

Do we use standards? The presence of ISO/TC-46 standards in the scientific literature (2000-2011)

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Abstract: The paper presents the results of research on the presence of ISO/TC-46 "Information and documentation" standards in the scientific literature between 2000 and 2011. During this period the Committee has published nearly 50 standards in the field of library and information science.

The first part of the study covers articles on ISO standards. The survey was based on the abstracting databases in the field of library and information science - Library and Information Science Abstracts (LISA) and Library, Information Science & Technology Abstracts (LISTA). The second part is an analysis of ISO standards citations in citation databases.

The results indicate which standards receive the biggest attention - and thus are needed by librarians, and which documents are ignored. An analysis of articles topics and citations illustrates the level of interest in the ISO standardization work in the scientific literature.

Keywords: standardization, ISO, library standards, ISO/TC 46

1. Introduction

Standardization plays an important role almost in every area of human activity. Verman (1973) described standardization as the process of formulating and applying rules for an orderly approach to a specific activity for the benefit and with the co-operation of all concerned, and in particular for the promotion of optimum overall economy taking due account of functional conditions and safety requirements. It is based on the consolidated results of science, technique and experience. It determines not only the basis for the present but also for future development and it should keep pace with progress. Results of standardization efforts are written in standards.

Standards are essential in library and information work, as they help to organize many aspects of their activities. Standards give rules to identify, index, classify,

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access, select, exploit, communicate, exchange and preserve information (ISO, 2010). The most important in library and information science on a global scale is International Organization for Standardization (ISO). ISO standards are developed by Technical committees and one of them – ISO TC 46 “Information and documentation” is responsible for library and information standards. In its scope are also aspects of archives, museums, and publisher’s activities. As the range of works is quite broad, there are 4 subcommittees specialized in some areas:

- TC 46/SC 4 “Technical interoperability”, dealing with the electronic data exchange, formats, metadata and similar aspects;
- TC 46/SC 8 “Quality - Statistics and performance evaluation”, working on library statistics and performance indicators;
- TC 46/SC 9 “Identification and description”, preparing standards for codes and numbers for documents;
- TC 46/SC 11 “Archives/records management”, dealing with records management, metadata for them.

Another entity, responsible for standards development is working group. There are 5 active working groups in ISO/TC 46 and their scope is narrower, including: coding of country names, conversion of languages, terminology, storage for archive materials and presentation of periodicals.

Information and Documentation Technical Committee and its subcommittees prepare many standards, which require a lot of work, so the purpose of the study was to examine which of them are the most needed. The research was conducted in two parts. The aim of the first part, based on abstracting databases LISA (Library and Information Science Abstracts) and LISTA (Library, Information Science & Technology Abstracts), was to check the presence of the articles about standards published by ISO/TC 46. Second part of the study, based on citation databases, indicated which standards are cited the most often. The study presents one of the possible ways to evaluate the use of standards.

2. ISO/TC 46 standards published in 2000-2011

During the period 2000-2011 ISO/TC 46 subcommittees and its working groups published 51 standards, 6 of which are informative documents (Technical Reports). Some of them were shortly described by Hopkinson and Haynes (2006). Fig. 1 presents how many documents were prepared by each technical body. The most active were SC 4 and SC 11, each of them published 13 documents and the least busy was SC 8, which drew up only 5 standards. Taking into account the number of publications and their subjects, it can be specified that for the last 11 years the most important were issues concerning electronic data exchange and records management. In other words Information and Communication Technologies played the important role in library and information standardization. Although the subcommittee 8 specialized in statistics and performance indicators published only 5 documents, they are essential in libraries and their evaluation.

