

# The impact of the multi-variant remote work model on knowledge management in enterprises. Applied tools.

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**Abstract**—The article presents the scope of issues related to knowledge management in models assuming the performance of work outside workplaces and the tools used to disseminate knowledge transfer. Knowledge management and transfer are the cornerstones of any business. They are evidence of market position and competitive advantage. The approach to knowledge transfer tools in remote work models is becoming crucial. On this basis, a research issue was formulated, which concerns knowledge management in hybrid work performance models and ICT tools used. The research objective is to assess knowledge transfer in businesses and identify the most effective ICT tools used by employees to manage knowledge in businesses. In order to solve the research problem, quantitative research was conducted on a randomly selected sample of respondents. Studies have shown that respondents are aware of the importance of knowledge sharing within organizations. They see the benefits and barriers thereof. Their command of knowledge-sharing tools, on the other hand, is moderate. The added value of the article is linking the substantive approach to knowledge transfer itself, taking into account the tools used in the hybrid model. The article indicates the existing connections and perception of the employees themselves.

**Index Terms**—knowledge, knowledge management, hybrid work model, ICT tools.

## I. INTRODUCTION

MODELS of performing work outside the employer's headquarters have gained importance due to the global coronavirus pandemic. This enabled the emergence of a new reality that encompassed all possible employers. This determined the definition - in accordance with the SWOT analysis - of new opportunities, threats, as well as specifying the strengths and weaknesses of this model. Many companies do not have clearly defined strategies for applying remote working models. This raises many doubts among employees, since the coronavirus pandemic has shown that many tasks and duties can be performed in remote models. This is also directly related to maintaining work-life balance, which is becoming increasingly important. There is a growing attention being paid to creating a culture of knowledge sharing by employees in businesses. A culture that is based on openness, trust and a favourable atmosphere. Knowledge is the primary resource of an organization, which testifies to

its market position and competitiveness. Resources, on the other hand, are employees, and in particular their skills and competences, which have open or secret forms of knowledge. The objective of businesses is to create such conditions in which employees will want to exchange their experience and know-how. To make this possible, it is necessary to use tools that will make it possible. These are primarily systems or knowledge bases that employees have access to. The article aims to analyze the knowledge transfer tools used in hybrid work models in businesses.

The article reviews the current literature on the subject, presents the research process methodology and the characteristics of the research sample, presents the research results, refers to the latest report results, and finally summarizes the conclusions.

The author's contribution to the article is as follows:

- carrying out a critical analysis of the research topic,
- referencing the subject matter of the article in the literature overview,
- conducting quantitative research on a random sample of respondents,
- research results constitute added value in the field of management and quality sciences. They indicate the connections in the examined topic.

## II. LITERATURE OVERVIEW

The concept of remote work or telework/telecommuting dates back to the 1970s. This was a response to many changes in the processes within businesses. This resulted in the emergence of innovative approaches to shaping new models of work performed outside the employer's headquarters. In 1973, Jack Nilles conducted an experiment that proved that each employee's work can be transmitted through computers or other telecommunications methods. This, in consequence, meant limiting the movement of workers who are required to perform work [1]. This was greatly aided by technological development, which determined the emergence of a new and flexible employment form for employees who could carry out their tasks outside the employer's stationary offices. The approach aims to limit com-

muting costs in addition to saving on commuting time [2]. The possibility of performing duties outside the workplace has been intensified by the increased importance of information and knowledge in relation to goods or products. The development of remote work is the development of information technologies as well as computer science itself, which is a tool in IT architecture [3].

There are many definitions of the term 'remote work'. It is very difficult to cite one that would fully reflect the essence of its meaning. In order to attempt to define remote work, one should draw attention to existing synonyms such as teleworking, virtual officing, remote work, networking, or work from home. It seems that the terms can be used interchangeably, because they mean the same thing. The difference may exist in the basis of employment under which work is performed [4].

TABLE I  
Selected definitions of the term of teleworking

A. Jeran (2016)	"Work carried out outside the employer's offices, depending on the form: in the employee's place of residence or another location, sometimes on the move" [5].
M. Hynes (2014)	The possibility of using IT tools that allow one to perform their duties in a different geographical location than the workplace [6].
R. Blanpain (2013)	"Work performed for an employer or client, mainly in a place other than the traditional workplace, using information technologies" [7].
Greenberg and A. Nilssen (2008)	Implementation of new information technologies through tools, including computers, in exchange for employees commuting to the workplace [8].
S. Ciupa (2009)	"A new form of organizing and performing work (...), where the manner and conditions of performance as well as order and organization can be shaped through the use of advanced information and communication technologies" [9].
The Act of 26 June 1974, art. 67, § 1 and 2. Labour Code (1974)	"It may be performed regularly outside the workplace, using electronic means of communication in light of regulations on the rendering of electronic services (teleworking). The teleworker is an employee who performs work (...) and provides the employer with the results of said work, in particular using electronic means of communication" [10].

