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An Introduction into Quality Assurance and Total Quality Management with reference to library and information institutions

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At the beginning of 1990's, library and information science communities were more and more convinced of the necessity of meeting primarily the needs of users when deciding about managing library and information systems. It became clear that every library, being not able to meet all the user requirements, has to set priority tasks for itself.. They should be based on thorough analysis of the user needs, and of the use of resources and services. The quality of library and information services has become a prominent category.

At this very time, an interest in total quality management (TQM) emerged in the theory and practice of librarianship and information science. Intensified development of production firms that resulted from the application of TQM could be observed, which caused the implementation of this system in a wide aspect of services, including non-commercial services. Some library and information institutions chose to introduce TQM. However, more often TQM was adopted, first of all, by hierarchically superior institutions, i.e. the institutions of higher learning, health service institutions, or some other organisations that run their own libraries or information centres.

An interest in new approaches to library and information management systems was stimulated by the growing financial difficulties, problems connected with introducing new information technologies, staff problems, and the increasing competitiveness on the information services market. When adopting new management systems and techniques, libraries try also to be active and flexible in meeting users' needs.

Parallel to TQM, some other quality management techniques have been developed; first of all the system that is called Quality Assurance. It forms a kind of basis, a stage in the development process that heads towards introducing a total quality management system. It also has an impact on the building and developing of the concept of TQM. Quality Assurance is quite often treated as a preliminary stage in a total approach, or it makes it possible to improve the quality of functioning of a given institution.

In quality assurance approach the focus was on the organisation of the work processes, and this was considered to be the basic feature of quality maintenance. Quality assurance is defined as: "totality of planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy the customer's requirements". It is being realised in the following stages:

- defining the level of quality that is to be achieved in a given moment;
- drawing up a practical and feasible plan of reaching the planned level of quality;
- building the system of maintaining the planned level of quality, which is called the system of quality assurance.[1]

A key feature in this approach was the development of tools and methods of building and maintaining the quality assurance systems in different institutions.[2] The focus was on the establishing of standards that were to serve as guidelines. The control of conformity of quality management systems that the institutions have worked out with a given standard was also to form the basis of their certification.

British Standard BS 5750 published in 1979 was the first national quality standard. It comprised all the procedures of the management system that were perceived as crucial to the final product quality and provided an explanation of how to control them. This standard received criticism for its engineering and technical character. Many institutions dealing with services found out that quality assurance and standardisation may find application also in their institutions. Hence it was necessary to establish some broader guidelines and adequate standards. In 1980 the ISO Technical Committee for Quality

Management was set up. The Committee established the international requirements on the basis of the above mentioned standard and incorporated them into the ISO 9000 standards. They were published in 1987,[3] and, in the same year, the EEC and EFTA adopted the ISO resolutions as European standards EN 2900.[4] In 1993 Poland incorporated ISO standards into the national standardisation system as PN-EN 2900. In 1996 they were changed to PN-ISO 9000. In 1994 ISO standards were amended. An agreement was also concluded that the standards would be updated every five years.

The collection of PN-ISO 9000:1996 (ISO 9000) standards includes two types of standards:

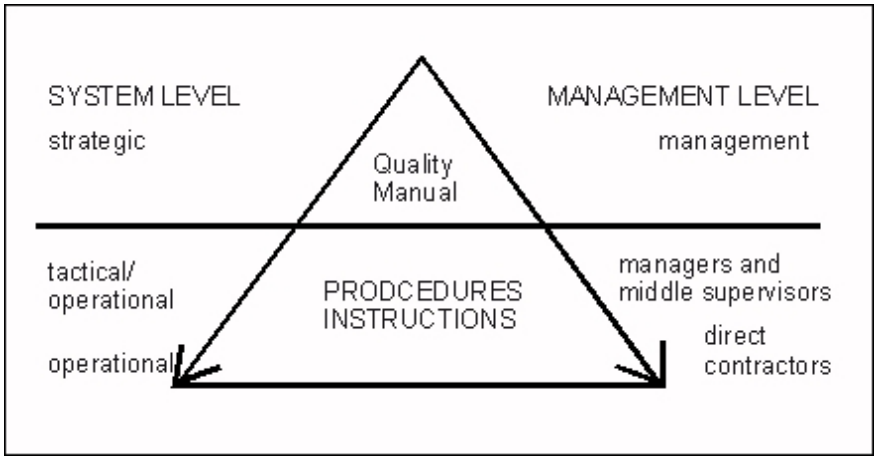
- PN-ISO 9000 and PN-ISO 9004-1 (ISO 9000-1 and 9004-1) that provide guidelines for all economic entities on quality management issues. Each of these standards consists of four sheets;
- PN-ISO 9001, PN-ISO 9002, PN-ISO 9003 (ISO 9001, 9002, 9003) that represent three quality assurance models.

