

INTERNAL COMMUNICATION IN ENTERPRISES LOCATED IN POLAND WITH THE USE OF MEANS OF ELECTRONIC COMMUNICATION – RESEARCH FINDINGS

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Purpose: The purpose of the paper is to describe the means of electronic communication used by companies for internal communication, to rank them according to the frequency of use by organizations, and to identify the attributes of the organization affecting the frequency of use of these means.

Design/methodology/approach: The article is based on a review of the literature in the field of organizational communication and own research. The research was conducted by means of a diagnostic survey among 225 companies located in Poland (16 provinces) using the CAWI technique and an author's survey questionnaire.

Findings: The survey results illustrate the high and continuing popularity of e-mail communication and the untapped potential of tools designed for team and project work. No correlation was noted between the use of means of electronic communication with the scope of the company, the form of ownership of the company, the ownership capital and the respondent (manager, IT manager, owner, board member). The correlation related to the use of e-communication means and the size of the company appears only in the case of e-mail and electronic workflow systems. A similar relationship, but involving more electronic communication means, appears for the degree of computerization of the company.

Research limitations/implications: A certain difficulty, already at the design stage of the survey, was the preparation of a list of means of electronic communication. There is not one in the literature that is exhaustive, disjointed and accepted by all. This fact points to the need for research and findings in this area. The risks accompanying the study are related to the development of technology and the obsolescence of specific communication tools.

Originality/value: The paper is primarily of cognitive value. The findings allow those responsible for communication in an organization to confront the means of electronic communication used in their organization with those used by others. It also illustrates the untapped potential of electronic tools for team or project work. The results of the study can serve as a reference point for further comparative research. The paper draws attention to the area of intra-organizational communication, which is still unstable and under development in the Polish reality.

Keywords: internal communication, means of electronic communication.

Category of the paper: research paper.

1. Introduction

Modern technologies have long influenced the way people communicate. They determine the formation of interpersonal relations, force the acquisition of knowledge and skills necessary for efficient communication through them. The change in communication with the use of the Internet, particularly accelerated after the outbreak of the pandemic caused by the SARS-COV-19 virus. The situation left no choice for employers and employees whose way of doing their jobs allowed them to work remotely. It became necessary to provide equipment, acquire new technologies and acquire new competencies, but also to properly organize the process of communicating with employees.

The purpose of the paper is to describe the means of electronic communication used by companies for internal communication, to rank them according to the frequency of use by organizations, and to identify the attributes of the organization affecting the frequency of use of these means. Secondary sources and a diagnostic survey method were used to achieve the goal. The survey was conducted using the CAWI technique among 225 companies located in Poland. It should be noted that there are not numerous studies devoted to these issues. The subject of internal communication in the Polish reality is still unstable and in the development stage, and often treated as one of the elements of marketing communication. The relevance of the issues is related to a number of benefits of integrating electronic communications into organizational communications, including deepening relationships with stakeholders, integrating dispersed organizations or facilitating access to work for people in regions with high unemployment rates.

2. Selected problems related to the study of internal communication in an organization and the advantages and disadvantages of communicating through electronic means of communication – literature review

The role of internal communication in organizations is appreciated both in the academic literature (e.g. Stankiewicz, 2006; Cornelissen, 2010; Hamilton, 2013; Ober, 2013; Jaworowicz, Jaworowicz, 2017) and by practitioners (e.g. Widarowska, 2019). It is also the subject of research (e.g. Kończak, 2020; Biernacka, 2022). Unfortunately, it is accompanied by some problems. Many authors stress that internal communication is considered in conjunction with marketing, public relations, Human Resource or employer branding (e.g. Zajkowska, 2009; Kończak, 2020). This results in a blurring of the boundaries between the different types of communication and a different approach to the recipient of internal communications (employees), who are treated as internal stakeholders or, according to the philosophy of internal

marketing, as internal customers (Varey, 1995; de Farias, 2010). The way we communicate with this audience is incredibly important, because it translates into work efficiency and atmosphere in the organization, as well as loyalty to the place of employment. Employees can be a company's best ambassadors in its environment. Their activities and messages can help the organization build a good corporate image, or the opposite. This link between internal and external communication is recognized by Joep Cornelissen (2010, p. 26), among others, locating them in corporate communication. In both types of communication (internal and external), the same communication tools are used to a large extent, although with different intensity. This fact can be read positively, but it is also a reason for the difficulty of sorting out and classifying communication tools, especially when it comes to communication via modern ICT technologies. In addition, as J. Cornelissen (2010, p. 227) notes, modern technologies in communication mean that communication directed to employees does not always stay within the organization, and the line between internal and external communication blurs.

