

Cooperation programs in IRAN on the context of technology, to access, develop and transform of information

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Abstract:

In this study, national and local cooperative library projects in Iran on the basis of technology were considered. The studied projects included Iranian Consortium of National Content (ICNC), Integrated System of Islamic Azad University Libraries (SIKA), Cooperation Project of Astan-e Quods-e Razavi Libraries (Thāmen), Trans-country Project of Iran Public Libraries (SĀMĀN), Library Network of Tehran Municipality Art and Cultural Organization, and Isfahan City Inter-library Loan Project. History, objectives, policies, services, and technologies used in the projects were described. Particularly, social networking features, digitization policies, soft ware options and protocols and the other technical features that strengthen these initiatives have been introduced. Finally, it was realized how libraries would be converted to dynamic libraries, participating in theses projects to access, develop and transform information for their end-users

Keywords: Library cooperation projects, Iran, Information technology

Introduction

Library is the heart of any university, industry or R & D institute. In such a space, there is data and information that enhances and speeds up all developmental activities. Instructors, researchers, students, managers and many work-groups need appropriate information resources for achieving some scientific activities (Bhaskara Rao, 1998, p 84). Libraries and library specialists' work environments are affected by changes resulting from the outside. The result of these changes involves some challenges and resistances to them. Because of systemic nature of library activities, adapting systemic thinking is a solution at hand for library specialists to fairly encounter the challenges and reaching successful surveillance. Based on systemic thinking approach, each entity interacts and relates others in a system and total behavior of a system is formed by these entities' interaction and communication (Prakash, 2010, p 211). Perhaps, the necessity for libraries to cooperate is one of the main challenges in our age.

Viewing resource sharing or interlibrary cooperation as a system, the cooperation is a system with some various elements designed to achieve a common goal. Such a system affects outside elements and is affected by them. These outside elements include regulations, economic statuses, and cooperation culture and so on. The change in any of these elements can affect the cooperation.

In this age, libraries of all kinds co-operate each other via digital communicating media and networks to achieve the goals of resource sharing and better information provision. Cooperation is a necessity for our digital age. If library automation and networking are conceived as soil in which information share and resource provision arises, cooperation is as water that makes them develop and expand (Thamarai Selvi, 2002, pp 40-41). In current age, library cooperation is a requirement for removing the limits libraries have in responding and fulfilling user needs in the form of various programs and projects according to some bases such as goals, responsibilities, activity domains, resource formats, and cooperation objectives and so on.

An important reason for highlighting resource sharing and library cooperation is to contribute ideas, to provide interest group resources, and to fulfil expert needs (Webster, 2008). Some reasons for highlighting resource sharing and library cooperation include (Ali-Doosti and Nazari, 2005):

- Information explosion and knowledge expansion;
- Development of modern ICTs;
- Increasing cost of information resources;
- Decrease in library budget;
- Increase in demand for information;

- The lack of equilibrium between user needs and information resources available;
- The limitations of preserving space;

The contexts of cooperation among libraries are various. Some includes: resource sharing, interlibrary loan, shared acquisition, shared cataloging, shared preservation and access, cooperation in resource organization and standard creation, digital content development, common reference services, etc (Najafgholinejad, 2013, pp 86-92). Shared scientific production and offering it to wide users is another benefit.

As a creative and innovative design for better performance of libraries, library cooperation aims at developing library services. Performing such innovation in traditional designations and primary facilities such as physical transformation means and post services make some troubles for libraries. New technologies are two-sided sword having both interesting benefits as well as main challenges for existing systems and procedures. Libraries have applied the various components of new information technologies to develop their services and better management of librerie administrations.

