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Research on organizational information absorption based on the perspective of multimedia knowledge management

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Abstract

How to use and knowledge management capabilities in today's highly competitive environment to help organizations respond quickly to market changes and customer needs is a major challenge in the organization of information technology, and one of the most important research issues in the field of information systems. Modern enterprises have shown great enthusiasm in using complex information technology to gain competitive advantage. The successful application of enterprise information technology requires enterprises to deeply understand the absorption process of information technology within the organization. The introduction of information technology in the organization often means the transfer of technical knowledge, management knowledge and institutional knowledge contained in the software system. Multimedia knowledge management has become a key factor affecting the in-depth application of enterprise information systems. Therefore, this paper starts from the level of multimedia knowledge management, and explores the impact of organizational knowledge and information technology-related knowledge base and absorptive capacity on enterprise system information absorption. At the same time, it also discusses the impact of multimedia information resources on organizational information absorption, focusing on the mediating role of multimedia information management capabilities and the regulatory role of MULTIMEDIA KNOWLEDGE MANAGEMENTs information support, confirming that information resources will improve organizational information absorption. When organizations need to improve the absorption of their organizational information, resorting to information is often an effective way to enrich the research on organizational information absorption from the perspective of multimedia knowledge management and information resources.

Keywords Knowledge management · Multimedia information · Information absorption · Organization

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1 Introduction

With the deepening of the informationization process, the importance of multimedia knowledge management in the organization is becoming more and more important, and the more and more examples of the organization's investment in multimedia knowledge management. Modern media is deeply valued by enterprise organizations with its multimedia functions and interactive functions. At present, a large number of knowledge websites, online schools and teaching resources have been built on the Internet. These resources have played a very important role in enterprise management and employee learning information. However, due to the uncertainty and dynamics of multimedia knowledge management, the failure rate of multimedia knowledge management projects remains high and cannot bring competitive advantages to the organization. One of the most effective means for an organization to achieve the desired business value from information input is to promote the success of the absorption of multimedia knowledge [1]. Therefore, how to use organizational factors and multimedia factors, especially high-level management support and multimedia resources, to promote the success of organizational information absorption has become a hot issue in the field of information systems.

The research on technology diffusion at the organizational level is based on the theory of technology/innovation diffusion, and studies the impact of technology, organization and environmental factors on the diffusion and application of organizational information systems. However, the application of modern organizational information technology often means the transfer of technical knowledge, management knowledge and institutional knowledge contained in the software system. With the increasing complexity of modern enterprise information systems, the knowledge bottleneck of enterprises has become more and more obvious. Researchers began to shift from factors such as technical characteristics, organizational structure and environmental characteristics to organizational knowledge and other factors [11]. Organizational learning theory also believes that the organization's operations and management processes are linked to certain knowledge and skills. The introduction of new technologies requires organizations to have a certain knowledge base and technical structure, thus bringing learning pressure to the organization. From the perspective of multimedia knowledge management, we can have a deeper understanding of enterprise information system applications.

Based on the perspective of multimedia management, this study explores the impact of organizational knowledge and information technology-related knowledge base and absorptive capacity on enterprise system absorption. It attempts to enrich the research of organizational information absorption from the perspective of multimedia knowledge management and information resources.

2 Absorption capacity research in the field of information technology

The ability to acquire, digest, transform, and apply information technology is precisely the absorptive capacity, relying on prior knowledge of the enterprise. It has path dependence and accumulation characteristics, which not only can create and utilize new knowledge, but also improve information technology performance. In order to expand the application field of absorptive capacity, researchers in the field of information technology conduct research on absorptive capacity from different perspectives such as resource view and dynamic capability

view. The concept of resources focuses on static knowledge, and the dynamic ability view emphasizes the dynamic process of knowledge absorption. Enterprise information knowledge exists between individuals and organizations [7]. At the individual level, enterprise information knowledge is an ability owned by business managers and information experts. For example, information competitiveness refers to the explicit and tacit knowledge associated with information owned by business managers, and the display of information charm through knowledge applications. At the organizational level, enterprise information knowledge refers to the shared domain knowledge of enterprises and information managers. In particular, business managers are aware of the impact of organizational information, and information managers clearly understand what information is used to improve organizational efficiency and effectiveness. Information absorption is the extent of technology communication in the organization of project projects, and evolved into a convention in these project process activities [7]. Knowledge diversity is the extent to which an organization has knowledge about innovation. Innovative research in information absorption often focuses on complex technologies. The complexity of information technology involves a lot of tacit knowledge, and the related knowledge and knowledge diversity reduce the knowledge barriers brought by complex technology, and knowledge users need to recreate by "using middle school". Such research is usually based on the view of resources that the absorptive capacity of the recipient is essentially a priori knowledge, which will promote or hinder knowledge transfer. Knowledge transfer can occur in multiple levels, including individuals, teams, and organizations. IS research has long touched on the relationship between knowledge transfer and organizational absorptive capacity among members of information-supported organizations. For example, organizational absorptive capacity is improved through the organization of internal knowledge flows and informal information transactions. In the ERP implementation study, customer absorptive capacity facilitates ERP-related knowledge transfer from consultants. These studies suggest that knowledge can improve the company's absorptive capacity through sectoral reorganization. As another example, at the organizational level, by improving the quality of information sharing and building information infrastructure to obtain information from partners, organizations can improve their ability to acquire, digest, transfer, and leverage market knowledge.

