Digital Effect: Relationship between Brand Media Image and Company Performance

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Abstract
The primary trend of the ongoing digital transformation is the rapid socialization of the Internet. The crucial role in those processes is assigned to social networks. Integrating companies representing goods and services into social networks makes implementing a marketing strategy in a virtual environment urgent. Our literature review looked at the goals of a brand’s social media presence and the expected benefits of that presence. Using a correlation-regression analysis, we have established the relationship between the media image of several global companies on social networks and the sales dynamics, value, and awareness of their brand. The hypotheses put forward were partially confirmed. However, the results showed no strong relationship between brand activity and brand audience in a social network and brand value and awareness. On the other hand, there was a noticeable relationship between the size of the audience in a social network and the dynamics of the brand’s revenue. Still, this influence turned out to be the opposite. Thus, the media image of a brand signifies the emergence of a kind of “digital effect” accompanied by concomitant phenomena of the relationship between the parameters of the audience size, revenue, value, and brand awareness. This constitutes the prospect of further research to clarify stable patterns.

Keywords: Social Networks; Audience Engagement; Brand Value; Internet Marketing.
A. Introduction

The key trend of the ongoing digital transformation is the rapid socialization of the Internet. The Internet already reaches over 4.66 billion people worldwide, increasing 316 million (+7.3%) compared to 2020. Of those, 4.20 billion use social networks, or 53.6% of the world’s population (Sergeeva, 2021). The Internet space contains more and more media resources, and social networks hold a particular position among them as virtual communities. The Internet combines multimedia, interactivity, and multifunctionality (Ashley & Tuten, 2015; Michaelidou et al., 2011; Berthon et al., 2012), which traditional media do not have as communication channels.

Initially, the core objective of social networks was to create conditions for easy and simple communication between people. Still, this function has been transformed in the contemporary context – communication has reached the level of consumers and producers, sellers and buyers. This has updated the problem of decision-making in virtual communities.

The researchers note that social media has become a vehicle for reaching potential customers (Leskovec et al., 2008). Thus, they became a platform for the company to promote and increase its product sales. Furthermore, in the era of information technology development, social networks have transformed into an analog of new markets. The data on social network users confirm this; most of the target audience of almost any company operating in the B2C segment is now on social networks. Therefore, social networks are an effective marketing method of promotion; they make it possible to shape the company’s awareness and brand, influence visibility, and arrange for sales (Grishkina, 2018; Chekmarev, 2019).

Corporate social media accounts with many subscribers are a valuable asset. This can lead to higher perceived brand popularity and awareness and higher attractiveness. Therefore, it is assumed that the use of social media for corporate purposes can significantly contribute to an
increase in financial results, especially in terms of sales efficiency. However, the success of social media marketing depends on the implementation of key strategic goals, the ability to communicate information to the target audience, and the ability to build sustainable relationships with them.

Despite the rapid development of media resources and the explosive growth in the number of users, the economic efficiency of social networks still needs more in-depth study and analysis. Therefore, this research will study the creation of the digital effect through assessing corporate activities in social networks on the change in business performance indicators. The research focuses on the relationship between a company's media image characteristics in social networks and the sales dynamics, changes in the brand's value, and awareness. To do this, we set the task of statistical analysis of the critical indicators characterizing the value and awareness of a brand, the number of subscribers of popular world brands in social networks; assessment of correlations between the considered indicators; determination of the interaction of the factors of activity in social networks that affect the business performance.

