

Practice of Public Relations Marketing and Market Risk Identification Empowered by Artificial Intelligence

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Abstract: Research was conducted to examine how generative artificial intelligence (GenAI) can be leveraged for public relations marketing and market risk analysis. The study addressed three research questions. In response to RQ1, GenAI-enabled tools, such as large language models, natural language processing and predictive sentiment analysis, can enhance content personalization, audience responsiveness and the speed of crisis communication; however, these technologies also introduce new rhetorical and authenticity risks. AI-based risk monitoring is better than the former way in all the above operational indicators for RQ2: time range, scope of channels, sensitivity to signals and analysis consistency. Based on the above analysis for RQ3, a governance system for the appropriate use of GenAI in public relations and marketing has been put forward. The four components of this system are algorithm transparency, privacy and data protection, human supervision of high-risk communication circumstances, and institutional responsibility for AI-assisted decisions. One of the first results of this study is that the forms of AI presented in traditional public relations and marketing theories, which are mainly rule-based automation and statistical pattern recognition, are conceptually different from the new generative AI systems. Therefore, the current theoretical system needs to be modified rather than directly applied. This paper presents a governance-oriented system for the ethical use of generative AI in public relations and marketing practices and puts forward directions for future research under the era of generative artificial intelligence.

Keywords: Generative AI; public relations; marketing; crisis communication; market risk identification; sentiment analysis; governance; large language models.

1. Introduction

1.1. Scope and Disciplinary Boundaries

Marketing and Public Relations (PR) are relatively close but have always been considered separate areas. Marketing focuses on the creation, communication, and delivery of value to consumers throughout the customer journey, while serving the interests of both consumers and organizations. PR, on the other hand, refers to the communication processes through which an organization engages with its various publics—including the media, government agencies, investors, employees, and communities—to build reputation, trust, and legitimacy. In fact, these two functions have become increasingly intertwined in the digital age because both rely on based on the same data infrastructure, social media platforms and audience intelligence systems, and are exposed to the same reputational risks in a real-time communication environment. The two will be considered a single, integrated communication management function in this study: PR marketing. The theoretical traditions of the two domains are distinct and, as such, have been treated separately in the theoretical system.

The scope of AI technology in PR marketing practice includes systems such as natural language processing (NLP), large language models (LLMs) such as ChatGPT and its successors, machine learning-based predictive analysis, and automated content creation platforms. A crucial distinction must be drawn at the outset. The AI discussed in canonical PR and marketing scholarship (such as the taxonomies of Davenport and Ronanki and the digital marketing frameworks of Chaffey and Ellis-Chadwick) generally falls into the category of rule-based automation, statistical recommendation systems, and early machine learning models.

The foundation for generating AI models that can create new text, images and other contents from large volumes of data was established long before their development. This paper studies the results of the above deficiency in applying theory.

1.2. Research Questions and Contributions

The three research questions of this study are as follows: RQ1: What are the effects of AI technology and generative AI on the production of PR marketing materials, audience comprehension and crisis management? RQ2: What are the differences in terms of speed, scope, depth of analysis and signal sensitivity of AI-based market risk identification methods compared to those of traditional market risk identification methods? RQ3: What are the ethical risks and governance mechanisms for the responsible deployment of AI in public relations and marketing? Review and summarize existing studies, systematically compare AI-based and traditional risk monitoring methods, present a case study of an organizational crisis, and put forward a governance framework for the responsible use of generative AI.

2. Theoretical Framework

2.1. AI Capability Classification: Davenport and Ronanki

Davenport and Ronanki identify three types of AI applications for businesses that are suitable for the roles of public relations (PR) and marketing: process automation, cognitive insight, and cognitive engagement [1]. Process automation refers to the automatic operation of some regular or rule-based processes, such as the advertising delivery and personalized notification modules, as well as performance report generation. Although the PR marketing tool can increase operating efficiency, it does not offer strategic

interpretation independently. Cognitive insights are the patterns discovered in a large amount of data. These applications can detect emotions in text, forecast market trends, and identify emerging issues. Therefore, this function will be used to enhance audience intelligence and early warning systems in crisis communication. Cognitive engagement is the interaction among cognitive systems and people in daily life, such as AI chatbots, virtual assistants and recommendation engines [1]. Although the above applications can improve the quality of life for all parties, they may also pose challenges such as inauthenticity and human accountability in practice.

Taxonomies serve as useful classification systems for analysis and are often based on examining applications of pre-generative AI. Generative AI systems, on the other hand, fall under all three categories: one can generate content, analyze the demands of the audience, and engage in conversation with all parties. The cross-category potential exceeds the original objective of the Davenport and Ronanki taxonomy, and this paper will investigate how to apply it in PR marketing [15].

