



Quality management of library services in the digital era

Rafael Ball

Research Centre Jülich, Germany

Abstract: *Libraries and information institutions are today being confronted with dramatic changes in technology, media and financial boundary conditions. In order to enhance customer satisfaction and gain new customers, demonstrate efficiency and increase the attractiveness of their products, economic measures are becoming increasingly important even in largely publicly financed libraries. These measures include, for example, controlling, marketing and quality management for enhancing the efficiency and effectiveness of library services. The quality of the products of the 'library as a service company' must be permanently optimised in accordance with customers' requirements. Services clearly differ, by several central criteria, from goods such as consumer products and capital goods. The presentation will discuss selected quality criteria for library services such as topicality, precision and relevance, reliability, completeness and speed, and on the basis of selected examples of modern electronic services will examine the way in which these quality criteria are fulfilled by libraries today. It will finally be shown that the paradigm shift in the media sector requires a permanent change and adaptation of quality criteria for these services. Quality management in libraries is an ongoing process which never ends.*

Keywords: library, quality management, electronic services

1. Introduction

The origin of the quality concept and quality management for the production of goods can be traced back to the start of industrial mass production. W.A. Sheward's theory of the *Economic Control of Quality of Manufactured Products* of 1931 can be regarded as a milestone [1]. The quality concept was always related to capital or consumer goods. At this early period, the quality of services was not yet a matter of interest. Even less attention was paid to the quality of services by non-profit organisations, where the topics of quality assurance and quality management were not addressed for many decades. The reasons for this are primarily the lack of economic pressure for efficiency, effectiveness and quality of services.

However, the boundary conditions in the non-profit area of the tertiary service sector have been undergoing a radical change for some time now. The funding bodies of the non-profit service providers (government establishments, organisations, associations), on the one hand, as well as the customers, on the other, are no longer prepared to accept low-quality services. The concept of quality assurance and quality management, including the introduction of TQM and certification pursuant to ISO 9000, today determine the picture in the tertiary sector in many non-profit organisations.

2. The services of a library

Public libraries and large general research libraries are essentially funded by the public purse. They are regarded as a cultural service and would not be able to make an adequate profit contribution in the overall business undertaking. For a long time, this prevented libraries from being subjected to the direct pressure of quality management. For many years the quality of the libraries' customer services was a matter of complete indifference. A basic turning point was only brought about by the structural crisis of (European) libraries, for which the following reasons can be mentioned:

1. underfunding of government-supported libraries and information organisations
2. lack of acceptance of library services by the general public and a perceptible drop in take-up of these services
3. structural modifications of library services through the integration of modern, electronic digital media in the existing traditional holdings
4. the medial and technological revolution in the information sector.

The consequence is intensive reflections on how the library user can be retained and regained as a satisfied customer, and how the efficiency of libraries and their services can be optimised and documented. Against this background, economic aspects such as controlling, marketing and quality assurance take on increasing significance as measures for increasing the efficiency and effectiveness of library services. Particular influence has been exerted by the diversification of media and technology in the past five to ten years. A number of new services offered to the customer today arose on the basis of digital data. Since, however, traditional library services have not been replaced but rather merely complemented, the range of library services has been multiplied by the application of modern technology and new media. Traditional quality standards and quality assurance measures are no longer applicable to these new services. There is an urgent need for the development and definition of new quality standards for new library services such as electronic journals, CD-ROM databases, alerting services, information consulting and online searches. In the Anglo-Saxon world, efforts at achieving quality standards and criteria for library services began to be made in the early 1990s. In adopting the quality management of profit organisations from the sector of the consumer and capital goods industry, clear customer orientation was regarded as one of the major goals for the quality management of library services (Figure 1).