B. Literature Review

Modern Internet marketing offers new tools for interacting with the consumer and has ample opportunities for product promotion. Moreover, social media marketing goes beyond geographic boundaries to reach a wider audience. Various sales promotion aspects with information technologies were considered in the works of Aleksina and Shipilova (2016) and Lebedeva (2016). Nevertheless, many studies have noted the essential role of social networks in modern commerce (Mayorova et al., 2016; de la Mata & Llano, 2013; Henningsen et al., 2015; Llano & de la Mata, 2016). Moreover, Tretyakova (2021) articulates that the Internet has transformed socio-economic relations or various modes of commercial activities in contemporary times. Specifically, the Internet and online advertising have been immensely used in managing and enhancing companies' brand image and performance. Brand communication and brand management are the key aspects behind the success of any company.
A company's presence on social networks aims to create an image, and unite the target audience on the brand platform, the need for feedback, and course sales (Piskorski, 2018). The presence in social networks and permanent contact with the audience work to not only achieve the primary goals of the company but also help to understand better its audience and its needs, which makes it possible to adjust the product following those requests (Chan-Olmsted et al., 2013; Choi, & Kroff, 2018; Liu et al., 2020; Manthiou et al., 2016). Companies have new opportunities to choose behavior/actions to implement a marketing strategy (building customer relationships, communication, content distribution, etc.) (Best et al., 2014). This creates a "digital effect," which is very valuable for marketers looking to influence or guide customers at different stages of the buying process.

For most people, social media are the primary source of information. According to a Smart Insights and Clutch survey (2017), people aged 16–24 are more likely to search for brand information on social media than on search engines (We Are Social, 2018; Smart Insights, 2017; Russian Public Opinion Research Centre, 2018). Moreover, a quarter of this age category users think about purchases based on the number of likes under brand posts. In the 35–44 age group, 20% of the respondents said the same.

In a short time, social media have turned from communication platforms into agents of global influence on public opinion and individual consciousness (Gubanov et al., 2009; Hu & Zhu, 2017; Meadows & Meadows, 2016; Syuntyurenko, 2015; Prasetya & Murata, 2020).

Tuten and Bosnjak (2001) concluded that buying behavior was influenced by the need to research information. Buyers, who have a low need for information, rely on the opinions of others to make a decision. On the other hand, customers with a high need for knowledge are more influenced by the quality of the reviews. Anderson (1998) confirmed a relationship between customer satisfaction and customer communication. He found that most of the information was spread by those who were very dissatisfied and delighted with the product. At the same time, Chen
et al. (2004) concluded that increasing information sources would increase trust. The authors have shown that trust in the product grows with more reviews and a sense of product quality.

Sørensen and Rasmussen (2004) found that negative reviews also increased sales by analyzing reviews and their impact on sales. Even negative reviews lead to increased consumer awareness of the product and brand. Yapa (2017) found that user-generated communication and company-generated communication positively correlated and influenced brand awareness. Therefore, social media efforts should drive business development.

It should be noted that product reviews in the traditional form and online on social media maintain a continuous influence. Customer satisfaction increases with high-quality reviews (Park et al., 2007). Petty et al. (1983) and a group of researchers have also shown that objective and understandable reviews have a more significant impact on purchasing decisions than subjective reviews. Beatty and Smith (1987) found that reviews affected customers differently depending on the product category. Westbrook and Fornell (1979) correctly emphasize that, in addition to reviews, various subjective characteristics affect customer behavior.

Iblasi et al. (2016) assessed the impact of social networks as a marketing tool on consumer purchasing decisions. The results show that social media are a productive online marketing platform and significantly impacts consumer behavior. Reviews influence shaping customer confidence in the company and brand and increase sales. Spiegel Research Center at Northwestern University (2017) found that posting reviews affected customer confidence, and boosted conversions and company sales.

Dülek and Saydan (2019) analyze the impact of awareness of social media advertising on various parameters of brand positioning. Three hundred ninety respondents took part in their survey. The data obtained made it possible to conclude that advertising awareness in social networks affects brand awareness, affecting its image. In turn, the image affects the consumer attitude towards the brand and the attitude towards brand loyalty.
Melati and Febianty (2016) and Bilgin (2018) confirm that social media marketing communications increase the company’s brand awareness. The results of Bilgin suggest that social media marketing activities effectively influence brand image and brand loyalty.