3 Information organization absorption theory of multimedia knowledge management

The theoretical basis of information organization is information system theory, coding theory and logic theory. According to this, the organization of information organization has different language connotations. Starting from the system theory, according to the ontological characteristics and formal characteristics of multimedia knowledge information, the information is sequenced and organized according to the regional spatial structure such as geometric information and topological information. Starting from the coding theory, the knowledge elements are organized according to a certain spatial structure. According to the perceptual purpose of the cognitive subject, certain coding information is transformed into a variety of multimedia information. Starting from the logic theory, it is based on the logical relationship between information, based on the utility characteristics of spatial information, and hierarchically organizes spatial information. It can be seen that the information organization of multimedia knowledge management is a process of classifying information according to certain standards

and expressing it in various visual forms. Here, starting from the logic theory, the information is specifically classified according to the content and expression [14]. Divided by content, multimedia electronic information consists of spatial data expressing spatial information and thematic data expressing thematic information. Spatial data mainly refers to pictures of various proportions, and the topic information contains different contents according to the theme of the required information. For example, in the aspect of enterprise human resource management information, the special information provided includes the employee's academic background, job status, salary analysis, attendance analysis, etc., which fully reflects the various aspects of the company's employees.

In the process of designing organizational information, it is a very important information reorganization and knowledge innovation to find an optimized organizational strategy to store and manage the massive information of the enterprise according to different themes and different uses. It plays a key role in the effective use of information. General multimedia products usually have four different information organization strategies, namely, reference book, time, system and organization, See Table 1. What these four strategies have in common is that they are "continuously deep", providing a more intuitive and logical organization of information through a layered approach, where users can continue to drill down to the next level until isolated specific information.

In the process of organizing strategies in terms of time, by linking the pages according to the span of the year or month, the user can select a specific time from the entire time period. The events that occur at this stage are listed through the hot zone into the page that reflects the

Table 1 Information organization strategy from the perspective of multimedia knowledge management
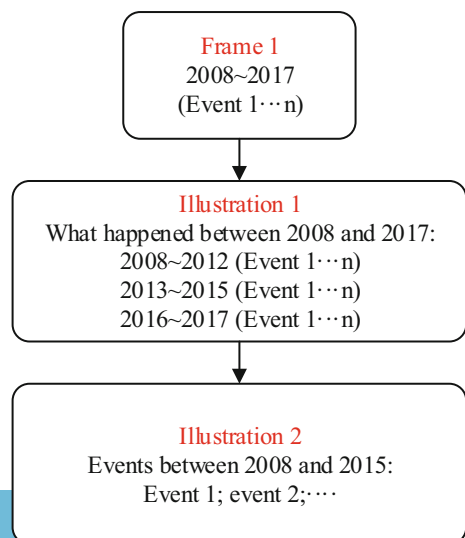
Strategy	Concept	Scope of application
Reference book organization strategy	Based on a structured list or a logical group. Information from a multimedia perspective can be divided into multiple levels according to certain criteria. Information at the same level is usually organized using reference books.	Organization for each topic in corporate information
Time organization strategy	Demonstrate a series of events or timely identify company information at a specific moment, the key question is how to relate time to events.	For the organization of time-related attribute information, classify attribute information in chronological order. The link combination is performed through the time period, thereby obtaining attribute information of each time period.
System organization strategy	The enterprise information environment represented by multimedia knowledge management is a complex and open giant system composed of various elements and regional subsystems. Reflects the law of regional change, the relationship between corporate activities and resources, and the environment	The enterprise must be provided with an indexing framework that employees can use. The indexing framework can be further broken down into subsystems or components that employees can use when searching for information.
Organizational strategy	When organizing information, classify information by superior, subordinate, and colleague.	Organization of attribute information that conforms to organizational relationships in enterprise information.

specific information for this period of time. Get the details of the event by its name, as shown in Fig. 1.