The ISO 9000 family of standards are being introduced in every field of activity. The understanding of the notion of "product" is very broad. Products can be tangible (a thing, a document), or intangible (software, a project, advice, an answer to a query). It can also be an action or a process, therefore the provision of various services. The choice of the quality system model depends on the organisational scope and the functional operation of an organisation, its strategy, and the contract requirements. The ISO 9003 standard covered the narrowest range of requirements, whereas the ISO 9001, the widest. As the model of quality assurance system started to encompass more elements, the requirements grew. Apart from internal requirements, ISO 9002 included the control of supplies, and ISO 9001 shaping the development, and the service.

Each institution that aims at obtaining the ISO 9000 certificate should:

- set goals and formulate the quality policy;
- ensure clear-cut quality management organisation;
- work out the system of documentation and data collection;
- conduct regular internal audits;
- establish a document management system (make their updates);
- offer the possibility of full identification of activities, and responsibility;
- introduce the system of detecting anomalies and reducing the risk of mistake;
- control all the processes that are a part of one of the three functional models. [5]

The organisational structure together with the division of responsibilities, as well as the procedures and instructions that enable the management through quality and continuous improvement of the level of quality, form the focus of the whole quality system. The documentation structure was clearly presented in the ISO 9000 series of standards. The graph below shows the quality system documentation hierarchy. [6]



In 1997, the ISO/TC Committee conducted a comprehensive survey that covered 1120 users of the standards in question. A new version of the ISO 9000 series of standards was published in December 2000. The standards were amended after the results of the survey concerning the customer expectations had been analysed.

A new version of the ISO 9000 series of standards comprise the following:

- ISO 9000:2000 - Quality management systems - Notions and terminology. The fundamentals and guidelines for the new family of standards.
- ISO 9001:2000 - Quality management systems - Requirements. A proper specification of guidelines on a quality management system. Presently, the requirements of the system are divided into four sections (accountability of managers, managing the resources, the realisation of products or services; measurement, analysis, improvements).
- ISO 9004:2000 - Quality management systems - Guidelines. Actions dealing with the improvement of the system that go beyond the ISO 9001 guidelines. Instructing the organisations that have already implemented the ISO 9001 standard in how to further improve the quality system. The ISO 9004 standard cannot be applied in the process of registration and certification. [7]

The ISO 9001, ISO 9002, ISO 9003 standards have been merged into an amended ISO 9001 standard. The ISO 8402 standard became the ISO 9000. The scope and the title of the amended edition of standards have been changed. The new title does not embrace the term "quality assurance", only "quality management".

The crucial changes introduced to the new standard consist in:

- Introducing the process approach to quality management. The standard implies that every activity or operation that involves the conversion of the input data to the output data may be treated as a process. The process approach is a systematic identification and managing the course of processes in an organisation.
- Choosing only one model of the system, i.e. ISO 9001. This implies the possibility of adjusting the requirements of the ISO 9001 model to the specificity of an organisation in a way that would enable to omit the requirements that do not concern a given organisation. It is particularly important for the institutions that have already introduced the system according to ISO 9002 (excluding planning and development). All the limitations should be described in the Quality Manual.
- Introducing the requirement of continuous improvement and prevention of discrepancies. It is not enough to confine the undertaken actions only to measuring the customer satisfaction level. It is necessary to pursue continuous action leading to increasing customer satisfaction from the supplied product or service.
- Introducing the requirement of standards being easy to understand and adopt, and using clear-cut terminology.
- Raising the level of conformity with the environmental management system standards of the ISO 14000 series.
- Placing great emphasis on surveying the customer needs and expectations.
- Paying attention to the management of resources, including HR management. The management is obliged to secure, among other things, education and personnel improvement. [8]

