CHALLENGES OF THE IMPLEMENTATION OF FOLKSONOMY IN LIBRARY SOFTWARE OF IRAN

[1]Zahra Lotfi Bakhshayesh, [2]Alireza Noruzi and [3]Nahid Bani Eghbal

[1]Department of Information Science and Environment, Islamic Azad University, College of Graduate Studies and Research, Hamadan Branch

[2]University of Tehran, Faculty of Information Science and Knowledge Studies, Tehran, Iran [3]Department of Information Science and Science Studies, Tehran University

ARTICLE INFO

ABSTRACT

Objective: The purpose of this study is the feasibility of applying tagging and categorizing people (Folksonomy) in library software of Iran. By using Folksonomy services, libraries can take an important step in accelerating the process of provision and disseminating information and by using user-oriented participatory methods they can convert libraries and informational centers to dynamic and user- oriented organizations. Therefore this study deals with the feasibility of applying tagging and categorizing people (Folksonomy) in existing library software of Iranian universities and reviews the fields of design and creation of user and folksonomy oriented libraries.

Methodology: Research methodology is survey, descriptive and comparative. And the statistical population of this study consists of common library software in Iranian universities including three comprehensive software of Simorgh (product of Nosa Company), DJ LIB Pars Azarakhsh (product of Pars Azarakhsh Company), and Sana (product of Payam Mashregh Company). In descriptive section, data and preliminary data collection tools have investigated 41 items of the feasibility capabilities of implementation of folksonomy in the library software by using a checklist that includes 5 indicators (including the need for creation and implementation, application and development, support and librarian functions) and 25 checklist were distributed between managers and staff of information centers and university libraries, library software engineers and programmers and the results were reviewed. And for this purpose the survey, analysis and comparative research methods were used and after the data collection, the data analysis was conducted in accordance with the research questions.

Research findings: Study findings determined that Sana Library Software has got the highest score at index of 1 - measures required for folksonomy 2 - strategies and implementation of Folksonomy 3 - Ability to run and develop folksonomy in the library software 4 - the tasks of librarians in providing services by utilizing folksonomy capabilities and Pars Azarakhsh Digital Library Software has acquired the highest rating at index 4- updated supports of Folksonomy in library software.

Results: On the basis of these findings, it is concluded that Sana (product of Payam Mashregh Company) has achieved significant progress in creating appropriate infrastructure for implementation of folksonomy and Pars Azarakhsh software progress is not considerable and the comprehensive software of Simorgh, at the last ranking, has not created an appropriate infrastructure for implementation and it is far from reaching such facilities and the goal. Finally, guidelines and recommendations derived from the study for infrastructure of software has been provided.

INTRODUCTION

In the field of library science, folksonomy is referred to as an approach that increases user engagement in making connections, because by freely tagging of information resources in computer networks and by overcoming the existing limitations of traditional library classification -such as the use of subject headings – and by creating flexibility and philosophy of library classification, individuals facilitate retrieval of library catalogs and information sources and

Corresponding author: **Zahra Lotfi Bakhshayesh**
Department of Information Science and Environment, Islamic Azad University, College of Graduate Studies and Research, Hamadan Branch

create an opportunity to benefit from the views of users by relying on keywords. It seems that by this approach folksonomy will have beneficial effects on participation of users as active participants of library and in encouraging them to create subject index and by creating a spirit of cooperation and sharing of ideas it have effects on improving quality of services provided by libraries and information centers. Considering research areas of information and centrality of fundamental elements of information and knowledge, undoubtedly the category of knowledge organization has been one of the main missions of librarians and information professionals and in the interaction with other fundamental issues such as thesaurus, ontologies, indexing and abstracting, metadata, controlled vocabularies, information retrieval and knowledge in natural language and similar cases, all with the aim to facilitate and accelerate the retrieval of information, it is considered of great importance for users. The fifth principle of Ranganathan law which is based on the liveliness and dynamism of library brings to mind the importance of being active in all fields of science and technology, pioneering in seeking and providing data, providing information with minimum errors and the most efficiency for users and the expressions of Web 2.0, library 2.0.; Because all the users are engaged and involved in the acquisition, organization, presentation and dissemination of information. Massive volume and variety of information sources has led to the increasing use of modern methods in organization of resources including participation of users and facilitation in various categories and the interaction between user and information system. Considering organization of information resources in various formats - the an outstanding example of it is cataloging category based on the users' tagging - possibility to restore and disseminating information based on the natural language descriptors – whose most prominent identification factor is using a set of keywords - to search for intended information of users and establish by multiple interactive relationships among information systems, have resulted in simplification of the process of organizing content of library catalog. Considering the inclusive growth in "Web 2", this article implies that it can also be used in the preparation of lists of library and information centers.