Source: Own study based on the cited literature

Remote work is a type of flexible work in the scope of dimensions such as: time, location, permanence of relation-

ships, and the type of contracts concluded between the employer and the employee [11].

According to S. Hogarty, the hybrid work model aims to combine elements characteristic of office-based work and performing duties as part of remote work. The goal is to provide the employee with an opportunity to decide how they will perform their work. The hybrid system of work is based on the performance of tasks by employees depending on their preferences and work style. Each employee must have full comfort in performing their duties. There are the following types of hybrid work: "remote first", which means that employees perform their tasks remotely, but can come to the office if necessary. The rotation variant, which consists in establishing a schedule and dividing employees into teams performing work remotely and stationary [12].

The advantages of using a hybrid work model include [13]:

- the possibility of saving time on commuting to the workplace,
- growing importance of work-life balance for employees,
- increase in KPIs in terms of employee satisfaction with and engagement in the performed work,
- greater flexibility in the recruitment carried out by companies, as well as reaching out to "talent",
- ability of maintaining better contacts with clients.

Knowledge management is becoming increasingly important in modern businesses as a foundation of the human resources management strategy. As a result of the end of the industrial era, some of the most important assets are knowledge, information and intellectual capital [14]. The issue at stake is the knowledge of employees itself, which is not the property of the companies [15]. Intensified development of the information society focusing on the knowledge management and distribution plays a key role in all communication progress. Telecommunications and all information technologies determine contacts between people and have a direct impact on teamwork in distributed structures [16].

The word "knowledge" has many definitions in subject literature. According to P. Ducker - knowledge is a type of effective and efficient use of information in taking actions [17]. On the other hand, E. Turban believes that components of knowledge include: truth, beliefs, expectations, ideas, and know-how [18]. S. Galata argues that knowledge is an exceptional and unique resource of an organization that accrues while in use [19].

One of the trends of innovative employee behaviors is the use of creativity based on three competencies, which include: expertise, motivation and creative abilities [20].

Human and intellectual resources have a key impact on building the innovation capacity of businesses where knowledge is a key element. Knowledge management, then, is influenced by the following:

- the education of employees hired by the business,
- skills related to knowledge acquisition and processing,
- openness of employees to improve their qualifications, as well as acquire new knowledge,

- acquired knowledge and experience of the management staff,
- all knowledge regarding the needs of internal and external clients, as well as contractors,
- competency opportunities to create new knowledge,
- cumulative knowledge (codified knowledge) encompassing intellectual property rights,
- possessing competencies related to knowledge acquisition from the external environment [21].

A given organization's management staff will support the knowledge management process, including the knowledge transfer itself, if it is related to obtaining potential benefits [22].

Knowledge management in the Japanese model consists of a process that includes the following elements:

- socialization – assumes experience sharing between employees. Creating hidden knowledge, as well as generating new ideas.
- externalization – that is, manifestation. It is a situation in which hidden knowledge is presented as a metaphor, a hypothesis. Afterwards, it is converted into overt knowledge.
- combination – combining available knowledge through various components. The result is the reaction of new knowledge.
- internalization – involves the permeation of available knowledge into hidden knowledge. It primarily involves education through taking action [23].

The model presented above is the beginning of the SCRUM concepts, which concern the concept of managing organizations in the perspective of project management. It is an operational level based on planning, as opposed to a traditional concept based on control [24].

Hidden knowledge is a type of knowledge that is difficult to articulate through colloquial language [25]. Overt knowledge is created on the foundations of hidden knowledge, which serves as the starting point [26].

In the process model, knowledge management integrates processes such as creating, organizing, collecting, and then utilizing knowledge in the organization [27].

If knowledge management in the process approach constitutes a process, it is possible to distinguish the following sub-processes:

- creation of new knowledge (recognition of new and old knowledge),
- specification of knowledge belonging to the organization,
- checking the knowledge resources,
- ordination of knowledge,
- the possibility of utilizing and promoting knowledge,
- creation of knowledge based on resources [28].

The resource model is based primarily on resources as the basic factor indicating a competitive advantage [29]. However, resources, including knowledge, are combined when creating the competitive advantage itself. This determines an exchange of knowledge between employees [30].