Digitization of printed material, electronic publishing and information exchanges among global, national and local networks and developing shared databases have great effects on enhancement and development of library cooperation programs. Since developing countries have no appropriate contexts for knowledge production and application, they are more apt to be marginalized due to increasingly competitive worldwide economy. In such a situation, the only way to be active is to construct and develop the appropriate contexts for knowledge creation and share by means of new information technologies. Iran, as a developing country is not an exception. It is clear that appropriate contextualization of software and hardware is needed for achieving the mission of knowledge comprehensiveness and pioneering science and technology acquired for determined indicators and measures (Necessity for Formation of Iranian Consortium of National Content, 2010, p 4).

The first cooperative and resource sharing program in Iran was proposed in 1969 with a group of representatives of libraries of all kinds and started as a pilot in the same year in Iran's Scientific Information and Documentation Center (IranDoc). The number of involved libraries amounted from 47 libraries in 1973 to 141 in 1988. Due to some troubles, the project weakened and stopped. After a while, some projects have begun since 1990s with the cooperation of some libraries, information centers and related organizations based on technological facilities and communicative means. In this study, some main and innovative library cooperation projects in Iran have been introduced. These projects are in progress now. We focused on the policies, objectives, history, missions, features, services, and facilities of the projects. The effect of information technology on the development and expansion of the studied

projects has been described by providing the status of resource sharing and library cooperation in the context of Iran. The studied projects include Iranian Consortium of National Content (ICNC), Integrated System of Islamic Azad University Libraries (SIKA), Cooperation Project of Astan-e Quods-e Razavi Libraries (Thāmen), Trans-country Project of Iran Public Libraries (SĀMĀN), Library Network of Tehran *Municipality Art and Cultural Organization*, and

Iranian Consortium of National Content (ICNC)¹

Developing a country-wide network that enables Internet users to explore digital resources of different content providers, libraries, archives and audio-visual collections has been a problem in different countries. The need to develop a national content network had been grown in recent years in Iran, too.

The integrated access to Persian information in the country was an old concern many related institutes have focused on according to their responsibilities, facilities and technologies. An Iranian user, however, must browse and search many websites for accessing their needed items. They may not fulfill their information needs at all. For this and with the goal of creating a context in which an Iranian user can search various needed contents as well as coping with copyright law, the formation of a consortium for national content was proposed by Tebyan institute in 2008. Iranian Consortium of National Content (ICNC) is a country-wide cooperation between content owners and content providers in Iran. The members are some governmental organizations with their own legislative limitation and inherent features. Based on the main construct of the consortium approved by the Council of Representatives, it consists of a core center participating in policy-making. Other centers and content-related holders can be the members of the consortium and provide their contents for national-wide and international-wide potential users.² ICNC tends to make its members' contents available for all users in national and international scope as possible. This necessitates contextualization and introducing of information provision in digital format and enhancing the processes of information acquisition, transformation, organization, preservation and dissemination.

The main principles of the consortium involve as follows (“Starting Iranian Consortium of National Content”, 2010, p 1):

- To attempt to guarantee the physical and intellectual rights of content holders;
- To maintain the individual identity of each member;
- To improve the quality and efficacy of all consortium activities;
- To try to make the members provide valid information;

¹ <http://icnc.ir/index.aspx?pid=1>

² <http://www.icnc.ir/index.aspx?pid=304>

- To be user-friendly in information provision.

The consortium aimed at ('Starting Iranian Consortium of National Content', 2010, p 2):

- Creating an appropriate context for researchers' access to national content, especially that of Persian;
- Providing easily-accessed information;
- Encouraging the digital preservation of information resources;
- Making global awareness of valuable national resources.

ICNC has some advantages for its members and researchers and in national level. The advantages for individual members include guaranteeing their individual entities, increasing the number of content users, accessing the valuable contents by license given by intellectual property, accessing various contents, and increasing available information. Its advantages for researchers include among others easily accessing wide-ranged information, accessing various information formats such as text, video, sound and so on. In the national level, the consortia formation can facilitate knowledge production in the competing world, contextualization of forming the consortia of local Islamic content, archiving the original contents, standardization of content cataloging, and lowering the access cost for national-wide researchers ('Advantages of Iranian Consortium of National Content, 2010, p 3). .