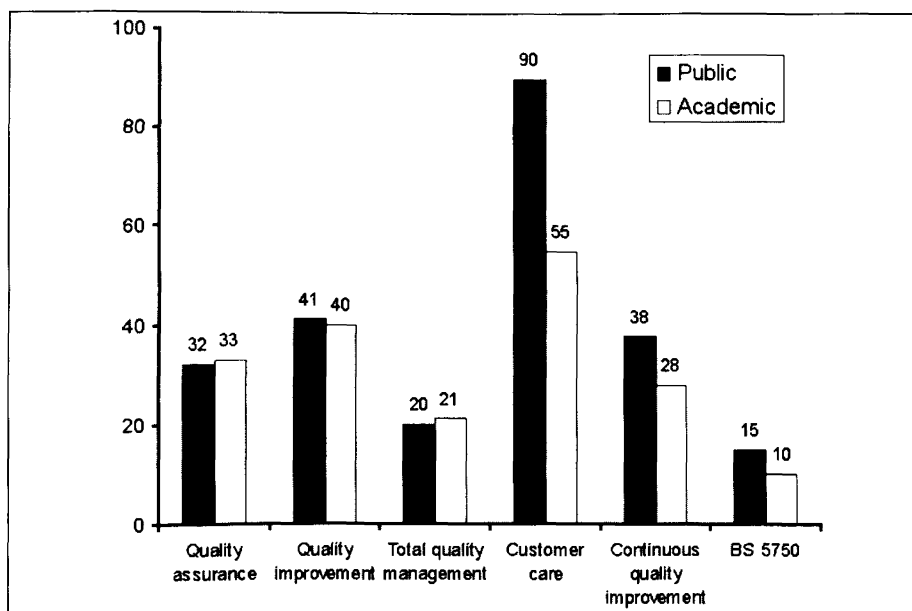
From the special aspect of customer orientation, quality in the service sector of a library is defined as permanent customer satisfaction. It is important here that quality is defined from the customers' perspective and cannot be predefined by the library's standards. Only a customer who regards the services as being of a high quality from his or her subjective perception will remain a satisfied library customer in the long run. The standards set up by Tann in 1993 are valid for a general assessment of library quality [3]:

- knowing the customer's needs
- faultless delivery of service
- good accommodation
- reliable equipment
- efficient administration
- efficient back-up service
- feedback loops to build in improvement procedures.

Against this background in particular, it becomes apparent that it is less the outputs of a library which are decisive for user satisfaction but rather the outcomes. The outcomes are defined as 'the uses made by the consumer of a given output and the degree of satisfaction felt with those outputs' [4]. There are sufficient standards and design codes for defining the quality of physical goods, and a standard is relatively easy to define. Values and parameters for the quality of services are difficult to determine and standardisation is only possible to a limited extent.

Figure 1:

Public and academic library involvement in quality management in the UK [2]



3. Quality criteria for library services

3.1. Topicality

Since the science of today must perform research in a fast, industrially orientated, innovative but also cost-conscious manner, the topicality of library services and information is of overriding significance. With ever shorter half-lives, especially for scientific and technical economic information, the topicality of library services and information is highly relevant to an increasing extent [5].

3.2. Precision and relevance of information

Library services for today's science sector must be precise, clear, unambiguous and relevant. Particularly in times with an inundation of information, verifying the relevance of scientific information is of undreamt of significance. It is the libraries' task and a hallmark of quality that the customer should enjoy an information service verified for relevance. If the scientists of today receive irrelevant data from their libraries this puts the success of their research programmes at risk as well as their personal reputations and that of their working groups, and thus their scientific survival. Irrelevant economic information endangers the economic success of a company.

3.3. Reliability

More than ever before, library services in the science and research sector must be characterised by reliability. This factor takes on special significance against the background of electronic media and new technologies. Lucky hits, disappearing URLs, crashing servers and unretrievable WWW addresses must not impair the quality of information services.

3.4. Completeness

Modern users of the library of today expect complete information concerning their query. Only the extensive, complete and comprehensive processing of their information problem is regarded as the fulfilment of their information needs. This includes the complete treatment of their questions and wishes in all available media and all accessible sources. Particularly against the background of the media mix in a hybrid library, the criterion of completeness is more difficult than ever to fulfil today.

3.5. Speed

The information service of a modern library for modern scientific and industrial businesses must not only contain current results but it must also pass these current results on to the customers rapidly and directly. Delayed passage through official channels due to the traditional 'civil service mentality', labyrinthine operations and long rest periods mean the certain kiss of death for any customer satisfaction.

3.6. Distribution flexibility

The scientist and businessperson of today expects the information specialist at the library to provide a response tailored to the specific question. This also includes the flexibility of accommodating the customer's distribution wishes. It is a quality feature of library services if the library is capable of making the information available to the customer in print form, by post, courier, fax, email, ftp or as a coded WWW address.

4. Applying the quality criteria for electronic library services to e-journals

The publication sector of electronic journals is characterised by very high dynamics and an increasing presence in all types of library. In some establishments, traditional print holdings are already being replaced by electronic journals. However, electronic journals must face up to different quality criteria than traditional journals.

4.1. Topicality

The *electronic medium* should actually be topicality itself. For this reason, especially in the case of electronic journals, an above-average level of topicality is expected. Reality, however, shows that there are very great differences between the various products. Depending on the production process of the electronic journal (spin-off from the electronic production process or a scan of the print version), it may be faster or slower than the print issue. Libraries, nevertheless, rightly expect that electronic journals should fulfil the quality feature of 'topicality' particularly well.