Knowledge transfer support tools within organizations include:

- a document circulation system (workflow) that allows for circulation of documents from different sources, but existing within one system, which all employees involved in a given process have access to. The scope of tasks includes: managing document flow, i.e. document life, data import / export.
- a system aimed at supporting group work, which enables joint performance of tasks or projects in distributed structures or in hybrid work models.
- an expert system that enables the use of available knowledge, and related decision-making. The scope of this system includes: a user interface, a knowledge base, a database, and a knowledge base editor.
- an e-learning system for monitoring and reporting progress results in the remote learning of employees.
- a content management system is a tool intended to create websites in the HTML model [31].

The figure below shows the relationship between knowledge management, which, using appropriate tools, affects the work performance in a hybrid model.

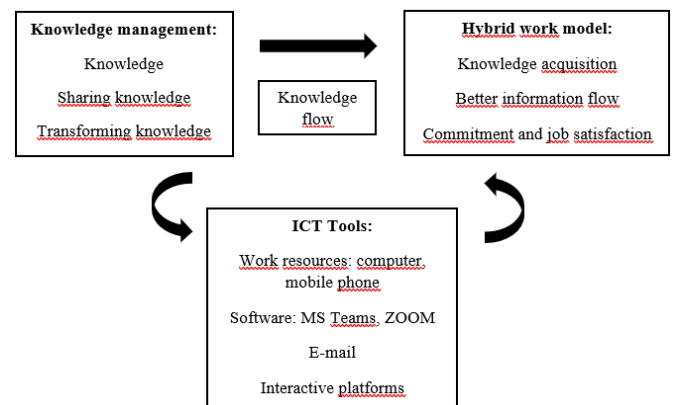


Fig. 1 Relationships between knowledge management and the hybrid work model  
Source: Own study

For the purposes of the article, a multi-variant remote work model has been developed, which has a direct impact on knowledge management in businesses. The model was created on the following models: resource-based, process-based and Japanese.

The model's assumptions are as follows:

- knowledge is the strategic and most important pillar of a business,
- knowledge exchange takes place among employees working in a hybrid model,
- knowledge has a multifaceted dimension,
- managing knowledge is a process consisting of its creation, transfer, implementation, sharing, and transformation.
- knowledge is not only information, but also values, emotions, views, and experience,
- ICT tools absolutely affect the transfer of knowledge between employees.

### III. METHODS AND MATERIALS

Based on the theoretical section, the following objectives of the conducted research were formulated:

- assessment of tools used by employees during hybrid work,
- assessment of the hybrid work model in businesses,
- assessment of knowledge transfer in businesses.

The article puts forward the following research hypotheses:

H1: Knowledge sharing has a significant impact on employees of companies.

H2: The use of ICT tools positively impacts the use of knowledge in businesses.

H3: Knowledge management depends on the multi-variant model of remote work adopted in the article.

In order to achieve the research objectives, a critical analysis of the subject literature was conducted. Literature studies were conducted using the desk research method utilizing secondary sources. Their objective was to prepare a research tool for conducting empirical analyses. The research was quantitative in nature. A prepared online survey was used as the research tool. The survey was conducted on 08-31.03.2022. Selection of the research sample was random. The study was anonymous and participation in it was voluntary.

The questionnaire consisted of 20 substantive questions and a metric. Some of the questions were open, asking the employee to provide an individual answer, while others were closed questions with the option of choosing one or several answers. The survey was taken by 239 respondents.

TABLE II  
Survey results – metric

No	Category	Respondents' answers	Answers In figures	Answers in [%]
1	Gender	Female	150	62,8%
		Male	89	37,2%
2	Age	Under 25 years old	42	17,6%
		25 - 40	90	37,7%
		41 - 60	64	26,8%
		Over 60	43	18%
3	Education	Primary	27	11,3%
		Secondary	133	55,6%
		Higher	79	33,1%
4	Company size	Small	124	51,9%
		Medium	59	24,7%
		Large	56	23,4%

Source: Own study

It should be noted that the research was carried out after a subsequent wave of the COVID-19 pandemic, which lasted from January to February 2022. There is a return of employees to stationary or hybrid work observed in businesses.

### IV. RESULTS OF THE CONDUCTED STUDY

The growing popularity of hybrid work requires companies to provide employees with the tools to perform their jobs outside the employer's offices.

The answers to open question concerning the tools necessary to perform duties in a hybrid model are presented in Figure 2. Respondents stated that the computer is a priority (38.3%). It's a basic tool that directly enables performance of work regardless of the employees' geographic location. The knowledge of internet tools enabling remote connection of employees – MS Teams, ZOOM (24.8%) was highly rated. Internet access (19.1%), as well as a mobile phone (5.3%), headphones with a microphone (4.4%), or other electronic devices (0.4%) are also considered necessary. A small number of respondents answered that this question did not apply to them (2.7%).