J. Trębecki (2012, p. 42) stresses that a classification of internal communication tools, would allow for a better understanding of them, a more informed selection of tools in terms of the organization's communication needs, and easier research. However, few descriptions and systematics of internal communication tools are present in the literature (Tarczydło, 2009; Wojcik, 2011; Trębecki, 2012, p. 42). Those that do appear deal with teams and their computer-assisted work (direct, synchronous and asynchronous communication) (Potocki, 2003, pp. 200-201; Grzenia, 2005, p. 65; Stefaniuk, 2014, p. 57). In addition, they are fraught with the difficulties of preparing a disjointed breakdown (Steinfeld et al., 2002, p. 10), as "various communication tools are combined within one comprehensive software package" (Stefaniuk, 2014, p. 57).

In view of these difficulties, in Poland there is still a high degree of emphasis on instruments that are designed to serve intra-organizational communication, although the international study *State of the Sector in trends for 2022* (Biernacka, 2022) points to a comprehensive approach to internal communication. Some scholars also draw attention to this, stressing that the intensive development of modern means of communication makes them quickly obsolete (Grzenia, 2006; Flanagin, 2020). Therefore, it makes sense to focus on the phenomena and processes behind these tools (Flanagin, 2020).

An additional difficulty is the terminology used to describe communication through modern technologies. In the literature, one can encounter the term media communication (Dobek-Ostrowska, 1999, p. 22), computer-mediated communication (CMC), virtual communication, or electronic communication (Grzenia, 2005, pp. 13-14, 59; Stefaniuk, 2014, pp. 51-53) communication using ICT (Pawlak-Kołodziejska, 2018, p. 198). Of these terms, according to T. Stefaniuk, electronic communication is the most unambiguous, and its definitions focus on a specific technology for the transmission of information (Stefaniuk, 2014, pp. 52-53). This perspective on the perception of electronic communication coincides with the views of J. Grzenia (2006, p. 59). Electronic communication, is any media in which "information from

the sender is - with the help of an appropriate device - transformed into electrical or electromagnetic signals, and then transmitted in this form to the receiver, who also uses an appropriate device - used to decipher the recording and give it a human-understandable form" (Grzenia, 2005, p. 59).

Electronic means of communication make it possible to work in virtual teams, work remotely or telecommute. This way of organizing work has advantages and disadvantages. They are described in abundance in the literature (e.g. Maruping, Agarwal, 2004, pp. 975-990; Stefaniuk, 2014, pp. 28-36; Shwartz-Asher, Ahituv, 2019, p. 551; Kobis, 2019, p. 58). During the crisis caused by the Covid - 19 virus, in some professions, remote work was a boon and a solution to a difficult time, providing a sense of health and economic security, continuity of work and the opportunity to interact (contact) with others. With this form of work, both employer and employee, save money and time. Remote work allows for flexibility and talent acquisition, regardless of geographic location (Stefaniuk, 2014, p. 36), it also provides employment opportunities in regions with high unemployment rates. Studies show that compared to face to face teams, virtual teams are more creative (Maruping, Agarwal, 2004, p. 975; Stefaniuk, 2014, p. 31), this is, among other things, a result of their high cultural diversity. However, it should be noted that virtual contacts can embolden and arouse the activity of some people, while blocking others. The effectiveness of work with electronic means of communication requires their appropriate selection (Maruping, Agarwal, 2004, pp. 975-990), for example, e-mail (asynchronous communication) will not work well in tasks that require immediate response and ensure its dynamics. Although, on the other hand, asynchronous communication allows emotions to be muted. Videoconferencing, although it largely mirrors face-to-face meetings, is not conducive to developing interpersonal contacts and solving difficult problems. Some electronic communication tools can block the flow of information and the wrong ones can do more harm than good.

