

# An Initial Standardized Knowledge Management Framework Formed from Learning During a Humanitarian Crisis

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**Abstract:** The paper presents some aspects of knowledge management theory. This underpins a research methodology designed to expose knowledge transfer in voluntary not-for-profit groups. The paper aims to make recommendations which, supported by a knowledge management strategy and good practices, provide the basis for the development of a future model of knowledge management in crisis situations. A hypothesis has been established: During emergencies that arise suddenly, a variety of information and knowledge is dispersed, widely disseminated, and belongs to many different organizations. A coherent information system is needed for the dissemination and sharing of knowledge for effective assistance to people affected by the crisis. The main challenge in managing knowledge in such humanitarian emergencies, is the fact that a wide variety of information and knowledge is dispersed, disseminated, and originally belongs to many different organizations. These information resources may not be organized and used effectively during a crisis situation. Over time, preliminary and non-standardized rules are developed. The authors of this paper took part in a humanitarian action - both independently and in cooperation with non-governmental organizations. This allowed for the collection of extensive research material. During the research, the methodology of participatory observation and surveys was used. The aim of the study was to develop knowledge management standards, for use in the event of other humanitarian crises. The final research technique used is given, from participant selection to outcome analysis. It was found that processes of organizational learning and active knowledge management occurred in many forms. Knowledge was transferred in and out of the organizations. Expertise from earlier experiences was applied, and transferred, becoming explicit. Managerial skills and methods were applied in new organizational contexts. Many similarities and some differences were found, despite clear differences in the type of organisations and country of origin. The research allowed the authors to research extensively into people's motivations, priorities, and forms of information transfer. Knowledge acquisition, transfer and sharing were clearly identifiable, as was organizational learning and subsequent usage of it. Future implementation of standardized, coherent knowledge management rules, used in crisis situations will facilitate the sharing of knowledge and its reuse. The framework can also be applied to other situations of emergency decision making, such as crisis management and emergency medical assistance.

**Keywords:** Knowledge management, Social organizations, Humanitarian crisis

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## 1. Introduction

A crisis situation is an aspect of the functioning of societies, organizations and enterprises that particularly destabilizes their functioning. An important feature of the crisis is that it usually involves “unacceptable consequences”, at least for part of society, and is accompanied by a variety of contexts: political, military, economic, humanitarian, social, technological, environmental or health (Jia et al., 2012). A crisis disrupts the normal course of events in an individual's life, requiring them to reassess their ways of thinking and acting (Reber et al., 2009).

A special case is a humanitarian crisis, which usually affects wide sections of society and has far-reaching consequences. In many humanitarian crises, the primary need for crisis management is useful cooperation of the public and non-governmental sectors (Schwartz, 2016), wherein non-governmental organizations (NGOs) play an important role in mitigating the negative effects of the humanitarian crisis. NGOs, being close to people and acting directly in the environment, may correctly recognize the issues. They often have more appropriate means and methods to deal with the problems that have arisen than other bodies.

Their functioning is based on their own independent decisions, and better recognition of a crisis situation, by which they can reach the affected people more effectively and faster. This leads to a more effective reduction of the negative impact of the crisis on individual stakeholders, and better protection of society. Thus the scope of humanitarian activities offered by non-governmental organizations does not only focus on material aid. Non-governmental organizations are characterized by a diverse approach to crisis situations, which may aid the building of social trust in each other and contribute to the development of interpersonal relations in particularly difficult times (Egger and Schopper, 2022). In a large-scale humanitarian crisis, with a huge number of people in need, the actions of governmental and non-governmental organizations may be insufficient. This gap is filled by ordinary citizens, who are not organized (Haaland and Wallevik, 2019).

The subject material of this paper is an analysis of management of the humanitarian crisis at the PL/UA border, in the first weeks of the armed conflict in the Ukraine. At that time, the Ukrainian authorities asked the refugees remaining abroad not to return to the country until the situation stabilized (Forsal, 2022). The example of this crisis showed that it was NGOs, and above all ordinary people, who flocked to the border from all over the country, that constituted an important aid force, but also a major organizational challenge, *inter alia* from the point of view of the knowledge management system.