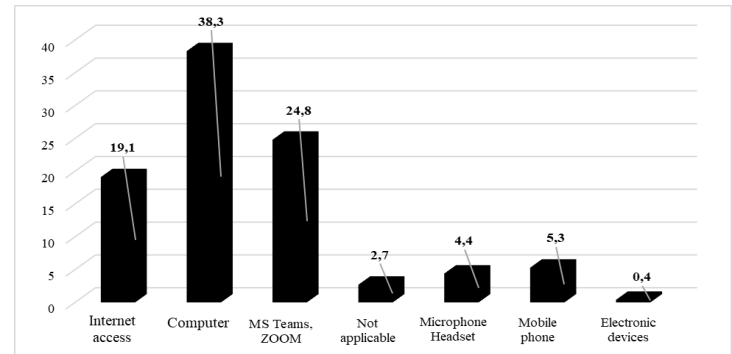


Fig. 2 Tools necessary to perform duties in a hybrid work model  
Source: Own study

Figure 3 presents the factors that respondents believe are in favor of performing work in a stationary model. Over half of the respondents consider contact with other colleagues to be the most important (52.8%). For employees, another important aspect is the greater control they have at work (12.4%) and the ability to focus on their job (6.8%). An equally important issue is access to all tools (8%) such as a printer, scanner or documents, which are only available in the workplace. Respondents also drew attention to the workplace atmosphere (7.2%). This is an extremely important factor which shows that employees feel the need to be at work in a pleasant atmosphere. There were also answers concerning: greater discipline (4%) and willingness to help others (3.2%).

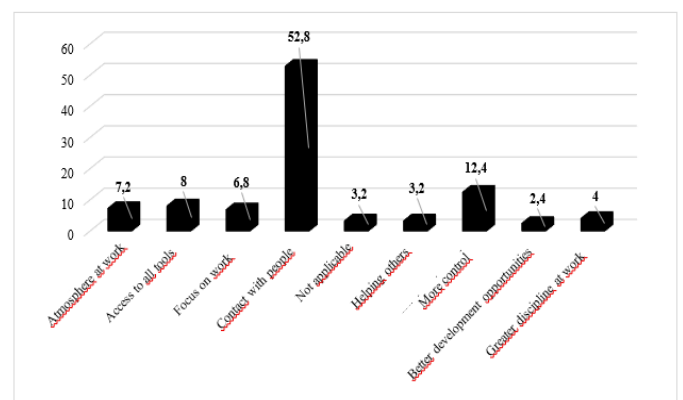


Fig. 3 Factors affecting stationary office work  
Source: Own study

The next question in the survey questionnaire concerned the ranking factors that affect job satisfaction in the hybrid model from the most important to the least important. According to respondents, the most important is flexibility, which is closely related to performing tasks outside the employer's headquarters (48.1%). In line with the theory by Jack Nills, respondents note a reduction in time associated with commuting (38.5%). When working from home, an important factor turns out to be the employer's trust in the employee reliably and conscientiously performing their work (29.7%). The answer to this question is related to the following answer of respondents concerning the maintenance of work-life balance (14.6%). Limiting the commute time, along with the employer's full trust in the employee performing their tasks directly affects the ability to maintain work-life balance. For workplaces with an open space, it is important that working from home allows for greater focus (19.7%).

Table 3 presents the results of respondents' answers to questions concerning work models implemented in businesses. The distribution of answers to the question related to the work mode's efficiency is very similar in terms of the stationary work model (36.8) and the hybrid work model (36%). The answers differ in the case of the work model applied in businesses. According to the respondents' answers, organizations prefer to work in a stationary model (44.8%) assuming that employees come to the employer's headquarters to perform their duties. The research shows that hybrid and remote work models are not popular among employers of the randomly surveyed respondent sample. Over half of the respondents (67.8%) believe that meetings with colleagues are a key element of teamwork. Respondents believe that the companies where are employed have provided them with appropriate knowledge and ensured corresponding knowledge carriers to perform their duties.