It is also important to recognize the disadvantages of communication through electronic means of communication, such as weakening the loyalty of the employee to the organization or team; the lack of face-to-face contacts, especially in informal communication, wreaks havoc; limited non-verbal communication, does not facilitate understanding of the context of the conversation and affects trust (Shwartz-Asher, Ahituv, 2019, p. 551). In addition, research shows that video communication is not as efficient as face to face communication, although more efficient than audio communication. Adding text to video and audio communication improves productivity and satisfaction (Shwartz-Asher, Ahituv, 2019, p. 551). The imprudent use of electronic communication can compromise information security, which is not insignificant for the company (Kobis, 2019). There is also a risk of employees becoming addicted to ICT (Cudo, Zabielska-Mendyk, 2019, pp. 61-79) and workaholism, among other things, due to the possibility of doing work at any place and at any time. Different time zones force night or offline work. Working on the basis of modern technology, there is also the risk of having to interrupt it in the event of a computer network failure and the risk of data loss

(Kobis, 2019, p. 58). In addition, connection and cooperation is only possible if all involved use the same electronic communication tools and software.

These are just a selection of the advantages and disadvantages of using electronic communications in communication and cooperation between employees.

3. The means of electronic communication in internal communication of enterprises located in Poland - own research conducted after the outbreak of the pandemic Covid-19

3.1. Survey methodology and characteristics of the survey sample

Internal communication using electronic means of communication was one of the areas of research undertaken as part of a research grant carried out at the Military University of Technology (UGB No. 744/2021). The study was carried out by a diagnostic survey method using the Computer Assisted Web Interview (CAWI) technique and a survey questionnaire prepared for the study. Conducting the survey, was commissioned to the IPC Research Institute Ltd. Implementation of the survey took place in July-September 2020. 225 companies participated in the survey. The selection of companies for the survey was stratified randomly and included companies from 16 provinces in Poland.

The respondents were business owners (16%), board members (19.6%), general managers (46.2%), managers in charge of IT in the surveyed organizations (18.2%). They represented small enterprises with 10 to 49 employees (33%), medium-sized enterprises with 50 to 249 employees (33%) and large enterprises with more than 250 employees (33%). An equal number of people participated in the survey, being representatives of trade (33.3%), manufacturing (33.3%) and services (33.3%). The form of company ownership was also taken into account. A corporation was represented by the largest number of people (55.1%), followed by a partnership (35.1%) and then a sole proprietorship (9.8%). Companies with predominantly or exclusively Polish capital (76.9%) and predominantly or exclusively foreign capital (23.1%) participated in the survey. The degree of computerization of the company was also asked. No or low level of computerization of the company was declared by 3.6% of respondents. A medium level of computerization of their company was indicated by 44% of respondents, a high level by 42.7% of respondents and a very high or total level by only 9.8%.

Calculations were conducted using PS IMAGO PRO 6.0 program.

The purpose of the paper is to describe the means of electronic communication used by companies for internal communication, to rank them according to the frequency of use by organizations, and to identify the attributes of the organization affecting the frequency of use of these means. The following research questions were formulated: 1. What means of electronic

communication within the enterprise, are used most often, and 2. Does the enterprise's use of means of electronic communications depend on the enterprise attributes adopted in the study?

Based on the analysis of the literature and results from research reports available on the Internet, the following research hypotheses were adopted: H1. The most common means in internal communication via of means of electronic communication include the traditionally used e-mail, instant messaging for voice and video calls and teamwork platforms/apps; H2. The use of means of electronic communication in an enterprise's internal communications depends on attributes such as the size of the enterprise, the nature of the business, the form of ownership, the ownership capital and the degree to which the company is computerized.

3.2. Results of the survey

One of the areas of interest, in the study undertaken, was internal communication in the enterprise using electronic communication means. A question was devoted to it, in which respondents were asked to indicate the degree of use of electronic communication means in internal communication in their enterprises. On the basis of literature, knowledge and own experience, a list of internal electronic communication means was compiled and each was assigned a scale from 0 to 5, with 0 indicating no such form of communication, and 5 indicating the highest degree of use of electronic communication means in the internal communication of the enterprise. A value of 3 on the five-point scale is interpreted as the average degree of use of electronic communication means in internal communication in the enterprise (Table 1).