4 Organizational absorption capacity and competitive advantage caused by information technology resources

Successful information technology applications can enhance business efficiency and efficiency, expand business and industry boundaries, enhance corporate competitiveness, and even become the driving force and source of sustainable development. As a high-level capability of an organization, the dynamic capability of an organization is an ability to properly allocate resources and take appropriate competitive activities in a timely manner according to changes in the external environment. It is because of this characteristic that the dynamic capabilities of an organization have important strategic implications for the organization [13]. Considering the background of the current era of knowledge economy, as an important strategic capability of enterprises, absorptive capacity plays a vital role in obtaining competitive advantage. In a turbulent environment, the potential absorption capacity is more conducive to the company to gain a competitive advantage, and in a stable environment, the realization of absorption capacity is more conducive to enterprises to gain competitive advantage. The tasks involved in the depth-oriented information technology capabilities mainly reflect the ability of enterprises to mine and apply knowledge. For example, by analysing client information, new business models and working methods may be discovered; helping companies develop new production processes by processing and tracking information in the production process; through knowledge sharing, it helps to develop innovative thinking. Therefore, the depth-oriented information technology capability helps enterprises to transform and utilize knowledge, that is, the depth-oriented information technology capability helps to enhance the company's ability to absorb. This presents a theoretical framework for exploring the organizational absorptive capacity and competitive advantage of information technology resources (Fig. 2).

Fig. 1 Application of time-based organizational strategy in enterprise information absorption
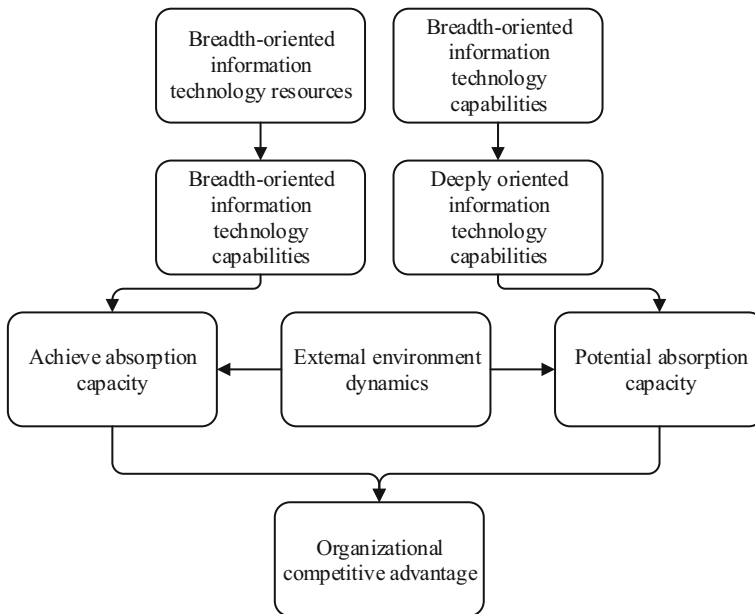
Frame 1
2008~2017
(Event 1···n)

Illustration 1
What happened between 2008 and 2017:
2008~2012 (Event 1···n)
2013~2015 (Event 1···n)
2016~2017 (Event 1···n)

Illustration 2
Events between 2008 and 2015:
Event 1; event 2;···

Fig. 2 Organizational absorption capacity and competitive advantage under information technology

5 Organizational information technology absorption analysis based on multimedia knowledge management

From the perspective of multimedia knowledge management, the application of organizational information technology is a process of continuous reduction of organizational learning and knowledge barriers. From organizing opportunity scanning to information technology, internalization becomes part of the company's capabilities [12]. Each stage of organizational information technology absorption has a certain knowledge inventory requirement, that is, only enterprises with a certain knowledge base can effectively discover technology use opportunities, realize purchase, deployment implementation, acceptance, routinization and internalization, as shown in Fig. 3. The lack of multimedia knowledge at each stage will lead to the termination of information technology implementation, that is, the emergence of technology absorption.