**TABLE III**  
Results of the survey concerning the performed work model

No.	Question	Answers to the questions asked in the survey	Respondents' answers	Average value	Median	Standard Deviation
1	What mode of work do you consider to be the most effective?	Stationary work model	88	79,67	86	10,40
		Hybrid work model (combining remote and stationary work)	86			
		Remote work model	65			
2	What is the work model solution in your organization?	Stationary work model	107	79,67	91	28,11
		Hybrid work model (combining remote and stationary work)	91			
		Remote work model	41			
3	Do you believe it is necessary to meet your team live?	Yes	162	119,5	162	42,5
		No	77			
4	When performing professional duties from home, do you think that the company has appropriately adapted the transfer of knowledge?	Yes	146	119,5	146	26,5
		No	93			

Source: Own study

Table 4 presents the respondents' answers to questions concerning knowledge transfer within employee relations in businesses. A very important element here seems to be the exchange of knowledge between employees, because it is through their work and effort that organizations implement business strategies and goals. The know-how of employees forms the basis for maintaining business continuity as well as company secrecy. The results presented below show that knowledge transfers are moderate between all employees at different levels in organizations. Most respondents (38.5%) believe that the best knowledge flow occurs in the manager-employee relationship. Top-down communication in this configuration testifies to the transfer of the supervisor's knowledge to their subordinates, including on what task to perform, what data is required, and often these are conversations regarding organizational changes. Communication in the employee-employee relationship was also assessed by respondents as moderate – 33.9%. Respondents gave the worst rating to bottom-up communication, i.e. the flow of knowledge between the employee and the manager – 31.8%.

Knowledge transfer in hybrid work models is primarily the knowledge of digital tools enabling communication between colleagues and the transmission of work results. It is a basic skill determining the digital competencies that are gaining so much importance. The majority of respondents assess their knowledge of online tools at a moderate level (30.5%). Only 11.3% assess their knowledge as very good, while as many as 16.7% of respondents practically do not deal with these types of tools.

**TABLE IV**  
Results of the survey concerning knowledge transfer

No.	Question	Scale (1 – very weak, 2 – weak, 3 – moderate, 4 – good, 5 – very good)				
		1	2	3	4	5
1	How do you assess the flow of knowledge in the employee-to-employee relationship in the hybrid model	38 15,9%	41 17,2%	81 33,9%	54 22,6%	<b>25</b> <b>10,5%</b>
2	How do you assess the flow of knowledge in the manager-employee relationship in the hybrid model	30 12,6%	36 15,1%	92 38,5%	52 21,8%	<b>29</b> <b>12,1%</b>
3	How do you assess the flow of knowledge in the employee-manager relationship in the hybrid model	32 13,4%	37 15,5%	76 31,8%	68 28,5%	<b>26</b> <b>10,9%</b>
4	What is your knowledge of digital tools, e.g. digital platforms, including MS Teams, ZOOM, ClickMeeting	40 16,7%	45 18,8%	73 30,5%	54 22,6%	<b>27</b> <b>11,3%</b>

Source: Own study

Table 5 presents the correlation results of questions regarding knowledge transfer according to Spearman's ranks. The correlation between the variables is at a very low level.

TABLE V  
Spearman's index for the survey results concerning  
knowledge transfer

No.	Question	Spearman's rank correlation coefficient - r,
1	How do you assess the flow of knowledge in the employee-to-employee relationship in the hybrid model	-0,1
2	How do you assess the flow of knowledge in the manager-employee relationship in the hybrid model	-0,1
3	How do you assess the flow of knowledge in the employee-manager relationship in the hybrid model	-0,1
4	What is your knowledge of digital tools, e.g. digital platforms, including MS Teams, ZOOM, ClickMeeting	-0,1

Source: Own study

Table 6 presents the results of respondents' answers to questions concerning knowledge management in businesses. The following questions are multiple choice. The respondents believe that the most important sources of knowledge transfer are external training courses (47.7%) and knowledge exchange between employees (44.8%). Respondents use resources such as knowledge repositories in organizations (10.9%) or market research reports (16.3%) the least. As the most important factors influencing knowledge sharing within the organization one may consider: employee trust (46.9%) and respect towards employees (46.9%). It follows that for employees the most as important fundamental the values that directly affect their openness in sharing knowledge. Remuneration was also assessed very highly (39.7%) as a financial motivator. It can be hypothetically assumed that the higher the employees' remuneration, the greater their willingness to share knowledge. The company's organizational culture was rated the lowest – 16.3%. In the subsequent question, respondents had to choose statements that describe their enterprises to the greatest extent, and above all, the organization's attitude to knowledge management. The largest number of respondents (34.7%) replied that knowledge transfer takes place mainly between employees and the knowledge sharing and management within organizations is a key process of the functioning of companies on the market (32.2%). Employees are the greatest source of knowledge in companies, and knowledge exchange is a fundamental element of their business. It should be noted that despite the awareness that the knowledge transfer-related processes are very important and both the management and employees know about it perfectly, simply promotion of a knowledge sharing culture is imperceptible which is evidenced by the respondents' answers in this regard – 12.1%.

