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Centralization of the Internet and its impact on the process of creating a media image of an enterprise: the case study of a mobile application development company AppDev

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ABSTRACT

The Internet, which used to be perceived as a democratic medium, allowing the huge dose of freedom of expression, has recently transformed into a very centralized medium. It can be noticed that some websites dominate the web spectrum in terms of traffic and this process is getting stronger and stronger, while other websites are isolated and can only be visited by typing in the URL address. The purpose of this paper is to discuss how the Internet architecture currently looks like and how it can influence the methods of creating a media image of an enterprise. The case study methodology was used to describe the communication processes of one of B2B companies, a mobile application development enterprise from Poland, and its ways to succeed in the ever-changing Internet environment. The time scope of the case study was two years: from April 2016 to April 2018. The communication practices studied included the whole range of the company's promotional activities online, including blog posts, sponsored articles, social media, forums etc. Such a research made it possible to notice the trends in the enterprise's communication, the challenges it faces, and the tools it uses to create the company image. The case study may serve as a good example of how an enterprise, which promotes its services exclusively online, adapts to the changing architecture of the Internet, trying to find its way in the changing environment. It can also suggest a new, emerging model of Internet architecture – a polycentric model.

1. INTRODUCTION

Over the past three decades, the structure of the Web has undergone significant transformation. The Internet, which in the nineties was perceived as a democratic, egalitarian medium, ensuring freedom of speech for all users, since then has changed into a centralized medium, in which the well-linked core plays a major role but getting to this core is more and more difficult because of the information noise.

Enterprises that conduct their marketing communication exclusively or to a large extent online have to face the problems that centralization of this medium generates. Assuming that only a connection to the center can provide them with a wide range for their messages, they try to reach the pages that are in the center, treating them as intermediaries of their communication. The rapid increase in the number of websites, however, means that not everyone can be connected to the center, and the position of the core increases, resulting in increased costs of reaching a mass audience via the Internet.

The aim of the article is to examine the relevance of existing Internet paradigms, i.e. the model of the egalitarian Internet and the bow tie model, in the context of marketing communication of an enterprise operating in the online environment. The following research hypothesis was put forward: in the communication activities of a company that conduct marketing communication exclusively online, the transition from the bow tie model (centralized Internet) to the polycentric model is taking place. In order to verify the hypothesis, the marketing communication of one of the leading companies from the information technology industry was analyzed, on the example of which the characteristics of two existing paradigms of the Internet structure and an emerging polycentric model were checked.

1. 1. Egalitarian Internet theory

In the first years after the Internet was created and started to reach a global scale, the Web was considered an egalitarian medium, because it provided all members with equal communication opportunities, allowing opinions to be published not only by the dominant, mainstream media but also by every person who had access to the Internet and appropriate technical skills (Shapiro 1999). Some of the researchers perceived the creation of the Internet to be an implementation of the Habermasian public sphere in which every citizen had equal access to participate in the public discourse and to take part in reaching the consensus (Dahlberg 2001). It was also pointed out that the Internet facilitated and promoted democracy and enabled true freedom of speech (van Dijk 1999).

As far as the network topology is concerned, the Web was perceived as a set of equal elements in which all the pages were connected to each other, and each of them is accessible from another using a small number of transitions (Barabási 2002). How many? According to the concept of small worlds and the concept of six degrees of separation by Albert, Jeong and Barabási, all the pages were so well linked to each other that to pass from one node to another only six elements were sufficient (Albert, Jeong, Barabási 1999).

The Internet architecture was therefore perceived as a network, a spider web, where every node is strictly connected to others.

On the other hand, over time, the concept of the Internet as an egalitarian medium gained many opponents. Currently, it is indicated that the Internet in the initial stages of its existence was an elite medium, which was used mainly by a small group of innovators and early adopters. Therefore, although it was true that communication between individual members was possible and easy, most people were excluded from the online discourse. What is more, along with the Web expansion, new members joining and the system entering the early majority phase, it turned out that there are too many publishers and messages to be possible to get to know all of them and the motives of communication become mainly commercial (Papacharissi 2002). Consequently, an information noise appeared and people started to be isolated in information bubbles, which made the online communication and efficient functioning of the public sphere more and more difficult (Noam 2005). Some researchers also began to notice that not all members of the Web are equal and not all websites are granted equal access, resulting in a divide between those already popular getting even more popular and those that existed on the outskirts of the Web (Hampton, Sessions, Her 2010).

1. 2. Internet centralization – the bow tie theory

The theory of egalitarian Internet, dominating in the nineties of the twentieth century and claiming that everyone has an equal voice in the discussion, has been increasingly criticized as the Web expands and develops. Currently, the structure of the Internet is considered to resemble a bow tie, consisting of a knot (core, center), two wings, smaller tendrils and tubes, and completely disconnected components (Benkler 2008).