ISO 9000:1994 consists of 20 key elements, the guidelines of which an institution has to follow. ISO 9000:2000 is based on a process model, which is easier to adopt in service institutions than the previous version of standards. The way the four sections of the ISO 9000:2000 model function is comparable to the improvement process popularised by Edwards Deming, one of the pioneers of TQM. It reflects the PDCA cycle (Plan - Do - Check - Act). [9]

There are various advantages of implementing ISO 9000 standards. First of all, the standards contribute to putting in order many matters in an institution by giving the possibility of the strict division of tasks, and by setting precise requirements and the scope of responsibilities. Moreover, the clear-cut procedures worked out in this approach, as well as instructions and quality plans help to supervise and

execute the realisation of these requirements, and also make it easier for the staff to perform their official duties. The established order as well as the policy of maintaining high quality contribute to the gradual change in the way of thinking of the personnel. It affects the organisational culture of an institution and slowly leads towards total quality management.

The implementation of the quality assurance system in a given institution helps also to use the methods and techniques of data collection and evaluation that have been developed in quality approach. Moreover, it makes it easier to develop team work skills. The application of the ISO 9000 series of standards provides a solid basis for implementing TQM. An institutional quality system conforming to the requirements of these standards and confirmed by a certificate issued by an independent entity guarantees that the basic activities of this institution are orderly and properly documented, and the organisational culture is conducive to the planned changes. A new version of these standards (not yet in force in Poland) brings closer the approach called so far quality assurance (it is exemplified by the mere change of this term to quality management in the new version of standards) to TQM by placing emphasis on the process approach, the need for continuous improvement, surveying the needs and expectations of users, and on the necessity of constant monitoring the improvement progress.

In the field of library and information science there is considerable interest in the methodology of implementation of quality assurance systems, but smaller than the interest in TQM procedures. However, the role of ISO 9000 standards in quality management on the operational level is being stressed. This means that the application of the discussed approach imposes an obligation to work out some detailed and well-tried procedures for carrying out various library and reference services, and to tailor the most effective work instructions to these procedures. It helps not only to streamline work processes, but also to maintain the level achieved, since the institution that was granted the ISO certificate is subject to continuous auditing. Moreover, the need to prepare a Quality Manual calls for working out goals and streamlining the organisational structure. [10] The manual supplies the users and the staff with information on the policy carried out by the management. The same as in the production sector, the marketing effect of gaining the ISO 9000 series of standards is important also in information institutions.

Especially advantageous for information institutions that can be treated as a link in the information chain is that the ISO 9000 series of standards identifies interaction models between customers and information providers.[11] In the presented approach, every information institution is perceived as a customer - service and product receiver, as well as the provider of services and products.

Such an approach to the functions of information institutions and their interrelations with the community makes it possible to carry out a detailed analysis of these interactions, and to assess their quality and efficiency. As quality certificates will become more and more widespread, and the providers of services and products for library and information institutions will obtain these certificates, it will be easier to choose the right product and service, and it will also improve the quality of functioning of these institutions. Thus, the discussed library and information science approach helps to streamline the library activities and to place libraries more accurately within the community while focusing on the interactions between these institutions and their communities. It also takes into consideration the marketing of library and information services, which is being more and more widely discussed in library communities.

The presented approach, in spite of its obvious advantages, is not free of faults. The main objection is the standards being still too technical and bureaucratic in their character, which makes them difficult to implement. It is also less open to the needs of users than the TQM system, more routinised and limited in their time perspective. The goals of information institutions presented in this approach are not long-ranging, and the activities of these institutions are only shaped at an operational level. [12] This will change a great deal when a new version of standards is introduced in these institutions. However, the above limitations can be reduced considerably by tailoring the instruments of analysis and assessment included in this approach to the user community's expectations. If you want to most advantageously shape the way the quality assurance systems are implemented , you have to assume from the very beginning that meeting the ISO 2000 standards is a very effective, but only a transitory stage towards total quality management.