Rust and Huang's theory of the "feeling economy" shows that as artificial intelligence assumes more of the analytic and routine cognitive labor in marketing, its strategic value will increasingly be in the uniquely human attributes of emotional intelligence, empathetic communication, and relational judgment [13]. PR is particularly sensitive to this, so to build the trust of the public, we need to foster a sincere concern for people in the organization's voice rather than algorithmic optimization and achieve "genuine" communication. Kaplan and Haenlein have put forward that "AI refers to a system's capability for accurate processing of external data, learning from that data, and applying the acquired knowledge to make independent decisions according to a specific purpose or task flexibly" [2]. Although generated by artificial intelligence, this does not make it a generative AI; it remains a rule-based automated system.

2.2. Crisis Communication: Coombs' SCCT

Coombs' Situational Crisis Communication Theory (SCCT) is a typical way in which AI-augmented crisis communication is implemented [5]. SCCT is a high-efficiency crisis-response mechanism that can accurately identify the type of crisis (victim, accident, and preventable crises), evaluate the current level of reputation capital, and adjust communication methods based on patterns of stakeholder attribution. AI strengthens all links in the SCCT process: an early warning system detects potential conflicts in time to prevent them from spreading; NLP-based sentiment analysis observes changes in stakeholder attribution in real time; and LLM-based generation creates reply messages in line with the SCCT approach.[5]. However, a typical constraint of SCCT is that it was originally proposed for crisis communication under conditions of a few hours' notice and mass media. In the age of generative AI, crises are emerging at a rapid pace, demanding real-time multi-platform solutions, and they may even be initiated or exacerbated by AI-generated disinformation; thus, SCCT is now being applied to fields that were not included in its original design [16, 17].

3. AI-Empowered Public Relations Marketing Practices

3.1. Intelligent Content Creation and Personalization

Generative AI systems can generate PR materials at a much higher speed and a significantly lower cost now. LLMs trained in accordance with the brand's standards, industry language and regulatory requirements can generate press releases, social media posts and executive statements independently in a short period [2, 3]. Personalization represents another important application of AI. Divide the audience into many small groups and present personalized content based on their interests and communication history via AI systems.[3]. Research shows that, with the help of AI-driven personalization, people are more likely to pay attention to, remember and buy products based on personalized messages compared with older segmented methods [3]. This, in turn, operationalizes the co-creation paradigm of Prahalad and Ramaswamy to promote competitive advantage through personalized stakeholder experiences at an industrial scale [14]. This development also reflects the Marketing 4.0 paradigm proposed by Kotler, Kartajaya, and Setiawan, who argue that digital connection will enable communication with all people as whole individuals rather than dividing them by demographics. This aim is now being achieved on a large scale for people through generative AI-powered personalization [9].

AI will boost efficiency, but it also has some rhetorical problems. As Pillar's case study of Vanderbilt University's use of ChatGPT to write a crisis response for a campus shooting shows, when AI authorship is disclosed or discovered in emotionally charged communication, the idea of "rhetorical humanity" disintegrates – that is to say, the communication is regarded as inauthentic regardless of its substantial content [16]. This result indicates that in a few kinds of communication situations, such as bereavement, crisis empathy, and high-stakes stakeholder engagement, AI content creation is not only less effective but also actively counterproductive; thus, human authorship will need to be preserved out of a strategic communication approach rather than just for regulatory compliance.

3.2. Social Listening and Predictive Sentiment Analysis

NLP-based social listening services collect information about a company's situation from all sorts of places at the same time and in large quantities, such as social media, news, and online reviews. Stieglitz and Dang-Xuan [7] have found that the degree of negative emotions in one's own experience will affect whether they share their personal lives on social media; Therefore, to facilitate early warning of crises and proactive narrative management, sentiment analysis can be employed. More advanced algorithms can identify the topic cluster, narrative structure, influencer network and early spread pattern of a story to predict whether it will be widely shared [4-5]. Arceneaux and Johnson [6] have pointed out that the audience of the media is increasingly divided politically and by topic. Therefore, a system of all-encompassing listening across multiple platforms is now required for the operation of the system. If only the large channels of distribution are used by a company, it will be out of touch with the smaller areas that are more likely to generate a story for

building a reputation. A development of predictive sentiment analysis. Train an AI model on historical crisis data to predict public responses before they are publicly expressed by stakeholders and adjust the communication plan proactively [5, 18].

