Model of Information Retrieval in the Context of Organizations

María Del Camen Cruz Gil
Carlos III University, Spain
Email: macruzg@bib.uc3m.es

An information retrieval model is presented as a result of a study of two different but integrated perspectives of Information Science. On the one hand, Information Science is considered from the point of view of Information Management, and on the other from the Information Science retrieval. The latter encompasses the point of view of some cognitivist authors who have created an information retrieval model and these have been exhaustively studied. This appraisal begins with the intention of finding realistic solutions to the problems in order that the information chain can flow unhindered and, thus, enable to achieve the objectives for which the information was generated.

Keywords: Information retrieval; Information management; Information retrieval model; Seeking information; Organization

INTRODUCTION

Information management can be defined as "the process by means of which basic resources (economic, physical, human, or material) are obtained, deployed, or used to handle information within and for the society it serves" (Ponjuan, 2007). Information management must include the whole information value chain starting from the identification of the needs of internal and external users to its final use. In this way the author considers that information has come to take a pre-eminent place among the resources that any organization and company must handle and administer so as to be able to face current challenges. Further, the information resources necessary to develop organizational functions should be handled correctly and systematically. The better they are handled, the more benefits the organization will obtain (Ponjuan, 2007).

Information retrieval is a discipline that deals with the application of a series of techniques, models, and activities so as to seek, locate, and retrieve efficiently, in the various Information Retrieval Systems (IRS), the relevant information that the user requires so as to satisfy his/her information needs (Salvador, 2008).

https://doi.org/10.47657%2F2018201245

The capacity to extract useful information from large electronic resources is, therefore, not only one of the main activities of individuals, but also an essential skill for most professional groups, and perhaps one of the means of achieving competitive advantages (Ruthven, 2008).

The last concept that needs to be clarified in this section, due to its clear relation to the theoretical studies that serve as a model for understanding the human processes involved in information retrieval, is that of, seeking information. It should be pointed out that in common with other authors, (Cacheda Seijo, Fernández Luna, & Huete Guadix, 2011) also emphasize that seeking information is the research field concerned with the study of information systems in a real world, and of the characteristics of interfaces, rather than of other abstract components that systems may contain.

Research Objective

Given that in previous studies, inhibitory factors or facilitators of information retrieval in the organizations were detected, for example, according to Cabero, Martín-Pozuelo, and Zazo. (2011), the records management in organizations is carried out in a well intentioned but inconsistent way, thus, the question arises as to, what the essential components are that should be included in a retrieval model of the information, that may be implemented in any organization?

This idea is the starting point for carrying out research in order to find answers to why the information retrieval processes currently used give such unfavourable results, and to further provide a solution to the problem.

From a methodological point of view, this study carries out in the first place a selective and intensive revision of the theoretical information retrieval models and of some scientific literature related to Documentation Science. Secondly, contrasting them and systematizing their principal contributions. Thirdly, an overall analysis is carried out in order to contrast all the information compiled and to draw up a series of rules or recommendations devoted to the situation analyzed. In short, this study is organized section wise in the following manner:

1. Study components detected by other authors to be considered in a process of information search, which can be found in Section 3;
2. Combine all the elements in a single model of information retrieval that can be implemented in any organization in Section 4; and
3. Providing a series of general guidelines or recommendations, in Section 5

https://doi.org/10.47657%2F2018201245

METHODOLOGY

An empirical study is offered with the objective of understanding, describing, analyzing and interpreting the situation in the real context. Generally, we consider two distinct paradigms: technical characteristics more oriented to the system and cognitive characteristics, more oriented to the user. The 'Documentation Science', within the perspective of the research, has a social work function, in which all techniques are designed to provide information to people, or provide them with knowledge and tools they that may be sufficient to obtain, enhance and transform their state of current knowledge autonomously. From the perspective of the cognitivist authors, who are the creators of an information retrieval model, we begin by extracting the components that we consider essential to the creation of an information retrieval model. These include the user, information, organization, systems, normative and documentation techniques. We also consider those elements of these components that facilitate not only information retrieval, but also their adaptation to any organization. Although, these elements have previously been mentioned by other authors, it can be seen throughout the study, that they had not up to now been taken into account in order to form part of an information retrieval model.