The procedure for implementing the ISO 9000 standards is rather complicated, especially in the case of service institutions. That is why instruction manuals for implementing these standards in libraries and information institutions have already been worked out in western European countries.[13] They include all the essential elements of the quality system application in these institutions. The principles of choosing the model of the quality assurance system (in general it is ISO 9002 or 9003), as well as the way the library functional structure that facilitates the working out of procedures and the quality control, are presented.[14] The manuals give also a detailed description of the methodology of implementing the 20 basic standard requirements for practical functioning of libraries, as well as the quality assurance system documentation. The way of writing procedures is described, as well as the issues regarding auditing and defining indicators of the quality of task accomplishment. Information is also given on how to obtain a certificate.

Introducing ISO 9000 standards to libraries and information centres is not so popular as adopting TQM. First such attempts were made for example in Australia [15] and in Nordic countries [16] at the beginning of 1990's. In the U.K. the first big library that implemented ISO 2000 standard was University Library in Central Lancashire.[17] According to the survey carried out by the British Library in 1992, about 17% of public libraries and 10% of academic libraries were engaged in implementing ISO 9000[18] during that year. More and more special libraries as well as information centres affiliated to different institutions show interest in implementing the QA system. It is only natural for them to join the quality management programmes that the whole parent institution has undertaken. In the U.K. such information centres are for example Building Design Partnership and Taywood Information Centre. In the U.S.A. and Canada the situation is similar; among the first libraries that successfully implemented the QA system were medical libraries. It was as early as the mid of 1980's. [19]

Different library and information science communities are also engaged in developing the QA system. One of the most interesting initiatives is SCONUL.[20] It brought about the setting of a special section for implementing ISO 9000 standards in university libraries - SCONUL Working Group on Quality Assurance in Libraries in 1994.[21] Much importance is attached to learning from the experiences of libraries in internal auditing, and to training external auditors in specific library activities. This section focuses on working out a coherent approach to quality systems implementation. It also aims at fostering close cooperation between teachers and practitioners in improving quality assurance training programmes. Quality management issues are taught in LIS schools.

The second approach, i.e. total quality management strategy, was also intended for development in production companies. In non-profit institutions, the transformation of the assumptions and tools of this approach is not easy because of the results of the activities of these institutions being more difficult to observe and measure. However, Edwards Deming's 14 points TQM philosophy is so universal in character that it may be applied to different types of organisations, and such attempts have been undertaken for some time now in regard to non-profit organisations. Endeavours are also being made to apply other basic principles of the discussed approach to non-production sector. They are the following:

- aiming at achieving good quality of products and services;
- focusing on fully meeting the needs and requirements of users as the main goal of the whole organisation;
- planning for quality, often in connection with strategic planning;
- participating in the management process by the personnel, and hence better employee motivation for improving quality;
- educating and training the personnel;
- forming problem-solving teams of staff members;
- using statistical methods to examine and solve problems;
- being convinced that ineffectiveness is primarily caused by mismanagement, the staff being not responsible for it. [22]

TQM offers a set of principles, methods and tools that can be applied to improve an organisation's activity. It is a platform for teamwork, for transforming the organisational culture of library and information institutions, and for introducing changes and improvements. It also makes it possible to evaluate and improve the quality of the human interface between the library/information systems and

their users, as well as sponsors. This is important for many organisations in view of the possibility of receiving some funds or achieving a high standing in their community. It also contributes to promoting library activities and creating a library's new image.

With the application of the TQM system in library and information institutions the role and importance of users has considerably increased. Meeting user requirements and needs has been set forth as a goal. The level of user satisfaction from services, resources and the ways of providing services began to be perceived as the indicator of the quality of library services. Performing assessment of quality systems involves the necessity of conducting regular customer surveys.

Moreover, the concept of user - library's customer is widely defined in the TQM system. The marketing term of internal customer - an employee was adopted, and an external customer was identified in the context of close cooperation between a library/information institution and its public, stressing the necessity of meeting the needs and requirements of the community. Librarians being the customers can expand their skills as providers of services. Focusing on the needs of the public brings about the growth of user requirements and results in the growing role and prestige of library and information institutions. According to the TQM principles library services should be widely publicised.

Work improvement teams are a new element in the organisational structure of libraries. Teamwork allows for sharing experiences with other departments and to have a better insight into the whole library system. In the case of teamwork, the management information flow is different than in hierarchical structures, and new interpersonal bonds are being formed. Library organisational structures gradually undergo transformation, i.e. flattening of structure, greater flexibility, adaptability, and innovativeness. For example, the focus is on introducing a matrix or network structure.

