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# Public Relations and Issues of Technological Progress: Communicating the Benefits and Risks of AI and IoT to the Public

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**ABSTRACT**

In an era of rapid technological progress, the presence of artificial intelligence (AI) and the Internet of Things (IoT) has an impact on society. However, along with the benefits, there are also risks and concerns regarding privacy, security and unemployment due to automation. In this context, the role of public relations becomes crucial in communicating accurate and balanced information to the public about the benefits and risks of AI and IoT. This research aims to explore the role of public relations in communicating the benefits and risks of AI and IoT to the public. The main focus is to understand how public relations practitioners can manage effective and transparent messages to form balanced perceptions and deep understanding among the public. The research method used is literature analysis and case studies to understand best practices in public communication about AI and IoT. Interviews with public relations practitioners were also conducted to gain direct insight into strategies and challenges in communicating complex technology issues to the public. The results of this research identify that publicrelations plays an important role in conveying accurate, clear and trustworthy information about the benefits and risks of AI and IoT to the public. Effective strategies include a narrative-based approach, use of relevant media platforms, and active engagement with stakeholders. The research conclusion is that by implementing best practices in public relations, organizations and institutions can help society to fully understand the impact of AI and IoT. Transparent and open communication can strengthen public trust and minimize unwarranted fears, thereby creating wider acceptance of technological advances.

**Keywords:** *Public Relations, Society, Technology*

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## INTRODUCTION

In an era where technology is increasingly integrating itself into almost every aspect of life, the role of Public Relations in managing and communicating issues related to technological advances is becoming increasingly important ("DGVS Vorstandsressort Presse- und Öffentlichkeitsarbeit," 2023). Public Relations is not only tasked with promoting new innovations, but must also be able to manage public perceptions of the social, economic and ethical impacts of continuously developing technology (Tsiourti et al., 2019). Technological advances have changed the communications landscape dramatically. Social media, online platforms, and other digital communication tools have made it possible for information to be disseminated quickly and efficiently to a wide audience (Bartlett et al., 2023). In this context, Public Relations must adapt to these changes and develop relevant and effective communication strategies (Gayoso, 2023). Using technology to expand the reach of messages, interact with audiences directly, and monitor conversations taking place on social media and online platforms.

One important aspect of Public Relations work is reputation management. In an era where information can easily be disseminated and obtained by the public via the internet, the reputation of a company or organization can quickly be affected by negative news or rumors circulating on social media (Gregory, 2023). Therefore, Public Relations must be able to respond quickly and effectively to crisis situations and take steps to minimize their negative impacts. Apart from that, Public Relations also has a role in supporting responsible technology (Hassan, 2023). In communicating new innovations to the public (García, 2020), Public Relations must ensure that the company or organization it represents prioritizes ethical and sustainability principles (Lane, 2023). Help explain how the technology can provide real benefits to society, while also recognizing and addressing the risks associated with its use.

Along with advances in technology, Public Relations must also be able to understand and communicate scientific and technical information clearly and effectively to audiences who may not have a technical background (Azionya et al., 2019). This involves the ability to articulate complex concepts in language that is easy for everyone to understand, as well as using various types of media, such as infographics or videos, to help explain difficult topics. Public Relations is also responsible for facilitating dialogue and engagement between the company or organization it represents and various stakeholders, including government, civil society and the general public (Capizzo & Sommerfeldt, 2023). In the context of technological advances, this may involve organizing forums or open discussions where various parties can share views and input on the implications of the technology (Yang & Saffer, 2019). As concerns about data privacy and online security increase, Public Relations must also work hard to maintain public trust (Upadhyay & Upadhyay, 2019). Be transparent in communicating how data is collected, stored and used by the company or organization it represents, as well as the steps taken to protect that data