Communication tools have been grouped according to the possibility of team collaboration or the lack of it or the negligible possibility of it. Team collaboration is provided, for example, by Office 365, Google Docs/Sheets, Ms Teams, Slack, Content Management Systems (CMS), SharePoint, Confluence, Zoho, Trello. Within these tools, it was necessary to divide them into those that guarantee not only planning, organizing and controlling collaboration (e.g. SharePoint, Confluence, Zoho, Trello) but also those that also allow synchronous communication using video (e.g. Ms Teams, Slack). In addition, from the tools for organizing the work of the team there are those dedicated to work in project teams (e.g. Zoho, Trello). A separate group is formed by office software with the possibility of team collaboration, e.g. Office 365, Google Docs/Sheets, due to the wider possibilities for office work than guaranteed by other electronic means of communication.

Other means of electronic communication within the organization on the list are characterized by the fact that they provide little or no opportunity for teamwork, e.g. external drives for storing and sharing documents. Among them, one can notice those that emphasize mainly one-way messages, without the possibility of interacting with the recipient e.g. newsletters or mailing, or interaction limited e.g. social networks.

Table 1.*Frequency of using of electronic communication in intra-company communication (N=255)*

Means of electronic communication	SCALE *						Mean value
	0	1	2	3	4	5	
E-mail	0%	4.9%	5.8%	17.3%	21.3%	50.7%	4.1
Office software with collaboration capabilities (e.g. Office 365, google docs/sheets)	5.3%	5.3%	8.4%	22.2%	24.9%	33.8%	3.8
External hard drives for document storage and sharing	6.2%	8.0%	12.0%	19.1%	29.8%	24.9%	3.6
Communicators for voice and video calls (e.g. Skype, zoom, whatsapp)	9.8%	4.9%	14.7%	20.9%	28.9%	20.9%	3.5
Electronic workflow systems	4.9%	6.2%	15.1%	25.3%	21.3%	27.1%	3.5
Text messaging (e.g. Gadu gadu, facebook, messenger)	14.7%	5.8%	12.4%	20.4%	22.7%	24.0%	3.5
Social networks (e.g. Facebook, linkedin)	11.1%	6.7%	15.1%	21.8%	22.7%	22.7%	3.5
Newsletterly lub mailingi	13.3%	9.8%	13.3%	22.2%	24.4%	16.9%	3.2
Publicly available discussion forums, blogs, message boards on the internet	16.4%	12.4%	12.0%	19.6%	24.4%	15.1%	3.5
Company portals with discussion forums, blogs, message boards	15.6%	9.3%	10.7%	27.1%	21.8%	15.6%	3.3
Content management systems (cms) /wiki-type tools (e.g. Sharepoint, confluence)	16.0%	10.2%	11.1%	27.1%	20.4%	15.1%	3.3
Platforms/apps for teamwork (e.g., teams, slack)	14.7%	8.9%	15.6%	25.8%	19.1%	16.0%	3.2
Project and task management tools (e.g. Zoho, trello)	21.3%	7.6%	17.8%	20.4%	21.8%	11.1%	3.1

*The question was closed ended and used a scale from 0 to 5, with 0 indicating no use and 5 indicating the highest degree of means of electronic communications use in the organizational communication. A value of 3 on the five-point scale is interpreted as an average degree of electronic means of communications use in the organizational communication.

Presented in Table 1, the hierarchy of the means of electronic communication within the organization, was prepared based on the sum of respondents' answers given in items 5 and 4 on the Likert scale adopted in the question.

Source: own research.

The most popular means of internal communication in the organization using electronic means of communication is via e-mail (72%¹) (Tab. 1). Such a result was to be expected, if only because of the wide and easy availability of this way of exchanging information, but also the advantages of asynchronous communication, typical of this means of communication. There was no person among the respondents who would not use e-mail in internal organizational communication.

¹ In preparing the hierarchy of the most popular means of electronic communication within the organization, the sum of respondents' answers given in items 5 and 4 on the Likert scale adopted in the question was used, where 5 means the highest degree of intensification and 4 means a high degree of intensification in the use of the listed means of communication.