Based on the proposed construct, ICNC has two principal bases: 1. The core (consisted of managers of the centers and organizations approving the primary agreement or being invited by previous members to involve. The head of the consortium is one of core members and the Council of Representatives is conceived as the consulting assistance of the core members, and 2. The Secretary of the Consortium dealing with the administrations of approvals and working under supervision of the head. The secretary and the sub-committees all work under the supervision of the secretary head. (Approval of total construct of Iranian Consortium of National Content, 2010, p 7).

21 libraries, information centers and related institutions become the members of the consortium. In meetings of the Council of Representatives, it was approved that the members provides their metadata for the Secretary in order to create a comprehensive database in the server of the Consortium portal (Comprehensive Database of Iranian Consortium of National Content, 2019, p 7). The main members include the National Library & Archives of Iran, the Library, Museum & Document Center of Iran Parliament, University of Tehran Central Library, Islamic Encyclopedia Foundation, and Iranian Research Institute for Information Science and Technology. In order to provide useful information for its users and members in national and international levels, the Consortium aimed at joining the other main international consortia and joined W3 Consortium in 2010.

All instituting members now connect the Consortium and all users can search all contents provided by the members. Access to the databases of most members is online and their metadata has been stored via OAI.PMH Protocol, resulting in the users' speedy and integrated access to related information. The role of institutions making the digital library production available for content holders is vital in ease communication with the portal. The Consortium confirms the digital library programs belonged to Pars Azaraksh Inc., Ganjineh Co., and Parvan Co..³ For other members, their digital library programs do not support OAI protocol, Tebyan Institute has designed an alternative program storing instantly the information that belongs to these members and ICNC portal can access the information via this alternative. Irandoc connects the portal via a Web service and users can observe 50 searched metadata items once ("Way of members' connection to Iranian Consortium of National Content", 2011, p 24).

ICNC portal makes the following options available for the user ("the necessity of Iranian Consortium of National Content", 2010, p 10).

- Observing the last searched metadata;
- Observing all downloaded or browsed items;
- Observing financial records and increase in credit for purchasing the productions;
- Ordering a certain item to be digitized and tracing the process.

There are no limitations in providing the contents which accord with Iran's public publication regulations.

The following services are of ICNC:

- *SRU (Search/Retrieve via URL)*: SRU has the performances, but not the complexities of z39.50 protocol. Using it is as easy as entering an Internet address. The result is represented as an XML that can be applied in various browsers. The search language is SQL that makes an accurate search of any database that supports it ("Initiating SRU server Protocol", 2011).
- *Reference Desk Service*:⁴ This is a daily service the specialists of member centers of ICNC provide for users ("Initiating reference desk", 2011).
- *Digitizing Ordering System*: Regarding copyright law, some documents cannot be provided freely or bough completely. In these cases, the user observes the start pages (usually the table of contents) and pays the cost for scanning some certain pages they ordered. The Consortium informs the content owner of ordering process in order to scan and digitize it.
- *Purchasing System*: This allows the owners to purchase their content in the price they want to. Maintaining the financial information related to each

³ <http://www.icnc.ir/index.aspx?pid=619>

⁴ <http://www.icnc.ir/Index.aspx?pid=316>

purchasing process, the system pays the owners for their purchased content in a two-month period with extracting 20% of total cost as maintaining cost.

- *New Services:* As new search engines, including Google, have some defects in finding and categorizing Persian webpages, designing a new search engine making the members' contents available for users can help users to retrieve their needed information. In the databases of some members, the amount of webpages found by the Consortium portal is more than that of Google search results. The new search engine is in its pilot phase, however. In addition, in order to search the content of each member's database(s) and making the members' daily entered data accessible for users, a search engine has been designed by Tebyan institution and initiated in the portal. When content owners produce the full-text of their contents, the users can search their intended phrases in them. It helps them to accurately access their intended information ("New search service in the portal of Iranian Consortia of National Content", 2011, p 24).