The application of new technologies cannot happen naturally in an organization, and organizations often generate two types of technical demand motives. One is to organize its own business-driven model, and the other is to drive from external technologies; information technology purchase is a turning point in the process of organizing information technology. From the perspective of multimedia knowledge management, the organization realizes the transition from thawing to change process at this stage. Decision makers will comprehensively consider various factors such as their own technology application needs, investment, corporate strategy, technology availability and environmental conditions. Make a decision on whether to make an investment; the deployment of information technology is a very important part of the organization of information technology applications. If the purchase phase determines whether information technology can be accepted by the organization and is a threshold for the organization of information systems, the deployment phase of the information system application determines whether the information system can be effectively deployed in the
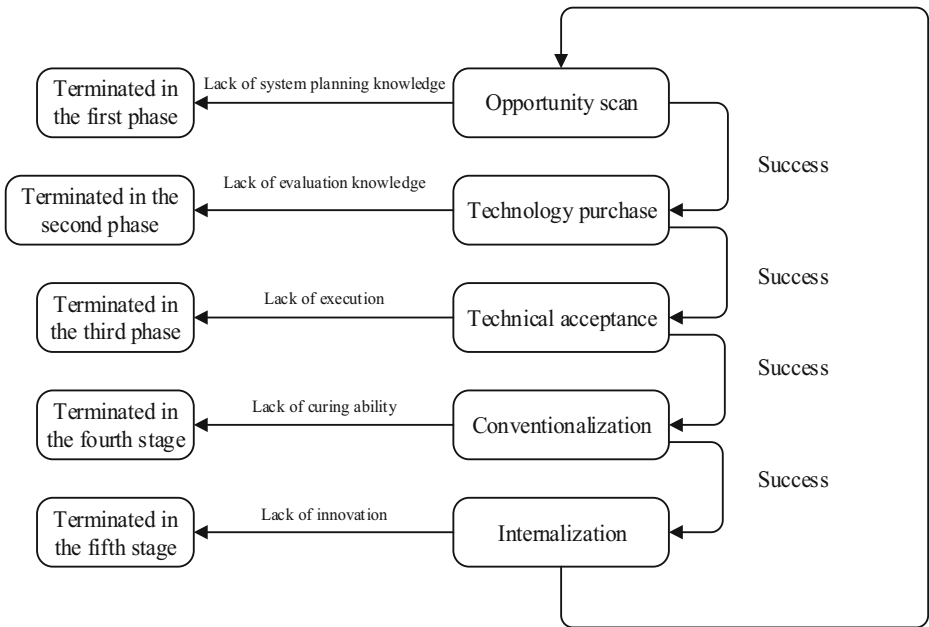
Fig. 3 Organizational information technology absorption process from the perspective of multimedia knowledge management

organization. It determines whether the organization's information system can be effectively utilized after obtaining the "entry permit"; the introduction of organizational information technology will bring huge learning pressure to employees, and employee psychology will react differently at different stages of information technology absorption, see Fig. 4 [10]. From
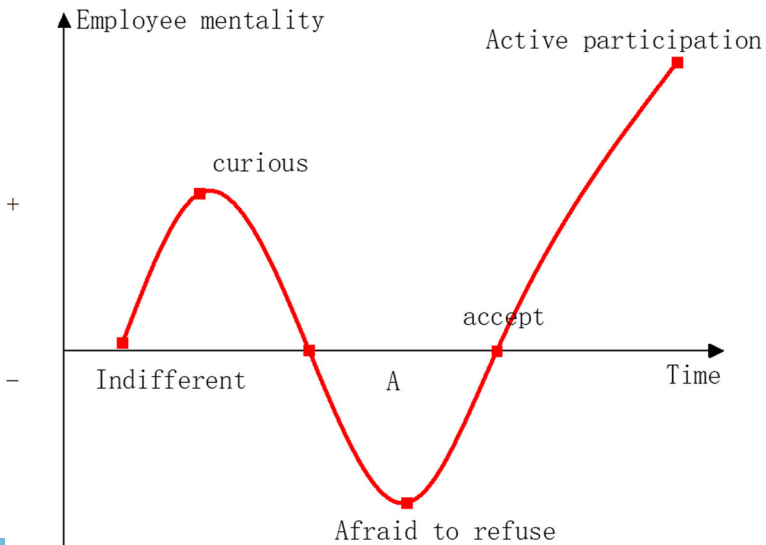

Fig. 4 Psychological change curve of employees in the process of information absorption under multimedia knowledge management

the indifference at the beginning of the introduction and the curiosity at the beginning of the system implementation, to the instinctive resistance, fear and rejection of the staff as the information technology proposes a higher level of knowledge, to the final acceptance and active participation. This requires enterprises to reduce knowledge barriers in various ways in this process and improve their own knowledge;

Conventionalization means that the use of information technology over a period of time becomes part of the organization's daily routines, and the use of information technology is no longer considered "fresh" or "abnormal". The internalization of information technology means that the existing information technology potential is maximized, and organizations are beginning to seek innovative applications based on existing multimedia knowledge technologies [5]. The factors affecting the absorption of multimedia information technology can be seen from the theoretical analysis of the process of organizing complex information technology absorption. Each stage of the absorption of organizational information technology requires a certain level of organizational knowledge, the shortcomings of enterprise multimedia knowledge base are the main reasons for the absorption of gully in the absorption of information technology, see Table 2.

6 Research on organizational information technology absorption from the perspective of multimedia knowledge management

Although the existing research has theoretically pointed out that information absorption can improve the competitive advantage of the organization, the cause of the absorption of organizational information still lacks in-depth exploration. Understanding the causes of information absorption is a prerequisite for enhancing organizational performance. For example, in practice, Wal-Mart has strong information and data processing capabilities by building information resources such as satellites and information centres under multimedia knowledge management [4]. This has contributed to the success of its contribution to the supply chain network in China. In view of the importance of multimedia information resources to the absorption of organizational information, this study believes that it is necessary to clarify how to use multimedia resources to drive the absorption of organizational information, thus providing information support for enhancing the absorption of sister information. Therefore, the first research question in this chapter is:

(1)   Information infrastructure resources and information human resources under the perspective of multimedia knowledge management have an impact on organizational information absorption through the intermediary role of information management capabilities.

