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The Future of Newspapers: a Thrilling Encounter with Augmented Reality

ABSTRACT

The objective of this study is to examine and better understand the impact of new technologies on multimedia journalism, mainly from the viewpoint of augmented reality (AR). Then, in the context of literature review, and in view of recent real-world examples of AR experience introduced by Harvard Business Review, the author will explore and critically evaluate the idea of using AR as a tool to help attract customers to newspapers and other print media. Apart from compelling content, newspapers can start offering a thrilling and enjoyable experience thanks to the implementation of innovative technologies. Thus, they can enhance multimedia journalism and take it to a whole new level. The study is complemented by an empirical probe focused on the current preferred ways of reading newspapers by readers in both the Czech Republic and the Slovak Republic. The survey also reveals the level of the survey respondents' awareness and imagination of 'live images' as an engaging part of media content. Simultaneously, specific examples of AR used in different industries are delineated and associated questions and directions for further research are suggested.

KEY WORDS

Augmented reality. AR. Augmented reality strategy. Mobile technologies. Multimedia journalism. Print media. Smart connected products.

1. Introduction

In view of noticeable changes in readers' media consumption preferences and their shift to digital editions of news, it is logical that newspaper publishers are worried about their print media's declining circulation numbers. They continuously look for new business models, advertising revenues and ways of engaging their readers. For many publishing houses the situation is not optimistic.

Seeing it from a different perspective, AR may represent a new hope for print media. Readers' imagination has always been vivid. Moreover, with good reason, writers sometimes claim that a good metaphor is worth a thousand pictures. However, taking readers 'on a journey' beyond the printed page is a new phenomenon worth exploring. Thanks to AR, people can watch a video/video animation, or any other unexpected content. Unlike virtual reality (VR), AR offers additional content that is usually interesting, informative and enjoyable. It requires only a smartphone with a mobile app to watch this content 'come to life'.

In the business world, AR has been used in product promotion for almost a decade. One of the first and most highly successful companies in this field was the UK-based company Blippar®. It specializes in AR and computer vision, harnessing these technologies in its attempts to bridge the physical and the digital. Among the company's first clients were Heinz Ketchup and Maybelline; Blippar has also prepared solutions in political marketing (for Barack Obama's first presidential campaign) and in the music industry (a campaign for Justin Bieber).¹

In terms of transferring AR's potential into the world of print media, we can consider its use not just on printed pages but also with inserts (leaflets or flyers) or, perhaps, as the most useful part of printed catalogues. In addition, a cover page visual can bring readers a real-life experience and these live images can be successfully used for sales promotion

2. Literature Review and Conceptual Background

Currently, the idea of using AR is somewhat innovative - not merely in, and by, the media. Therefore, it is this study's author's aim to put AR into a broader context and provide the reader with the latest information based on relevant research literature, including recent studies and professional articles. The literature review focuses mainly on authors who are concerned with innovative media channels, mobile video, mobile AR applications and AR used by journalists. Recent global research projects' results complement the conceptual background.

The starting point is undoubtedly the well-known statement by Marshall McLuhan explaining that the form of a message (print, visual, musical, etc.) largely determines the ways in which that message is perceived by the recipient. *"Already in his time, McLuhan argued that modern electronic communications (including radio, television, films, and computers) would have far-reaching sociological, aesthetic, and philosophical consequences, to the point of actually altering the ways in which we experience the world."*²

The traditional media channels have been complemented by a number of new ones, mainly of a digital nature. Many of them are highly innovative, including social media and mobile communication tools. As long ago as 2013, the author J. V. Pavlik, in his research, addressed the question of innovations as the key to the viability of news media in the digital age.³

Taking into account the changes in media consumption preferences, including growing mobile access to the Internet, it is important to point out the increasing popularity of mobile video formats. Written articles are waning in popularity, especially among millennials. Deloitte Global's recent research revealed that, in 2018, some 16% of respondents are so fond of videos that they shoot their own videos at least once a week.⁴

¹ *Augmented Reality & Computer Vision Solutions – Blippar*. [online]. [2018-04-04]. Available at: <<https://www.blippar.com>>.

² *The medium is the message, Define The medium is the message at Dictionary.com*. [online]. [2018-03-20]. Available at: <<http://www.dictionary.com/browse/the-medium-is-the-message>>.