Problem Statement

In the world of Internet, networks have been developed with the aim of creating a collaborative environment with the users, an environment in which the user is categorizing the content. In the network world this phenomenon has been called "Web 2" with the main purpose of efficient communication through a common language. This new phenomenon in the world of web has been called folksonomy and in different contexts has been mentioned with terms like collaborative tagging, social classification and social indexing. Folksonomy is a method for creating and managing tags that guides collaboratively the network users to classification or classifying the contents. Today, some countries like America and Canada use tagging approach and categorization of people (folksonomy) in public libraries lists. For example, public libraries of Oakville (Canada) and Naperville (America) use this system in the library's OPAC and allow library users issue tagging of the resources. The question is raised that is there any possibility to implement the method in the existing software in Iran according to its

scientific and social peculiarities? What facilities are needed to carry out the plan? Its implementation will lead to the desired results or not? Folksonomy facilities in the library software (in terms of executable form is included in the user page of the library software and during search it is displayed alongside the sources in the library catalog) enables users to allocate the preferred sources of information and desired subject keywords and finally tags it and displays on a personal page in the output software and enables librarian to get information about the books that the user has read and liked. Keywords can indefinitely be assigned to resources by unlimited users, which are considered as the most important elements used in folksonomy. In web resources, users become familiar with web resources shared with other users through these tagging. And in fact they can be informed and use it by what has been previously retrieved and labeled by others. Also they can give new tags to resources or they can acquire a list of other keywords that can be used to retrieve the desired resources.

LITERATURE

Research Backgrounds in Iran

In short we can say that this study is going to examine the possibility of using tagging and categorizing people (folksonomy) in library software of Iran. Norouzi 1385, one of the domestic researchers has done considerable research in the relevant field. In a research, entitled "classification of people (folksonomy) in contrast to library classification systems" he has studied the history of people classification and has compared it with library classification systems and finally, based on previous experience suggests that in order to match the language of the authors and users, thesaurus and controlled vocabulary should be used in people classification systems.

Eltemasi (1390) in a research entitled "folksonomy in the traditional library" reports the experience Technical University library which have used folksonomy to create library 2 in order to increase access and library's audience reception of the materials of it with the aim of promoting public and professional knowledge of library users. So the result is that the existence of such method is noticeable even in the physical world, due to the presence of valuable resources in academic libraries and the need for students and faculty members to update the level of knowledge, doing such a work seems to be necessary in libraries.

Sabzi Pour (1390) in research entitled "Application of " folksonomy "in the representation of digital images: a new approach to user - oriented indexing " provides an approach of image indexing that has not been mentioned so far and or it has been explained briefly and the general idea that has expressed the challenges related to image indexing based on the concept. He refers to folksonomy as a method that is significantly considered in the world of digital libraries, in which social tagging is described as a tool for enhancing digital objects description, providing a vehicle for capturing user input, and for more involvement of the user.

This paper assesses the advantages and disadvantages of user-made metadata in the content of digital images and compares it with professionally made metadata format and vocabulary control tools. Also, in addition to the analysis of

characteristics of people classification it finds that tagging people can be implemented as a complement for metadata backgrounds made professionally to make an opportunity for users in order to comment about the images.

Kakalia Constantia and Papatheodorou (2010) in an article entitled "Utilization of folk classification in thematic analysis', through a case study in the university library provides a method for utilizing social markup in subject cataloging. Findings show the behavioral characteristics of users' markup that in most cases has improved the explanation of the subjects of documentation. The results obtained show the relationships of alternative policy regarding the projects of organization of knowledge, technological infrastructure and information services.

Keshet (2011) in a research titled 'classification system according to the sociology of knowledge " have suggested the concept of combined knowledge in order to clarify the epistemological basis of modern science which is made by controversial combination of groups of modern science, including the objective, mental, social or natural science and it has been concluded that integration of tree like classification with folk classification or in other words, creating a natural structural order of objective relations with social and mental classification systems can create a wide range of combined knowledge.

Erik Mai (2011) a research entitled "folk classification and new order: the power in the digital disorder", has investigated the concept of authority and role of professionals in a changing environment, where more people are involved in the organization and presentation of information and knowledge. The article questions the traditional role of professionals and argues that the system should be designed to facilitate trust and authority, and authority comes from folk classification and collective commentary systems of users and means production.

The Importance and Necessity of Research

Libraries using folksonomy services can take an important step in accelerating the process of providing affairs and information dissemination and by employing a user-oriented and participatory approach, to convert libraries and information centers to dynamic and user-centered organs that the true purpose of folksonomy is to provide a new method for self-organizing sources of information by employing users' natural language descriptors regardless of the limitations of time, place and even circumstances of a particular language. This research intends to investigate the feasibility of applying classification of people (folksonomy) in library software in Iran. As it was told folksonomy is the presentation of a new method for self-organizing sources of information by employing users' natural language descriptors regardless of the limitations of time, place and even circumstances of a particular language. Experiences with similar cases in other countries have shown that it would eventually lead to improvement of retrieval services of library resources. One of the key points of this approach is that in many cases the retrieval of information from library catalogs by users makes the achievement of the required works rapid. Today, some countries like Canada and America use folksonomy system in libraries.

Research Variables

Independent variable: Software facilities and equipment necessary for implementation and application of people classification (folksonomy) in library software in universities of Iran

Dependent variable: The results of implementing folksonomy classification in library software in universities of Iran.

Research Methodology

Since the study is in conceptual and technical development area, so descriptive- comparative methods are the most important research methods in this dissertation.
This research studies in the field of existing technology in development of folksonomy and related concepts is to investigate the possibility of defining and implementing this concept in information resources management software in the libraries of Iran.