Table 2 Factors affecting the absorption of organizational information

Organizing knowledge stocks related to information technology	When an organization needs to implement an information technology for various reasons and lacks a relevant knowledge base, the study of organizing relevant knowledge also faces great obstacles.
Organization of information technology-related absorptive capacity	Absorptive capacity continues to grow as organizations invest in innovation-related areas. The formation of absorptive capacity has historical relevance and path dependence. The level of absorptive capacity associated with information technology is largely due to the company's previous investment in related fields.

(2) Whether senior management support can indirectly affect organizational information absorption by adjusting the relationship between information resources and information management capabilities.

6.1 Research methods

6.1.1 Theoretical basis and assumptions

Combined with the relevant content of multimedia knowledge management, the theoretical basis and assumptions used in this study are shown in Table 3 [3].

In summary, the research model of this chapter is shown in Fig. 5.

The structural equation model shown in Eq. 1 represents the path relationship of the research model in Fig. 5.

$$
\begin{bmatrix} \text{IT management capabilities} \\ \text{IT competitive use} \end{bmatrix} = \begin{bmatrix} 0 & 0 \\ \beta_{21} & 0 \end{bmatrix} \begin{bmatrix} \text{IT management capabilities} \\ \text{IT competitive use} \end{bmatrix} + \\ \begin{bmatrix} \gamma_{11} & \gamma_{21} \\ \gamma_{12} & \gamma_{22} \\ \gamma_{13} & 0 \\ \gamma_{14} & 0 \end{bmatrix} \begin{bmatrix} \text{IT infrastructure resources} \\ \text{IT Human Resources} \\ \text{CEO}'\text{s IT support}^* \text{ IT infrastructure resources} \\ \text{CEO}'\text{s IT support}^*\text{IT human resources} \end{bmatrix} + \begin{bmatrix} s_1 \\ s_2 \end{bmatrix} \quad (1)
$$

In Eq. 1, β_{21} is the path coefficient of IT management capabilities in the competitive use of IT.

γ_{11}、γ_{21}、γ_{13}、γ_{14} is the path coefficient of IT infrastructure resources, IT human resources, IT support and the interaction items of these two types of IT resources in IT management capabilities.

γ_{21}、γ_{22} is the path coefficient of IT infrastructure resources and IT human resources in the competitive use of IT.

s_1、s_2 is a random error.

6.1.2 Research object

This study selected 20 organizations in different industries such as automobile manufacturing, banking and financial services, information technology, manufacturing, retail, pharmaceutical, and consumer goods. During the investigation, we contacted the information supervisors and business executives of these organizations by phone. Among them, the information supervisor is responsible for answering information related measures such as information infrastructure resources, information human resources, multimedia information support, information resetting, information integration and information competitive use, and issued a paper questionnaire to them in January 2017. Based on the research scale of the relevant literature, this study further revised the research scale according to the recommendations of experts in the field of information systems. The specific research amount is shown in Table 4.

The research model of this paper uses SPSS 22.0 and other software for statistical analysis. First, the study performed a confirmatory factor analysis to measure and tests the reliability and validity of the study model. Second, conduct a mediating effect test of information management capabilities [6]. Finally, the hierarchical regression method is used to analyse the regulatory effect of the multimedia knowledge management's information in the relationship between information resources, information management capabilities and competitive use.

Table 3 Theoretical basis and assumptions of this study

Theoretical basis	Hypothesis	Foundation
Value creation process theory	/	There is an information value creation process of "information resources - information management capabilities - organizational performance" in the organization. And the impact of information resources on organizational performance through information management capabilities depends on organizational or environmental factors.
Information infrastructure resources and information management capabilities	A1: Multimedia infrastructure resources are positively affecting information management capabilities •	Good multimedia information infrastructure resources can foster a strong willingness for information sector employees to integrate information strategies and business strategies, as well as develop plans for information applications.
Information human resources and information management capabilities	A2: Human resources under multimedia information technology is affecting the ability of enterprise information absorption management • •	Organizations with strong multimedia information and human resources can deploy information resources more effectively than organizations with weaker human resources. These organizations can reconfigure and integrate information system modules faster
Information management can absorb information with organizations	A3: Multimedia knowledge management capabilities are positively affecting organizational information absorption • •	Reduce the organization's efforts to reconfigure the information infrastructure to support business needs by reducing the specificity of multimedia information infrastructure resources. This allows organizations to configure the right applications at a faster rate, respond to changes in the organization's environment, and improve the organization's information absorption.
Mediating effect of information management ability	A4: Multimedia information management capabilities play a mediating role in the relationship between information infrastructure resources and organizational information absorption A5: Multimedia information management capabilities play a mediating role in the relationship between information human resources and organizational interfaces. •	Multimedia information management capabilities can tap the potential of information infrastructure resources, expand their depth and breadth, and improve the frontier of organizational information absorption.
The regulatory effect of multimedia knowledge management's information support	A6: the multimedia knowledge management's port support plays a role in the relationship between multimedia information infrastructure resources and information management.	In the organizational field, there is no optimal way to apply to the design of any organization. The organization should achieve high organizational performance through the matching of resources and