³ PAVLIK, J. V.: *Innovation and the Future of Journalism*. [online]. [2018-03-19] Available at: <<http://www.tandfonline.com/doi/abs/10.1080/21670811.2012.756666>>.

⁴ *TMT Predictions 2018: Overview, Technology, Media, and Telecommunications*. [online]. [2018-02-27]. Available at: <www2.deloitte.com/global/en/pages/technology-media-and-telecommunications/articles/tmt-predictions.html>.

In the treatise called “Mobile Augmented Reality Game Engine”, co-authors Jian Gu and Henry B. L. Duh explain: “The recent fusion of Augmented Reality (AR) and mobile technologies has enabled the creation of novel mobile AR applications. As the image processing algorithms and processing capabilities of mobile hardware continue to improve, mobile AR will become more commonplace.”⁵

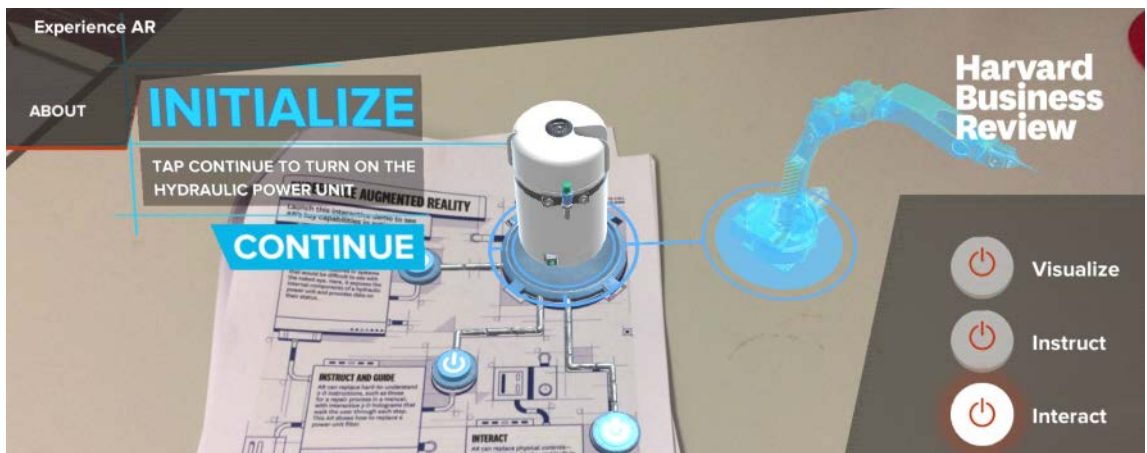
Another question to be addressed is the relative popularity of print compared with digital media channels. Deloitte Global predicts that, “By the end of 2018, 50 percent of adults in developed countries will have at least two online-only media subscriptions, and by the end of 2020, that average will have doubled to four. The cost of these subscriptions – spanning principally TV, movies, music, news and magazines – will typically be under \$10 per month each in 2018.”⁶

The convergence of the mobile environment and AR is another threshold to be considered. Its importance for the media world is apparent, although examples of its implementation are still somewhat exceptional. However, its role could be significant in the future, if it is properly understood, appreciated and managed.

3. Augmented reality – a new hope for newspapers?

At the end of 2017 the Harvard Business Review published a collection of articles titled “A Manager’s Guide to Augmented Reality”. The leading article “Why Every Organization Needs an Augmented Reality Strategy”, co-authored by world-acclaimed Michael E. Porter and James E. Heppelmann, is a must-read for anyone interested in augmented reality (AR) and its practical application in the business world.⁷ On March 15, 2018, this was followed by a live video on the Facebook profile of Michael E. Porter in which he explained not only how AR would change business and the way we work but also the term *augmented reality* itself.⁸

The article not only reveals new aspects and applications of AR but is also a piece of AR itself, as the authors lead readers through the process of downloading the HBR AR mobile app from an app store and then watching one of the 2D charts in the article ‘come to life’. This particular AR video-simulation is a real-world example offering a helping hand to solve maintenance issues remotely while increasing productivity and reducing costs. In the above-mentioned live video, Michael E. Porter explains the dynamic shift in productivity that can come from applying AR and speaks about ‘smart connected products’.



