

INFORMATION MANAGEMENT IN CRISIS SITUATION. ANALYSIS OF COMMUNICATION ACTIVITIES IN CASE OF INDUSTRIAL BREAKDOWNS OR ACCIDENTS

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Abstract: The aim of the study was to identify the risks to communication activities carried out in the event of accidents or industrial breakdowns. The focus group interview was attended by information policy management specialists, journalists, and an interdisciplinary team of energy and chemical companies' employees. The experts who participated in the project identified the areas of coordination, competence, and logistics as weak points of rescue operations. Failures in these areas can also affect the effectiveness of the communication process. In addition, good practices were identified in the field of technology, tools, and procedures for communicating information on industrial accidents and emergencies.

Keywords: Information and knowledge management, industrial accidents, crisis communication; media relations, internal corporate communication

1. INTRODUCTION

Crisis management encompasses more than just addressing the consequences of a breakdown or industrial accident. The actions of medical services, rescue teams, firefighters, and chemical contamination cleanup specialists must be communicated by crisis public relations specialists. The company's image is not the only factor that matters. Ensuring safety is paramount. Mistakes made in social communication can hinder rescue operations and can also create additional problems for the company's reputation.

On 14 February 2022, an accident occurred at NITROERG S.A., a Polish company producing explosives, during the technological process of mixing nitroglycerine. Two men who were in the building where the detonation occurred, were torn apart by the force of the explosion. The company's press office could not announce the death of the employees until the prosecutor's office formally confirmed it. The search operation was officially ongoing until the bodies were found or the prosecutor's office issued a decision.

Meanwhile, the next morning [i.e. 15 February 2022 – author's note] the Regional Crisis Management Centre in Katowice issued a statement describing the events of the previous day: '14 February 2022, 5:16 p.m., Krupski Młyn, Zawadzkiego Street, Tarnowskie Góry County. Explosion at NITROERG, a company producing explosives. One building was destroyed. Two people did not show up at the assembly point, and a search led by a specialised group of State Fire Service firefighters with hound dogs was initiated. Two people

died as a result of the accident. At 10:41 p.m., the State Fire Service ended their activities.' (Report, 2022).

In practice, the message confirming the fatal accident meant a complete lack of synchronisation of the actions of the voivode's anti-crisis services, who ignored the recommendations of the prosecutor's office conducting the investigation and put the company's press office in a difficult situation. The experts were aware that after this type of detonation, the remains of the deceased will be discovered over the following days in various places in the rubble, and that the identification will only be possible through DNA testing. However, it was not the company's intention to emphasise this fact in the face of a personal tragedy for the families, relatives, and friends of the deceased employees.

Fortunately, journalists did not focus excessively on the differences in the messages from the authorities presenting the facts from the scene of the accident: 'Two people died as a result of Monday's explosion at the explosives factory in Krupski Młyn - the emergency services confirmed on Tuesday. On Monday evening, NITROERG's representatives had reported that the chances of finding anyone alive were slim' (Błoński, 2022). However, the described inconsistency could have been the source of the crisis.

A similar threat, but for a different reason, arose when reporting the rescue operation at a depth of 1,200 metres below ground in KWK ROW Rudułowcy in Rudułowcy, a coal mine belonging to Polska Grupa Górnicza S.A. On 11 July 2024 at 8:16 a.m., a rock burst occurred there, causing a mass accident. As a result of the accident, one mineworker died, and 21 others were injured. A communication error consisted in multiplying the number of centres providing journalists with information about the incident and the course of the rescue operation. Members of the PGG [Polska Grupa Górnicza – translator's note] management did, of course, speak to the media, but so did representatives of public administration, mining supervision, municipal government, scientists and journalists themselves (Krawczyk, 2024). In this case, there was a lack of coherent communication management by the PGG spokesperson. Therefore, the issue of ensuring proper communication of industrial accidents and breakdowns was the subject of the analyses described in the current paper.