Table 3 (continued)

Theoretical basis	Hypothesis	Foundation
	A7: The information support of the multimedia plays a regulatory role in the relationship between human resources and information management capabilities. • •	organizational environment.

6.2 Data analysis and results

This study used the PLS method to measure the reliability and validity of this study model. All study variables in this study were reflective variables. Among them, multimedia information infrastructure resources, information human resources, multimedia information support, and information competitive use are first-order variables, and information management capabilities are second-order variables. And information reset and information integration are first-order variables that multimedia information management can be, and second-order construct information management capabilities are also reflective variables. The comprehensive reliability coefficient of the variable, the mean variance of the factor extraction, and the correlation coefficient between the variables are shown in Table 5 [8]. The above data test results show that the measurement model has good internal consistency and convergence validity. At the same time, the correlation coefficient between all variables is smaller than the square root of the average variance value of the factor extraction of the variable, which satisfies the test requirement of the differential validity. The data test results also indicate that the measurement model has good discriminant validity.

This study uses hierarchical regression analysis to test whether the multimedia knowledge management's information supports the relationship between information resources and information management capabilities. The results are shown in Table 6. Among them, Model 2 examines the impact of control variables, information infrastructure resources, and information human resources on information management capabilities. On this basis, Model 7 examines the impact of control variables, information infrastructure resources, information human resources, and multimedia information on information management capabilities. Model 8
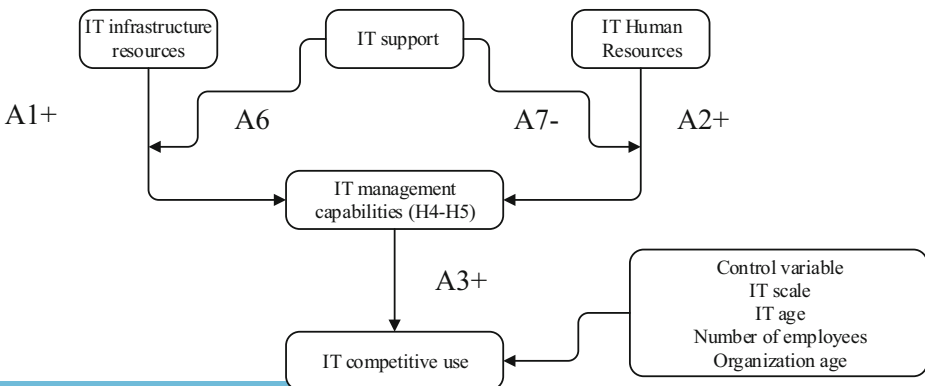

Fig. 5 Multimedia information infrastructure resources and information human resources driven organizational information absorption model

Table 4 Measurement items of the research concept

Construct	Measure item	Measurement topic
Information support	T1	Resorts to information to run the business
	T2	Master is very supportive of information projects
	T3	The Master has a close working relationship
Information infrastructure resources	R1	In the organization, data management services and information architecture are sufficient
	R2	Information applications and quality of service meet the needs of the organization's business
	R3	The organization's information staff has sufficient information technology foundation
Information reset	IT1	Information platform can easily adapt to new business units
	IT2	Information platform can be easily and sexually applied or functionally integrated
	IT3	Information platform uses information service standards that are acceptable to most existing potential business partners
	IT4	The information platform is made up of many software modules that can be reused by other enterprise applications.

examines the multimedia knowledge management's information to support the role of regulation in the relationship between information resources and information management capabilities [2].

It can be seen from Model 8 that the interaction item $\beta = 0.401$, $p \leq 0.05$ supported by the information infrastructure resources and the multimedia knowledge management's information has a significant impact on the information management capabilities. This indicates that the multimedia knowledge management's information support plays a regulatory role in the relationship between information infrastructure resources and information management capabilities, that is, A6 is established. The interaction between the information human resources and the multimedia knowledge management's mouth-supported item $\beta = 0.315$, $p \leq 0.05$ has a significant impact on information management capabilities. This indicates that the multimedia knowledge management's information support plays a regulatory role in the relationship between information human resources and port management capabilities, that is, A7 is established. This study found that the degree of information support of different multimedia, the mediation of the relationship between information human resources and information competitive use of multimedia information is not significant, $\Delta\beta = 0.010$, 95% confidence interval is $[-0.032, 0.049]$, including Zero point. This shows that the mediating role of information management capabilities between information human resources and competitive use of information does not vary significantly with the degree of information support of the multimedia.