STUDY OF ELEMENTS FOR MODEL OF INFORMATION RETRIEVAL

Once the theories of the information retrieval with the scientific literature of the Documentation Sciences environment are considered, it is necessary to present a model of information retrieval, composed of elements drawn from relevant authors such as Lancaster and Saracevic. There are the other components extracted from authors of the cognitive line or their evolutions, whose models proposed information retrieval that will also be discussed. These include Belkin, Ingwersen, Ellis, Khulthau, Wilson, Dervin and Byström. The following subsections describe the importance of each element that is incorporated in the model of information retrieval.

1. User

In the first place, the user is mentioned as a component who is considered important to get to know. Belkin considered that the great problem detected in Documentation Science is the effective communication of the desired information between a human generator and a human user (Belkin, 2008). Later studies carried out by Yuan and Belkin (2014), "demonstrate that the dialogue structures the

https://doi.org/10.47657%2F2018201245

authors designed indeed support effective human information behavior patterns in a variety of ways" (p.829). What this idea of Belkin's aims to emphasize is that, it is not only the user who should be considered to be a central component of an IRS, but also his/her cognitive space, attitude, informative needs, and behavior during the search. In other words, the user and all that this concept involves is relevant when shaping an IRS, owing to which, all the concepts associated with this component are on the same lines.

In the same way as Belkin (1993) observed the need to take into account the user and all those who intervene in informative processes, it is considered essential to take into account all the components that are considered to intervene in information retrieval. The failure to take them into account would not provide the overall vision necessary in the integration of processes. As a consequence the efficiency and effectiveness of information retrieval would decrease, rather than increase.

In this manner, the user is proposed as the first component. People are not only those who design, but also those who use information systems. The most important component of society is the human being, which has the capacity to create and transform the world (Ponjuan, 2007). Authors such as Carol Kuhlthau and David Ellis concentrated their studies on the observation of the user. This is the person directly intervening in informative processes and, therefore, considered to be an essential component, being related to elements that must also be taken into account. These elements are:

1.1 Differentiation

This element is defined by Ellis (1990) as the capacity of the user to classify sources according to their nature and quality. It is considered to be an element that must be taken into account in the model proposed, because if the user is capable of differentiating he/she will provide very important information for the organization on whether the use of the sources provided comply with their objective.

1.2 Gap

In the model established by Dervin, Foreman-Wernet, and Lauterbac(2002) the 'gap' is defined as any information voids that people may have. These voids are considered by Dervin to be cognitive and physical. It is, therefore, considered important to take this element into account, because when a person has an informative gap, it is necessary to find out the origin of this deficiency and whether it can be solved or not. If this information is known in an organization, the user gaps

https://doi.org/10.47657%2F2018201245

will be filled, and as a consequence his/her task is likely to be performed more successfully, from which both the user and the organization will benefit. If the gap is not detected, analyzed, and filled, it will persist to the detriment of both the person and the organization. Subsequently, other important authors such as Chowdhury, Gibb and Landoni, (2014), continue with the theory that "the gap is reduced as information is found and disappears when the search process ends" (p.575).

1.3 Participation

The action with which the users participate in information retrieval will provide effective alternatives. For this very reason, it is important for the users to be invited to analyze the existing situation. In addition, if the participation of users is taken into account their motivation will be greater, as well as, be a source of information when assessing a system (García Moreno, 1998). This idea is also considered by Ellis with regards to the importance of user participation regarding the assessment of the system, and, as an essential part of its success.