Two methods were used in this applied study

* Documentary method (libraries): study and collect information through the review of published and available documents.
* Survey - descriptive - comparative research method: survey - descriptive - comparative research methods were used in to gather information on the feasibility and implementation of library software. Then it was tried to compare them using checklists.

Statistical population, sampling method and sample size
The study population consisted of two groups as follows:

The first group: consists of university library software made in Iran because university libraries can represent the entire statistical population of the country, after studies conducted by the researcher and the university libraries software list (Appendix 2) was prepared and it was found that some of these programs do not have even the capability to apply folksonomy and so they were excluded and software were studied that had the folksonomy capability to same extent. It should be noted that according to the directive of Islamic Azad University, most libraries of Islamic Azad University are obliged to use the Simorgh software (Sika network) (Integrated System of Islamic Azad University libraries), also in use in accordance with Payam Noor University directive, its libraries are required to use Sana Software, the product of Payam Mashregh company, and according to the evaluation it was found that most university libraries use the above two software and Pars Azarakhsh software the product of Nosa company, as a result the statistical population of this study consists of common library software in Iranian universities including three comprehensive software of Simorgh (product of Nosa Company), DJ LIB Pars Azarakhsh (product of Pars Azarakhsh Company), and Sana (product of Payam Mashregh Company),that due to consideration of them and the frequency of use by academic libraries in the country, by taking into account the suggestions of experts and their approach it was found that it is better to use standards than software produced domestically.

The second group consisted of designers, programmer, support engineers, and librarians that from each of the related

software groups, one person was selected and questioned, at least 2 and if required 4 people were questioned, therefore, by studying results of existing software we conclude that whether the software are folksonomy centered / oriented or not and if not, suggest how it can be folksonomy- centered? This checklist includes five indicators that evaluate 41 possibilities of capabilities of digital library software in terms of folksonomy feasibility that indicators are: necessity of establishment and implementation, application and development, support and librarian functions, and data collection tools, distribution of 25 checklists among managers and staff of information centers and university libraries, engineers and library software programmers. The list was completed by reading software manuals, articles about them, viewing and also using checklist of dissertations related to the topic to obtain information.

The Method of Analyzing Findings

After collecting the data, initially the data bank were adjusted statistically in the SPSS software (SPSS) version 19 and then analysis were conducted in accordance with the research questions and descriptive results were interpreted in form of charts and graphs.

Summary and Responses to Questions

According to the findings obtained from five items raised for assessing the question of "What is the necessity of creating folksonomy capabilities (classification of people) in popular software of Iran libraries to provide services to users?" These measures can be consisted of following items:

1 - Providing areas for accelerating access to information:
Currently Pars Azarakhsh software has fully provided areas for accelerating access to retrieving information for the users, but Sana and Nosa software should make greater efforts in order to achieve full compliance in this field.

2 - Creating keyword suggestion and resource tagging feature in lexical database to accelerate recovery:

Pars Azarakhsh software in allocation of keyword or resources tagging in lexical database, has surpasses Sana and Nosa software and it is in the first place, then Sana software is in the next place, but Nosa software should make particular effort and plan to create this feature in its software.

3 - Creating the ability to take advantage of the sharing, searching, and dissemination of information from other websites based on folksonomy:

Currently Sana software is in the best position in the above category as compared to other evaluated software of this study and Pars Azarakhsh software is in the next position. But Nosa software, for creating digital library software capabilities with respect to the potential capabilities of software and also mastering and dominance of software as one of the best software options for data centers to provide information services requires users' trust to improve the software.

4 – Providing the possibility of customizing the required information (news, events, etc.) based on the proposed terms:
Currently status of Sana software regarding components and features are shown above. Therefore currently none of studied software has reached the desired competence, and therefore, it is needed to make greater efforts in this regard.

5 - Creating capabilities to select favorite topics and authors to receive the selective information (SDI):
Currently Sana Software has the desired competence regarding above components and features and Pars Azarakhsh and Nosa software should make greater efforts to achieve this competence.

Overall, it should be said that the studied software are not at the same level and some software like Nosa need more planning to create and develop folksonomy capabilities (classification of people) in the mentioned software and data centers; But Sana software can be pioneer among the library software. But the emphasis on mentioned action for creating folksonomy (classification People) to provide services to the users is necessary for library software.

In Figure 1, there is a comparison between library software about the extent of a containing 5 "What is the necessity of creating folksonomy capabilities (classification of people) in popular software of Iran libraries to provide services to users?" that the results show that from the perfect score of 40 points (by assuming containing all the above features) Sana Software (see checklist in Appendix 1) with 34 points is in the better position than the two other software and next comes the Pars Azarakhsh software has with a score of 24 and Nosa software is in the next position with 15 points.
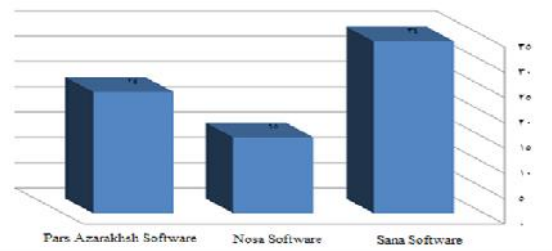
Figure 1 A comparison between library software about the extent of "What is the necessity of creating folksonomy capabilities in software "

According to the findings obtained from the 10 items proposed for assessing the question: "What strategies and tools are needed for the implementation of folksonomy in the libraries software systems?" Practices can be considered to include the followings:

1 - Allocation of personal space for each user and insertion of personal information in the software (allowing registration and membership):

❖ Apart from the Sana software that has an optimal performance regarding the above components, other software should make greater attempt to implement this feature.