Guzman and Lewis do not think that generative artificial intelligence will be a new way to carry out the company's present public relations work; rather, they believe it will be used in different parts of the organization to communicate with all parties. AI literacy, which refers to a person's ability to critically evaluate the accuracy, reliability and other connotations of AI-generated content, is therefore considered a required quality for public relations professionals rather than an extra form of training [15]. Bibliometric analysis of AI-PR research from 2018 to 2023 has also shown that the number of studies in this field has been rising rapidly. Recently, rather than discussing the advantages of AI, some scholars have focused on the technical and ethical problems in specific applications [19].

3.3. Crisis Communication Support: The OpenAI Case

AI's functions are aligned with the operational requirements of SCCT. However, according to the actual cases, both AI tools and the existing theory have their own deficiencies. The November 2023 OpenAI crisis saw the board suddenly remove CEO Sam Altman and issued a vague statement that he had not shown "consistent candor in his communications"; as a result, some 700 of the company's employees were at risk of leaving, major shareholders intervened, and Altman was reappointed to his post within five days [17]. OpenAI is now an all-around AI company. Leadership in technology for AI does not necessarily result in good crisis handling, internal management, or communication with stakeholders. The reasons for this are that the board lacks a decision-making mechanism, and there is a large information asymmetry among the board, staff, investors and partners.

The first communication of the board did not meet the basic SCCT requirements; that is, it failed to correctly identify the nature of the crisis and did not provide the stakeholders with a practical basis for attribution. No reasons were given; therefore, a vacuum in the information was filled with conjecture. The internal stakeholders (workers and key partners, such as Microsoft) were not well prepared for the public announcement [17], and thus the order and credibility of the communication process were affected. Liu and Burnap further pointed out the problems of new language and contextual ambiguity in their study on using machine learning for crisis classification, and the opaque statement from the OpenAI board provided an example of this classification challenge for stakeholders [8].

But this mobilization of employees should not be regarded as an unusual phenomenon in the history of the AI era; there were also collective pressures on management decisions in the previous days before the current AI era. A new way of reading this is that it is a case that shows a pattern of communication that is less obvious in classical PR theory: internal publics can use the visibility provided by social media, mobility in the labor market, and investor attention to prompt a rapid revision of management decisions. As a result, the senior staff did not directly oppose the board, but they exerted pressure that led to the change in plans.

Veil, Buehner and Palenchar studied literature on social

media in crisis communication and found that it has changed the speed and form of crisis information dissemination; as a result, new requirements and opportunities for early warning have emerged [12]. According to the OpenAI case, the board did not anticipate the scale and speed of the response from stakeholders at that time. In short, a high-tech AI company does not need many AI tools; rather, its monitoring system, alarm-response mechanism and human-review process all need to work together smoothly. AI systems can enhance organizational intelligence and responsiveness, but they cannot compensate for failures in governance, communication processes, or stakeholder management.

Answer to RQ1: AI tools such as large language models (LLMs) and natural language processing (NLP) sentiment analysis systems can be used to customize the distribution of public relations (PR) marketing materials and understand the public's emotions more deeply. However, generative AI raises problems of authenticity in the context of empathetic communication, and the current framework of SCCT needs to be revised to address the dynamics of crises in the age of AI.

4. AI-Driven Market Risk Identification

4.1. Comparative Analysis: AI vs Traditional Approaches

The old ways of market risk monitoring are periodic surveys, manual scanning of media, competitive benchmarking and analyst-driven reports, and they have three structural deficiencies: a time lag between the occurrence of a risk and its discovery; incomplete coverage of communication channels; and cognitive biases in the interpretation of analyst reports [1, 2]. A system in China will monitor all locations to detect disturbances automatically, and at the same time use algorithms for pattern analysis. Table 1 shows the traditional and AI-based methods in terms of the above operational dimensions.

Table 1. AI-Augmented vs Traditional Market Risk Monitoring

Dimension	Traditional Approach	AI-Augmented Approach
Temporal coverage	Periodic (weekly/monthly)	Continuous, 24/7 real-time
Channel breadth	Selected platforms, manual sampling	Multi-platform, cross-lingual at scale
Response speed	Hours to days	Minutes to hours
Signal sensitivity	Visible trends only	Weak signal and anomaly detection
Analytical consistency	Subject to cognitive bias	Algorithmically standardised
Predictive capability	Retrospective	Forward-looking (predictive models)
Cost at scale	High (labour-intensive)	Low marginal cost per additional channel

AI can identify early warning signs of risk in the data more efficiently. It refers to the capacity to spot the earliest and least obvious signs of a problem, such as a cluster of irregular sentences, abnormal behaviour from influencers or the beginning of an irregular narrative structure, before it becomes an open issue [1]. Pang and Lee are the first to present an all-encompassing introduction to opinion mining and sentiment analysis; they have provided a computational

strategy for reputation risk management and offered a theoretical foundation for AI-based recognition of affective signals in unstructured text [10]. Westerman, Spence and Van Der Heide have also found that people pay more attention to social media content that is viewed as more credible. Therefore, AI systems that consider credibility indicators in addition to sentiment can provide rich data for the risk assessment of reputational damage; otherwise, only sentiment analysis will be used [11].