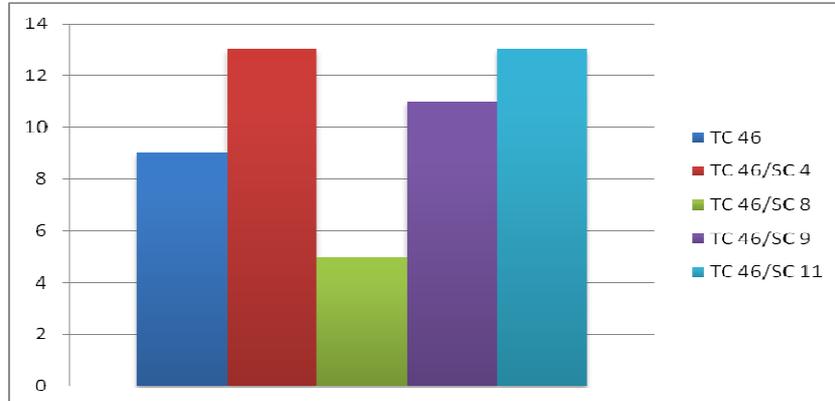


Fig. 1. Structure of standards publication by technical body between 2000-2011

3. Presence of ISO/TC 46 standards in the scientific literature

Standardization issues are not popular topics in literature on librarianship and information science. Studies conducted in 2 databases gave results of 72 articles written in English devoted to standards published by ISO/TC 46. There are many other articles concerning with standardization problems in general or with standards prepared by other committees, especially by ISO/IEC JTC 1 “Information Technology Standards”. Many of them are discussing problems of information security standards or multimedia formats. Table 1 presents standards that were subjects of the articles published between 2000 and 2011, number of articles devoted to each standard and technical body which published that standard. Only 13 standards, usually including all of its parts, were described in the articles. The remaining 38 did not appear as interesting topics for the authors.

Table 1. ISO/TC 46 standards and their presence in the literature.

TC/SC	Standard number	Number of articles
TC 46/SC 11	ISO 15489-1 & ISO 15489-2	49
TC 46/SC 9	ISO 3297	8
TC 46/SC 8	ISO 11620	4
TC 46/SC 8	ISO 2789	4
TC 46/SC 9	ISO 2108	3
TC 46/SC 4	ISO 28560-1 & ISO 28560-2 & ISO 28560-3	3
TC 46/SC 4	ISO 15836	1
TC 46/SC 11	ISO 23081-1	1
TC 46/SC 4	ISO 2709	1
TC 46/SC 9	ISO 25964	1

More than a half of all articles deal with 1 standard ISO 15489 “Information and documentation - Records management”, which is one of the oldest in the survey. Standard consists of 2 parts: ISO 15489-1:2001 and ISO/TR 15489-2:2001, but mainly they were described together as an integral document. The articles discuss the development of document, its content, implementation in libraries in different countries or compare it with other management standards. Most of the papers were published in 3 journals: “Records Management Journal”, “Library Management” and “Information Management Journal”. Several articles are devoted to revised version of ISO 3297 “Information and documentation - International standard serial number (ISSN)”, especially its new mechanism linking ISSN. Most of them were published in “Serials librarian”. Some popularity have also standards published by subcommittee 8 “Quality - Statistics and performance evaluation”: ISO 11620 “Information and documentation - Library performance indicators” and ISO 2789 “Information and documentation - International library statistics”. Smaller interest received new edition of ISBN standard and documents implementing RFID in libraries. The survey revealed also four standards that appeared only once as a topic of the article. They concern The Dublin Core metadata element set, Metadata for Records, Format for Information Exchange and Thesauri for information retrieval. Each subcommittee published more than 1 standard that was the subject of at least one article. None of the papers indexed in LISA and LISTA databases described standards prepared by TC/46 working groups.

4. Presence of ISO/TC 46 standards in citation databases

Topics of articles and their descriptions in abstracting databases were one way to study standards popularity. Another study was based on citations. The biggest citation databases: SCI (Social Sciences Citation Index) and SSCI (Science Citation Index Expanded) do not provide information on standards, so the study was based on Google Scholar. Each standard published between 2000 and 2011 by ISO/TC 46 was searched and a number of its citations only in English articles and books was counted. As a whole, library standards were cited 707 times during the period considered. The results, showing only the 10 most often cited standards are presented in table 2, which consists of standard identifier, subcommittee responsible for its development and number of citations.

There are some differences between popularity of cited standards and articles about them. Standards dealing with records management were cited very often, especially the part ISO 15489-1, but the highest number of citations received ISO 15836 “Information and documentation - The Dublin Core metadata element set” (releases 2003 and 2009 together).