This implies that organizations devote insufficient efforts to further intensify the dissemination of the knowledge sharing culture at all organizational levels. In terms of tools used to disseminate knowledge in enterprises, these are: interactive platforms (including e-learning platforms) – 30.1%, e-mails (used by employees to send each other their know-how) – 31%, internal employer tools (which, among others, include

TABLE VI  
Results of the survey concerning knowledge management  
knowledge transfer

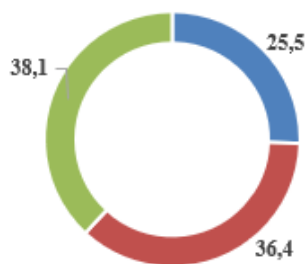
No.	Question	Answers to the questions asked in the survey	Respondents' answers	Average value	Median	Standard Deviation
1	What sources do you consider crucial for knowledge acquisition by employees in businesses?	Training courses provided by external trainers	114	72,5	78,5	28,54
		Training courses conducted by internal trainers	78			
		Knowledge exchange between staff	107			
		Contacts and cooperation with customers	79			
		The Internet	87			
		Knowledge repositories in businesses	26			
		Conferences, symposiums	50			
2	What factors influence eagerness to share knowledge?	Market analysis reports	39	78,44	82,00	24,90
		Trust towards employees	112			
		Respect for employees.	112			
		Organizational culture of the business	70			
		Appropriate motivation	88			
		Remuneration	95			
		Development and training courses	82			
3	Which statements apply to your company?	Organizational culture	39	55,25	47,00	18,59
		Friendly management staff	62			
		Communication channels	46			
		Sharing knowledge is a key process in any business.	77			
		Employees are encouraged to share knowledge.	74			
		Most employees exchange knowledge between one another.	83			
		I feel personal development through knowledge sharing.	50			
4	What tools are used to disseminate knowledge in your organization?	My supervisor notices me sharing knowledge with my coworkers.	42	53,83	56,50	15,82
		My supervisor is happy to share his knowledge with me.	44			
		The organization promotes a culture of knowledge sharing.	29			
		All employees are aware that knowledge sharing is a key element in the implementation of the company's strategy.	43			
		Knowledge repository	50			
		Interactive platforms	72			
		The employer's internal site Intranet	68			
5	What barriers in your opinion may exist to knowledge management in your organization?	Social media	63	51,11	38,00	28,08
		Forum	44			
		E-mail	74			
		Does not have any	26			
		High turnover among employees	64			
		Lack of openness of employees to share knowledge	86			
		Lack of trust	108			
		Common reluctance to share knowledge	53			
		Unadapted IT infrastructure	38			
		No existing communication channels	34			
6	What are the important benefits of knowledge management?	Lack of existing knowledge sharing tools	30	39,83	35,50	16,59
		Lack of funds	28			
		There are no barriers	19			
		Increased engagement and job satisfaction	53			
		Improving the information flow	67			
		Competitive edge	34			
		Better cooperation between organizational units	36			
6	What are the important benefits of knowledge management?	Learning from mistakes	35	39,83	35,50	16,59
		Better resource allocation	14			

Source: Own study

intranet websites) – 28.5%, and communication channels, which include all social media – 26.4%. Attention is drawn to the number of respondents whose employing businesses do not have knowledge dissemination tools implemented – 10.9%.

Barriers preventing smooth knowledge management in businesses are a very important element. Over half of the respondents believe that the lack of trust between employers and employees creates a barrier to the knowledge exchange – 45.2%. The lack of trust is also related to a lack of openness of employees to the knowledge-sharing process itself – 36%. In fact, one clearly results from the other. Trust and openness are closely related and determine the employees' attitudes. The barriers to knowledge management also include a high employee turnover and rotation rate, which is associated with the lack of knowledge transfer between employees – 26.8% and a widespread reluctance to share knowledge – 22.2%. Only 7.9% of respondents believe that there are no barriers affecting processes related to knowledge management within organizations. In terms of benefits, the highest scores were given to: better information and knowledge flow between employees (28%) and commitment and job satisfaction (22.2%) as non-financial motivators. Learning from mistakes (14.6%), as well as better cooperation between organizational units (15.1%) were also highly rated by the respondents.

Figure 4 presents the results of the respondents' answers to the question of what knowledge management model is used in the businesses in which they are employed. The resource model, which assumes that the most important factor in knowledge exchange in organizations is employees, is the most popular among the respondents (38.1%). Slightly fewer responses were obtained by the implemented process model (36.4%), which is characterized by dissemination of knowledge by the company itself serving as the initiator. Also highly rated was the Japanese model (25.5%), which assumes that each employee influences the company's state of knowledge.