## **2. Crisis Management at Various Stages of a Crisis Situation**

Crisis management is important for effective assistance activities. This requires the application of strategies designed to help the organizations and society cope with a sudden and significant negative event (Maniatis, 2018). A crisis most often occurs as a result of an unforeseeable event or an unforeseen consequence of an event or its consequences (Morell, 2005). In both cases, a crisis almost always requires quick decisions to limit its damage. The nature of the potential damage varies, but in most cases may have an impact on health, safety, finances and, in the case of organizational crises, on the reputation of the entity or a combination of them. Crisis management aims to minimize the damage caused. It is thus not just responding to a crisis, it is a comprehensive process that may be prepared for and implemented in practice before a crisis occurs. In both cases, a crisis almost always requires quick decisions to limit its damage (Tokakis et al., 2019).

Almost every crisis situation is preceded by certain symptoms. Correct identification of threats and their interpretation allows for taking certain pre-emptive actions that will help mitigate the effects of a later crisis. It is important to establish monitoring systems (mechanical, electronic, databases) that can provide early warning signals of any foreseeable crisis (Ramesh et al., 2015; Dijkzeul et al., 2013). Many stakeholders should be involved in pre-crisis activities (Alpaslan et al. 2009). In the case of organizations, these will be representatives of individual departments, e.g. HR, financial, legal or operational. A crisis manager should be appointed to coordinate the analysis of crisis symptoms and manage the crisis recovery process if one arises.

The next stage of crisis management is the reaction to it (Coombs, 2006). The crisis manager is responsible for leading the response in accordance with the established management plan. An important role is knowledge management, overseeing the flow of information and communicating with the public (Coombs et al., 2008; Jin et al. 2014). In the post-crisis stage, when it subsides, management is focused on determining corrective actions to minimize the negative effects. An important aspect of the actions taken is also feedback, which leads to the development of improvements in the crisis management system, in order to better prepare the organization and society for future crisis situations (Coombs and Laufer, 2018). The crisis management team should review the management plans to assess whether the plan worked properly and what aspects need improvement (Moon et al., 2020).

## **3. Knowledge Management in a Crisis Situation**

Knowledge management in a crisis situation compasses all activities aimed at improving preparatory and executive actions in the event of emerging crises. So it involves capturing the knowledge generated within the organization and in the inter-organizational environment, and making it available to those who need it to make decisions (Jennex and Raman, 2009). Knowledge management determines the effectiveness of the organisation in strategic planning, decision-making, problems solving, administrative management and reaction in crisis. (Jia et al., 2012).

One of the key elements of knowledge management, which determines its success, is the acquisition and delivery of information to the relevant organizations involved. Without an efficient flow of information, counteracting a crisis situation is practically impossible. The role of information handling is essential to the efficiency and quality of response of individual organizations, whether at the level of local government or national non-profit organizations. The effectiveness of crisis management depends on the speed and precision of information exchange between stakeholders (i.e. organizations, people involved in cooperation). The effectiveness of crisis management therefor depends not only on ICT systems, but also on such dimensions as strategy, processes, services and roles that guide the coordination of the entities involved (Jia et al., 2012).

Opportunities resulting from modern technologies mean that units responsible for solving crises are looking there for solutions to improve crisis management. The increased interest in these solutions is also due to the increased participation of citizens. Thanks to the use of communication technologies, people are more willing to cooperate in times of crisis, and on the other hand - they carefully monitor the actions taken (Barthe-Delanoë et al., 2012).

Knowledge management is thus the systematic process of searching, collecting, filtering and presenting data, information and knowledge for a specific purpose and to serve a specific organization or community. In complex situations of humanitarian crises, there is usually information overload, a large number of chaotic reports and a lack of systematic collection of standardized data. It is also difficult to store structured, filterable database data (Andreeva and Kianto, 2012; Gao et al., 2018).