Table 2. ISO/TC 46 standards and their citations in Google Scholar

TC/SC	Standard number	Number of citations
TC 46/SC 4	ISO 15836	142
TC 46/SC 11	ISO 15489-1	138
TC 46/SC 4	ISO 21127	98
TC 46/SC 8	ISO 2789	56
TC 46/SC 4	ISO 15511	26
TC 46/SC 11	ISO/TR 15489-2	26
TC 46/SC 8	ISO 11620	18
TC 46/SC 9	ISO 3901	18
TC 46/SC 4	ISO 8459	17
TC 46/SC 9	ISO 15707	16

Other standards, which were cited more than 50 times, are ISO 21127:2006 "Information and documentation - A reference ontology for the interchange of cultural heritage information" and ISO 2789 "Information and documentation - International library statistics" (releases 2006 and 2003). Quite good results have also standards dealing with library identifiers, indicators, data exchange and documents numbers. Again, the lack of interest received standards that were developed by ISO/TC 46 working groups concerning with transliteration, storage of materials, but also some types of document numbers, statistics or specific aspects of records management. Only 10 standards have never been cited and 18 documents were cited less than 5 times. The newest standards, published in 2011, could not be cited or described often, because they exist too short. If subcommittees responsible for developing standards are analyzed, the most popular are issues of technical interoperability.

5. Conclusions

The most popular standard, both in amount of articles and citations, is ISO 15489 "Information and documentation - Records management". There are few reasons for this situation. It is the first international standard that tries to cope with the important problem of records management. Moreover it is one of the first standards published in the studied period. Surprisingly, ISO 15836 „The Dublin Core metadata element set”, which was cited the most often and is not so new, because it was first released in 2003, was not popular as a topic for the articles. It may be due to the fact, that before it became an ISO standard, Dublin Core was an open informal standard and then was the subject of interest. Other popular standards introduce ways how to deal with recent problems which emerged with the spread of information & communication technologies in libraries and areas of information activities. Standards, that are old and widely used like ISSN or ISBN, were discussed only because they were revised and changed.

Fig. 2 presents productivity of ISO/TC 46 subcommittees compared with the number of articles and citations concerning their standards. Subcommittees that published the biggest amount of standards, in the same time are cited the most

often. However the number of published standards is not a good indicator, as the subcommittee 8, which has the smallest number of finished works, has the third place in the number of articles and citations. This leads to the conclusion that activity of the bodies is not as important as their scope.

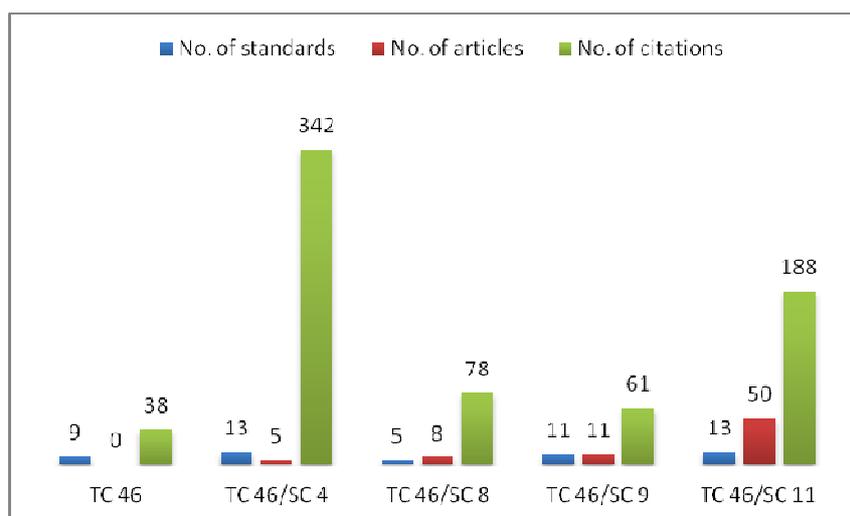


Fig. 2. Subcommittee's productivity and popularity of their products.

In general librarians in the last few years were focused on information management and retrieval in electronic environment. The conducted study revealed trends in library standardization in short period of time. The examination did not include documents that were published before 2000 and had big impact on many aspects of library and information activities.

The results of the research do not mean that libraries need only international rules for records management and metadata and have little interests in statistics, standard numbers or other very narrow aspects of library processes. It is hard to imagine the work in library without less popular in research standards solving the problems with conversion of languages, terminology or bibliographic data exchange. Standards were important tool in cooperation between libraries and they will be even more significant in the world of electronic information and interoperable applications. If libraries want to meet the needs of demanding users, they have to adopt technology with good, international standards and actively participate in the development of them.

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