from misuse or violation

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**Literatur of Refiew**

**Advances in AI technology in society**

Artificial Intelligence (AI) is a branch of computer science that is concerned with creating intelligent machines that can imitate human behavior, such as learning, planning, solving problems, and making decisions (Adamson et al., 2014). AI technology has become an increasingly popular and relevant topic in a variety of fields, from business to health, due to its potential to change the way we live, work and interact with the world around us (Ali et al., 2019). AI encompasses a variety of techniques and approaches to creating intelligent machines (O'Neill et al., 2020). One of the main approaches in AI is machine learning, where computers are programmed to learn from the data they are given and identify certain patterns or trends. There is also deep learning, which is a subfield of machine learning that uses artificial neural networks to model and analyze complex data.

Additionally, there are also techniques such as natural language processing (NLP), computer vision, and reinforcement learning, all of which contribute to the ability of machines to understand and interact with the real world like humans (Ali et al., 2019). The use of AI technology for society has expanded and reaches various areas of daily life. One of the most common examples of AI use is in search and virtual assistant applications, such as Google Assistant or Siri. This technology allows users to search for information, set schedules, or perform other tasks using voice, which is then processed and understood by AI algorithms (Andronie et al., 2021). Additionally, AI technology is also used in e-commerce applications to recommend products to users based on their preferences and previous purchasing patterns. This helps improve the online shopping experience and allows companies to increase sales.

In the healthcare field, AI is used to analyze medical data, diagnose diseases, and design effective treatment plans (Sohn & Kwon, 2020). For example, AI algorithms can be used to identify patterns in medical images, such as CT or MRI scans, which can help doctors diagnose cancer or other diseases more quickly and accurately. In the transportation sector, AI technology is used in the development of autonomous vehicles that can drive themselves without human intervention. Autonomous cars use sensors and cameras to detect surrounding objects and make decisions about navigation and behavior on the road. Although still in the development stage, autonomous vehicles have the potential to reduce traffic accidents and improve mobility for those who cannot or are not safe to drive themselves.

In industry, AI is used to improve operational efficiency and automate production processes. For example, manufacturing companies can use AI algorithms to optimize supply chains, identify patterns that indicate the need for machine maintenance, or predict market demand to organize production more efficiently (Roberts et al., 2021). In the security field, AI technology is used to detect cyber threats and prevent attacks aimed at damaging or stealing data. AI algorithms can be

used to analyze network traffic patterns and identify suspicious behavior, as well as update and improve AI-based security systems in real-time according to evolving threats.

**IoT Technology in Society**

Internet of Things (IoT) is a concept where physical objects such as electronic devices, vehicles, or even buildings have the ability to connect and exchange data over the internet. In other words, IoT allows these objects to communicate with each other and interact with humans, the surrounding environment, and other objects. This concept has changed the way we interact with the world around us and has had a significant impact in various areas of life, from smart homes to industry and health (Dwivedi et al., 2019). IoT involves the use of sensors, hardware, software, and internet connectivity to connect physical objects to a network and enable them to collect and exchange data automatically. For example, a smart thermostat in your home can connect to the internet and receive information about the outdoor weather to automatically regulate the temperature in the home. Likewise, an autonomous vehicle can use internet-connected sensors to detect surrounding objects and make decisions about navigation and behavior on the road.

Society's use of IoT technology has grown rapidly in recent years, with a variety of applications designed to increase convenience, efficiency and security (Shah et al., 2020). One of the most common use cases for IoT is in the smart home. Smart homes use a variety of internet-connected devices, such as lights, door locks, thermostats, and security cameras, that can be controlled and monitored remotely via mobile phone apps or other devices. With a smart home, users can control lighting, temperature, security and other devices automatically or via voice commands using virtual assistants such as Amazon Alexa or Google Assistant. This allows users to save energy, improve safety, and increase living comfort in unprecedented ways.