Knowledge management within the NGO organization, is more open to external contacts and exchange of experience than in the commercial sector. This characteristic is of particular importance in a crisis situation, when it attaches great importance to cooperation as a means of acquiring and sharing knowledge. In the case of longer-functioning organizations, cooperation mechanisms have already been developed, which clearly facilitates building a knowledge management system. The exchange of information is of key importance in crisis situations related to humanitarian aid, because individual, selective aid does not make it possible to meet all the rapidly emerging needs.

Extensive cooperation within the knowledge and experience management system generates many benefits: it reduces unnecessary duplication of activities and waste of resources, improves coordination and provides a common knowledge base (Jakubik and Mürsepp, 2018). It is important to be able to use modern communication tools, but it is important to use diversified solutions (analogue-digital, Internet and non-Internet) due to possible disruptions to access.

An essential aspect of preparing for crisis situations is to develop an appropriate knowledge management model. McGill et al. (2023) have made a broad review of approaches to knowledge exchange in crisis settings. Ramalingam (2006) proposed a model demonstrating the importance of using knowledge and learning tools as part of a holistic approach to organisational change. This approach to knowledge management is based on the search for relationships between: organisational contexts (e.g. strategic alignment, management behaviours), relationships and collaborations within and across organisation (e.g. using ICT technologies) and organisational knowledge (forms and locations; creation, sharing, storage etc.) - in relation with external factors (partners, donors and networks). Safran (2003) proposed a disaster management cycle, in a broader context, where three phases have been distinguished: prevention, transition (disaster and emergency) and recovery. Onyango (2016) indicated some main knowledge management capabilities, which affected the performance of international humanitarian in Kenya: technological advancement, organization structure, organization culture and human resource. Dumitriu (2016) indicated the need to distinguish three categories: data, information and knowledge - during building a knowledge management model. Yahya et al. (2015) suggested simplification of the knowledge management model in crisis situations. They proposed a knowledge transfer model ACIS based on four stages: Acquisition, Conversion, Implementation and Storage. Finally, a big challenge that should be taken into account when building a knowledge management model is improving civil-military coordination in humanitarian logistics (Heaslip and Barber, 2016).

#### **4. The Scale Of the Humanitarian Crisis Studied in the Light of Statistical Data**

In the analysed period, in the first quarter of 2022, during the initial aggression of Russia, over 4.2 million citizens crossed the Polish-Ukrainian border, according to the Border Guard (2022). Over 3.1 million were refugees from Ukraine. The number of people crossing the border with Ukraine (in both directions) provided by the Border Guard is the number of entries to Poland and departures to Ukraine. It should be noted that this number is not the same as the number of refugees and helpers during this period. This number varies due to the fact that some people have crossed the border two or more times.

Data on border crossings provided by the Border Guard (2022, 2023) include "foreigners". The vast majority of them are, of course, Ukrainian citizens, but among those fleeing the war, especially at the beginning, there were, for example, students from India and Africa who studied in the Ukraine. According to the data of the Ministry of Education of Ukraine (ONET 2022), in 2020, 80,000 people from abroad studied there. According to information from the Polish Ministry of Foreign Affairs from March 2022, among the first group of refugees to Poland, apart from Ukrainian citizens, there were: 5,300 people from Poland, 3,000 from India, 2,300 from Nigeria, 1,400 from Algeria and 1,300 each from Morocco and Pakistan (OKOPRESS 2023).