PICTURE 1: Experience augmented reality

Source: Author's own elaboration using the mobile app HRB AR and 2D graphics attached to the article “Why Every Organization Needs an Augmented Reality Strategy”.

⁵ FURHT, B.: *Handbook of Augmented Reality*. New York : Springer, 2011, p. 99.

⁶ TMT Predictions 2018: Overview, Technology, Media, and Telecommunications. [online]. [2018-02-27]. Available at: <www2.deloitte.com/global/en/pages/technology-media-and-telecommunications/articles/tmt-predictions.html>.

⁷ A Manager’s Guide to Augmented Reality. [online]. [2018-03-19]. Available at: <<https://hbr.org/2017/11/a-managers-guide-to-augmented-reality#why-every-organization-needs-an-augmented-reality-strategy>>.

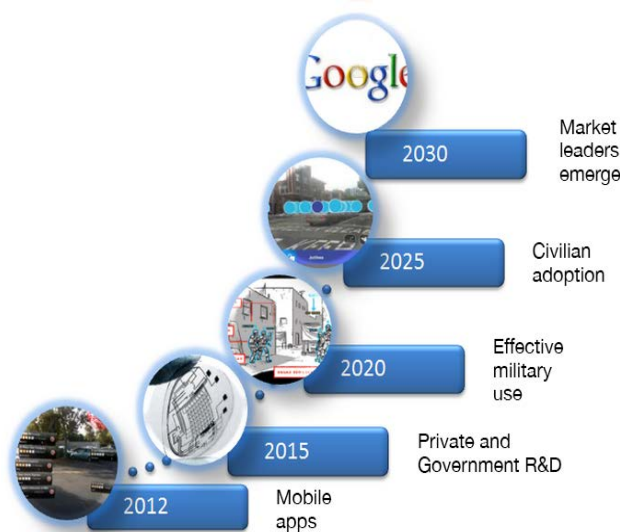
⁸ PORTER, M. E.: *How AR Will Change Business and the Ways You Work. Broadcast on 15th March 2018*. [online]. [2018-03-19]. Available at: <<https://www.facebook.com/HBR/videos/10155898055607787/>>.

In its article, MIT Sloan Management Review further explained: “According to Porter, organizations seeking to leverage AR must think through five key points on the way to developing a strategy, including:

- What implementation areas they should prioritize;
- How to use AR for product differentiation;
- Where AR may be most cost-effective;
- Whether to build capabilities in-house or outsource;
- What role AR can play as a future communications medium.”⁹

These five areas are also of critical importance to the worlds of journalism and media. The gradual permeation of AR into, and its eventual proliferation in, all sectors of the economy will have a dramatic impact on readers’ and viewers’ expectations.

See Picture 2 documenting projected adoption of AR in the coming decades.



PICTURE 2: AR projected adoption in different industries

Source: Augmented reality. [online]. [2018-03-20]. Available at: <<https://augreality.wikispaces.com/Projected+Adoption#Timeline>>.

Despite the fact that AR examples have been known to the media world since 2010, in 2018, AR is still an immature technology. However, the acceleration of the AR adoption process is inevitable. It goes hand-in-hand with technological advancement. “Augmented reality is poised to enter the consumer market with prevalence in many different industries such as education, social media, gaming, medical and home entertainment.”¹⁰

In further chapters, the author will explore and critically evaluate AR as a tool for encouraging customers to return to newspapers, since AR can be seen as a radical new means of engaging with these readers. Simultaneously, AR stimulates the use of higher-order cognitive processes (visual memory, attention, problem-solving, fluid intelligence, etc.). So, a novel way of processing information is being born. Companies will need to approach this new technology with a clear strategy. It is obvious that creativity will be much needed in this process.

⁹ Why Business Leaders Need an Augmented Reality Strategy. [online]. [2018-03-19]. Available at: <<https://sloanreview.mit.edu/sponsors-content/why-business-leaders-need-an-augmented-reality-strategy/>>.

¹⁰ Augmented reality. [online]. [2018-03-20]. Available at: <<https://augreality.wikispaces.com/Projected+Adoption#Timeline>>.