2 - Proximity search capabilities through proposed tags:

❖ Aforementioned feature should be considered seriously particularly by Nosa library software. Pars Azarakhsh and Sana software have better performance in this category.

3 - Ability to search for tags relevant to users, when searching for information from lexical database:

❖ Apart from Sana Software that has optimal performance in foregoing competent, other software lack such features and require more efforts to achieve the ability.

4 - Ability to sort search results based on tags:

❖ Studied software had relatively good performance in this feature; of course they are far from ideal.

5 - Capabilities of allocation and availability of user to the icon, "sources are being studied":

❖ Concerning aforementioned capabilities, Pars Azarakhsh software outperformed other software and Nosa software lacks this ability and requires more effort to implement this feature.

6 - Capabilities of allocation and availability of user to the icon "My Data Sources" or "My data":

❖ About the above feature, Nosa and Sana software had better performance than Pars Akhtar, but none have reached the ideal.

7 - Capabilities of allocation and availability of user to the icon "My Search History" for getting information about the course of study and user interest:

❖ Sana Software in this feature is better than other software. Nosa software lacks this feature.

8 - Capabilities of allocation and availability of user to the icon "Studied information and sources":

❖ Pars Azarakhsh software status regarding this feature is better than other software.

9 - Capabilities of allocation and availability of user to the icon "Studied resources interests":

❖ Sana Software in this feature is better than other software.

10 - Capabilities of allocation and availability of user to the icon "add tag" or tagging for providing lexical database or suggested keywords of users to retrieve information resources ":

❖ Library software regarding this feature does not have the appropriate position and Pars Azarakhsh has the better position among other software.

In Figure 4.2, there is a comparison between library software regarding the extent of containing 10 cited features that results show that from a perfect score of 80 points (by assuming of having all the above features) Sana Software (see checklist in Appendix 1), with 77 points has better performance compared to other software and Pars Azarakhsh software with 65 points and Nosa software with a score of 45 are in the next place.
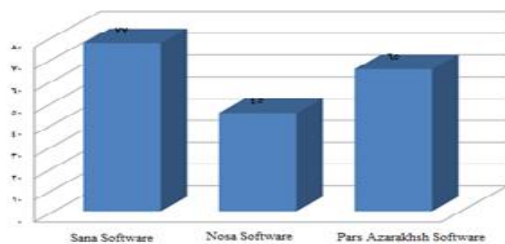

Figure 2 Comparisons between library software about the level of "What strategies and tools are needed for implementing folksonomy libraries software system of Iran?"

Summary and Responses to Questions

According to the findings obtained from the proposed 13 item to assess questionnaire "What capabilities are needed to run and develop folksonomy in the libraries software system of Iran?" solutions can include the followings:

1 - Capabilities of integrated searching through proposed tags:

❖ Sana software status regarding the mentioned component shows that it fully contains the components, however Nosa software 100% lacks such components, and

Pars Azarakhsh is in the intermediate state.

2 - Ability to search in different languages:

❖ In all three cases the software completely (100%) has this feature.

3 - Capabilities of the application of review or use of lexical database:

❖ Status of Sana software regarding above components and features show that it fully contains the components, but two other software have not achieved full compliance.

4 - The capabilities to apply browse through the different fields:

❖ Sana software and Pars Azarakhsh completely (100%) contain these capabilities. But Nosa software with7/66 percent of containing this feature is ranked next and requires special efforts for the full implementation of this feature.

5 - The possibility of selecting one, several or all retrieved items for complete view:

❖ Sana and Nosa Software completely (100%) contain these capabilities. But Pars Azarakhsh Software with 5/87% was successful in implementing this feature.

6 - Ability to change data display settings (change the header color, font, font size, etc.):

❖ Sana Software completely (100%) contains these capabilities. But Pars Azarakhsh with 5/62 percent is in the second place and Nosa software with 6/55% is in the third position.

7 - Ability to display the corresponding and parallel tags:

❖ Studied software does not have appropriate position regarding this feature, as among the studied software Sana and Pars Azarakhsh are located in the firest place and Nosa software lacks this feature.

8 - Capabilities of allocation and availability of user to the icons of proposed study" information for you "by other users for you ":

❖ Sana Software outperformed two soft wares of Nosa and Pars Azarakhsh.

9 - Capabilities of allocation and availability of user to the icons "your reading suggestions "data sources suggested by you for other users:

❖ Sana Software based on the survey findings, has the better performance than the Nosa and Pars Azarakhsh Software.