- Japanese model – assumes that the knowledge base is co-created by every employee
- Process-based model – assumes creation, dissemination and use of knowledge by the organization
- Resource-based model – assumes that the main and key source of knowledge are the enterprise's employees

Fig. 4 Knowledge management models in businesses  
Source: Own study

Figure 5 presents tools for knowledge development in enterprises. Most respondents take advantage of knowledge development through participation in trainings (57.3%), courses (37.2%) and conferences (20.5%). It seems that these forms of development are the most accessible to employees and can be easily utilized. Methods such as coaching (11.3%) or mentoring (7.9%) are much less used. Figure 6, on the other hand, shows the frequency of participation in selected forms of development presented in Figure 5. According to available data, in 2021-2022 almost 38.9% of respondents did not participate in any of the above-mentioned forms of development. Over 30% participated once or twice, while 17.2% participated 3 or 4 times. A small percentage (12.6%) is people, who actively sought ways of development in 2021-2022.

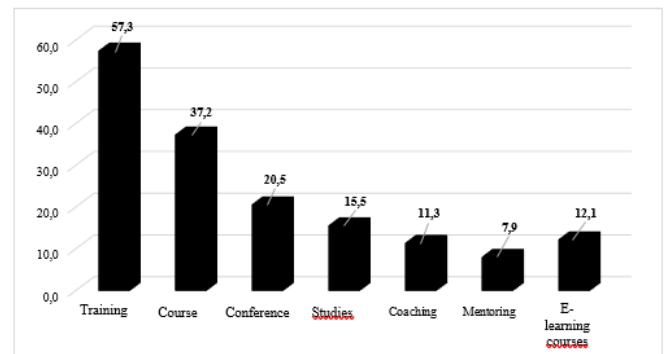


Fig. 5 Methods of knowledge development in businesses  
Source: Own study

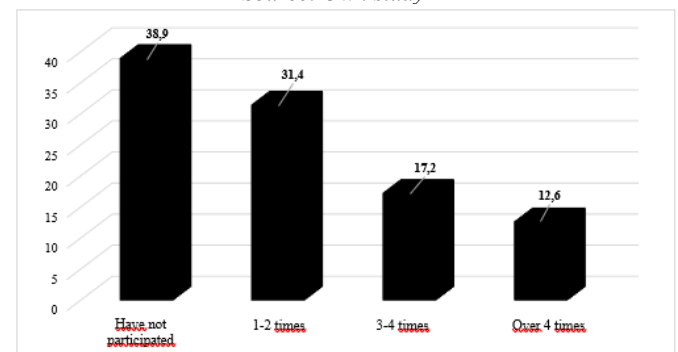


Fig. 6 Participation in selected forms of development  
Source: Own study

## V. RESULTS AND DISCUSSION

The conducted research showed that implementation of hybrid work models is still at an early stage. A significant percentage of respondents, who took part in the survey continue to perform their work in stationary models. Knowledge management in enterprises is a key process. A flexible and continuous flow of information enables employees to efficiently perform their tasks. Respondents notice the importance and necessity of knowledge sharing in favorable conditions. They pay particular attention to openness and trust on the part of employers. They easily identify the benefits of openness, as well as the barriers to knowledge transfers be-

tween colleagues. Digital tools play an important role both in the hybrid work model as well as knowledge management, which enable knowledge transfer in the hybrid model. Studies of this research sample proved that respondents notice the importance of programs such as MS Teams, ZOOM, or ClickMeeting as a basic tool used in performing their duties outside the employer's premises. They state their knowledge of the software at a moderately good level, which means that they use these tools only for occasional meetings. On the other hand, in the global perspective, the tools used to disseminate knowledge in organizations are primarily interactive platforms, which include LMS (Learning Management System) or e-learning platforms. Communication channels such as social media that are available to all employees are very popular. The tools used to popularize knowledge are not only IT programs, but also forms such as training, courses, conferences, studies, or more individualized forms, which include coaching or mentoring generally available to employees.

The results of the research conducted related to the adopted multi-variant remote work model in relation to knowledge management in businesses are as follows:

- employees use ICT tools to perform remote work in order to transfer knowledge. These include MS Teams, ZOOM, interactive platforms, social media and electronic devices,
- the respondents work in a stationary work model, while they expect a hybrid model,
- knowledge exchange between employees flows best in the employee-employee relationship and the manager-employee relationship,
- respondents notice many sources of knowledge management processes. These include: acquiring knowledge through training, sharing knowledge or acquiring it from customers,
- sharing is the first step towards the implementation and dissemination of a knowledge sharing culture.