4. Methodology

Apart from undertaking a literature review, to help develop the necessary conceptual background, the author carried out an empirical probe entitled “Do you read newspapers? A digital edition or print version?” The online survey, prepared with the help of the SurveyMonkey online app and distributed through social networks in March 2018, revealed some interesting findings. Although the sample of respondents is far from being representative, altogether 71 responses were collected and analysed (see Chapter 4). The results are enlightening. As for demographic data, the age of the survey respondents ranged from 18 to 65+, irrespective of gender. The respondents were recruited from two geographical areas: the Czech Republic and the Slovak Republic. The survey was promoted on Facebook with the total budget of 350, -- Czech Crowns for the period of 11 days.

5. Survey results and interpretation

The above-described survey consisted of two multiple-choice questions only.

1. Choose one of the following options:

- I prefer the print version of newspapers.
- I prefer the online edition of newspapers, event, a mobile app.
- I don't read newspapers at all.

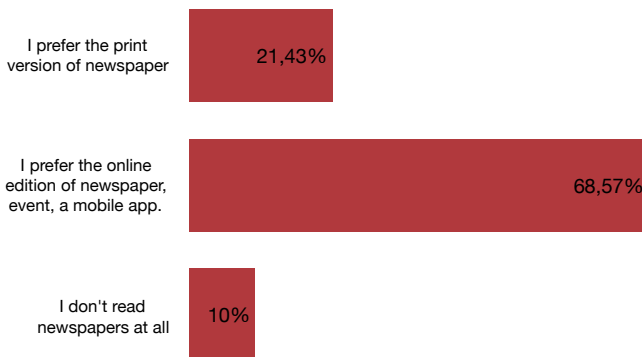


CHART 1: Do you read newspapers? A digital edition or print version?

Source: own processing

There were five respondents' comments. One of them, repeated several times, is:

“Digital editions need electricity. However, they are more up-to-date and you don't need to take care of paper waste. From print versions I read mostly only those free of charge.”

Other interesting comments:

“I prefer an audio version in combination with the print version.”

“There is not always time for reading a newspaper. However, digital editions are available always and everywhere.”

Author's comment:

Considering the reasons for such a high number of respondents preferring digital facsimiles may lead us to a few conclusions: the price of newspapers is rather high; the respondents lack time to read on daily basis and, perhaps, there is an abundance of information available everywhere. Furthermore, media fragmentation makes it extremely difficult for any newspaper publisher to build a long-lasting relationship with a specific audience. Traditional values associated with a newspaper may be an advantage in keeping an existing audience – but not necessarily in attracting a new one. Further research may bring an answer to the question of whether there is, or isn't, a direct relationship between a specific digital edition and the print version of the

same title to which the family used to subscribe. There may be a psychological connection to the original 'physical product', e.g. based on the trustworthiness of a specific newspaper. Allocating time to reading a newspaper (or to reading at all) was a habit passed on from one generation to another. Nowadays, it may be slowly disappearing as more engaging activities, e.g. PC games, take the lead.

2. Can you imagine a newspaper with a picture/diagram that 'comes to life' thanks to augmented reality and an app in your smartphone?

- 87% of the respondents answered this question positively.

Author's comment:

The spread of interesting information on new media, virtual reality VR, AR, robotics, Industry 4.0, and the like is unprecedented. This, together with relatively easy and cheap access to the Internet, influences people's 'knowledgeableness' - since they tend not to miss information which is relevant to them, or that is relevant to their future. Our survey identified a rather surprisingly high number of respondents (87%) who can envisage AR features being a familiar part of newspapers. It is a promising signal that they are at least partly ready to adopt AR without barriers or prejudices. However, further research is needed to investigate if they are ready to pro-actively use a smart mobile app to 'enliven' the AR images. This information will prove useful should a newspaper decide to adopt this strategy and technology.

6. Discussion

To evaluate AR and its potential to become a unique selling point for newspapers, a great deal of information needs to be examined very carefully. Only then can a viable strategy be formulated with more precision.

As a minimum, there are four areas of future research to consider: (1) readiness of the readership to adopt an entirely new type of media format and become pro-active in its use, (2) the resources (money, know-how, and workforce) required, (3) in-house versus outsourced AR solutions, and (4) paid versus free access.