It is important to note that the rank of ICNC in Google Rank site is six, relatively acceptable rank in comparison with those of other similar Iranian sites ("Rank of Iranian Consortia of National Content in Google Rank", 2011, 24).

Integrated System of Islamic Azad University Libraries (SIKA)⁵

The libraries in various units of Islamic Azad University provided their services independently and separately by 2011. Of them, few had the possibility for being searched via the Net. With the development of new information technology and its application in library and information science, the libraries tend to apply the Internet infrastructures and facilities and integrated systems. Central Organization of Islamic Azad University decided to create an integrated and organized network as an important requirement for mechanizing the libraries. This main objective was achieved by approving an agreement between the university and Nosa Co. in 2011. Following this, many university units throughout the country started to install the integrating software as soon as possible. They created Sika Network.

Any university unit needed Simorgh comprehensive information software online for connecting SIKA. Almost half units with Simorgh software could provide online service for the software named Simorgh hosts. SIKA Server URL can provide not only the possibility for contribution in SIKA, but also direct connection and use of resources in the related university unit.

⁵ <http://78.38.208.190/portal/tabid/73/Default.aspx>

The main advantages of SIKA are:

- Synchronous search and share of library resources;
 - Independent management of the resources of university units and work independence from the integrated network;
 - Country-wide interlibrary loan;
 - Fact-based online integrated network for all libraries of the university units.

Simorgh,⁶ as powerful software, provide some great facilities for any library. After installing the software, a library as a Simorgh host is available on the Net. All hosts will connect each other via this virtual network Simorgh has the following main facilities and features:

- Synchronous search among multiple information centers;
- User's optional selection of the centers for search them;
- Searching various formats by Dublin Core Standards;
- Immediate observation of each center's holding.

The architecture of Simorgh includes web server (http Broker), data server, circulation server, and a browser using http for connecting the software (Figure 1).

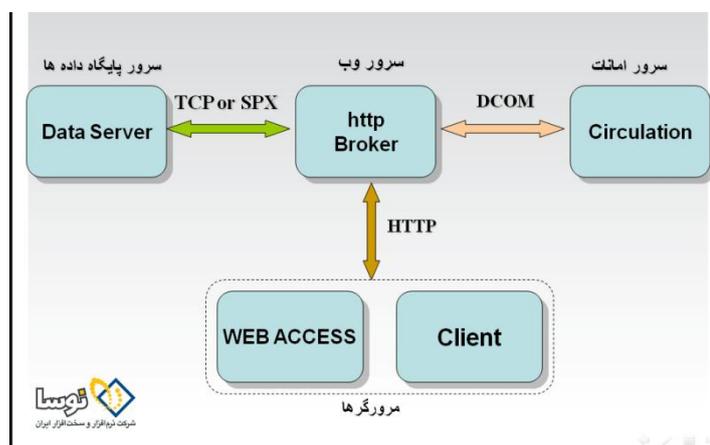


Figure 1. Simorgh software architecture

Simorgh has some main features. It implements n-tier approach and http-based server-client connection. The software supports Dublin Core Standards and various text formats as well as classification schemes. It can recall information directly from Iran National Library, Library of Congress, and British Library. It supports information in other formats such as ISO 2709, Tagged Format, and DBF.

⁶ http://nosasoft.ir/nosa/Documents/FEAT/SIM/FEAT_SIM_TotalSimorgh_E3.pdf

Simorgh software configuration in SIKA is shown in Figure 2. It uses two servers: Windows 2003 and Windows 2008. The former is applied for bibliographic databases, web server and circulation server, and the latter IS USED as the server for Simorgh's digital resources.