The knot is the heart of the Web, in which there are about 1/3 of all nodes that are very much interlinked. The wings contain about 1/4 web pages, with the left wing containing pages from which one can reach the center but which do not have links from the center, while the right wing contains pages that are accessible from the center, but there is no way to go to the core from them. In the bow tie model, there are also about 1/5 of the nodes that are completely disconnected and cannot be reached from the core or from the nodes connected to the core (Dill 2001).

The new theory of the Web architecture assumes that the structure of the Internet is not based on a network of equal nodes but on the bow tie model in which only nodes closely related to the center are strongly connected while those that are outside do everything to get to the core because only being in the center guarantees a wide range of communication. Some websites are not connected to the center of the Internet at all, constituting lonely islands of the Web and in consequence, not guaranteeing that the message published by their creators will be heard by anyone else (Zhou, Mondragon 2004).

The second phase of the Internet architecture also assumes that the probability that there is a direct path between two randomly selected websites is only 24%. As a result, an average number of hyperlinks needed to go from one page to another is as much as 16 (Broder 2000). Another result of such an Internet structure is also preferential attachment, consisting in the fact that new nodes which get a large number of connections with the center become more and more popular over time, and thus the centralized structure of the Internet not only consolidates but also strengthens (Jacob, Mörters 2015).

2. CASE STUDY

2. 1. Methodology

The aim of the article is to examine the relevance of existing Internet paradigms, i.e. the model of the egalitarian Internet and the bow tie model, in the context of marketing communication of an enterprise operating in the online environment. The characteristics of each of these paradigms will be examined by analyzing the example of communication activities of one of the well-known companies in the information technology industry. New characteristics will also be indicated, as they may suggest the emergence of a new Internet architecture – the process caused, among others, by the activities of enterprises and the discovery of new market niches, along with the growing percentage share of Internet users in the population (Poushter 2016).

The following research hypothesis was put forward: in the communication activities of a company that conduct marketing communication exclusively on the Internet, the transition from the bow tie model (centralized Internet) to the polycentric model is taking place.

In order to check the validity of the hypothesis, a case study analysis of the marketing communication of one of the well-known Polish companies was carried out. The chosen company belongs to the new technologies industry and its communication is carried out exclusively online. Such a case selection is due to the importance of the company in the industry. Since 2016, the company has been at the top of the rankings of mobile applications developers not only in Poland but also abroad (in the United Kingdom and the United States). The company was announced the Mobile App Developer of the Year 2016 and 2017 according to AppFutura, the Number 1 App Developer in the United Kingdom by Clutch.co, and the Top iOS Developer by Business of Apps. It also has a big marketing department and extensive marketing communication. Therefore, it can be a benchmark in terms of promotional communication for other companies in the industry. The selection of the case was carried also due to the availability of research material.

As part of the case study, the target group and the company's external situation were analyzed as well as its communication activities. The case study includes two years period from April 2016 to April 2018 and it is divided into three consecutive periods: from April to September 2016, from October 2016 to March 2017, and from April 2017 to April 2018. Marketing communication was analyzed in terms of the characteristics of the existing two paradigms of Internet architecture. The new characteristics were also noticed, which suggests that the company is trying to break out of the bow tie model and use new marketing techniques to make its communication more efficient, participating in creating a new, polycentric model.

2. 2. Case study

The paradigm shift of the Internet architecture will be traced on the example of the marketing communication of a company, which, in order not to reveal the trade secret, will be referred to as "AppDev" (short from "mobile applications developer"). In the case study, the business model, the target group of AppDev as well as its communication activities, divided into three phases, will be discussed.

2. 2. 1. Business model

AppDev is a private enterprise from the information technology industry. It specializes in the production of mobile software, i.e. software for smartphones and tablets, for various operating systems (Android, iOS, Windows Phone), using a variety of available technologies, including Artificial Reality, Internet of Things and wearables.

The AppDev business model is based on the B2B (Business-to-Business) model, so the recipient of its services are other companies which provide the end users with the software developed by the contractor. AppDev must, therefore, operate in two ways – its products must meet not only the requirements of the company which ordered the software but also please the end users who will eventually use the software. Therefore, there are two target groups of the product: the client (a company) and the end user (a person).

2. 2. 2. Communication target group

However, the AppDev's target group of communication is different than the target group of its product. Although the company produces software that must meet the requirements of the end user, the end users are not the target group of brand's communication. The contractor producing the mobile software is in no way promoted by the service provider (client), and the only place where the information about the software developer can be found is an app store from which the end user downloads the application. Therefore, only other companies and possibly private individuals, who outsource production of mobile software for internal purposes or for business purposes based on the produced software, can be the clients and the target group of AppDev's communication.