Implementing TQM means assigning new roles for librarians. It is a derivative of the accepted in the discussed approach assumption of "authorising" staff members, i.e. making them responsible for the quality of functioning of a library and the effectiveness of user services. Professional skills are acquired thanks to continuous staff training and development. These are obviously the factors that strengthen motivation and build up the prestige of library profession. Continuous training makes it easier for the staff to adapt to changes, including technological improvements. It also facilitates the use of various methods of and tools for data collection and analysis that enable the research and the assessment of the quality of functioning of libraries.

The TQM strategy contributes to the changing attitude of the management towards employees. Special emphasis is given to the positive and motivating attitude of the management towards workers' commitment and initiative. The discussed approach forms a new organisational culture of library and information institutions thanks to its strategy of continuous research and development. The culture of "the learning" organisation that is being developed thanks to the TQM system lays foundation for a new, active role of libraries.

According to the TQM principles, all the elements of the library system are coordinated in order to achieve a common goal. This approach calls for continuous library system improvement and optimisation of the management control function through monitoring the conformity of requirements, needs, and standards with the current indicators of activity, which proves to what extent the requirements and aims are fulfiled.

The process of implementation of TQM in library and information institutions began in 1990. It took place in the USA in The Oregon State University Library, The Harvard College Library and the Stanford University Library.[23] In the same year, the TQM system procedures were adopted by the first special library, Georgia Tech Library. As early as at the beginning of 1991 a next library joined in. It was Case Western Reserve University Library in Cleveland.[24] The first Australian library to introduce the TQM system in 1993 was Northern Territory University Library. [25]

In Europe the concept of TQM met with response early enough in the U.K. and in Nordic countries. One of the first libraries in the U.K. that introduced TQM at the beginning of 1990's after the ISO 9000 series of standards had been implemented was the Central Lancashire University Library. From among the countries of eastern Europe the first library to adopt TQM was Lek Pharmaceutical and Chemical Company Library and the Oncological Institute Library in Ljubliana, Slovenia. [26] In 1998 in

Poland a project was launched to implement TQM in a group of academic libraries (among others in the Warminsko-Mazurski University Library and in the Main Library of the Technical University in Cracow) with funds from the TEMPUS programme. [27]

During the last years a growing number of library and information institutions worldwide have applied the TQM system. It is the most popular among special libraries whose parent organisations use this system. Libraries and information institutions use various methods and procedures to achieve a goal which is the application of total management strategy. Some of them, especially British and Scandinavian libraries and information centres, started with the implementation of the ISO 9000 series of standards before adopting the TQM system. Every library and information institution tailors the guiding principles of quality systems to its specific needs and conditions of functioning.

There is a growing conviction that library and information institutions should find an optimal relation between TQM and ISO 9000 if they want to implement the total quality management system. Implementing both systems at the same time means constant quest for improvements; TQM stands for innovation and culture, whereas ISO 9000 means consolidation and discipline. As Robert Karaszewski states:

- ISO 9000 = efficiency = proper accomplishment of tasks
- TQM = effectiveness = accomplishment of proper tasks. [28]

Footnotes

[1] St. Gorzkowski, Zarządzanie jakością. Systemy zapewniania jakości w oparciu o normę międzynarodową ISO 9000-9004, Bydgoszcz, 1994, p.24.

[2] Quality Assurance is defined as a set of coordinated actions based on division of competencies, tasks, and resources undertaken to assure product quality.

[3] St. Gorzkowski, Zarządzanie jakością. Systemy zapewniania jakości w oparciu o normę międzynarodową ISO 9000-9004, Bydgoszcz, 1994, p.32; K. Stefański, Systemy jakości - modele zapewniania jakości wg norm ISO serii 9000. [in:] seminar proceedings: "Praktyczne aspekty realizacji strategii totalnej jakości w Polskich przedsiębiorstwach, Błażejewko, 14-17 September, 1993, p.151.

[4] L. J. Wedlake, An introduction to Quality Assurance and guide to implementation of BS 5750, ASLIB Proceedings, Vol. 45, No. 1 Jan. 1993, p. 24.

[5] Zarządzanie przez jakość, [electronic document], Sikorski Jarosław, July 2001, URL: http://www.ibspan.waw.pl./~sikorski/tqm/wyk_2.htm.

