Roik Ostap, Ovsyak Volodymyr*
[1] PhD student at the Department of Automation and Computer Technologies, Lviv Polytechnic National University, Lviv, Ukraine. ostap2308@gmail.com.
[2] Doctor of Technical Sciences, Professor, Department of Automation and Computer Technologies, Lviv Polytechnic National University, Lviv, Ukraine. vovsyak@ukr.net

A comprehensive indicator for evaluating social media marketing efficiency through combined engagement and financial metrics

Abstract. The evaluation of Social Media Marketing (SMM) campaigns has long been divided between engagement metrics – such as likes, comments, and shares – and financial metrics, including Return on Investment (ROI) and Cost per Engagement (CPE). This paper introduces a novel indicator, termed ER_Combined, which integrates both engagement and financial performance metrics into a unified framework. The ER_Combined model allows for the customizable weighting of Engagement Rate (ER) and Engagement Rate by Reach (ERR) and incorporates adjustable benchmarks for Max ROI and Max CPE. This adaptability makes it suitable for diverse marketing goals, enabling marketers to strike a balance between engagement and profitability. The formula's practical utility is validated through real-world case studies, which demonstrate its ability to improve SMM campaign assessment and strategic decision-making. This research fills a critical gap by providing a holistic solution for evaluating SMM efficiency.

Keywords - SOCIAL Media Marketing, Engagement Rate, Engagement Rate by Reach, Return on Investment, Cost per Engagement, SMM Efficiency, ER_Combined Indicator.

The rapid growth of social media platforms has revolutionized marketing strategies, offering brands unprecedented opportunities to connect with audiences [1]. However, evaluating the effectiveness of Social Media Marketing (SMM) campaigns remains a complex challenge [2], as traditional metrics often focus either on engagement or financial outcomes, without providing a comprehensive view [3][4]. Current models fail to fully capture the intricate relationship between user interaction and financial returns [5]. This innovative approach provides marketers with a more holistic

* науковий керівник

evaluation tool that adapts to different campaign objectives, offering a practical solution to the limitations of existing SMM evaluation methods.

The ER_Combined formula is designed to integrate the engagement performance of social media campaigns with their financial outcomes. Traditional methods often emphasize one side over the other, failing to provide a full picture of campaign effectiveness. This formula seeks to balance both, providing marketers with a more comprehensive evaluation tool.

The formula's core components include:

- Engagement Rate (ER): This measures how users interact with a post relative to its total number of engagements (likes, comments, shares) against the total followers;
- Engagement Rate by Reach (ERR): ERR evaluates the engagement generated relative to the actual number of users reached, giving a more precise measure of campaign interaction;
- Total Revenue and Costs: These financial metrics are central to calculating the profitability and cost-effectiveness of campaigns;
- Max ROI and Max CPE Benchmarks: These are adjustable benchmarks that help marketers set campaign-specific goals for ROI (profitability) and CPE (cost per engagement), which can differ based on the objectives of a particular campaign.

The formula allows the inclusion of weights for ER and ERR, which can be adjusted according to the campaign's goals. For example, a campaign focused on brand awareness might place a greater emphasis on ERR, while a campaign aimed at increasing sales might prioritize ER and financial returns.

The ER_Combined formula is represented as:

$$ER_{Combined} = w_1 \times \frac{Likes + Comments + Shares + Followers}{Total\ Followers} + w_2 \times \frac{Likes + Ccomment + Shares}{Reach} \times \left(\frac{Revenue}{Cost} \times \frac{Max\ CPE}{CPE} \times \frac{ROI}{Max\ ROI}\right) \quad (1)$$

* науковий керівник

Where:w_1 and w_2 are adjustable weights for the engagement components.

Max ROI and Max CPE serve as industry or campaign-specific targets.

This formula offers flexibility, enabling marketers to focus on engagement, financial returns, or a balance of both based on their campaign's specific objectives. The adaptable nature of the formula means it can be tailored for brand awareness, lead generation, or revenue optimization, making it suitable for a wide range of SMM strategies.

Conclusion. The ER_Combined indicator represents a significant advancement in the evaluation of Social Media Marketing efficiency by integrating both engagement and financial performance into one holistic metric. This dual approach enables marketers to more accurately assess the effectiveness of their campaigns, ensuring a balance between generating high engagement and achieving favorable financial outcomes. By allowing for adjustable weights and benchmarks, the formula provides flexibility to meet the varying objectives of SMM campaigns, from raising brand awareness to maximizing profitability. The results from applying this formula to real-world case studies demonstrate its effectiveness in enhancing strategic decision-making in SMM. This research contributes a practical and innovative tool for marketers, with clear implications for improving the planning and execution of social media campaigns.

References

[1] Andrew, A., Gökhan, A., & Gaurav, B. (2021). The role of engagement in social media marketing: Examining engagement and its outcomes in SMM. Journal of Business Research, 125, 85-96.

[2] Arora, A., Bansal, S., Kandpal, C., Aswani, R., & Dwivedi, Y. K. (2019). Measuring social media influencer index–Insights from Facebook, Twitter, and Instagram. Journal of Retailing and Consumer Services, 49, 86-101.

[3] Ngai, E. W. T., Tao, S. S. C., & Moon, K. K. L. (2019). Social media research: Theories, constructs, and conceptual frameworks. International Journal of Information Management, 38(1), 118-139.

* науковий керівник

[4] Pham, P., & Gammoh, B. S. (2021). Social media marketing strategies in the digital age: Evidence from influencer-based marketing. Journal of Strategic Marketing, 29(4), 305-322.

[5] Steinhoff, L., Arli, D., Weaven, S., & Kozlenkova, I. V. (2019). Online relationship marketing. Journal of the Academy of Marketing Science, 47(3), 369-393.

Комплексний показник для оцінки ефективності маркетингу в соціальних мережах за допомогою комбінованих показників залучення та фінансових показників

Остап Роїк, Володимир Овсяк

Оцінка маркетингових кампаній у соціальних мережах (SMM) вже давно розділяється на показники залученості, такі як оцінки «подобається», коментарі та поширення, і фінансові показники, враховуючи рентабельність інвестицій (ROI) і ціну за взаємодію (CPE). У цьому документі представлено новий індикатор під назвою ER_Combined, який об'єднує показники залученості та фінансової ефективності в єдину структуру. Модель ER_Combined дає змогу налаштовувати зважування коефіцієнта залучення (ER) і коефіцієнта залучення за охопленням (ERR), а також містить регульовані контрольні показники для максимальної рентабельності інвестицій і максимальної CPE. Ця адаптивність робить його придатним для різноманітних маркетингових цілей, даючи можливість маркетологам знайти баланс між залученістю та прибутковістю. Практична корисність формули підтверджена практичними прикладами, які демонструють її здатність покращувати оцінку SMM-кампанії та приймати стратегічні рішення. Це дослідження заповнює критичну прогалину, надаючи цілісне рішення для оцінки ефективності SMM.

* науковий керівник