10 - Capabilities of allocation and availability of user to the icons "Favorites libraries and information centers ":

❖ Sana Software based on the survey findings, has the better performance than the Nosa and Pars Azarakhsh Software

11 - Capabilities of allocation and availability of user to the icons "writing and adding review and note" to insert comments:

❖ Nosa Software based on the survey findings lacks this feature, but Sana Software with 5/87% and Pars

Azarakhsh software with 5/37 percent possess this feature.

12 - Ability to allocate icons "Alphabetical setting of users tags" when entering or editing information:

❖ Pars Azarakhsh software based on results had a good performance regarding the foregoing factors and the software components and Nosa software lacks such components, and Sana software is in the intermediate state.

13 - Capabilities of allocation and availability of user to the icons "user tag" for getting information about the keywords assigned by the user:

❖ Nosa and Sana software lack aforementioned capabilities, but Pars Azarakhsh software based on results had a good performance regarding this capability.

In Figure 3, there is a comparison between library software regarding the extent of containing 13 cited features that results show that from a perfect score of 104 points (by assuming of having all the above features) Sana Software (see checklist in Appendix 1), with 46 points has better performance compared to other software and Pars Azarakhsh software with 38 points and Nosa software with a score of 18 are in the next place. But overall, the software status regarding the mentioned capabilities is in weak condition.
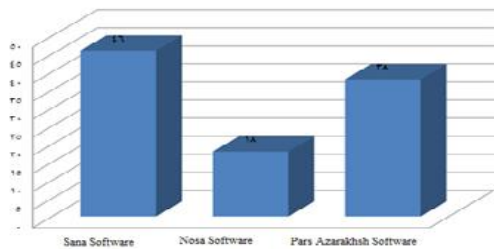
Figure 3 Comparison between library software on "Does library software of Iran have the capability to run and develop folksonomy facilities?"

Summary and Responses to Questions

According to the findings obtained from the proposed 9 item to assess question "By assuming the establishment of such facilities, do library software of Iranian information centers have the capability of updated support of folksonomy?" The items can be as followings:

1 - Identification of obvious and known misspellings as one of the necessary components for updated support of folksonomy:

❖ Studied soft wares do not have optimal performance in this field and among the soft wares Nosa software lacks the above feature and Sana and Pars Azarakhsh have a better situation.

2 - The possibility of selecting popular items from the tree-like list instead of typing them:

❖ Studying library software capabilities of Iran show that Pars Azarakhsh software has optimal performance in these areas as compared to two other soft wares.

3 - The possibility of displaying a variety of information sources (print - digital):

❖ Studying library software capabilities of Iran show that Pars Azarakhsh software has optimal performance in these areas as compared to two other soft wares.

4 - The possibility of access to special collections:

❖ Studying library software capabilities of Iran show that Pars Azarakhsh and Nosa software has optimal performance in these areas as compared to other software.

5 - The possibility of displaying tags as cloud:

❖ Studying library software capabilities of Iran show that the studied software does not have appropriate performance regarding the above capability and among them Nosa software has the worst situation.

6 - The possibility of displaying rating (weighted) used and proposes keywords of the users:

❖ The studied software does not have appropriate performance regarding the above capability and only Pars Azarakhsh software is better as compared to other software.

7 - Capabilities of allocation and availability of user to the icons "Insert Link to sets and sites":

❖ The results of the investigating the status of Nosa, Simorgh and Sana software capabilities indicates that Nosa lacks above features, and Sana software about 50 percent and Pars Azarakhsh about 5/62% possess these capabilities .

8 - Capabilities of allocation and availability of user to the icons "Meta Tags" of tags inserted by the user:

❖ The studied software does not have appropriate performance regarding the above capability and only Pars Azarakhsh software is better as compared to other software.

9 - Capabilities of allocation and availability of user to the icons "label classification based on type, similarities, language":

❖ The studied software does not have appropriate performance regarding the above capability and only Pars Azarakhsh software is better as compared to other software.

In Figure 4.4, there is a comparison between library software regarding the extent of containing 9 cited features that results show that from a perfect score of 72 points (by assuming of having all the above features)
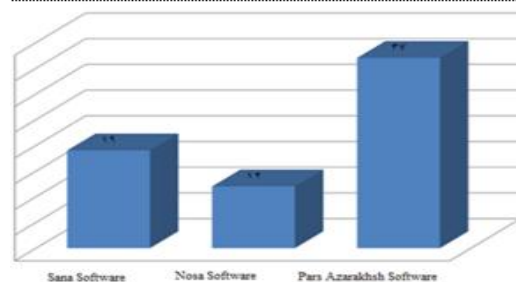
Figure 4 Comparison between library software on "By assuming the establishment of such facilities do library software of Iranian information centers have the capability of updated support of folksonomy?"

Pars Azarakhsh Software (see checklist in Appendix 1), with 72 points has better performance compared to other software and Sana software with 19 points and Nosa software with a score of 12 are in the next place.

Summary and Responses to Questions

According to the findings obtained from the proposed 9 item to assess question "What are the librarians' tasks in libraries to provide services utilizing folksonomy

capabilities (classification of people) to provide services to users" could be considered as the following cases:

1 - Accelerating the access to groups and individuals who have a common interest and course of reading:
  ❖ Sana Software completely (100%) contains these capabilities and Nosa software with 8/77 percent is in the second place and Pars Azarakhsh software with 5/12% is in the third position.

