minimum number of 350 words to the editorial newsroom email for each predetermined rubric.

The production of this article can be sourced from social media, interviews or *website sources* that are permitted by editorial unit regulations. Next, the editor checks and edits the content creator's writing. Then, the editor broadcasts the news.

After the content uploading process, articles are indexed automatically to Google and some are automatically published on social media (if connected to the autopost feature). After that, the reader reads the article and is counted as pageviews or reader visits to the website. for one month, the recording of page views that enter the website or the posts of each author will be rewarded with a multiplier of IDR / PV. After that,

revenue will appear. That is the mechanism of the programmatic business model that is currently running and adopted by digital media or online portals, including the Pikiran Rakyat Media Network.

Changes or transformations in the production flow of news content between conventional media platforms and digital media platforms can be described in the following chart.
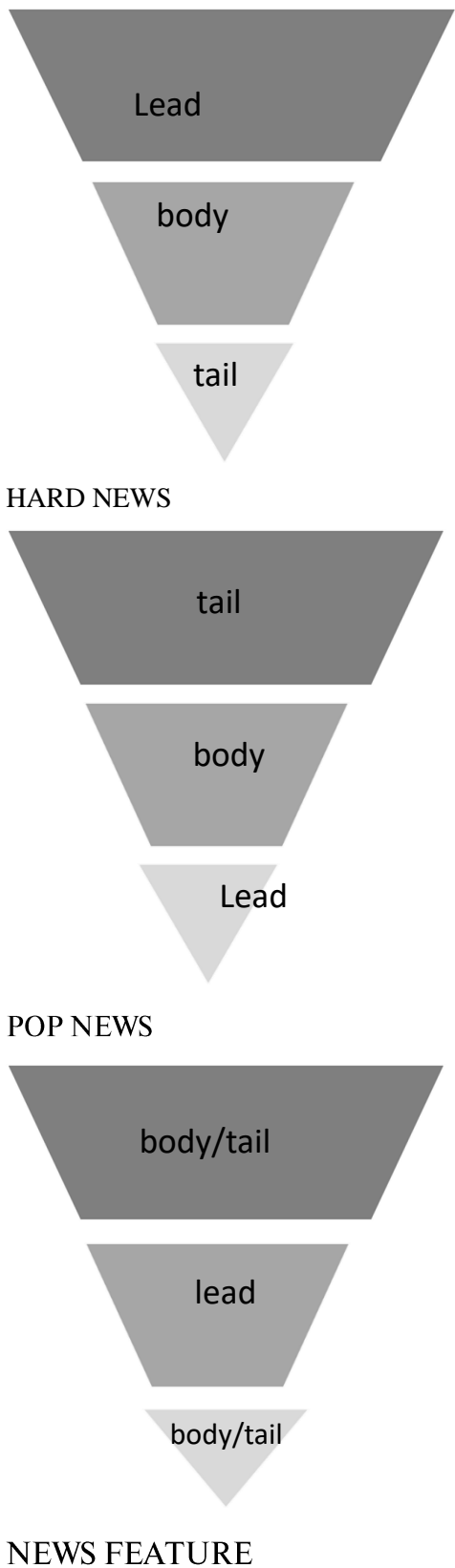
LEAD (Most important)

BODY (important)

(Not too important)
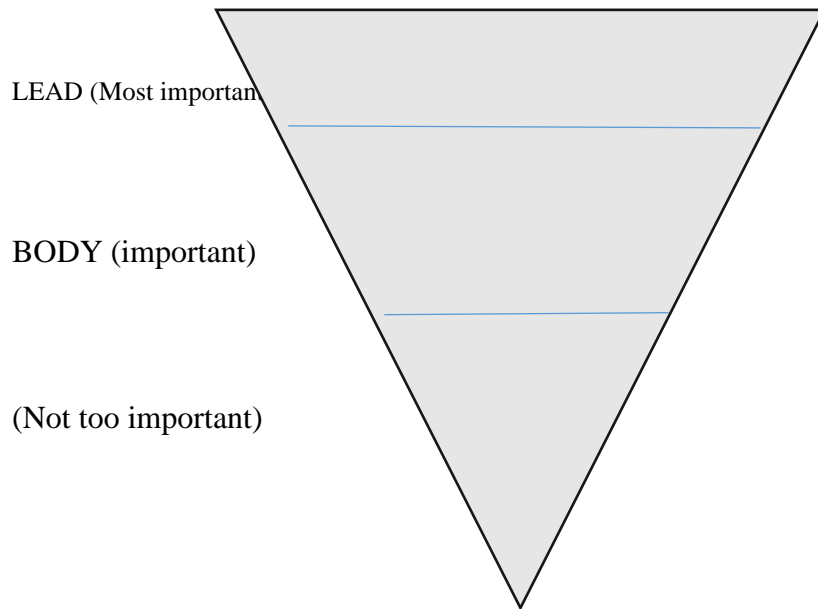
Inverted Pyramid Structure

In the process, the flow of digital media content production can be described as follows.