According to a study by the House of Skills concerning 'Trends in human development for 2022' [32], the results indicate the further development and future of hybrid work in businesses. The challenge will lie in competent management of the dispersed team taking into account employees performing work from offices and homes in real time. However, there is a lack of clear guidance from companies on the use of hybrid work. According to the Gartner report [33], many companies have not yet developed internal strategies for using hybrid work. A study conducted by the Future Business Institute [34] shows that 75% of respondents believe that stationary work should be combined with remote work, i.e. a hybrid model of tasks performance by employees should be established. Merely 12% of respondents are of the opinion that they can only do their work remotely. However, 51% of respondents believe that performing work at home stimulates their innovativeness.

According to a recent survey by The Voice of the European Workforce [35], results show that employees believe that companies that have implemented knowledge transfer

are much more competitive in terms of customer satisfaction and contentment, as well as revenue growth. Employees perceive such companies as innovative and valuable. The future in the dissemination of knowledge lies in tools such as artificial intelligence, databases or natural language processing.

Data from the Future of Jobs Report [36] indicate technologies that can be implemented by businesses by 2025. These include:

- 87% encryption and cybersecurity,
- 86% artificial intelligence,
- 80% the possibility of using cloud tools,
- 73% extension of big data analytics,
- 71% e-commerce,
- 69% development of robotization (automation).

## VI. CONCLUSION

In the 1960s, IT systems started being developed to support knowledge management processes in businesses. Their goal was to quickly and easily transfer knowledge between employees or create places where knowledge can be collected and processed. The larger the company's knowledge repository is, the greater its attractiveness on the market. This affects the number of applications sent in by people who want to be employed in a company with a well-established market position. Knowledge determines the decisions made by the management and directly influences strategic actions. Competent knowledge management and transfer also affect the work models in which employees work. Remote or hybrid work models, which combine remote and stationary work, are becoming increasingly common. It is a model that is expected by employees. It refers to maintaining a balance between professional and private life, limiting factors such as the time for commuting to work.

The first research hypothesis (H1) was positively verified: knowledge sharing significantly affects employees. The respondents believe that the knowledge sharing process is a fundamental element in establishing interpersonal relationships, building trust and openness. It is a process that should encourage companies to build a culture of knowledge sharing among employees. Respondents see a direct link and influence on building a company's competitiveness and market position.

The conducted research indicated that employees most often use the tools provided by their employer to transfer knowledge. They also use software intended for knowledge exchange and communicate between employees. These include: MS Teams, ZOOM, ClickMeeting, and many others. It is also worth noting that e-learning platforms or internal employer systems such as the intranet (H2) are used for knowledge exchange. Most respondents believe that performing tasks in a hybrid work model is an effective and efficient solution, while 44.8% of respondents continue to work in a stationary model. The hybrid model allows for individual work, but also the opportunity to meet the team live on days that are scheduled for presence at the workplace. The respondents have no objections to knowledge transfer



that is implemented in their organizations. The best flow of information is in the manager-employee relationship. This is due to the fact that the manager contacts their employee regarding: tasks performed, delegation of duties or providing organizational information. Employees also share information, experience, or various other insights with each other. Respondents value openness and trust on the part of the employer in terms of knowledge transfer. They consider this to be one of the key processes functioning in businesses. There are benefits such as: better information flow, increased engagement, and barriers: lack of trust or widespread reluctance to share knowledge.

The third hypothesis (H3) regarding the relationship between knowledge management and the multi-variant model of remote work adopted in the article was positively verified. According to the conducted research, the model created for the purposes of this article was reflected in the respondents' answers to the survey questions. Both knowledge creation, transfer and transformation are basic processes that affect the flexibility and reach of knowledge transfers. This is done by matching appropriate ICT tools that will correspond to the needs of employees. The direction of the conducted research indicates dissemination of a knowledge sharing culture in organizations. Knowledge is a multi-faceted element. It is not possible to easily determine its components. It also encompasses emotions, feelings, values. Important contributing factors include the workplace atmosphere and a sense of trust.

The study is limited by the fact of including a randomly selected research sample working in companies of all sizes and industries. Therefore, the study has an illustrative dimension.

In the perspective of further research, they should be carried out in specific companies in order to be able to analyze how such companies approach the hybrid model and knowledge management. Research should be carried out taking into account specific industries and professions performed by the respondents. This will allow a clear reference to the results of previous research.

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