2 - Familiarity with sources and user information needs as one of the duties of librarians in libraries for providing services by utilizing folksonomy capabilities:
  ❖Sana Software completely (100%) contains these capabilities and Nosa software with 8/77 percent is in the second place and Pars Azarakhsh software with 50 % is in the third position.

3 - Familiarity with the course of study and informational interests of user:
  ❖Sana Software with 5/87% contains these capabilities and then Pars Azarakhsh with 50% comes next. Nosa software lacks this feature.

4 – The ability to offer data sources with regard to the course of reading and user interests by the system and other members:
  ❖Sana Software with 5/87% contains these capabilities and then Pars Azarakhsh with 50% comes next. Nosa software lacks this feature.

In Figure 5, there is a comparison between library software regarding the extent of containing 4 cited features that results show that from a perfect score of 32 points (by assuming of having all the above features) Sana Software (see checklist in Appendix 1), with 30 points has better performance compared to other software and Nosa software with 14 points and Pars Azarakhsh software with a score of 13 are in the next place.
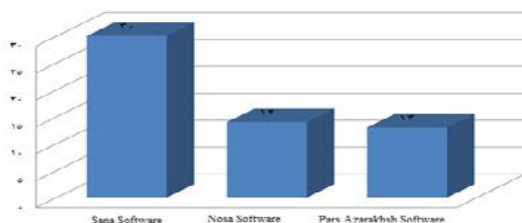
Figure 5 Comparison between library software on "What are the librarians' tasks in libraries to provide services utilizing folksonomy capabilities (classification People) to provide services to users

What is the necessity of creating folksonomy (classification of people to provide services to users) in common library software of Iran?

The answer to the first question

For exploring this question 5 criteria are determined which are as follows: 1 - accelerating access to information 2 – Offering a keyword or tagging sources in lexical database 3 - benefiting from sharing, searching, and dissemination of information from websites based on folksonomy 4 - Customize information (news, events, and, ...) based on proposed keywords 5 - Selecting favorite topics and authors for selective service information (SDI). According to the responses obtained with these criteria in Chapter Four, and Tables 4-1 to 4-5 and Figure 4-1 show the Sana library software with the frequency of 34 Pars Azarakhsh library

software with the frequency 24 and comprehensive digital library software of Simorgh with frequency of 15, have achieved the desired criteria, that Sana library software has got the highest rate of frequency of this criteria.

"What strategies and tools are needed for the implementation of folksonomy in the libraries software systems of Iran?"

The answer to the second question

To study this question, 10 criteria are determined which are as follows:, 1 - Allocation of personal space 2 - Proximity search capabilities through the proposed tagging 3 - Ability to search for related tags in lexical database 4 - Sorting Search Results By Tags 5 - allocation and user accessibility to the icons "source being studied »6 - allocation and user accessibility to the icons " my data sources "or" my data "7 - allocation and user accessibility to the icons " my Search History "8 - allocation and user accessibility to the icons " studied information and resources » 9 - allocation and user accessibility to the icons Favorites study sources "10 allocation and user accessibility to the icons " adding Tags ". According to the responses obtained with these criteria in Chapter Four, and Tables 4-1 to 4-5 and Figure 4-1 show the Sana library software with the frequency of 77, Pars Azarakhsh library software with the frequency 65 and comprehensive digital library software of Simorgh with frequency of 45, have achieved the desired criteria, that Sana library software has got the highest rate of frequency of this criteria.

"Does library software of Iran have the capability to run and develop folksonomy facilities?"

The answer to the third question

To study this question, 13 criteria are determined which are as follows: 1-Capabilities of integrated searching through proposed tags2- Ability to search in different languages3 - Capabilities of the application of review or use of lexical database 4-The capabilities to apply browse through the different fields 5 - The possibility of selecting one, several or all retrieved items for complete view 6 - Ability to change data display settings 7 - Ability to display the corresponding and parallel tags 8 - Capabilities of allocation and availability of user to the icons of proposed study" information for you "by other users for you "10 - Capabilities of allocation and availability of user to the icons "Favorites libraries and information centers "11 - Capabilities of allocation and availability of user to the icons "writing and adding review and note" to insert comments 12 - Ability to allocate icons "Alphabetical setting of users tags" when entering or editing information13 - Capabilities of allocation and availability of user to the icons "user tag" for getting information about the keywords assigned by the user.

According to the responses obtained with these criteria in Chapter Four, and Tables 4-16 to 4-28 and Figure 4-1 show the Sana library software with the frequency of 46, Pars Azarakhsh library software with the frequency 38 and comprehensive digital library software of Simorgh with frequency of 18, have achieved the desired criteria, that Sana library software has achieved the highest rate of frequency of this criteria.

""By assuming the establishment of such facilities, do library software of Iranian information centers have the capability of updated support of folksonomy?

The answer to the fourth question

To study this question, 9 criteria are determined which are as follows: 1 - Identification of obvious and known misspelling 2- The possibility of selecting popular items from the tree-like list 3 - The possibility of displaying a variety of information sources (print - digital)4 - The possibility of access to special collections 5 - The possibility of displaying tags as cloud 6 - The possibility of displaying rating (weighted) used and proposes keywords of the users 7 - Capabilities of allocation and availability of user to the icons "Insert Link to sets and sites" 8 - Capabilities of allocation and availability of user to the icons "Meta Tags" of tags inserted by the user 9 - Capabilities of allocation and availability of user to the icons "label classification based on type, similarities, language".