1.4 Intermediary

This is the term used by Ingwersen, Saracevic, Spink, and Wu, who believe that the 'intermediary' is an information professional (also known as information scientist, special or reference librarian, information broker, or information seeker) who has the skills necessary for recognizing the real information needs of the user (user models) and for the subsequent search and retrieval in different IRS and databases (Salvador, 2008). According to Ponjuan (2007), the information professional plays a determinant role in the interpretation of the needs of his/her users and the potentialities of his/her system. He/she has a relation with the user as the person who is the bridge between the IRS and the end-user, thus, being the intermediary user of the system. He/she may likewise, be a member of the organization or an expert user of the system, and, thus, his/her existence in the organization is highly advisable. The intermediary will be an indispensable figure for the people working at the organization, as well as for the organization itself.

1.5 Information Literacy

As previously been discussed, if a user is literate from an information point of view, he/she will be able to apply documentation techniques that make him/her independent, and consequently his/her information seeking will probably be more efficient and effective (Lancaster (1978) as quoted in Sarmiento, Segovia, and Fernández (2004). Information literacy was previously mentioned from the

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perspective of some authors and also from European recommendations, owing to which it is considered appropriate to add the perspective that if a user receives training, for example on the use of the system, information retrieval will also be potentially more efficient and more effective. Further, the performance of the system will be improved, leading to greater compensation for the economic investment.

1.6 User identification and categorization

If the organization has identified and knows the user, it will be able to locate him/her in positions in which the performance of his/her tasks may be more profitable to the organization (Dervin, Foreman-Wernet, & Lauterbac, 2002). It is considered favourable to identify and categorize the user. This will prove to be valuable data for the organization as it would enable improved performance from people who are better qualified for the posts they fill and have previously been undervalued; On the downside, this may lead to a lack of motivation and unease that influences the person and the organizational atmosphere. However, it may also lead to the knowledge that a person is in a post for which he/she is not sufficiently qualified, owing to which the performance of his/her tasks will not be optimum that will have possible negative consequences for the organization.

1.7 Seeking behavior

This is the user's interaction with the system in the search process. This will depend on the manner in which the user interacts with the system for search and inquiry. If the system is imposed “it will carry out a thought task for the user”, but if the user employs "forced" browsing, then the system simply gives prioritized ideas that are directly related to user requests (Ellis, 1996). It is considered that this characteristic of IRS developed to find out the cases in which it is "forced" or whether the system “carries out a thought task for the user” must be taken into account, as this will influence other components that we shall see later.

2. Information

To continue with the identification and analysis of the components of the retrieval model, one may wonder what the origin of this intervention is and why a user seeks information. As has been mentioned, Kuhlthau (1996) made it clear that the information that is available became a critical element in decision-making. For Marchionini (1995) the search for information is an essential human process related to learning and problem solving.

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It can be observed at all times that everything revolves around information. The user needs information and seeks information, which means it should be taken into account as an indispensable component. Without informative needs there would be no information retrieval. In fact, we can distinguish several information management levels as follows (Cabero, Martín-Pozuelo, & Zazo, 2011, p. 105)

a) "Information management tied to a job position and individual data control related to daily tasks;
b) Information management focused on departmental or functional objectives; and
c) Information management deployed for achieving corporate goals..

The elements associated with it are as follows:

2.1 Supervision

This is defined by Ellis as a process in which a user supervises the evolution of a piece of information in a programmed manner by using sources. It was observed in the study of another author, that in organizations the information follows a workflow process that may vary, owing to which it is recommended that supervision should be taken into account. For example, in an organization a dossier is initiated and the information it contains varies as the workflow process advances. In consequence, if the information is not supervised we will have something that may not be up-to-date, which may be detrimental to the execution of our tasks and ultimately to the organization.

2.2 Extraction

This is the process of extracting the information. Ellis (1990) draws attention to the systematic extraction of information from a specific source where the material of interest to the work has been located. This is therefore considered to be important, as it is necessary to know the source that has been used to obtain the information for the performance of the tasks. If the source is known it can be assessed and as a consequence the quality of the information used can be known.