It should be also noted that there are two clearly identifiable groups within the above-mentioned target group: mobile startup owners and entrepreneurs from other industries. The first group consists of entrepreneurs who treat the created mobile software as the core of their business and the basic product sold to end users. Within this group, the people to whom the AppDev's communication is directed include usually the top management of the organization, which is usually small at this stage of its development. The second group of clients treats the mobile application as an additional product, designed to fulfill specific needs within a larger organization, e.g. provide help for sellers or be a promotional tool. As part of this group, AppDev's communication is targeted at project managers who are, however, not the final decision makers about the choice of contractor or the final shape of the project.

An important feature of the AppDev communication group is its international character. Although the company is entirely Polish, both in terms of ownership structure, the location of the headquarters and employees involved in the production process, Polish customers remain only a marginal group in comparison with foreign clients. The main markets on which AppDev is present are the United Kingdom, the United States, Australia and the Arab countries, such as the United Arab Emirates. Therefore, the marketing communication of the company is conducted only in English, even though customer service in the further stages of the sales funnel is also conducted in Polish and other languages.

Such a target group of communication determines the entire AppDev's communication strategy, which is conducted on global markets, exclusively in English, to people with basic technical and business knowledge.

2. 2. 3. Communication activities

The communication activities of AppDev can be divided into three consecutive chronologically but at the same time, interpenetrating stages.

The first stage occurred from the moment the organized marketing activity was started in the company (April 2016) and lasted for about half a year (till September 2016). Although the company existed for two years before the beginning of this phase, it was at this stage when the first marketing strategy was created. In the first marketing strategy, the focus was put on the development of company's own communication channels in various media. The center of the AppDev's communication in this period was the company's website, constituting a landing page for external messages. In addition to information about the company and the services offered, the AppDev's website includes a corporate blog with tips on mobile applications and running a mobile startup, targeted at two main target groups of brand's communication. The blog is regularly updated several times a week, which clearly indicates the dominant role of content marketing in the brand's communication strategy. In addition to the website, AppDev developed a network of its own communication channels on popular social media and forums, publishing links to the content available on the blog in all those places. Such communication was homogeneous, and its aim was to create as many links as possible to the company's landing page.

In the first stage of the AppDev's communication activity, the characteristics of the egalitarian model of the Internet were noticeable. The communication was homogenous, aimed at leaving a message with a link to the landing page on as many pages as possible, paying less attention to the diversification of the messages and selection of the sources. Each potential lead source was treated as equally important, and the goal was to reach out to the target group wherever it is present. At the same time, however, the effectiveness of such a strategy was hardly measured and analyzed in this period, and time and cost consumption in relation to effectiveness was proportionally high. Therefore, after half a year, AppDev changed its communication strategy.

The second stage of the AppDev's communication activityfocused on attempts to get to the center of the Web. In addition to basic content activities on the blog and in company's social media, the new strategy focused on cooperation with the largest and most recognizable media, including both broadcasting and narrowcasting. PR activities were intensified by the marketing department who started to prepare sponsored articles and tried to establish contact with journalists and media. Also, other gatekeepers had been involved, e.g. online business directories, especially specialist ones, associating mobile application developers. The goal of both these activities was to obtain links to the company's website. The company also started a massive linking process to the websites from the Web center: the links were published in articles on the corporate blog and on social media channels.

In the second stage of the company's communication activity, lasting about half a year, AppDev's strategy was based on the bow tie model. The strategy focused on getting to the core, participation in which it was supposed to provide mass coverage and prestige. The aim of the marketing activities was to get as many links as possible, especially dofollow links, which, unlike the nofollow links, suggest search engines that the linked page is valuable. However, this strategy proved to be ineffective due to the significant costs in comparison to the low efficiency of this type of activities. The company failed to achieve the virality status and the difficulty in getting to the core of the Web as well as the lack of guarantees that

existence in the core will have any long-term value in the ubiquitous information noise, caused the strategy to change again towards considering a polycentric theory.

Currently, for over a year (from April 2017 to April 2018), AppDev has been in the third stage of its communication activities. The new communication strategy focuses on multiple smaller, but well-defined and targeted online media with which the company is trying to establish cooperation in a form of sponsored articles. The company also establishes contacts with influencers and startups from the mobile applications industry, who are willing to participate in joint projects enabling mutual promotion. As part of the new strategy, an individual approach to potential customers was also introduced, offering them information based on the data collected on the AppDev website and with the use of a complex automatization process.

The third stage of AppDev communication embodies the new, emerging model, which can be described as polycentric. An individual approach to the clients was adopted and the communication focus changed from the center of the Web to carefully selected, smaller centers. Such centers are easier to access and better-profiled than the "mass" core of the Web. They allow reaching specific target groups who are interested in a specific subject, causing an increase in the percentage of leads in relation to people who had the opportunity to come across the company's communication. This strategy appears to be the most successful for AppDev by now, allowing the biggest range in comparison to the financial effort taken.