In the health sector, IoT technology is used to monitor health conditions and support remote medical care (Albahri et al., 2021). For example, wearable devices such as smartwatches or health bracelets can be used to measure a person's heart rate, blood pressure, and physical activity levels, which can then be sent directly to a healthcare professional for further evaluation and monitoring (Agarwal et al., 2021) . This helps in monitoring chronic conditions, early detection of disease, and ensuring patients receive appropriate care as needed. In industry, IoT is used to increase operational efficiency, optimize supply chains, and reduce production costs. Manufacturing companies can use internet-connected sensors to monitor the condition of machines and equipment, identify potential damage or failure patterns, and plan timely preventive maintenance. This helps in reducing downtime and unexpected repair costs, as well as increasing productivity and product quality.

There are several previous research opinions. The first research according to Floridi et al., (2021), with the research title An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. The results of his research stated that findings of AI4People, a year-long initiative designed to lay the

foundations for a "Good AI Society". We introduce the core opportunities and risks of AI for society; present a synthesis of five ethical principles that should undergird its development and adoption; and offer 20 concrete recommendations – to assess, to develop, to incentivise, and to support good AI. The second research according to La Fors, (2020), with the research title Legal Remedies For a Forgiving Society: Children's rights, data protection rights and the value of forgiveness in AI-mediated risk profiling of children by Dutch authorities. The results of his research stated that incorporating forgiveness into the mentioned legal instruments would not only benefit individual children but would also foster public safety as a result. The third research according to Zinchenko et al., (2023), with the research title Prevention of AI risks for sustainable development of society and post-humanity researches. The results of his research stated that sustainable development of society is critically dependent on proper assessment of prospects of cyber transformation of humans or humanization of robots as a result of risks of AI embodiments in humans and robots.

## METHOD

This research uses a qualitative approach that includes literature analysis, case studies (Smith & Firth, 2011), and interviews with public relations practitioners who are experienced in managing complex technological issues such as artificial intelligence (AI) and the Internet of Things (IoT).

### Literature Analysis

First of all, this research will conduct a literature analysis to gain an in-depth understanding of issues related to technological advances, especially AI and IoT, as well as the role of public relations in communicating benefits and risks to the public. This analysis will include related studies from various scientific disciplines such as communication science, management, and information technology, as well as practical literature that discusses Public Relations communication strategies in a technological context.

### Case study

Next, this research will analyze several case studies that demonstrate best practices in communicating the benefits and risks of AI and IoT to the public. This case study will cover various organizations or institutions that have been successful in managing complex technology issues through effective Public Relations communication strategies. These case study examples can come from a variety of sectors, including the technology industry, government, and non-profit organizations.

### Interview with Public Relations Practitioners

In addition, this research will conduct interviews with Public Relations practitioners who have experience in managing complex technological issues such as AI and IoT (Cacciagrano et al., 2021). This interview will aim to gain first-hand insight into the strategies, challenges and best practices in communicating the benefits and risks of technology to the public. Public Relations practitioners interviewed can come from a variety of backgrounds, including technology companies, government

agencies, and Public Relations agencies.

**Data analysis**

Data obtained from literature analysis, case studies and interviews will be analyzed comprehensively to identify key findings regarding the role of public relations in communicating the benefits and risks of AI and IoT to the public. This analysis will involve identifying patterns, trends, and findings that emerge from the data, as well as interpreting the implications of these results in theoretical and practical contexts. After analyzing the data and compiling a discussion, this research will present conclusions that describe the main findings and their implications in the context of public relations practice. This conclusion will include a summary of the important role of public relations in communicating the benefits and risks of AI and IoT to the public (Ahmad et al., 2022). Furthermore, this research will evaluate the success of communication strategies used by Public Relations practitioners in managing complex technology issues. This evaluation will consider factors such as success in influencing public perception, response from stakeholders, and the actual impact generated in increasing understanding of AI and IoT. In addition, this research will highlight the challenges and obstacles faced by Public Relations practitioners in communicating complex technological issues to the public. These challenges may include the complexity of the subject, uncertainty related to technological developments, resistance from certain groups, and the inability to access or understand technical information.