2.3 Relevance

Within the conflictive term relevance one of the conclusions quoted by Schamber, Eisenberg and Nilan in Salvador (2008) is transference. These authors consider 'relevance' to be a dynamic concept that depends on the opinions of the users regarding the quality of the relationship between the information and the need for information at a given moment. This concept is also qualified by Ingwersen

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(2005), for whom relevance refers to the judging of the usefulness or the pertinence of a certain source of information by a cognitive player with reference to a certain informative situation at a given point in time. It is, therefore, essential to take this concept into account when assessing a source of information.

2.4 Document

Standard ISO 30300 (2011) refers to documents as an active information resource type, which is not only a part of the capital of an organization, but also becomes the medium for the decisions made and the subsequent activities. It guarantees the reporting process to interested parties both present and prospective. Ingwersen (2005) considers that the real objective of information retrieval is the finding of useful information to fulfill a need. In practice this objective is often reduced to seeking documents, document components, or document replacements. In consequence it is recommended that the document should be taken into account with the appropriate definition provided by Ingwersen and corroborated by this standard.

2.5 Exhaustiveness and accessibility

As has previously been mentioned, various perspectives of exhaustiveness and accessibility exist according to different authors. For example, standard ISO 15489 defines exhaustiveness as the management of documents originating from all the activities of the organization or from the section of the latter of which it is a part. Independently of the different concepts or perspectives, it is recommended that this concept should be taken into account, since as Kuhlthau (1996) declared it is clear that information should be exhaustive and accessible to satisfy the information needs that arise in the user search process.

2.6 Interconnection, reuse, and transparency

Interconnection is the action of interconnecting. In short, connecting is joining, linking, or establishing a connection. The capacity for interconnection, the reuse of information, and greater transparency is a recommendation reflected in European directive 2003/98/CE for its application in public data managed by the administrations. This recommendation of 2003, which is strengthened by new directive 2013/37/UE (Pastor-Sánchez, 2014), is therefore transferred.

2.7 Medium

It can be defined as a material with a surface that records information, such as

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paper, a videotape, or a compact disk. Formerly a document was mainly taken to refer to physical documentation, but it should be stressed that information is not only found on conventional mediums. It is therefore advisable to think in advance of all possible mediums where information is to be found as this is where it can subsequently be retrieved. We consequently share with Byström (2002) the idea that the organization must take into account the various mediums on which information is recorded.

2.8 Integrity

Something that is integrated is part of a whole and it is in this sense that we can relate the measures that must be applied to control access, user identification, authorized destruction, and security with the aim of avoiding the unauthorized access, destruction, modification, or elimination of documents as recorded in standard ISO 15489. Cruz Mundet (2003) also draws attention to the importance of guaranteeing information integrity in filing systems. We consequently recommend it as an essential element to apply and to take into consideration at all times regarding this type of information. Integration in the case of organizations' information need strategies to be able to approach change in a way that optimizes both information resources and general innovation. (Cabero, Martín-Pozuelo, & Zazo, 2011, p.116).

3. Organization

For Belkin both the user and the information can be found in different environments: social and work. Byström (2002) maintains that the '**organization'** must become involved in and take responsibility for the process of information seeking. As has been mentioned, the organization must have an open communication process and identify and categorize the user according to Dervin, Foreman-Wernet, and Lauterbac (2002). Taking into account the various points of view, therefore, the organization is considered to be another component of our model, and moreover to be related to the following conceptual elements:

3.1 Knowledge

The activity of any organization is reflected in its knowledge and this knowledge is currently reflected in the physical documentation (González 2006). ICT has led us to use systems, but it should not be forgotten that this is relatively recent and that all previous knowledge is to be found in physical documentation, in common with much other documentation for reasons of administrative and legal

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validity. In consequence, it is of no use at all to take into account current knowledge without considering previous knowledge as it is the latter that has allowed us to reach the former. It is, therefore, advisable to take into consideration where the knowledge of the organization is reflected and to pay attention to this aspect.