News Aggregator

Social Media

Search Engine

Algorithmic News Distribution

End Users
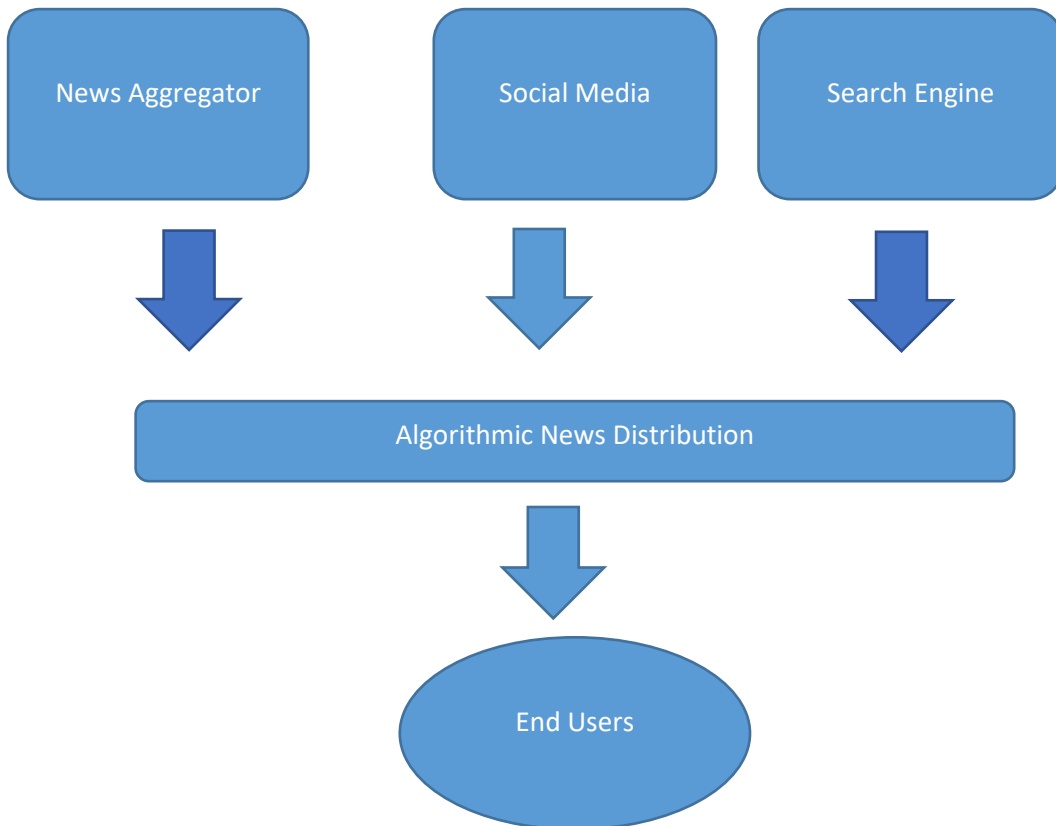
With such a flow of content production, the structure of writing news content has changed from the standard inverted pyramid structure that is known so far. Changes in the writing structure can be described in the following table:

HARD NEWS

POP NEWS

NEWS FEATURE

In the concept of programmatic news or algorithmic news, the writing structure becomes very fluid. A news is no longer based on the most important aspects of an issue, but rather because it is busy being discussed in the digital realm. Or in other words more because of the virality aspect or the amount of traffic in digital conversations.

In this case, the more readers who visit news pages, the more programmatic ads that appear, the more money they will generate. This encourages online media to target as many readers as possible to increase ad revenue. Then there was a change in the production flow and structure of writing digital era news content; from inverted pyramid to algorithmic, as the theme of this research.

Conclusion

1. The development of information technology in the era of digitalization has caused the current flow of information not only to come from the press or mainstream/conventional media. Everyone who has access to gadgets and the internet can convey information via social media even faster than the press. Many press media instead focus on making news as quickly as possible and set aside the ideal journalistic conventions depicted in the standard writing structure, namely the inverted pyramid.
2. There has been a change in the flow of content production and the structure of content writing when conventional media has transformed to digital platforms, as shown by study on Pikiran Rakyat Media Network.
3. In further study and as a theme for further research, the relationship between digital platforms and publishers is not mutually beneficial, aka lame. The digital platform controls the publisher more. In fact, digital platforms can change the algorithm system arbitrarily which has an impact on the content distribution process and revenue sharing for paid content.
4. By mastering the algorithm, publishers are inevitably "forced" to follow this pattern. Because publishers still rely on their revenue from advertising, business continuity depends on digital aggregators. Meanwhile, aggregators can act however they want, because they are not treated equally before the law that has so far applied to the mainstream media.

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