3. CONCLUSIONS

The three stages of the AppDev marketing communication strategy illustrate well the changes that have taken place in the Internet architecture in recent years. The first stage corresponds to the oldest phase of Internet architecture, in which the Internet was considered an egalitarian medium. Nowadays, however, not all websites are equally valuable, which fact was quickly noticed by the AppDev which gave up the promotion with the use of the least profitable ones. The second phase of the AppDev communication strategy focused on the attempt to reach the center of the network. It turned out, however, that it is not only too expensive, sometimes even impossible to complete, but also ineffective. Marketing research has shown that even obtaining a dofollow link from a website located in the center of the Web does not guarantee a steady growth of interest in the brand, but only a temporary increase. Therefore, the company decided to change the strategy towards using many specialized centers and an individual approach to potential clients, which has, by now, proven to be the most efficient strategy.

The case study analysis shows that nowadays, even a global corporation with a reputable brand is not always able to reach the core with its communication and even if it happens, such communication often turns out to be ineffective for the needs of specialized company focused on a well-defined industry. In addition, along with the growing number of competitors for a place in the Web core and the resulting information noise, such communication becomes less and less effective and may be unnoticed in the crowd of other messages. As a result, a small or medium enterprise, instead of heading to the center, tries to reach smaller centers, in which communication consumes fewer funds, and which often turns out to be more profitable than mass communication, because it allows reaching a better-selected target group.

The case study analysis does not allow for generalizations but at the same time it should be noticed that AppDev is not the only company using the polycentric model strategy in its communication. As such communication strategy proves to be effective and as this trend becomes widely used, it may even result in a change of the Internet architecture from a centralized to polycentric one.

This article presents three theories of Internet architecture that are related to successive phases of development of this medium. They have been compared in Table 1.

Table 1. Phases of Internet centralization

	Phase I	**Phase II**	**Phase III**
Number of centers	Each one separately	One center	Many centers
Egalitarianism	Equality	Inequality	Relatively equal opportunities
Connections	Everyone with everyone	Mainly within the center, some elements not connected at all	Connections with small, multiple centers
Modus operandi	There is no need for promotional activities, everyone can easily find what they are looking for	It is very difficult to get to the center, the goal is to get a dofollow link	Multiple centers, the main goal is not to get to the center of the network, but to the target group
Participation	Elitism	Mass character	Mass character
The nature of the Internet	Egalitarianism	Elitism	Individualism

Source: Own research.

In the first phase, it was assumed that each member of the network is equal and there are no centers that are more important than other nodes. Each element of the Web was connected to each other so that the transition between the two arbitrarily selected elements was simple and could be done using only a few intermediaries. Due to such an egalitarian character of the Internet, the promotion of only a few enterprises existing then in the elite Web could be based on the dissemination of links to their site on any other sites, preferably as many as possible, because the quality of such sites did not matter.

The second phase of the development of the Internet was based on the opposite assumption to the first one. It assumed the existence of a strict Internet center and drastic inequality of communication opportunities. The nature of the Internet, like in case of other mass media, has become elitist, and as a result, barriers to entry have increased. Only communication through the Internet center would give significant communication effects, but

getting to this core was extremely difficult and expensive. Over time, however, the network center began to blur, because more and more companies wanted to use it to promote products, giving the effect of information noise and reducing the effectiveness of such communication.

Although the bow tie model is still in operation, generally describing well the architecture of the World Wide Web, it should be noticed, on the basis of the AppDev case study and activities of many other online B2B companies, that a new kind of marketing strategy is visible. The case study shows that a company, once failing to get to the core of the Web, may start to focus its communication at the smaller centers, contributing to the emergence of characteristics of a new Internet architecture – a polycentric model. In the light of the recent research, especially Karin Nahon's research on the process of virality, it becomes clear that in the Internet, there are numerous centers, variable in time and space, which exist independently of the main core of the Web and not connected well to each other (Nahon, Hemsley 2013).

Such centers tend to be prone to fashions – they appear quickly, independently (as a viral) or with help of promotional activities – and they can also disappear as quickly. As access to the Internet has become more common also outside the Western world, such centers are increasingly based on national languages, different cultures and political systems as well as different industries and consumer interests. Communication activity of enterprises focused on such centers may not only require smaller resources and have smaller barriers to entry, but also may be more effective in the era of individual approach to clients and may allow the use of selected market niches, as in case of AppDev communication strategy.

Biography

Katarzyna Lorenc is a Ph.D. Candidate at the Institute of Journalism, Media and Social Communication, the Faculty of Management and Social Communication at the Jagiellonian University. In her academic work, she deals with social networks in new media and media freedom. She is the author of the book entitled "The dynamics of media freedom in the world".

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