In second place, were office software with team collaboration capabilities (office application suite) (58.7%) (Tab. 1). They include a word processor, spreadsheet, presentation software, a forms tool and a simple drawing editor. The office application suite, which is available online, usually has a part available to the user in free and paid versions. The package also includes a calendar and mail client. However, these powerful groupware tools still do not use video-formatted contacts, but allow more interaction than external drives for document storage and sharing, which were identified by respondents as the third most used means of electronic communication within the organization (54.7%).

Instant messaging for voice and video calls (e.g., Skype, Zoom, WhatsApp), fostering interactions most similar to face-to-face communication, came in fourth place (49.8%). This may come as a surprise, especially since some of them provide opportunities for team collaboration.

Slight differences appear in the following indications of electronic communication means used for intra-organizational communication: electronic workflow system (48.4%), text messaging (e.g. Gadu Gadu, Facebook, Messenger) (46.7%) and social networks (e.g. Facebook, LinkedIn) (45.4%). They differ in terms of functionality. The former focuses on document exchange and is most often purchased by an organization and more secure to use. The latter two places are for short text messages, use images and videos, i.e. one-way messages, and are less secure due to their general accessibility.

The eighth place in the hierarchy of electronic communication means used for intra-organizational communication was taken by newsletters and mailings (41.3%). This form of communication is more associated with e-marketing and reaching external customers. However, it is also practiced towards employees, understood as internal customers. Newsletters provide information about what is going on in the company, and sent systematically, they are intended to build relationships between the organization and employees.

This was followed by publicly accessible discussion forums, blogs, message boards on the Internet (39.5%) and company portals with discussion forums, blogs, message boards (37.4%). What differs between the mentioned means of electronic communication is the degree of control by the employer. In the case of discussion forums and blogs, it is usually problematic who will run the company blog and what information can be posted on it so that it is interesting and does not violate the company's security policy. The company must also adopt procedures for responding to uncomfortable comments. According to HubSpot's research, blogs are now one of the most popular marketing communication channels. They are second only to social media as Top Marketing Channels in 2022 (hubspot.com). So it seems to be an effective way to communicate.

One of the final places on the list of electronic means of communication within an organization is occupied by Content Management Systems (CMS)/Wikis-type tools (e.g. SharePoint, Confluence) (35.5%). The penultimate place is occupied by teamwork platforms/apps (e.g. Teams, Slack) (35.1%).

In last place are project and task management tools (e.g., Zoho, Trello) (32.9%). Their lower popularity in the indications of respondents, may be due to the fact that not all work is based on project teams, and so the need to use them is far less than the other means of electronic communication.

Among the means of electronic communication within the organization, project and task management tools (e.g., Zoho, Trello) (21.3%), publicly available discussion forums, blogs, bulletin boards on the Internet (16.4%), Content Management Systems (CMS) / Wiki-type tools (e.g., SharePoint, Confluence) (16.0%), company portals with discussion forums, blogs, bulletin boards (15.6%) are not used by respondents.

The study was also interested in the attributes of the organization and their influence on the frequency of use of electronic means of communication (Tab. 2). No correlation was noted between the use of means of electronic communication with the scope of the company, the form of ownership of the company, the ownership capital and the respondent (manager, IT manager, owner, board member).

Table 2.

The degree of computerization of the company vs. the use of means of electronic communication in internal company communications

Means of electronic communication	Degree of computerization of the company	
	Correlation coefficient (Spearman's R)	Statistical significance (p)
Newslettery lub mailingi	0.173	0.009
Office software with collaboration capabilities (e.g. Office 365, google docs/sheets)	0.196	0.003
External hard drives for document storage and sharing	0.317	0.000
Communicators for voice and video calls (e.g. Skype, zoom, whatsapp)	0.197	0.003
Electronic workflow systems	0.294	0.000
E-mail	0.148	0.026
Social networks (e.g. Facebook, linkedin)	0.138	0.038
Publicly available discussion forums, blogs, message boards on the internet	0.157	0.018
Content management systems (cms) / wiki-type tools (e.g. Sharepoint, confluence)	0.169	0.011
Platforms/apps for teamwork (e.g., teams, slack)	0.155	0.020
Project and task management tools (e.g. Zoho, trello)	0.055	0.408
Text messaging (e.g. Gadu gadu, facebook, messenger)	0.095	0.115
Company portals with discussion forums, blogs, message boards	0.112	0.093

Source: own research.