**Table 1: Section of the Border with Poland/Ukraine. Passenger Border Traffic in the First Quarter of 2021, 2022, 2023 - number of Crossings, Including Foreigners**

Specification	1st quarter 2021	1st quarter 2022	1st quarter 2023
<b>Total</b>	1 555 269	4 233 617	3 846 939
<b>- including from Poland</b>	626 038	974 864	1 882 719
<b>- including to Poland</b>	929 231	3 255 753	1 964 220
<b>Foreigners</b>	1 493 473	4 109 210	3 737 411
<b>- including from Poland</b>	596 590	916 456	1 828 278
<b>- including to Poland</b>	896 883	3 192 754	1 909 754

Source: Border Guard (2021), Informacja Statystyczna za I kwartał 2021 r. Warszawa, Informacja\_statystyczna\_za\_I\_kwartal\_2021\_r\_.pdf; Border Guard (2022), Informacja Statystyczna za I kwartał 2022 r. Warszawa, Informacja\_statystyczna\_za\_I\_kwartal\_2022\_r\_.pdf; Border Guard (2023), Informacja Statystyczna za I kwartał 2023 r. Warszawa, Informacja\_statystyczna\_za\_I\_kwartal\_2023\_r\_.pdf

According to OKOPRESS data (2023) and data provided by the Polish authorities to UNHCR (Office of the United Nations High Commissioner for Refugees), currently (as of February 21, 2023) 1,563,386 people are registered as “refugees under the care of the state” (Temporary Protection). This number in practice means that these people in Poland received a Polish identification number (PESEL).

**Table 2: Section of the Border with Poland/Ukraine. Passenger Border Traffic in the First Quarter of 2021, 2022, 2023 - Percentage Change**

Specification	Percentage difference between Q1 2022/Q1 2021	Percentage difference between Q1 2023/Q1 2022
<b>Total</b>	172%	-9%
<b>- including from Poland</b>	56%	+93%
<b>- including to Poland</b>	251%	-40%
<b>Foreigners</b>	175%	-9%
<b>- including from Poland</b>	54%	+99%
<b>- including to Poland</b>	256%	-40%

Source: Border Guard (2021), Informacja Statystyczna za I kwartał 2021 r. Warszawa, Informacja\_statystyczna\_za\_I\_kwartal\_2021\_r\_.pdf; Border Guard (2022), Informacja Statystyczna za I kwartał 2022 r. Warszawa, Informacja\_statystyczna\_za\_I\_kwartal\_2022\_r\_.pdf; Border Guard (2023), Informacja Statystyczna za I kwartał 2023 r. Warszawa, Informacja\_statystyczna\_za\_I\_kwartal\_2023\_r\_.pdf

According to UNHCR (2023) data, 6.3 million refugees from Ukraine were recorded globally. Apart from Poland and Germany, the largest number is in the Czech Republic (491,000). Italy (170,000) and Spain (168,000). In terms of the number of inhabitants of a given country, the greatest effort is made by: Estonia (the number of refugees is 5% of the population), the Czech Republic (4.7%), Moldova (4.2%) and Poland (4.1%) and Germany (1.3%).

## 5. Methods of Knowledge Management in the Process of Disseminating and Sharing it During a Humanitarian Crisis

The subject of the study was the community of charity organizations involved in helping refugees during the humanitarian crisis on the PL/UA border, in the first weeks of the armed conflict in Ukraine. Due to the escalation of the war in Ukraine after February 24, 2022, new challenges and reactions appeared in Polish society and aid organizations to the emerging humanitarian crisis.

As earlier stated, a hypothesis has been established: During emergencies that arise suddenly, a variety of information and knowledge is dispersed, widely disseminated, and belongs to many different organizations. A coherent information system is needed for the dissemination and sharing of knowledge for effective assistance to people affected by the crisis.

The authors of this study took part in the then humanitarian action - independently and in cooperation with non-governmental organizations. The study used the methodology of participatory observation and a diagnostic survey. The research technique used was a questionnaire. The aim of the study was to indicate the possibility of developing knowledge management standards in the event of a humanitarian crisis. The research tool was a questionnaire as direct research in places where humanitarian actions are carried out. The sampling method was purposive. Volunteers from organizations that actively participated in helping on the Polish-Ukrainian border were invited to participate in the study. The study was conducted at the turn of February and March 2022. 200 surveys have been made available. The return rate was 61.5%. 123 correctly completed questionnaires were received. This study presents the results of two questions out of nine survey questions. Other work will follow.