Table 5 Reliability coefficients and correlation coefficients of variables

Variable	CR	Cronbacha's	AVE	T	R	IT	ITR	ITI	ITCA
ITIR	0.88	0.75	0.66	0.86	/	/	/	/	/
ITHR	0.84	0.74	0.58	0.74	0.83	/	/	/	/
CSIT	0.69	0.81	0.76	0.28	0.48	0.87	/	/	/
ITR	0.91	0.86	0.82	0.55	0.34	0.41	0.89	/	/
ITI	0.77	0.81	0.46	0.36	0.22	0.29	0.44	0.83	/
ITCA	0.79	0.85	0.36	0.15	0.45	0.51	0.41	0.47	0.80

Table 6 Test results of the regulatory effects of the multimedia knowledge managements support in the relationship between multimedia information resources and information management capabilities

	Model 2: IT management capabilities	Model 8: IT Management Capabilities	Model 9: IT Management Capabilities
IT age	−0.15	−0.29	−0.18
IT scale	0.08	0.35	0.065
Organization age	−0.77	−0.08	−0.025
organization	−0.19	−0.16	−0.19
employee count	0.11	0.15	0.173
IT infrastructure resources	0.26	0.09	0.23
IT Human Resources	/	0.78	−0.49
CEO's IT support	/	/	0.36
Infrastructure resources	/	/	0.58
Human Resources	/	/	0.04
R2	0.68	0.65	0.45
ΔR2	/	0.06	0.06
f2	/	0.057	0.03
F	/	6.98	7.68

6.3 Discussion

This study finds that the resources of multimedia knowledge management have an indirect impact on organizational information absorption through multimedia information management capabilities. The multimedia information human resources can not only have a direct impact on the organization information absorption, but also have an indirect impact on the organization information absorption through the multimedia information management capabilities. This also shows that multimedia information management capabilities play a mediating role in the relationship between information human resources and organizational absorption. When the organization information management ability is strong, the advantages of multimedia knowledge management can be fully utilized to promote the absorption of organizational information. This study confirms that the information resources of multimedia knowledge management will improve the absorption of organizational information. When organizations need to improve the absorption of their organizational information, resorting to information is often an effective way. Therefore, the information supervisor of multimedia knowledge should pay attention to information resources when formulating information strategy, formulate corresponding information, and correctly handle various situations that occur during resource deployment. The results of this study show that multimedia knowledge capabilities play an important role in the relationship between multimedia resources and organizational information absorption. Therefore, the multimedia information supervisor should pay more attention to the improvement of information management capabilities and strengthen the deployment of information resources on the basis of the construction of information resources. On the one hand. Keep information resources modular, and reconfigure various information modules in time according to changes in the environment; on the other hand, it is possible to make seamless links between information systems and realize real-time interaction of organizational information [9].

Table 7 The role of maps in the multimedia structure of electronic maps

|	
Maps are tools for spatial data science visualization	Compared with traditional maps, electronic maps can make full use of the advantages of various media in visual representation to visualize spatial data.
Ability to organize all kinds of information with maps	Electronic maps can organize spatial information or non-spatial information in a certain way, including maps, spatial targets, multimedia information, etc., and their mutual links.
Provide current location reference information while browsing	Organize all kinds of information according to the map, and provide information about the current location when browsing.

7 Information organization based on the perspective of multimedia knowledge management——taking the information organization of multimedia electronic map as an example

The electronic map multimedia model is to organize and manage information based on electronic maps. Electronic maps play multiple roles in the model, such as tools for visualizing geographic information, organizers for spatial information, tools for accessing information, and interfaces for human-computer interaction.

7.1 Map in the electronic structure of the electronic map

From the perspective of multimedia model structure, the map is actually a type of node, which includes multiple hotspot primitives. Hotspots are composed of various spatial targets such as points, lines, and surfaces. The connection between the hotspot and the map frame and between the maps is achieved by a chain with semantics. In this sense, the electronic map is not only a container for spatial information organization, but also a carrier attached to a geo-referenced hotspot. That is to say, the map becomes a human-computer interaction interface in multimedia knowledge navigation. Readers can click on the hotspots on the electronic map to link to the nodes associated with them, and realize the quick jump of information during reading, which is the embodiment of hyper-media "non-linear". The role of maps in the electronic map hypermedia structure is embodied in several aspects as shown in Table 7.