Similar findings were made by Ardiansyah and Sarwoko (2020). Based on a survey of respondents, they confirmed that social media marketing had a positive impact on both brand awareness and purchasing decisions. Ardiansyah and Sarwoko argue that consumers tend to be rational in products with high engagement, so they need more time and effort to evaluate specific product characteristics.

Krylova (2017) considers the influence of social networks on the company development dynamics. The issues of expanding the occupied market share and transition to a new market, increasing the competitiveness of products, and the impact of the media image in a virtual environment on creating the brand and product value for customers were studied. As a result, Krylova confirmed the assumption about the importance of social networks both at the initial stages of small and medium-sized company development and at the stage of maturity. However, there are still open questions about how effective companies communicate with the target audience through social networks.

The research findings in the literature review prompted us to conclude that, despite the high insight into social networks, it is advisable to supplement the accumulated panel of empirical data to clarify stable patterns. Companies' use of social media is increasingly seen as one of the critical factors in internationalization and contributing to sales growth and reaching new customers. To determine this, we intend to analyze the number of subscribers to corporate accounts in social networks on global brands' revenue, value, and awareness.

C. Method

The research aims to determine the relationship between the characteristics of a company’s media image in social networks and the dynamics of sales, value, and awareness of the brand. To establish this
relationship, we used correlation-regression analysis. It is assumed that the use of social media for corporate purposes can significantly contribute to the increase in financial performance, especially in terms of sales efficiency. This study provides the basis for the research concept.

The information base of the study is made up of Statista (2021), Brandfinance (2020), RepTrak (2021), and Interbrand (2021) research data. For the analysis, eight popular global brands were selected: Lego Group, Rolex, Ferrari, Canon, Adidas, Disney, Microsoft, and Sony. The choice of these brands is due to the availability of information to brands about the strength of brand awareness in the RepTrak survey (2021).

Instagram was chosen as a marker of company activities on social media. This choice is because Instagram has become one of the most viewed social networks. According to the data, the total number of monthly active Instagram users in 2020 exceeded 1 billion (Business of Apps, 2021). A review of other social media shows that Facebook is more of a network for communication, while Twitter is attractive for disseminating information. In addition, Instagram is a powerful tool for promoting and advertising a specific product or service.

The research was carried out in the stages as follows: (i) Statistical analysis of the critical indicators characterizing the value, reputation, and the number of subscribers of famous global brands on the Instagram social network; (ii) Analysis of correlations between indicators of revenue, brand value, and the number of subscribers; (iii) Construction of possible econometric models exhibiting the relationship between factors of the activities in social networks that affect the brand revenue dynamics.

The research aims to test several sentences developed from a literature review and empirical observations. We put forward multifaceted groups of hypotheses that should clarify the nature of the relationship between the factors under consideration:

a) H1.1: A brand’s audience on Instagram has a significant impact on the brand’s revenue.

b) H1.2: A brand’s audience on Instagram has a significant impact on the brand’s awareness.
c) H1.3: The Instagram brand audience has a significant impact on brand value.
d) H2.1: The engagement of a brand’s audience on Instagram has a significant impact on the brand’s revenue.
e) H2.2: The engagement of a brand’s audience on Instagram significantly impacts the brand’s awareness.
f) H2.3: The engagement of a brand’s audience on Instagram has a significant impact on brand value.
g) H3.1: Instagram brand activity has a significant impact on brand revenue.
h) H3.2: Instagram brand activity has a significant impact on brand awareness.
i) H3.3: Instagram brand activity has a significant impact on brand value.

A correlation coefficient was calculated to assess the relationship between brand value, brand awareness, and the number of Instagram followers (Ishkhanyan & Karpenko, 2016):

\[ r_{xy} = \frac{\sum_{i=1}^{n} (x_i - \bar{x})(y_i - \bar{y})}{n \cdot \sigma_x \sigma_y}, \]

Where \( n \) is the population of analysis (sample size); \( \bar{x} \) the average parameter values; \( \sigma_x^2 \) variances; \( \sigma_y \) are the root-mean-square (standard) deviations of the parameters. Correlation indices were assessed with the Chaddock scale (Ishkhanyan & Karpenko, 2016).