4.2. Emerging and Novel Risk Categories

AI monitoring has broadened the range of risk identification and corrected some long-standing issues. The new problem of regulatory compliance risk in marketing communications. An AI system will automatically determine whether the advertised goods comply with laws on consumer protection and privacy regulations for data in advertising. Algorithmic bias audits are systematic analyses of biased tendencies in AI marketing systems for targeting or personalization, and they should serve as both compliance measures and proactive reputation risk management tools [1-2].

Answer to RQ2: AI-based market risk identification performs better than the traditional method across all main links of operation (see Table 1). The three kinds of enhancements are continuous observation, weak-signal identification and prediction. At the same time, AI has introduced new problems for regulatory compliance, algorithmic bias and governance supervision, and therefore needs to be monitored and managed separately from traditional risk frameworks.

5. Discussion

5.1. Theoretical Reinterpretation for the GenAI Era

Evidence synthesis in sections 3 and 4 shows that there is a general trend: although classic communication theories, such as Coombs' SCCT, Grunig and Hunt's two-way symmetrical model, and Davenport and Ronanki's capacity taxonomy, offer the required analytical support, they need to be actively reinterpreted in the context of generative artificial intelligence (AI). Grunig and Hunt's two-way symmetrical model proposes that, to the extent possible, an organization and its publics should engage in mutual dialogue to perform public relations [4]. The most practically implementable operationalizations of this idea in history that allow corporations to monitor and respond to the public mood consistently and at a population level are AI-enhanced social listening and real-time sentiment analysis. Veil and Palenchar have investigated possible applications of GenAI in PR work, and although practitioners are starting to use it, the main obstacles preventing wider use are a lack of openness, oversight and authenticity [20]. However, the same technologies that allow for symmetrical communication also enable one-way algorithmic manipulation of the public's perception of mood; thus, a tension has arisen that the original two-way model did not predict, and governance frameworks are required that extend beyond what any communication theory has yet provided [15, 18].

5.2. The Human-AI Boundary in PR Practice

A general trend of the studies on content production and crisis communication is that human rhetorical judgment

cannot be removed in high-risk situations. The Vanderbilt case [16] and the OpenAI board debacle [17] both show that, although AI technologies can enhance expressive capacity, they still lack context-aware judgement, empathy, credibility, and ethical responsibility expected of organizational communication. This is consistent with Rust and Huang's "feeling economy" theory [13]: with the rise of generative AI, people's need for human connection due to emotions and social relationships will increase, and AI will be used for analytical and routine thinking. And it has been verified empirically already. Practically speaking, the competence of PR marketing in the AI era will not be about using AIGC tools, but rather about the practitioner's ability to identify what kind of communication should be created by human writers and then deciding on that basis.

6. Conclusion

With the application of new methods, generative artificial intelligence has begun to be used in some areas of public relations marketing and market-risk assessment and is now reshaping them. Generative AI promotes the development of communication and intelligence at a higher level. OpenAI's crisis scenario suggests that AI-enhanced crisis monitoring will be used to help reduce losses, and people will still be involved in the response. The vague and ill-defined statements of the board were not due to a failure of AI technology but rather problems in governance, information flow and stakeholder perception that AI technology cannot resolve on its own. The four principles of governance at the end of the research are: transparency in AI-powered communication, human oversight of high-risk situations, continuous assessment of algorithmic bias, and ongoing monitoring to ensure compliance with regulations. The above are practical rules for organizations that wish to use AI responsibly in PR marketing.

In the future, some empirical studies will be carried out to investigate the actual circumstances and results of different AI governance models in various organizations and institutional cultures. Future research will explore the long-term impact of AI-mediated communication on stakeholder trust, whether AI-enhanced public relations leads to improved relational outcomes or to the emergence of new forms of perceived inauthenticity, and propose a revised crisis communication theory that accounts for the specific nature of crises in the era of AI, including crises caused by AI systems.

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