**Draw a conclusion**

The results of the analysis will be used to develop an in-depth discussion about the role of public relations in managing complex technological issues and their implications for society. The discussion will cover challenges, opportunities, and recommendations for Public Relations practitioners in communicating the benefits and risks of AI and IoT effectively and sustainably. In addition, the conclusions of this research will highlight the contribution of research to the understanding of the relationship between public relations, technological progress, and society.

## RESULTS AND DISCUSSION

In an era where technology is developing rapidly, artificial intelligence (AI) and the Internet of Things (IoT) have become two fields that are experiencing significant development. However, along with this progress, various issues related to benefits and risks have emerged that haunt society. In this context, the role of public relations becomes very important in communicating accurate and balanced information to the public about AI and IoT (Moloney & McGrath, 2019). Through literature analysis and case studies, as well as interviews with Public Relations practitioners, this research aims to explore how Public Relations can play an effective role in managing messages related to this complex technology.

In an effort to communicate the benefits and risks of AI and IoT to society, it is necessary to understand that these two fields have broad and complex impacts (Onyango,

2021). AI, as a technology capable of performing tasks that require human intelligence, offers the potential to increase efficiency, productivity and innovation in various sectors, from health to transportation. However, along with the benefits, there are also risks related to the use of sensitive data, algorithm bias, and the potential for replacing human jobs by machines. Meanwhile, IoT connects physical devices to the internet, enabling faster and more efficient data exchange. IoT has the potential to change the way we interact with our surroundings, such as smart homes, smart cities, and autonomous transportation. However, with broader connectivity, IoT also brings risks related to privacy, security and sustainability.

In facing the complexity of the benefits and risks associated with AI and IoT, Public Relations practitioners need to have a deep understanding of both fields as well as the ability to communicate complex information clearly and attractively to the wider public. Effective communication strategies in this context include a narrative-based approach, use of relevant media platforms, and active engagement with stakeholders. One effective approach is to use compelling narratives or stories to explain complex concepts. In this case, Public Relations can take advantage of real examples of how AI and IoT have improved people's daily lives, such as the use of chatbots in customer service or remote health monitoring via IoT devices. By presenting relevant and inspiring stories, Public Relations can help the public understand the benefits of this technology.

Apart from that, it is also important to use various relevant media platforms to convey these messages to the public. Public Relations must consider the media preferences and habits of target consumers, from social media to newspapers and television broadcasts (Asdlori, 2023). By choosing the right platform, messages about AI and IoT can more easily reach and be understood by a wider audience. Active engagement with stakeholders is also crucial in communicating the benefits and risks of AI and IoT to society. Public Relations needs to collaborate with technology experts, academics, government and civil society organizations to ensure that the information conveyed is accurate, complete and trustworthy. Through this involvement, Public Relations can build trust with the public and overcome any fears or doubts that may arise. However, in communicating the benefits and risks of AI and IoT, Public Relations also needs to maintain a balance between optimism and realism. While it is important to highlight the positive potential of both areas, Public Relations must also recognize and address the associated risks. By doing this, Public Relations can build a strong organizational or institutional reputation and win public trust in the long term.

Some of the roles of Public Relations in communicating the benefits of AI are that Public Relations acts as a liaison between technology companies, AI developers, government and society (Dashti et al., 2023). One of the main tasks of PR is to communicate the benefits that society can gain from the use of AI. This involves delivering clear and comprehensive information on how AI can improve efficiency, increase productivity and facilitate innovation in a variety of sectors, from health to transportation. For example, Public Relations can organize press conferences, seminars or webinars aimed at conveying successful AI use cases and their benefits to society. Using social media and marketing campaigns to expand the reach of messages. Through this approach, Public Relations can help change people's perception of AI from something scary to a tool that can help improve

the quality of life.