The data volume, the sample, and the object of study impose certain limitations on the study, of which Instagram was chosen as a social network since all the brands under study have accounts on that social network. Other social networks were not considered because of their profile specialization. To assess the engagement of subscribers of the social network and the brand activity, the secondary data of the InstaHero service (2021) were used.

D. Result and Discussion

The research analyzed the brands of Lego Group, Rolex, Ferrari, Canon, Adidas, Disney, Microsoft, and Sony on the Instagram social network and the brand value and awareness. Further, a correlation-regression analysis
was carried out between the factors under consideration, such as the number of social network followers, brand value, brand awareness, and company revenue. Table 1 presents the initial statistical data for determining the strength of the correlation between the factors.

**Table 1: Research Factor Data**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Number of Instagram subscribers, million</th>
<th>Brand value, USD billion</th>
<th>Brand reputation, points</th>
<th>Brand revenue, USD billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lego Group</td>
<td>7.0</td>
<td>7.5</td>
<td>80.4</td>
<td>6.9</td>
</tr>
<tr>
<td>Rolex</td>
<td>11.8</td>
<td>7.9</td>
<td>79.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Ferrari</td>
<td>20.3</td>
<td>9.1</td>
<td>78.8</td>
<td>3.9</td>
</tr>
<tr>
<td>Canon</td>
<td>3.1</td>
<td>8.0</td>
<td>77.6</td>
<td>30.4</td>
</tr>
<tr>
<td>Adidas</td>
<td>25.9</td>
<td>16.5</td>
<td>77.6</td>
<td>5.5</td>
</tr>
<tr>
<td>Disney</td>
<td>30.0</td>
<td>56.1</td>
<td>77.5</td>
<td>16.2</td>
</tr>
<tr>
<td>Microsoft</td>
<td>3.2</td>
<td>117.1</td>
<td>77.1</td>
<td>41.7</td>
</tr>
<tr>
<td>Sony</td>
<td>8.6</td>
<td>12.0</td>
<td>77.0</td>
<td>8.9</td>
</tr>
</tbody>
</table>

*Source: according to the data (Instagram, 2021; RepTrak Company, 2021; Interbrand, 2021; Statista, 2021)*

Microsoft has the highest brand value among those considered, while it is significantly inferior to other brands regarding the number of Instagram social network followers. Microsoft’s brand strength is also significantly lower than Lego Group, Rolex, Ferrari, Canon, Adidas, and Disney. Microsoft and Canon have the highest revenues, while Rolex and Ferrari have the lowest.

The engagement of subscribers of the brands in question on the Instagram social network is low. For example, for such brands as Lego Group, Rolex, Ferrari, Canon, and Microsoft, it is 0.01%. For brands such as Adidas, Disney, and Sony, it is 0. The engagement rate of subscribers of the brands in question is shown in Figure 1.
It is interesting to study the company's activity on the social network for brand awareness, brand value, and financial performance.

**Hypotheses Testing**

H1.1: There is a significant correlation between the number of brand followers on Instagram and sales revenue. The correlation coefficient is -0.501, which means that the relationship between the signs is inverse and noticeable.

H1.2: There is no consistent correlation between the number of followers of a brand on Instagram and brand awareness. The correlation coefficient is -0.089. Therefore, the relationship is inverse and weak.

H1.3: There is no consistent correlation between brand followers on Instagram and brand value. The brand's audience on the Instagram social network does not significantly impact the brand value. The correlation coefficient is -0.099, and the relationship between these signs is inverse and weak.

Thus, the number of brand followers on the Instagram social network does not significantly impact the brand value and brand awareness; at the same time, it has a significant inverse impact on the sales revenue. This finding is at odds with previous empirical results from Neff (2007), who argued that engagement led to higher sales for a company.
Therefore, one should continue to search for an explanation of this phenomenon.