[6] It is a slightly modified by the author diagram, see St. Gorzkowski, op. cit., p. 37.

[7] ISO 9000: 2000 Quality management systems - fundamentals and vocabulary, ISO 9001: 2000 Quality management systems - requirements, ISO 9004: 2000 Quality management systems - guidelines (publ. on 15.12. 2000). On 22nd February 2001 the Polish ISO 9001 draft standard (Pr PN-EN ISO 9001) was forwarded for surveying (a general and targeted survey). In Poland, an international standard takes effect after 1-2 years as a rule.

[8] ISO 9000: 2000, ISO 9001: 2000; Tabor A., Zając A., Rączka M., Zarządzanie jakością. T1 Jakość i systemy zapewniania jakości. 2nd ed., Cracow, 2000, pp.71-72, see also R. Karaszewski, TQM. Teoria i praktyka, Toruń, 2001, pp. 228-230.

[9] R. Karaszewski, op. cit., p. 229.

[10] M. Kinnell, Quality management and library and information services: Competitive advantage for the information revolution, IFLA Journal, 1995, no.4, p. 270.

[11] Compare C. G. Johannsen, Can the ISO standards on quality management be useful to libraries and how? Inspel, 1994, no.2, p.229.

[12] The process of implementing ISO 9000 lasts about 2 years.

[13] See for example.: T. Bang, ISO 9000 for libraries and information centres: a guide. The Hague, 1996 and D. Ellis, B. Norton, Implementing BS EN ISO 9000 in libraries, London, 1993, 2nd ed. 1996 - there are no manuals yet of the newest version of standards.

[14] A manual by D. Ellis and B. Norton, op. cit, 2nd ed., p.55 gives a very thorough presentation of the above issue in the form of charts that show 3 groups of basic library functions: acquisition, processing, and supply of resources.

[15] Compare V. Williamson, F. C. A. Exon, The Quality Movement in Australian University Libraries, Library Trends, 1996, no.3, pp.526-544.

[16] Compare C. G. Johannsen, Quality Management and Innovation: Findings of a Nordic Quality Management Survey, Libri, 1995, pp.136-137.

[17] P. Brophy, The Quality Program at the Library and Learning Resources Service at the University of Central Lancashire, Inspel, 1994, no.2, pp. 240-247.

[18] C. G. Johannsen, Can the ISO standards..., p. 237.

[19] R. O'Neil, A total look at Total Quality Management: A TQM perspective from literature of business, industry, higher education and librarianship, Library Administration and Management, 1993, no. 4, pp. 249-250.

[20] The Standing Conference of University Libraries.

[21] J. M. Sykes, SCONUL and Quality Assurance, Library Review, 1996, no.5, pp.17-22.

[22] S. Jurow, S. Barnard, Introduction: TQM fundamentals and overview of contents, Journal of Library Administration, vol.18, 1993, no.1/2, p. 2.

[23] Compare K. S. Butcher, Total Quality Management: The Oregon State University Library's experience, Journal of Library Administration, 1993, no.1/2, pp. 45-56 and M. E. Clack, Organizational development and TQM: The Harvard College Library Experience, Journal of Library Administration, 1993 no.1/2, pp. 29-43 and D. K. Fitch, J. Thomason, E. C. Wells, Turning the library upside down: reorganization using Total Quality Management principles, The Journal of Academic Librarianship, 1993 no.5, pp. 294-299.

[24] Compare D. K. Gapen, Q. Hampton, S. Schmitt, TQM: The director's perspective, Journal of Library Administration, 1993, no.1/2, pp. 15-28.

[25] V. Williamson, F. C. A. Exon, The quality movement in Australian university libraries, Library Trends, 1996, no.3, p.535.

[26] N. Trzan-Herman, D. Kiauta, The organizational map: an important aspect of achieving Total Quality Management in a pharmaceutical and medical library: a Slovenian case, Libri, 1996, no. 2, pp. 113-119.

[27] Project TEMPUS, Jep, 13242-98.

[28] R. Karaszewski, op. cit., p.233.h [electronic document] Ewa Głowacka, Warsaw : KWE SBP - EBIB, 2002, no.30, URL: http://ebib.oss.wroc.pl

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