Based on the values obtained for Spearman's R correlation coefficient and statistical significance, it should be noted that the correlation between the mentioned attributes of the organization and the use of electronic means exists mainly for the degree of computerization of the company (Table 2) and to a small extent for the size of the workforce.

The Spearman's R correlation coefficient (Rs) obtained indicates a very weak but clear and statistically significant (p) correlation of the degree of computerization of the company with the use of the following electronic means of intra-organizational communication: Social

networking sites (e.g., Facebook, LinkedIn) ($R_s = 0.138$; $p = 0.038$), e-mail ($R_s = 0.148$; $p = 0.026$), Teamwork platforms/apps (e.g. Teams, Slack) ($R_s = 0.155$; $p = 0.020$), Publicly available discussion forums, blogs, online bulletin boards ($R_s = 0.157$; $p = 0.018$), Content Management Systems (CMS) / wiki-type tools (e.g., SharePoint, Confluence) ($R_s = 0.169$; $p = 0.011$), Newsletters or mailing ($R_s = 0.173$; $p = 0.009$).

The Spearman's R correlation coefficient (R_s) obtained indicates a weak but clear and statistically significant (p) correlation of the degree of computerization of the company with the use of the following electronic means of intra-organizational communication: Collaborative office software (e.g., Office 365, Google Docs/Sheets) ($R_s = 0.196$; $p = 0.003$), Instant messaging for voice and video calls (e.g., Skype, Zoom, WhatsApp) ($R_s = 0.197$; $p = 0.003$), Electronic workflow systems ($R_s = 0.294$; $p = 0.000$), External drives for document storage and sharing ($R_s = 0.317$; $p = 0.000$).

Based on the value of Spearman's R correlation coefficient (R_s) and the level of statistical significance (p), no correlation is observed between the degree of computerization of the company and the use of the following electronic means of intra-organizational communication: Text messaging (e.g., Gadu Gadu, Facebook Messenger); Project and task management tools (e.g., Zoho, Trello); Company portals with discussion forums, blogs, message boards.

Spearman's R correlation coefficient (R_s) obtained indicates a weak but clear and significant (p) correlation between the size of a company's workforce and the use of e-mail in intra-organizational communication ($R_s = 0.190$; $p = 0.004$) and electronic workflow systems ($R_s = 0.196$; $p = 0.003$). In the case of the other electronic means of intra-organizational communication, listed in Table 2, no relationship is observed with the size of employment.

The results of the survey, presented in the paper, show that e-mail is a readily used means of communication. Unfortunately, the potential of tools designed for team and project work is untapped. Despite this, the results in Tab 1 show that the surveyed companies are eager to use electronic means of communication.

4. Summary and conclusions

Based on the surveys conducted, it can be noted that e-mail ranks first among electronic communication means, as it did in other studies before and during the pandemic (Stefaniuk, 2014, p. 58; Pawlak, 2018, p. 205; Biernacka, 2020). Voice and video calling communicators ranked further down (fourth). These results may come as a surprise on the one hand, since synchronous communication tools, which include voice and video call communicators, provide a way of communicating that is most similar to face-to-face communication (Ehsan et al., 2008; Xu, Liao, 2020). However, it should be noted that the question asked about the most popular means of electronic communication. The results may look different if respondents are asked to

determine the effectiveness of electronic communication means. This is illustrated by the results of the State of the Sector 2021-2022 survey (Biernacka, 2022).

It would seem that working online, would favor the popularity of platforms/apps for teamwork (e.g. Teams, Slack) and project and task management tools (e.g. Zoho, Trello). Unfortunately, they were indicated by respondents in the final places. The H1. adopted in the study can be positively verified only partially.

Of the company attributes listed in H2. only the degree of computerization affects the use of electronic communications, and to a small extent the size of the workforce. However, it is worth noting that there is no correlation between the degree of computerization of the company and the use of project management tools, text messaging and company portals with discussion forums, blogs, bulletin boards in communication. In contrast, the correlation of the size of the company's workforce with the use of electronic means of communication in intra-organizational communication relates only to e-mail and electronic workflow systems. The H2. adopted in the study can be positively verified only partially.