3.2 Knowledge Management and Organizational Structure

As has previously been mentioned, once the importance of knowledge has been recognized, its management and organization is recommended. Knowledge, as a corporate asset implies the need to manage it (Ponjuan, 2018). Lack of knowledge or a lack of organizational structure causes many problems in information systems when the latter should act as a support for the various types of exchange between explicit and tacit knowledge. Their interests range from theory to the application of the information system model in files and document management (Ellis, 2006).

3.3 Climate of the Organization

Wilson (1997) observed that the user will be influenced not only by how the search is carried out but also by the climate of the organization. As this will have a direct effect on information retrieval, it is recommended that the organization should take this concept into account. If the climate of the organization is good this may have a favourable effect on the user and ultimately on the organization itself. Nowadays, Wilson's theory is a general theory these contextual characteristics do not limit theory, but constitute the elements of the context within which information needs arise. (Wilson, 2016, p.4).

4. IRS

As has previously been mentioned, Ellis (1996) considers that the function of the IRS is to provide information to the user so as to work with and support him/her, which represents a source of conceptual and methodological ideas for their application in information retrieval. It is also a study area for Ingwersen (1992), from whose work some elements associated with IRS are also extracted:

4.1 Interface

The interface is defined by Ingwersen (2005) as the mechanism located between the electronic or human components of an IRS. This definition is considered sufficient for drawing attention to the importance of the interface, which together with the definition of Belkin et al. (2001) as an integral part of the

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system that has been developed to support the task of information retrieval, corroborates no doubt that within the IRS component it is advisable to take the interface into special consideration. If one has an IRS with an interface that does not help but on the contrary hinders information retrieval by the user, its efficiency will be considerably reduced. The interface element is so important that further studies continue on the importance of the interface as support for the search for information and the type of interactive for information retrieval. (Ruthven & Kelly, 2012).

4.2 Method of Interaction

Interaction can be defined as the way the user communicates with the system. It is considered appropriate to recommend the method of interaction that the system allows. Belkin (1993), for example, mentions that in the method of interaction the user can carry out two types of search: either a more general search or a more specific one.

4.3 Structure of Systems

Ingwersen (1992) proposed several possible structures in an IRS and classified them as follows: a) Active structures: The system should include information retrieval techniques in its configuration such as the construction of user models or as IRS interrogation devices; in other words, during interaction the system has an active structure that helps the user, for example, to make searches in the hypertext systems; b) Passive structures: The system should include in its configuration indexing rules and structured databases. The system has a structure in which it does not interact dynamically with the user, as occurs for example, on an Excel sheet; and c) Incorporated conceptual structures: The objects of the system should include texts, images, representations, or intermediary mechanisms, for example thesauruses. In this case the system will offer different search possibilities from those previously mentioned. It is advisable to take into account the different possible structures of the systems, as if we know the structure this will allow us to select the most suitable one for the information type we have, and, therefore, information retrieval will potentially be more efficient.

4.4 Results

A result is the effect and consequence of a fact, operation, or deliberation. This effect or consequence may be favourable or unfavourable. However, if results are not analyzed it will neither be possible to reach a conclusion nor to consider them

https://doi.org/10.47657%2F2018201245

in the design of the system, so the recommendation of Dervin (1999) must be taken into account so as to find out whether the system is complying with its objectives or not.

4.5 Interoperability

According to Spanish Royal Decree 4/2010 of 8th January, interoperability is the capacity of the information systems and the procedures which these support for sharing data and allowing the exchanging of information and knowledge between them. Practically the same definition is also given in Standard ISO 23081-2. It is advisable to take interoperability in systems into account, as it is only possible to exchange information if the system has the capacity to do so.