2. LITERATURE REVIEW

Information and knowledge management is a broad concept. Strategies for the internationalization and dissemination of science (Kuzior et al., 2024; Altyar et al., 2020; Chohra, 2024; Guemidi et al., 2024), social participation (Najiah, 2025; Hedau, 2025), and organisational culture (Konopelko, 2024; Tessema, 2025) are subject to scientific reflection, and integrated marketing communication is being analysed (Szymczyk, 2024; Hamyem et al., 2024). Research is also focused on the Smart City concept (Kuzior, 2024), i.e. the functioning of intelligent cities (Kuzior et al., 2023). Currently, the role of artificial intelligence as a moderator of communication processes is being analysed more and more often (Pyjas, 2024), and attention is paid to the risks resulting from this (Yarovenko, 2024). The challenges concern both government authorities (Siregar, 2024), and corporations (Hejlova et al., 2025). Especially in the area of crisis management (Jin, 2024; Bsoul-Kopowska et al., 2022). The same crisis, which has its origin outside the organization, can affect its functioning in various ways (Zagórowski, 2022). The same relates to internal crises, such as breakdowns or accidents (Krawczyk, Maciejczyk, 2024). Employers are obliged to ensure safe and hygienic working conditions using all available technical and

organizational solutions (Kuzior & Kopij, 2024), this being an integral part of every organisation (Chrzęszcz et al., 2024; Zhou, 2024). Therefore, improving the efficiency of decision-making translates into optimising productivity (Kuzior & Sira, 2024). This also applies to internal communication in companies (Verčič, 2024), which is one of the research questions addressed in the article. This view aligns with recent evidence that safety culture—closely tied to clarity of internal communication and leadership signalling—shapes employees' risk perceptions and compliance behaviours in manufacturing settings (Raditsela et al., 2025). Issues of safety and industrial accidents must be analyzed in connection with the design of supply chains and networks (Staniewska, 2021). Especially during crises (Łupicka, Konecka, 2022). It is important to increase the level of automation of technological processes (Kholbutaevich, 2025), but at the same time one must be aware of the threats resulting from failures or attacks in cyberspace (Kochanowicz, Bryczek-Wróbel, 2025). Legal regulations are crucial for occupational safety (Czarnecki, 2023), and in the event of an accident, proper documentation is crucial (Zubańska & Filipek, 2024). Currently, the application of artificial intelligence in processes related to occupational safety (Uddin et al., 2023), reliable reporting (Gao et al., 2022), and shaping responsible attitudes towards new technologies (Leja, 2024) are increasingly challenging.

3. METHODOLOGY

The protection and safety of industrial facilities are regulated by legal acts such as the Environmental Protection Law of April 27, 2001, the Regulation of the Minister of Development of February 23, 2016, on the safety report for a high-risk establishment, or the Regulation of the Minister of the Interior and Administration of June 8, 2016, on the requirements for operational and rescue plans, etc. In theory, the procedures required by law are developed in Polish companies and are systematically verified during audits and periodic exercises. During the simulation, certain challenges were identified, which subsequently materialized in real life.

For the purpose of preparing this paper, a focus group interview was conducted on 10 February 2025 in Gliwice (Silesian Voivodeship, Poland) with the participation of specialists in the field of social communication and journalism, as well as an interdisciplinary group of employees representing energy and chemical companies, involved in the removal of the effects of industrial accidents. The group included representatives of the internal audit, human resources, occupational health and safety, cybersecurity, industrial security, public relations, and management office departments. Study participants answered questions about how a crisis situation unfolded in relation to their duties. They also highlighted threats related to social communication.

4. RESULTS

The shortcomings cited by survey participants related to logistical issues. For example, the entry of ambulances, police cars, and fire trucks onto company premises caused traffic jams during both exercises and actual rescue operations. Commanders needed valuable time to clear the resulting traffic jams.