Publicly available electronic means of communication, e.g. Facebook, WhatsApp, as well as specialized ones under the control of the organization, e.g. company blogs, are equally often used in internal communication. For the sake of organizational security, it is worth paying attention to what content is transmitted by employees through publicly available applications or messengers.

One of the major difficulties accompanying the study of electronic communications is the lack of their disjointed classifications, and the use of the names of specific applications, communicators, etc., due to the development of technology, carries the risk that the results will quickly become outdated. The above situation also makes it difficult to conduct comparative studies.

However, it is worth the effort to identify the most popular means of communication in the organization. Knowing them will make it easier to choose the right mode of communication. Communication using electronic means of communication provides an opportunity to integrate distributed organizations (distributed organization) and an opportunity for people in regions with high unemployment rates to work. It is also a solution for times of crisis.

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References

1. Biernacka, M. (2020). *Najskuteczniejsze narzędzia komunikacji wewnętrznej. Wyniki badania State of the Sector 2020*, Retrieved from: <https://beedifferent.pl/blog/najskuteczniejsze-narzedzia-komunikacji-wewnetrznej-wyniki-badania-state-sector-2020>, 5.09.2022.
2. Biernacka, M. (2022). *Skuteczna komunikacja wewnętrzna. Wyniki badania State of the Sector 2021/22*, Retrieved from: <https://beedifferent.pl/blog/skuteczna-komunikacja-wewnetrzna-badania-state-sector-202122>, 5.09.2022.
3. Cornelissen, J. (2010). *Komunikacja korporacyjna. Przewodnik po teorii i praktyce*. Warszawa: Oficyna a Wolters Kluwer business.
4. Cudo, A., Zabielska-Mendyk, E. (2019). Funkcjonowanie poznawcze a uzależnienie od Internetu - przegląd badań, *Psychiatria Polska, nr 53(1)*, pp. 61-79. Retrieved from: https://researchgate.net/publication/31501135_Funkcjonowanie_poznawcze_a_uzaleznienie_od_Internetu_-_przeglad_badan_Cognitive_functions_in_Internet_addiction_-_a_review_Polish_and_English, 27.012.2022.
5. de Farias, S.A. (2010). Internal Marketing (IM): a literature review and research propositions for service excellence. *Brazilian Business Review, Vol. 7, No. 2*, pp. 99-115. Retrieved from: <http://dx.doi.org/10.15728/bbr.2010.7.2.6>, 5.09.2022.
6. Dobek-Ostrowska, B. (1999). *Komunikacja społeczna*. Wrocław: Astrum.
7. Ehsan, N., Mirza, E., Ahmad, M. (2008). Impact Of Computer-Mediated Communication On Virtual Teams- Performance: An Empirical Study, *World Academy of Science. Engineering and Technology International Journal of Electronics and Communication Engineering, Vol. 2, No. 6*, pp. 1194-1203. Retrieved from: <https://doi:10.5281/zenodo.1063126> fatcat:sub6e7ipcrajrenpbs7dxn7s3i, 5.09.2022.
8. Flanagan, A.J. (2020). The Conduct and Consequence of Research on Digital Communication. *Journal of Computer-Mediated Communication, Vol. 25, Iss. 1*, pp. 23-31, Retrieved from: <https://doi.org/10.1093/jcmc/zmz019>, 25.09.2022.
9. Grzenia, J. (2007). *Komunikacja językowa w Internecie*. Warszawa: PWN.
10. Hamilton, Ch. (2011). *Skuteczna komunikacja w biznesie*. Warszawa: PWN.
11. Jaworowicz, M., Jaworowicz, P. (2017). *Skuteczna komunikacja w nowoczesnej organizacji*. Warszawa: Difin.
12. Kobis, P. (2019). Człowiek w zespołach wirtualnych a bezpieczeństwo w zarządzaniu informacją. *Przegląd Organizacji, nr 7(954)*, pp. 57-64. Retrieved from: <https://przegladorganizacji.pl/plik/5e092497e8765/po.2019.07.08.pdf>, 27.12.2022.
13. Kończak, J. (2020). Rola komunikacji korporacyjnej w Polsce. *Studia Medioznawcze, nr 1*, pp. 45-63. DOI:10.33077/uw.24511617.ms.2017.68.408.