According to the responses obtained with these criteria in Chapter Four, and Tables 4-29 to 4-37 and Figure 4-4 show the Pars Azarakhsh library software with the frequency of 37, Sana library software with the frequency 19 and comprehensive digital library software of Simorgh with frequency of 12, have achieved the desired criteria, that Pars Azarakhsh library software has achieved the highest rate of frequency of this criteria.

"What are the librarians' tasks in libraries to provide services utilizing folksonomy capabilities (classification of people) to provide services to users"

The answer to the fifth question

To study this question, 9 criteria are determined which are as follows: 1 - Accelerating the access to groups and individuals who have a common interest and course of reading 2 - Familiarity with sources and user information needs as one of the duties of librarians in libraries for providing services by utilizing folksonomy capabilities 3 - Familiarity with the course of study and informational interests of user 4 – The ability to offer data sources with regard to the course of reading and user interests by the system and other members.

According to the responses obtained with these criteria in Chapter Four, and Tables 4-38 to 4-31 and Figure 4-5 show that Sana library software with the frequency of 30, comprehensive digital library software of Simorgh with frequency of 14 and Pars Azarakhsh library software with the frequency of 13, have achieved the desired criteria, that Sana library software has achieved the highest rate of frequency of this criteria.

Summary and General Conclusions

Study findings determined that Sana Library Software has got the highest score at index of 1 - measures required for folksonomy 2 - strategies and implementation of Folksonomy 3 - Ability to run and develop folksonomy in the library software 4 - the tasks of librarians in providing services by utilizing folksonomy capabilities and Pars Azarakhsh Digital Library Software has acquired the highest rating at updated supports of Folksonomy in library software.

CONCLUSION

On the basis of these findings, it is concluded that Sana (product of Payam Mashregh Company) has achieved significant progress in creating appropriate infrastructure for implementation of folksonomy and Pars Azarakhsh software progress is not considerable and the comprehensive software of Simorgh, at the last ranking, has not created an appropriate infrastructure for implementation and it is far from reaching such facilities and the goal. Finally, guidelines and recommendations derived from the study for infrastructure of software has been provided.

This research suggests that libraries using folksonomy services can take an important step in accelerating the process of providing affairs and information dissemination and by employing a user-oriented and participatory approach, to convert libraries and information centers to dynamic and user-centered organs that the true purpose of folksonomy is to provide a new method for self-organizing sources of information by employing users' natural language descriptors regardless of the limitations of time, place and even circumstances of a particular language and finally, improves library information seeking services and provides a great change in the availability of information resources. Today, some countries like America and Canada use tagging approach and categorization of people (folksonomy) in public libraries lists. This research ultimately examines the possibility of designing and creating a user-oriented and folksonomy-centered library catalog and has achieved the following results. Given these findings, it is recommended that in order to create good infrastructure for the implementation of folksonomy in library software that are linked directly or indirectly, the following should be considered:

1. Software programmers should make greater efforts in expanding and developing the use of folksonomy capabilities in data software.
2. Software programmers should make greater efforts in expanding and developing the use of active participation of users and librarians in data software.
3. Adopting programs and strategies by the programmers of software companies for implementation of personalization, self-organizing and promoting folksonomy for users and librarians in information software must be considered.
4. Considering the potential capabilities of the library software of Iran it is necessary to be in line with the global developments for promoting the concept of Web 2.
In the future more complementary research can be done in the following fields:
1 – Conducting research to prepare standards required for inserting keywords by users into the software of library and information centers.
2 - Conducting research on the evaluation of acceptance and implementation of capabilities of folksonomy by librarians of library and information centers.
1 - Conducting research on the evaluation of acceptance and implementation of capabilities of allocation of personal space and existing facilities for users in the software of library and information centers.

References

Al-Khalifa, H. S; Davis, H.C. (2007)." Exploring The value Of folksonomies For Creating Semantic Metadata", International Journal on Semantic Web & Information Systems,3,1

Bates, M.J. (1998). The design of browsing and berry – picking techniques for the online search interface. Online Review. 13 (5): 407-474.

Beikin, N.J. (1980). Anomalous states of knowledge as a basic for information retrieval. The Canadian journal of information science, 5, 133-143.

Birdsall, W. F.(2007). "Web 2.0 as a Social Movement." Webology , 4,2. from http : // www. webology. ir/2007/ v4n2/ a40. html

Constantia, Kakalia (2010) Exploitation of folksonomies in subject analysis. This paper presents a methodology for the exploitation of social tagging in subject indexing, and explores that method through a case study in Library & Information Science Research Volume 32, Issue 3, July 2010, Pages 192–202

Farrelly, Glen (2009) On Tags and Signs: A Semiotic Analysis of Folksonomies. Faculty of Information Quarterly, Vol 1, No 2 (2009). https: //fiq. ischool. utoronto. ca/index. php/ fiq/ article/view/20/64.