**Table 3: The use of Benchmarking in the Dissemination and Sharing of Knowledge (in %)**

No.	Specification	Yes	No
1.	Tracking the activities / information of the institution / organization on successes	56.9	43.1
2.	Tracking activities/information announced by volunteers about successes	53.6	46.4
3.	Documenting and publicizing your activities in the media	35.7	64.2
4.	Using solutions from other organizations	56.1	43.9
5.	Using the solutions of other volunteers	58.5	41.5
6.	Using multiple solutions to find the best one	32.5	67.5
7.	Personal contact with organizations to find the best solution	65.8	34.2
8.	Personal contact with other volunteers in order to find the best solution / face to face meeting	78.1	21.9
9.	Encouraging others to imitate effective aid methods	27.6	72.4
10.	Information obtained from other organizations was helpful	64.2	35.7
11.	The information gleaned from other volunteers was helpful	80.5	19.5

Source: Own elaboration based on a survey

One of the useful methods included in the group of comprehensive methods at this stage is benchmarking. It is a relatively simple and cheap method of disseminating and sharing knowledge. However, for this to happen, there must be an appropriate motivation system so that participants express their willingness to share knowledge. In the case of the respondents, the motivation was the willingness to help refugees selflessly, as well as the statutory assumptions of the organizations in which the volunteers worked. This method does not evaluate people as better or worse, but strives to make the success of an individual become the success of the entire enterprise, so that the experience of one person becomes an inspiration for another.

Despite the undoubted advantages of benchmarking, this method was used to a limited extent during the assistance activities on the Polish-Ukrainian border. Organizations and volunteers, however, exchanged information and, as they indicated, willingly shared their knowledge. During the aid campaigns, cooperation could be observed in the internal relations between the volunteers. Information about the successes of the actions taken was provided. The exchange of information was based on informal, friendly contacts between the volunteers. At the same time, a significant group of respondents assess the information received from organizations (64.2%) and directly from volunteers (80.5%) as useful in action.

In the group of improvement methods, helpful tools in knowledge sharing and knowledge management were face to face meetings (78.1%), tracking activities/information of other organizations (56.9%) and individual volunteers (53.6%) about successes. Documenting and announcing their activities in the media was used less frequently (35.7%). It should be noted that the surveyed respondents used the solutions of other organizations in their assistance activities (56.1%), slightly more often than the solutions of other volunteers (58.5%). Relatively rarely, decisions on the implemented solutions were based on the analysis of many solutions in order to select the best one (32.5%).

It is worth noting that for each of the analysed benchmarking categories, respondents more often used contact directly with volunteers than with organizations. The results of the answers to the second question concerned the need to use the information system in knowledge management. Various information systems, including IT, are useful in the dissemination and sharing of knowledge. The need for their use was indicated by the majority of respondents (for 82.1% of respondents this need was very high). An equally high percentage of respondents indicated the need to use a database of good practices. Respondents see the need to introduce coherent information systems because, in their opinion, their use leads to greater effectiveness of aid in situations of humanitarian crises (74.8% strongly agreed with this statement. The respondents pointed to the need to build nationwide information portals where one can find various information on topics bothering both refugees (83.7%) and volunteers (88.6%).

**Table 4: The Need to use the Information System in the Dissemination and Sharing of Knowledge (in %)**

No.	Specification	0	1	2	3
1.	It is necessary to use an IT system to manage knowledge.	0	3.3	14.6	82.1
2.	The introduction and use of an information system increases the effectiveness of assistance.	0	12.2	13	74.8
3.	It is necessary to introduce a database of good practices.	0	0.8	16.3	82.9
4.	A coherent system of recording current activities of charitable organizations is needed.	34.2	35.7	17.1	13
5.	A coherent information system for the exchange of experiences (forums and discussion groups) is needed.	0	47.2	47.9	4.8
6.	A coherent information exchange system for the group of experts is needed.	24.4	55.3	18.7	1.6
7.	A coherent nationwide portal is needed where refugees from Ukraine can find various forms of support.	0	1.6	14.7	83.7
8.	A coherent nationwide portal is needed where helpers (volunteers and charities) can find a variety of information.	0	8.2	3.3	88.6

Where: 0 - disagree 1 - slightly agree 2 - moderately agree 3 - strongly agree

Source: Own elaboration based on a survey

Critical reflections may be aroused by the fact that in the process of knowledge dissemination and sharing, volunteers to a small extent indicated the need for a coherent system of recording current activities of charitable organizations (34.2% of respondents disagreed with this need, and 35.7% supported it to a small extent). Similarly, low support was declared for the need for a coherent information exchange system of the expert group.