1. *Readership readiness:* An AR strategy could become a unique selling point and a competitive advantage for newspaper publishers. However, the AR content should be carefully considered and in no way should it be just another version of evening TV news. People will seek added value in these 'live images'. High levels of engagement, guidance, counselling, entertainment and education are just a few of the criteria to consider. A systematic approach is needed, as customer relations can be built with the help of this innovative tool at a totally new level.
2. *Resources:* Prior to allocating money to AR and adopting AR as a core strategy, it is advisable to work with available business analytics. If we want a particular newspaper's readership to stay loyal to reading its print version and not to cancel their subscriptions, we need to enhance customer satisfaction as much as possible. In the business world, companies such as Xerox and IKEA managed to increase customer satisfaction after the introduction of AR into their business processes. E.g. Xerox has seen its customer satisfaction rates rise to 95% now that the company is using AR to connect remote technical experts directly with customers.¹¹ Given AR's various uses and its practical benefits, the newspaper publisher may reach the situation where customers' emotional enchantment by, and loyalty to, a brand prevails in their mutual relations. If AR is used in the print version of newspapers, the number of subscribers may increase as a result of customers' deep emotional attachment to their newspaper brand. The AR experience is often very surprising, enchanting and engaging and there is a high probability that readers, themselves, will gladly share their new experience on social media or elsewhere.

¹¹ *A Manager's Guide to Augmented Reality*. [online]. [2018-03-19]. Available at: <<https://hbr.org/2017/11/a-managers-guide-to-augmented-reality#why-every-organization-needs-an-augmented-reality-strategy>>.

3. *In-house versus outsourced AR solutions*: Ideally, the decision to develop AR resources in-house or 'buy-in' these resources (that is, outsourcing them) should be based on a particular publisher's business results, risk profile and strategy. The publisher might start with an outsourced AR solution and monitor its business results for a while. Depending on these results, massive investment into in-house AR solutions could be justifiable - and communication with stakeholders and potential investors made easier.
4. *Paid versus free access*: Many attempts to find the appropriate business model can be seen in the activities of media publishers. Some of them try to increase revenue from advertising. Some of them try to influence their readers to search their hearts and consider donations/contributions to their news supplier, e.g. The Guardian writes on their website: *"Unlike many news organizations, we haven't put up a paywall – we want to keep our journalism as open as we can. The Guardian's independent, investigative journalism takes a lot of time, money and hard work to produce. But the revenue we get from advertising is falling, so we increasingly need our readers to fund us."*¹² Finding a new business model - perhaps a business model based on new technologies - might be costly and time-consuming. However, it is worth having a trial to see if a company can benefit from it. If it succeeds, it's worth its weight in gold.

Kannan and Hongshuang in their research highlight: *"As new digital devices and technologies evolve, future research needs to focus on how firms can use these developments to create sustainable competitive advantage, gain market share, and increase customer equity and brand equity."*¹³ This statement lies at the core of future bold and timely managerial decisions.

7. Conclusion

The objective of this study has been to critically evaluate AR as a tool capable of encouraging customers to return to reading newspapers, since AR can be seen as a radical new means of engaging with readers. Despite the limitations of the survey carried out by the author, that survey's results have provided some evidence that newspaper readership is ready for AR while, at the same time, revealing people's preference for digital editions compared with print media.

In a similar way to what is going on in other industries, print media publishers should start considering implementing an AR strategy, at least at the level of crystalizing their opinions on the possible use of AR in terms of product differentiation and cost-effectiveness. There are also the issues of whether any AR solutions employed should be developed in-house or outsourced. Furthermore, on an over-arching strategic level, media publishers need to consider the role of AR as a viable mass communication medium of the future.

Although, today, we still know so little about the features and capabilities of modern innovative technologies, exploring the available technological solutions and indulging in creative thinking about their implementation in specific industries and lines of business is well worth doing. If we don't, we won't know what we have missed.

¹² *News, sport and opinion from the Guardian's global edition, The Guardian*. [online]. [2018-04-04]. Available at: <<https://www.theguardian.com/international>>.

¹³ KANNAN, P.K.: Hongshuang "Alice" LI, 2017. Digital marketing: A framework, review and research agenda. In *International Journal of Research in Marketing*, 2017, Vol. 34, No. 1., p. 22-45. [online]. [2018-03-19]. Available at: <<https://linkinghub.elsevier.com/retrieve/pii/S0167811616301550>>.

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