5. Normative

As has previously been mentioned, organizations operate based on legislation and normative regulations. Given this, the current study agrees with the justification of Martín (2001), in which the existence of rules will facilitate the availability of standardized formats that will allow, among other things, more efficient and effective information retrieval. The existence of rules will therefore help the 'user' (component) to retrieve the 'information' (component) deposited in 'systems' (component) in our 'organization' (component), owing to which we propose the inclusion of regulations as a component of this model directly related to the previous ones. In this particular case, we will not associate elements but we will mention some of the rules that we recommend for distribution and applicability at an international level, in any organization, according to Cabero, Martín-Pozuelo, & Zazo (2011), "Standardization of organizational management is put in place through the use of multiple standards and/or codes of good practice, which have a type character for management systems. The International Organization for Standardization (ISO) has developed a series of standards and technical reports related to records management with the aim of ensuring efficient management of documents in organizations" (p.117), followed by in each case, a brief exposé to explain why they have been chosen:

5.1 ISAD-G, ISAAR-CPF

The application of the ISAD (G) rule has given naturalization papers to access points, defining them as "the names, keywords, indexing terms, etc. through which information may be identified and retrieved" (Martín, 2001).The use of this filing rule is considered highly advisable in the context of organizations, as it will naturally

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describe the information with the aim of facilitating its retrieval.

5.2 ISO 15489 1-2

The management of documents is considered important, and it is therefore advisable for this to be controlled by rules such as ISO 15489, which is the standard regulating good practice in document management (whether conventional or digital) issued by organizations (whether public or private) for internal or external purposes(Solana, 2007).

> "ISO 15489 constitutes a statement of principles for best practice for records managers and its use addresses the various types of documentary management requirements that organizations may have. Operating in an electronic work environment, organizations have, as has already been shown, various levels of endogenous and exogenous information management." (Moro Cabero, 2011, p.108)

5.3 ISO 9003

According to technical recommendation ISO 90003:2004 in section 4.2.4, "registers should be established and maintained to provide evidence of compliance with the requirements" (Eíto-Brun, 2008).

5.4 MOREQ-2010

The importance of interoperability has already been mentioned. As a consequence we also recommend the regulations that have arisen within the data exchange framework in the administration (MOREQ, 2010), which specifies exhaustively the requirements of the management of electronic registers in organization systems.

5.5 ISO 2308-1-2

The importance of the inclusion of metadata in information systems has already been mentioned. We, therefore, recommend the application of regulations on the principles defining metadata models to the management of documents, thus, retaining their integrity and naturally the information.

5.6 ISO 30300

The objective of standard ISO 30300 (2011) is that all organizations, regardless of their size, nature, or activity, which generate information in their work processes, should implement a Document Management System, the aim of which is the

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systematic management of information of the activities of the organization. The aim of standard ISO 30300 (2011) is to establish objectives and provide principles, owing to which the recommendation of the standard is considered to be essential.

6. Documentation Techniques

At this point, we are in a position to affirm that the component that is managed by this model is the 'documentation technical requirement', which is obtaining the greatest efficiency and effectiveness in the process of information retrieval. As we have mentioned, Calvin Mooers as quoted in Salvador (2008) considered various difficulties when facing information retrieval, among which he included how it should be defined and organized. This component is the proposal designed to try the integration of information in the organization in a way that it guarantees the achievement of its objectives. Documentation management is a vital process for the organization owing to the magnitude of information acquired from the documents. One of the aspects that information management involves is the use of documentation techniques. In our context the term 'documentation techniques' is used as a component to include all operations carried out by information professionals, intermediaries, and information managers with the aim of identifying, classifying, and organizing, so as to be able to retrieve the information later in an efficient and effective way. Bolea (2005) defines terminological control as the main characteristic of documentation languages and, therefore, documentation techniques, as it allows the representation of concepts deriving from indexing without ambiguities and guaranteeing the use of the same terms to express the same concepts. Some technical operations of this nature are as follows:

6.1 Indexing of Documents

Bolea (2005) defines indexing as the basic process that analyzes the concepts of the document; selects those that are appropriate; and translates them into a documentation language. 'Indexing' is a documentation technique which, as is shown by Ingwersen(1999), on analysing the frequency of indexing terms and other representative structures helps users to understand information contents in retrieval systems, owing to which the application of this documentation technique to IRS makes this technique vital.