The multimedia knowledge management model based on electronic map provides structural support for the organization and integration of spatial information and multimedia information. This gives multimedia electronic maps a great deal of flexibility in visual representation. That is, you can integrate various media such as 3D animation, video, photos, sounds, text,
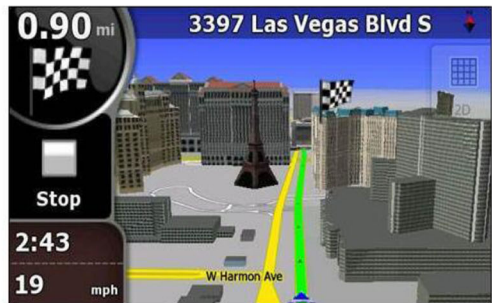
Fig. 6 Application example

animations, and panoramas. All types of media exist in the form of nodes, which are linked by hotspots and chains between them, as shown in Fig. 6.

8 Conclusion

One of the principles of multimedia knowledge management is the infinite nature of knowledge management, that is, the generation of new knowledge makes knowledge management impossible to stop. The emphasis on the flow of knowledge and the people-oriented concept of knowledge management coincides with the theoretical essence of resource-based research learning and collaborative learning advocated by current educational informatization. In the process of construction and management of information resources, enterprises should fully mobilize the initiative and participation spirit of all aspects, and strive to maximize the conversion of personal knowledge into collective knowledge. In this way, the flow and innovation of knowledge among learners can be promoted, and a dynamic and vital knowledge flow module can be established to guide the information flow and knowledge flow and drive the flow of resources.

Starting from the level of multimedia knowledge management, this paper explores the impact of the knowledge base and absorption capacity of organizations and information technology on the absorption of enterprise system information. It also discusses the impact of multimedia information resources on organizational information absorption, focusing on the mediating role of multimedia information management capabilities and the regulatory role of multimedia knowledge management's information support, confirming that information resources will enhance organizational information absorption. When organizations need to improve the absorption of their organizational information, resorting to information is often an effective way. Therefore, when developing information strategy, MULTIMEDIAs and other information supervisors should pay attention to information resources, formulate corresponding information plans, and correctly handle various situations that occur during the deployment of port resources. Taking the information organization of multimedia electronic map as an example, the paper absorbs the organization information under the management of multimedia knowledge, and attempts to enrich the research of organizational information absorption from the perspective of multimedia knowledge management and information resources.

References

1. Agarwal R, Karahanna E (2000) Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage[J]. MIS Q:665–694
2. Barhoumi C (2015) The effectiveness of WhatsApp mobile learning activities guided by activity theory on Students' knowledge management. Contemp Educ Technol 6(3):221–238
3. Dumais S, Cutrell E, Cadiz JJ et al (2016) Stuff I've seen: a system for personal information retrieval and re-use[C]. In: ACM SIGIR Forum. ACM, vol 49, issue 2, pp 28–35
4. Grover R, Froese TM (2016) Knowledge management in construction using a SocioBIM platform: a case study of AYO smart home project[J]. Procedia Engineering 145:1283–1290
5. Huang W, Mille A (2006) ConKMeL: a contextual knowledge management framework to support multimedia e-learning. Multimed Tools Appl 30(2):205–219
6. Jung E-Y, Kim JT, Soh J, Park DK (2015) Development of U-healthcare monitoring system based on context-aware for knowledge service. Multimed Tools Appl 74(7):2467–2482

7. Lee C, Rahayu W, Nguyen UT (2014) Knowledge management technologies for semantic multimedia services. Multimed Tools Appl 71(1):195–198
8. Oyelami JO, Ithnin NB (2015) Establishing a sustainable information security management policies in organization: a guide to information security management practice (ISMP)[J]. Organization 4–4(01)
9. Pomerantz JR (2017) Perceptual organization in information processing[M]. In: Perceptual organization. Routledge, pp 141–180
10. Prabhakaran B, Jiang Y G, Kalva H et al (2018) Editorial IEEE transactions on multimedia special section on video analytics: challenges, algorithms, and Applications[J]. IEEE Transactions on Multimedia 20(5):1037–1037
11. Reynolds C (2017) From transgression to tradition: relationality, organizational absorption, and the lascivious costume ball, 1970–1984. Organization 24(6):916–937
12. Soomai SS (2017) The science-policy interface in fisheries management: insights about the influence of organizational structure and culture on information pathways. Mar Policy 81:53–63
13. Soomro ZA, Shah MH, Ahmed J (2016) Information security management needs more holistic approach: a literature review[J]. Int J Inf Manag 36(2):215–225
14. Wei K, Ram J (2016) Perceived usefulness of podcasting in organizational learning: the role of information characteristics. Comput Hum Behav 64:859–870

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