The category of logistics shortcomings also includes disregarding the stringent restrictions on the mobility of people involved in the rescue operation in the case of plants producing or processing hazardous chemicals or biologically active substances. There have been incidents where firefighters (especially from volunteer fire departments) decided to take a

'smoke break' near warehouses with toxic, explosive, or flammable intermediates. As indicated by the interviewees, another aspect that generates crises is the sphere of competence. They mentioned, among other things, the issue of standardising the management of rescue operations. In practice, the officers of the State Fire Service participating in a rescue operation may lack knowledge of e.g. who is the highest-ranking person at the scene of the accident, or who takes over command. Another area of increased risk is the problems with coordinating the activities of various services. Examples include the interactions between firefighters from different organisations (state fire service, volunteer fire service, chemical salvage teams, etc.), police officers and public prosecutors, or paramedics and company employees. It was stated that without the consent and knowledge of the specialised emergency services, police officers were able to prepare a workplace for a prosecutor in the 'zero zones' of contamination or detonation risk. Prosecutors, on the other hand, secured only copies of the personal files of the employees who died or were seriously injured in an accident for the purpose of the investigation, which should be the responsibility of the HR department. For this reason, the relevant department within the company should reproduce these files for the purposes of public relations management, so that media reports do not reveal that the management is unable to provide the age or job seniority of the victims.

5. DISCUSSION

Proceeding to the communication aspects, one of the risks indicated was video footage being recorded on smartphones by employees who had not yet been evacuated, the firefighters, passers-by, or residents with access to the accident site.

In the context of crisis communication, attention was drawn to the need to include all management functions in the process. From planning, which involves identifying and improving ways of working, through organising, which can be understood as assigning specific company resources to anti-crisis activities, to coordination, which means establishing a coherent system for managing individual activities in the organisation. Of course, implementation is important, i.e. conducting communication activities in a crisis. However, one must not forget about the supervision and evaluation of the process through the implementation of mechanisms to counteract the crisis and improve responsiveness. This is consistent with findings in high-risk industries, where digital platforms supporting hazard awareness were shown to improve organizational preparedness and streamline communication flows during emergencies (Biały & Midor, 2025)

In the event of an accident, a crisis team should be appointed in accordance with these procedures. It is important for the management of external communication to be well-prepared for reporting within the organisation. It is also necessary to appoint a 'crisis manager', i.e. a person responsible for contacting the media. In this model, top management representatives only shall communicate the most important events. The press spokesman, on the other hand, ensures that the measures taken are consistent. The 'face of the crisis', however, reports on the course of events, e.g. during a rescue operation. This person should be a leader with formal and personal authority, expertise, and professional experience, and at the same proper interpersonal skills, and the ability to control their emotions.

The crisis team is responsible for developing and communicating reliable messages to the press. According to the interviewees, the proper communication channel should be chosen for this purpose (press conferences, social media profiles, company website, etc.).

Communication activities must consider the needs of different media (including editorial offices that rely on journalists to create video material). Specific and quickly distributed information can also reach the audience through the company media, i.e. website, profiles, and accounts on Facebook, X platform (formerly Twitter), film channels (YouTube), or other social media platforms (TikTok, Pinterest, Snapchat, LinkedIn, Instagram), depending on the target audience. The need to take over the narrative and to expand the number of information sources in a controlled manner was also indicated, e.g. regarding the company's stakeholders, recipients, contractors, customers, experts and scientists, non-governmental and industry organisations, and the local community.

6. CONCLUSION

In the opinion of the interview participants, effective communication in the event of accidents, or industrial breakdowns must provide the press with access to comprehensible and constantly updated messages explaining the causes, circumstances, and course of events. After the operation is completed, procedures should be created or supplemented to increase the effectiveness of communication services.

The study revealed that maintaining a consistent narrative about the course, circumstances, and causes of the incident is crucial. If multiple entities are involved in the emergency response, a team should establish common messaging. Social media content should also be constantly monitored to ensure access to real-time information that could influence public perception of the rescue operation.

The plan for further research in this area involves conducting focus group interviews with people who have participated in rescue operations after accidents or industrial breakdowns, and represent organisations such as the state fire brigade, volunteer fire brigade, police, building inspectorate, or environmental protection services.

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