In turn, the results of participant observation indicated that the effectiveness of acquiring knowledge from institutions and organizations was relatively limited. It should be added, however, that during the period of conducting the research, the situation on the Polish-Ukrainian border was very dynamic, and the information did not appear on an ongoing basis on information pages on the Internet. Participants in aid activities, however, expressed their willingness to acquire such knowledge. However, it is difficult to assess whether their expectations resulted from limited independence and a lowered assessment of their own competences, or whether they consciously perceived the important role of organizations which, by virtue of their activity, should take over the role of leadership in sharing knowledge.

The results of the observations clearly indicated that an important method of knowledge management, which enabled its transfer in an informal way, was the formation of informal groups. Their effectiveness was conditioned by the existence of solutions in organizations that favour and motivate the formation of such groups and encourage knowledge sharing. Information provided in an informal way was often the only knowledge available, more up-to-date, reliable and tailored to the needs of recipients. In general, a high level of readiness of volunteers and others to share knowledge during the crisis could be observed in the analysed period.

## 6. Conclusions

The results of the research and the review of available source materials made it possible to indicate recommendations for selected aspects of knowledge management in humanitarian crisis situations: 1) At least minimum basic sets of knowledge management guidelines should be developed by aid organizations based on the best practices and experiences of individual organizations and volunteers; 2) Gradual steps should be taken to embed knowledge management and knowledge sharing skills in the appropriate assessment systems of service providers; 3) Job descriptions and core organizational competencies should be provided. It is necessary to establish standards and procedures for retaining and transferring knowledge at the end of aid work and/or termination of work of individual volunteers, transferring them to another area of activity; 4) Efforts should be made to optimize the capacity of all organizations involved in humanitarian aid during a crisis, identify a place and space for joint design of aid activities and run knowledge management training programs adapted to holistic principles; 5) Those responsible for organizing the activities should have a long and comprehensive experience in knowledge management and should be at the forefront of implementation in identifying priority actions dedicated to knowledge management; 6) Good practices and lessons learned should be indicated, which will cover the entire knowledge management system in a crisis situation.

The results allowed verification of the hypothesis positively, because the knowledge available during the analysed humanitarian crisis was highly dispersed and widely disseminated in many different organisations. The need for an efficient knowledge management system was clearly visible, and some promising initiatives were founded. Summing up, in the knowledge management process studied here, methods of obtaining information focused on benchmarking were used. Acquiring information and its implementation as well as sharing knowledge with others are key elements of success.

During the crisis it is necessary to quickly identify knowledge gaps in conjunction with the ongoing assessment of information needs. It is important that the accumulated tacit knowledge is transformed into knowledge available and understandable to other people involved in the assistance. Visualization is also very important. Appropriate maps, signposts, graphics, and knowledge maps facilitate communication, especially when the assistance is of an international nature (eliminating language barriers). These activities shorten and simplify communication, which is of great importance during time pressure. An important element of knowledge management in a crisis situation is to organize an efficient Q&A system (questions and answers) to respond to identified information needs. A system of rapid, almost instant training on knowledge management procedures, communication systems, virtual cooperation networks, and technology tools is necessary for the quick deployment of volunteers for routine and effective assistance to the victims.

This paper is the result of preliminary work and is intended to indicate the basic recommendations, which would provide the basis for the development of the knowledge management model in crisis situations. The authors undertake further, extended research on the basis of which they will propose such a model.

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