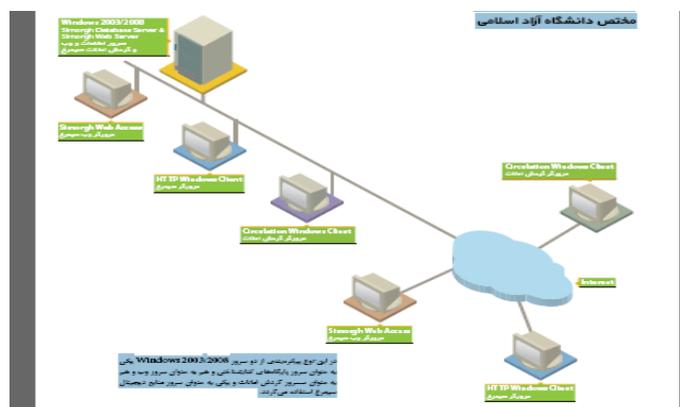


Figure 2. SIKA configuration

Considering the great number of university units active in SIKA, it is necessary to categorize the involved centers by the states in order to facilitate accessibility. However, searching all units in SIKA is important. As a result, two approaches are designed in the new portal: synchronous country-wide search in all involved units, and synchronous stat-wide search in the units of a certain state.

Cooperation Project of Astan-e Quods-e Razavi Libraries (Thāmen)⁷

For achieving the goals of Astan-e Quods-e Razavi Libraries, Museums and Documents Organization 20-year perspective, interlibrary loan project named Thāmen started. It aims at accessibility of information resources, encouraging reading habits, improving information literacy skills, fulfilling members' information needs and facilitating service provision in the libraries located in Mashhad, the central city of Khorasan-e Razavi State. By initiating this project, the great family of Mashhad's dependent library members (1700000 members) will access almost 600,000 information resources.

Astan-e Quods-e Razavi Libraries include one central and 34 dependent/branch libraries. Ordering and acquisition processes are integrately done by the central library. Recording, organization and other related processes are done in the central library too by a technical service team and the output is then delivered to the branches.

⁷ <http://aqlibrary.ir/aqlibraries/>

The technical service affair is done by Simorgh software. In this software, there is only a database for a document. For example, there are over 400,000 records for Persian books and each record includes holding data such as recording number, volumes, copies, location, etc.

For some reasons such as geographical distance and distribution of branch libraries country-wide, the lack of a capable network between them and the central library, budget deficiencies and so on, it was agreed that a circulation system is designed only for the central library and a cheaper software named Nosa purchased for the branches. The software includes three sub-systems: bibliographical information search, comprehensive library and achieve, and circulation. The circulation subsystem has some features and possibilities, including among others:⁸

- Inter-library loan and circulation without any limitation in the number of members and libraries;
- Daily management of recording and tracing circulation and dues;
- Searching based on information on borrowed documents;
- Providing various reports;
- Sending messages to members via e-mails;

Using SĀM project for the branch libraries was proposed to Astan-e Qods-e Razavi in 2013. In this project, the central library would enter the needed information on resources (including recording number, volumes, copies, etc. in the circulation software (Kavosh) rather than Simorgh. These holdings would connect cataloging records of the same integrated database, e.g. that of Persian books.

The main advantage of SĀM project for the branch libraries is the low number of field duplication of physical holdings. Increase in field duplication in Simorgh results in serious low speed in information amendment. For example, 300 duplications were reported for some records.

SĀM project has some advantages (Ghorbi, 2013):

- Low cost of initiating the new software in the branch libraries;
- Using auxiliary means (e-mail, SMS, etc.) after purchasing the software;
- No need to independent installation of the software in each branch library;
- Using circulation clients to connect the circulation server located in the central library by SOAP service;
- Using a low-cost ADSL to connect existing clients;
- Integration of resource holding information without limitations involved in Simorgh software;

⁸ <http://www.kavoshsoft.ir/Files/ParvanehGhasedak.pdf>

- Recording holdings of the branch libraries by professionals of these libraries;
- Making an integrative backup from the branch library system;
- Decrease in the workload of Simorgh software and its continuous improvement.