However, Public Relations also has a responsibility to transparently communicate the risks associated with the use of AI. These risks include concerns about data privacy, unemployment due to job automation, algorithm bias, and the potential misuse of AI's power for nefarious purposes. Public Relations must ensure that the public has a clear understanding of these risks and the steps taken to minimize them (Boon et al., 2023). One approach that Public Relations can take is to hold an open forum where the public can raise questions and concerns about AI. This can be done through panel discussions, question and answer sessions, or online forums. PR can also produce educational materials, such as infographics or brochures, that explain in detail the risks associated with AI and the steps that can be taken to address them.

Although Public Relations has an important role in communicating the benefits and risks of AI it also faces a number of challenges in the process. One of the main challenges is the complexity of AI technology itself. For many people, concepts like machine learning and algorithms can be difficult to understand. Therefore, Public Relations needs to find effective ways to simplify this information so that it can be understood by a wide audience. The challenge in communicating the benefits and risks of AI is that Public Relations must also face the skepticism that some people may have towards AI. Some people may be uncomfortable with the idea of using technology that can make decisions independently or replace human work. Public Relations must be able to overcome this skepticism by providing empirical evidence about the benefits that have been obtained from the use of AI in various sectors. In addition, Public Relations must also deal with ethical issues related to the development and use of AI (Anderson, 2023). For example, issues around data privacy and algorithmic discrimination often raise concerns about unintended consequences from the use of AI technology. Public Relations must be able to explain how companies and governments are trying to overcome these issues through appropriate regulations and policies.

Public Relations in Communicating the Benefits of IoT has a role. One of the main tasks of Public Relations in the IoT context is to educate the public about the benefits offered by this technology. Through marketing campaigns, public events, and various types of educational content, Public Relations can explain how IoT can improve people's quality of life by helping with energy efficiency, health monitoring, home security, and business process efficiency. For example, Public Relations can organize seminars or workshops aimed at introducing IoT concepts to the general public, as well as successful use cases in various sectors such as health, transportation, and industry. In this case, Public Relations can also work with companies that have implemented IoT solutions to share practical experiences and learning with the community.

However, Public Relations must also honestly communicate the risks associated with the use of IoT. One of the main risks is data privacy and security issues. As more and more devices are connected to the internet, the potential for them to be compromised by irresponsible parties or used for unethical purposes, such as identity theft or surveillance, increases. Public Relations needs to provide clear information about the steps taken by

companies and governments to protect personal data and prevent IoT misuse. Apart from that, we must also ensure that people understand the importance of securing their own IoT devices, such as by changing default passwords, updating software regularly, and using trusted hardware. In addition, Public Relations also needs to communicate other risks associated with IoT, such as the inability of devices to operate optimally without a stable internet connection, or potential vulnerability to cyber attacks that could disrupt critical services, such as electricity supplies or transportation systems.

In communicating the benefits and risks of IoT to the public, Public Relations is faced with a number of challenges. One of the main challenges is the level of complexity of IoT technology itself. Concepts such as sensor networks, real-time data processing, and device interoperability can be difficult for the general public to understand. Therefore, Public Relations must find effective ways to simplify this information so that it can be understood by a wide audience. Apart from that, Public Relations must also overcome the uncertainty and distrust that some people may have towards IoT. Some people may be uncomfortable with the idea that multiple devices nearby can connect to the internet and collect data about activity. Public Relations must be able to address these concerns by providing a clear explanation of data security and privacy, as well as the benefits that can be gained from using IoT.

## CONCLUSIONS

Based on the results and discussion above, it can be concluded that the role of public relations in communicating the benefits and risks of AI and IoT to the public is very important in an era where technology increasingly influences life. By using an effective approach, Public Relations can help the public to better understand the implications of these technological advances and take appropriate steps to utilize them wisely. Therefore, there is a need for greater investment in capacity building and increasing awareness of the important role of Public Relations in bridging the gap between technology and society.

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