H2.1: There is a correlation between the level of engagement of brand followers on Instagram and sales revenue. The correlation coefficient was 0.270, and the relationship between the considered parameters is weak and direct.

H2.2: There is a significant correlation between the level of engagement of brand followers on Instagram and brand awareness. The correlation coefficient was 0.549. This indicates a noticeable direct relationship.

H2.3: There is no consistent correlation between the level of engagement of brand followers on Instagram and brand value. The correlation coefficient was 0.022. Therefore, there is no relationship between the parameters.

H3.1: There is no strong correlation between the number of posts on a brand's Instagram account and sales revenue. The correlation coefficient is 0.11. Thus, the relationship is weak and direct.

H3.2: There is no strong correlation between the number of posts on a brand's Instagram account and brand awareness. The correlation coefficient was -0.015. Therefore, there is no relationship between the parameters.

H3.3: There is a correlation between the number of posts of the brand's account on the Instagram social network and the brand value. The correlation coefficient is -0.218, which indicates weak feedback.

Thus, the analysis showed no strong relationship between brand activity and brand audience on the Instagram social network with brand value and brand awareness. A noticeable relationship was revealed only under two hypotheses, H1.1 and H2.2 (in the first case, the inverse relationship between the number of followers on the social network Instagram and sales revenue can be recorded; in the second case, a direct relationship between the level of engagement of subscribers in the social
network Instagram and brand awareness can be recorded). The inverse relationship between the number of subscribers and the revenue from sales of brand products can be explained by the high proportion of commercial accounts among brand followers. Table 2 presents some data on the proportion of commercial accounts of brand subscribers.

<table>
<thead>
<tr>
<th>Brand</th>
<th>The proportion of commercial accounts among brand subscribers, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lego Group</td>
<td>43.8</td>
</tr>
<tr>
<td>Rolex</td>
<td>46.7</td>
</tr>
<tr>
<td>Ferrari</td>
<td>43.9</td>
</tr>
<tr>
<td>Canon</td>
<td>52.9</td>
</tr>
<tr>
<td>Adidas</td>
<td>47.1</td>
</tr>
<tr>
<td>Disney</td>
<td>44.6</td>
</tr>
<tr>
<td>Microsoft</td>
<td>49.8</td>
</tr>
<tr>
<td>Sony</td>
<td>55.7</td>
</tr>
</tbody>
</table>

Source: (InstaHero, 2021)

As shown in Table 2, about half the brand followers on Instagram are from commercial accounts. Consequently, brands have almost half the actual potential customers as the total number of followers. This can be the case when companies in the industry subscribe to monitor their brand. In this regard, when promoting a media image on a social network, brands should focus not on the overall growth of the number of subscribers but also on non-commercial account growth and engagement rate growth.

E. Conclusion

The development of new information technologies that contribute to the proliferation of virtual communities is changing the ecosystem of contemporary media resources. The consumption of content in the digital environment has strengthened the role of social media as critical media in its creation and use. The involvement of producers of goods and services in this process made it possible for them to create an alternative sales market and break new ground in choosing behavior for implementing a
marketing strategy. We think of this as a "digital effect," where digital transformation creates new benefits. During the research, we considered one of the aspects of digitalization embodied in a virtual environment: companies' media image. Our results show that an engaged brand user on Instagram has a significant impact on brand awareness. At the same time, an increase in the number of subscribers leads to the opposite change in sales revenue. This means that brand followers have a low conversion rate to customers. This can be explained by the high proportion of commercial accounts among subscribers. Thus, the analysis showed no strong relationship between brand activity and brand audience on the Instagram social network with brand value and brand awareness. The obtained patterns partly contradict some of the empirical results of other researchers, which leads to the need to continue searching for an explanation of this phenomenon; this is the prospect of further research.

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