Governor, James; Hinchcliffe, Dion and Nickull, Duane (2009) Web 2.0 Architectures. USA: O'Reilly Media, Inc.

Graham, P.(2007). "Web 2.0". from: http://www .paulgraham.com/ web20.html [January 15, 2007]

Hawryszkiewyszkiewycs, lgor .(2004). System Analysis and Desin Pertice Hall, Australia.

Hotho, A., Jäschke, R., Schmitz, C., & Stumme, G.(2006)."Information retrieval in folksonomies :Search and ranking". In Proceedings of the 3rd European Semantic Web Conference (ESWC2006). Budva, Montenegro: LNCS, Springer.

Keshet, Yael (2011) "Classification systems in the light of sociology of knowledge", Journal of Documentation, Vol. 67 Iss: 1, pp.144 – 158.

Kipp, M. E.(2006). "Exploring the context of user, creator, and intermediate tagging". IA Summit 2006.Vancouver, Canada.

Knautz, Kathrin , Stock, Wolfgang G. (2011) "Collective indexing of emotions in videos", Journal of Documentation, Vol. 67 Iss: 6, pp.975 – 994.

Kroski, E.(2006)."The hive mind: Folksonomies and user-based tagging" from http://infotangle.blogsome.com/2005/12/07/the-hive-mind-folksonomies-and-user-based-tagging/ [May 7, 2007]

Mai, Erik (2011). Folksonomies and the New Order: Authority in the Digital Disorder. 115 created by the people who are engaged with the in -

Matusiak, Krystyna K. (2006). Towards user-centered indexing in digital image collections.

Momtahan, Lee & et al., (2006). A Taxonomy of Web Services Using CSP, Electronic Notes in Theoretical Computer Science, Volume 151, Issue 2, 31 May 2006, Pages 71–87.

Morrison, Jason (2007). Why Are They Tagging, and Why Do We Want Them To? Bulletin of the American Society for Information Science and Technology.Volume 34, Number 1, October/November 2007. pp.12-16.

Morrison, Jason (2008). Tagging and searching: Search retrieval effectiveness of folksonomies on the World Wide. Information Processing and Management 44 (2008) 1562–1579.Available online at www.sciencedirect.com.

Munk, Timme B., and Kristian Mork.(2007). Folksonomy, The Power Law & The Significance of the Least Effort Knowledge Organization, Vol. 34, No. 1. (2007), pp. 33-16 Key: citeulike:2960497

Noruzi, Alireza (2006). Folksonomies: (Un)Controlled Vocabulary? Knowledge Organization, 2006, vol. 33, n. 4, pp. 199-203. [Journal article (Print/Paginated)]

Huvila, Isto (2010). Aesthetic judgments in folksonomies as criteria for organising knowledge.

Park, Peejin (2010). A Conceptual Framework to Study Folksonomic Interaction. Knowledge Organization, 2010, vol. 38, n. 6, pp. 515-529.

PennTags: University of Pennsylvania Public Library Tag. You're it. (2007), A high-profile instance of libraries using tagging is PennTags at the University of Pennsylvania Library. Developed for the academic community …

Peters, Isabella., and Paul Becker. (2009). Folksonomies: Indexing and Retrieval in Web 2.0. Berlin: De Gruyter/Saur, 2009.

Peters, Isabella & et al., (2011),Proceedings of the American Society for Information Science and Technology, Volume 48, Issue 1, 2011, Pages: 1–4, Isabella Peters, Margaret E. I. Kipp, Tamara Heck, Jacek Gwizdka, Kun Lu, Diane Rasmussen Neal and Louise Spiteri. Article first published online : 11 JAN 2012, DOI: 10.1002/meet.2011.14504801069

Soledad Pera1, Maria (2009), A Sophisticated Library Search Strategy Using Folksonomies and Similarity Matching

Spiteri, Louise F. (2006). The Use of Folksonomies in Public Library Catalogues

Spiteri, Louise F. (2007). Structure and form of folksonomy tags: The road to the public library catalogue. Volume 4, Number 2, June, 2007.

Spiteri, Louise F. (2013). The Structure and Form of Folksonomy Tags - American Library ...www.ala.org/lita/ital/sites/ala.org.lita.ital/files/content/2 6/.../ spiteri. pdf. http: //kftf. ischool. washington.

-Sweeny, M., Maguire, M. & Shekels, B. (1993). Evaluation user computer interaction: a framework. International Journal of Man- Machine Studies. 38: 689-711.

Vanderwal, T.(2007). "Folksonomy definition and Wikipedia".from http :// www. vanderwal. net/ random/ entrysel.php?blog=1750 [May 7, 2007].

Voss, J. (2006)." Collaborative thesaurus tagging the Wikipedia way".from (v2; 2006-04-27; http://arxiv.org/abs/cs.IR/0604036) page 3 .[Wikimetrics] research papers, volume 1, issue1.

Wikipedia(2008)."folksonomy wikipedia foundation" from http://en.wikipedia.org/wiki/Folksonomies (May 10, 2008).

-Yi, Kwan and Chan. (2009), Linking folksonomy to Library of Congress subject headings: an exploratory study. (School of Library and ...). www.emeraldinsight.com/journals.htm?...