Trans-country Project of Iran Public Libraries (SĀMĀN)⁹

By this project, users being members in one public library will use the services provided by all public libraries connected to SĀMĀN throughout the country. Users can request new membership or membership change to use the system. 2075 public libraries connect to SĀMĀN now.

As comprehensive library management software, SĀMĀN software was designed to resolve the problems public libraries encounter in using current software and to create an integrative web-based public library management system for trans-country space.

This new system has many advantages, including among others:

- The possibility for trans-country membership;
- The possibility for speedy administration and connectivity for new libraries;
- The possibility for searching library resources according to states and cities;
- Easy search process;
- The web-based possibility for managing all library affairs (registration, regulation, shelf-reading, labeling, etc.);
- Reporting by some clicks;
- Member's Internet-based resource reservation and renewal;
- Implementing inter-library loans among related public libraries.

The system has many facilitating features that include among others:

- Librarians' interaction with each other and library members;
- Answering users' questions and receiving their suggestions;
- Using MARK format for cataloging;
- Monitoring the system online;
- Online service provision;
- Identifying and tracing system errors;
- Connecting other libraries via Z_{39.50} protocol.

By using this system, some important services can be offered to library users, such as trans-country membership request anywhere internet connection is possible, provision of printed and electronic contents anywhere internet connection is possible, reservation anywhere internet connection is possible, etc.

⁹ <http://www.samanpl.ir/>

Library Network of Tehran Municipality Art and Cultural Organization¹⁰

This network made access to over 1,400,000 book titles and 2,000,000 full-text articles in over 80 municipality libraries located in Tehran state. The network uses Thanā as library 2.0 software. Library 2.0 creates a completely democratic and cooperative system among librarians and users. It provides interlibrary loan and speedy access for library users. Natural language indexing and general labeling methods help users to access their intended resources in the system. Thanā applies a controlled social network system for user interactions. Currently, library 2.0 uses webinar approach in which users can distribute their news to news agencies in controlled manner. Thanā has some features including among others, high speed, new procedures for programming, applying the thesaurus for search, cross referencing, low false-drops, tab-based search pages, holding previous search results and being userfriend.

This integrated system can search all library resources in all member libraries, reserve and renew resources by the member, viewing digital resources based on agreed protocol for members, etc

Isfahan City Inter-library Loan Project¹¹

The project was initiated in 2006 with the participation of Isfahan municipality central library and 9 other libraries. Based on the project, the libraries of Isfahan Municipality, Isfahan University, Isfahan University of Medical Sciences, Isfahan Industrial University, etc shared their resources with each other in order to make them accessible for their users. The member libraries provide appropriate services for their user, most of them are academic ones. Using integrative library 2.0 software, Thanā, the member libraries share their holdings with others. The mediator of lending library should provide requested resources for borrowing library or if in reserve, recall them for circulation.

An emissary crosses all member libraries three times a week and transforms needed resources and contracts among the member libraries. If in workload, the emissary works every day. Resource demands can be sent by e-mail and electronically connecting the mediator in each library.

It is important to briefly consider some features of Thanā, as software used in the two above-mentioned projects. The software as the first production of library 2.0 is the production of an Iranian cooperation, Payam-e Mashregh. Some of its main features include: various bibliographic field representation, separate categorization of information fields in any descriptive bibliographic area, smart search, easy portal management, various reporting procedures,

¹⁰ <http://www.tlib.ir/dl/search>

¹¹ <http://www.isfill.ir/>

electronic credit and payment, familiar social network design, wiki for knowledge management, webinar management approach, etc.¹²

Conclusion

Library integrating and cooperating programs are increasingly developing in Iran. Some projects are initiating in national and local levels in the country. Regarding the limit resources and budget of libraries, increase in information format variety, increase in resource demands and so on, some new solutions are needed in new technology contexts. Appropriate use of existing technologies is the only way to develop information service for our users in Iran. It is hoped that the steps forward can reach us the end. Such innovative projects can improve the true placement of library and information centers as possible.

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