14. Maruping, L., Agarwal, R. (2004). Managing team interpersonal processes through technology: a task-technology fit perspective. *Journal of Applied Psychology*, Vol. 89, No. 6, pp. 975-990. Retrieved from: <https://pubmed.ncbi.nlm.nih.gov/15584836/>, 27.12.2022.
15. Ober, J. (2013). Funkcja i rola efektywnej komunikacji w zarządzaniu. *Zeszyty Naukowe Politechniki Śląskiej, Organizacja i Zarządzanie*, nr 65, Nr kol. 1897, pp. 257-266.
16. Pawlak, K. (2018). Środki komunikowania się przedsiębiorstw z rynku NewConnect z interesariuszami. In: J. Woźniak, K. Pawlak, P. Zaskórski, *Technologie teleinformatyczne w gospodarce informacyjnej i komunikowaniu się współczesnych przedsiębiorstw. Perspektywa rynku NewConnect*. Warszawa: WAT.
17. Potocki, A. (2003). Metody rozwiązywania problemów i tworzenia innowacji oparte na odpowiednio zorganizowanej komunikacji. In: A. Potocki, R. Winkler, A. Żbikowska, *Techniki komunikacji w organizacjach gospodarczych* (pp. 163-249). Warszawa: Difin.
18. Shwartz-Asher, D., Ahituv, N. (2019). Comparison between Face-to-Face Teams and Virtual Teams with Respect to Compliance with Directives. *Journal of Service Science and Management*, Vol. 12, No. 4, pp. 549-571. Retrieved from: [https://www.scirp.org/\(S\(351jmbntvnst1aadkozje\)\)/journal/paperinformation.aspx?paperid=93379](https://www.scirp.org/(S(351jmbntvnst1aadkozje))/journal/paperinformation.aspx?paperid=93379), 27.12.2022.
19. Stankiewicz, J. (2006). *Komunikowanie się w organizacji*. Wrocław: Astrum.
20. Stefaniuk, T. (2014). *Komunikacja w zespole wirtualnym*. Warszawa: Difin.
21. Steinfield, Ch., Yang, Ch., Huysman, J.M., David, K. (2002). *Communication and Collaboration Processes in Global Virtual Teams. International Networked Teams for Engineering Design (INTEnd) Project Summary Report*. East Lansing, Michigan: Michigan State University. Retrieved from: http://www.researchgate.net/publication/277283706_communication_and_collaboration_process_in_global_virtual_teams, 15.09.2022.
22. Tarczydło, B. (2009). Wewnętrzne public relations przedsiębiorstwa, wybrane przykłady. In: D. Tworzydło, T. Chmielewski (Ed.), *Problemy i wyzwania public relations w świetle badań i praktyki* (pp. 191-204). Rzeszów: WSIZ.
23. Trębecki, J. (2012). Klasyfikacja narzędzi komunikowania wewnętrznego – nowe propozycje. *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Poznaniu*, nr 249, pp. 40-48.
24. Varey, R.J. (1995). Internal Marketing: A Review and Some InterDisciplinary Research Challenges. *International Journal of Service Industry Management*, Vol. 6, No. 1, pp. 40-63, Retrieved from: https://www.researchgate.net/publication/235269288_internal_marketing_a_review_and_some_interdisciplinary_research_challenges, 5.09.2022.
25. Widarowska, D. (2019). *Komunikacja wewnętrzna a zarządzanie firmą - narzędzia oraz metody*. Retrieved from: <https://brandnewportal.pl>, 5.09.2022.
26. Wojcik, K. (2011). *Public relations, wiarygodny dialog z otoczeniem*. Warszawa: Placet.

27. Xu, K., Liao, T. (2020). Explicating Cues: A Typology for Understanding Emerging Media Technologies. *Journal of Computer-Mediated Communication*, Vol. 25, Iss. 1, pp. 32-43. Retrieved from: <https://doi.org/10.1093/jcmc/zmz023>, 5.09.2022.
28. Zajkowska, M. (2009). Komunikacja wewnętrzna jako element systemu zintegrowanej komunikacji marketingowej. *Zeszyty Naukowe Uniwersytetu Szczecińskiego, nr 559, Ekonomiczne Problemy Usług, nr 42*, pp. 210-216.