6.2 Thesauruses

They are defined by García-Quismondo, et al. (2002) as a type of documentation language with two main functions: representing an area of

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knowledge and serving as a document retrieval tool in that area. It is true that they comply with these two tasks like any other controlled documentation vocabulary, but they are considered in particular to be a tool of documentation identification and, therefore, retrieval because of a high coherence in indexing and to the possibility of the expansion of the vocabulary of inquiries for the use of relationships between the terms. Therefore, their application in an IRS is considered essential.

6.3 Documentation Descriptors

An information representation model based on describers and documentation languages is considered by Codina (1994) to be essential if an information retrieval system is to be efficient.

6.4 Vocabulary Control and Terminological Control

These techniques are recommended for two reasons. Firstly, in the case of vocabulary control, as Codina (1996) states, it will prevent spelling errors in a database or prevent any other system from causing losses of information. Secondly, technological control facilitates the representation of concepts deriving from indexing without ambiguities and in a coherent manner (Bolea, 2005). Model of information retrieval proposed, see Fig 1, is considered a necessary application in any organization, as all components intervening in an information retrieval process are represented. In the same manner the researcher puts forward some elements belonging to the components, the application of which is also recommended.

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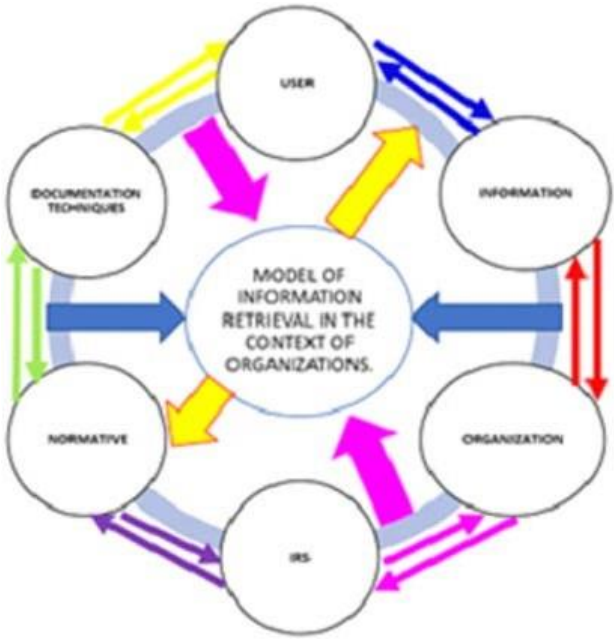

Figure 1. Model of Information Retrieval in the Context of Organizations

CONCLUSION

On the one hand, in current studies, such as that of Savolainen, (2016), attention is drawn to the fact that the models of search and retrieval information have contributed to the conceptual growth in the investigation of the behavior of information. However, even though there are abundant models and individual theories, the number of integrated frameworks is still low, thus, it can be concluded that the contribution of this search and retrieval model contributes to the integration of different models, as well as, their application in a real context as is the case of organizations.

On the other hand, keeping in mind the objectives previously mentioned, it is presented as the conclusion of the study of elements detected by other authors for the analysis of the seeking and retrieval information process, combined in a single model of information retrieval, which can be implemented in any organization, to end with the general guidelines or recommendations that are as follows:

5.1 It is recommended that the user should take part in designing the IRS;

5.2 Information supervision in organizations at a general level is recommended;

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5.3 A greater commitment is recommended from organizations in information management, documentation management, and knowledge management if they are to comply with the mission of their objectives;

5.4 Terminological control and vocabulary control are recommended so as to avoid the destructuring of the information; and

5.5 The application of technical regulations for information, regardless of its medium, is recommended so as to guarantee its reuse, transparency, integrity, and preservation.

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