4.2. Precision and relevance

Since the content of the majority of electronic journals is by no means inferior to that of the printed version, the precision and relevance of the information is comparable to that of print journals, and possibly even superior due

to the addition of further information. Only in the case of those products available as scans of the print version can the precision and relevance in comparison to the print version be reduced by technical errors.

4.3. Reliability

As far as reliability is concerned, electronic journals have the possibility of permanent distribution. This is ensured by data networks, even if occasionally accompanied by short-term malfunctions. The much greater problem of reliability is the long-term archiving of electronic media. In this respect, at least in the medium term, electronic journals will undoubtedly not achieve such great reliability as traditional paper journals printed on acid-free paper.

4.4. Completeness

Several levels must also be differentiated in the field of completeness. In comparison to print materials, in the electronic sector the issues are not always complete. Editorial sections are not distributed electronically, advertisements are possibly not redispached and illustrations only made available to a limited extent. As far as the completeness of information is concerned with respect to back issues and volumes, completeness cannot be assumed in the electronic sector. It will take decades, and may perhaps never be realised, before all the volumes of all journals are available electronically.

4.5. Relevance

The relevance of information obtainable by a user from an electronic journal can be much more intensively focused than the comparable output of a traditional print journal. The application of search engines or the possibility of using retrieval software for the contents of electronic journals guarantees a relevant result for the scientist. Intensively focused and special issues concerning highly specialised contents can thus be more effectively realised in electronic media than in print journals.

4.6. Speed

Speed is closely interlinked with topicality for electronic journals. The distribution of materials present electronically on the provider's server is largely ensured by transmission over data networks. The speed is much higher here than for the distribution of comparable print issues.

4.7. Distribution flexibility

The option frequently offered by electronic journals of selecting the usable format enables electronic information to be read from different platforms with different software programs. Distribution flexibility is therefore basically guaranteed for electronic journals.

5. Quality assurance measurements for electronic journals at the Central Library of Research Centre Jülich

There are a number of examples of the introduction of total quality management (TQM) in libraries. Especially in the US and the UK, as well as in the Scandinavian countries, examples are known from the 1990s [6].

However, all these examples merely show the integration of TQM as a management technique and its overall incorporation into library procedures [7]. Quality assurance measures and standards have not yet been established and implemented for the special fields of electronic materials, especially for ejournals.

The Central Library of Research Centre Jülich has set up an extensive working group to ensure quality standards for electronic journals and their availability. A three-stage quality assurance system has been defined in collaboration between staff from several departments. The roughly 800 electronic journals available at the Central Library have been subdivided into three categories:

1. journal titles as core journals of the highest relevance
2. journals of medium relevance which can be accessed by cross-access within the framework of a syndicated subscription
3. journals of low relevance available free of charge.

A graded quality assurance concept was established on the basis of relevance. For journals in groups 1 and 2, a quarterly review of the link availability was set up as well as a thorough review of the completeness of all volumes and issues. Complaints are passed on to publishing houses and providers by the library's internet group. Standardised error documentation is implemented in an EDP program specially created for this purpose. Journals in group 3 are reviewed once a year with respect to availability and completeness. These measures enable novel electronic products to be included in quality assurance, and new standards and quality routines to be developed.

6. Summary

Structural crises, tight resources and the introduction of electronic media have contributed to the introduction of economic methods in the library sector. The quality optimisation of library services is an important factor against this background. The features of services, in contrast to consumer and capital goods, are immateriality, integration of the customer and simultaneousness of production and consumption. Quality must be defined from the customer's perspective since there cannot be any standardised objective features for quality. Examples of quality criteria for library services are: topicality, precision and relevance, reliability, completeness, speed and distribution flexibility. Conformity with these criteria must be regulated in quality circles and is a central task of library management.

References

- [1] Sheward, W.A. (1931) *Economic Control of Quality of Manufactured Products*, London. Macmillan.
- [2] Brophy, P. and Coulling, K. (1996) *Quality Management for Information and Library Managers*, ASLIB Gower, Aldershot, p. 116.
- [3] Tann, J. (1993) Dimensions of quality in library settings, in Ashcroft, M. and Barton, D. (eds) *Quality Management: Towards BS 5750*, Proceedings of a seminar held in Stamford, Lincs on 21 April 1993, Stamford, Lincs: Capital Planning Information, pp. 23-31.
- [4] Abbot, C. (1994) *Performance Measurement in Library and Information Services*, London, ASLIB, p. 16.
- [5] Poll, R. and te Boekhovst, P. (1996) *Measuring Quality. International Guidelines for Performance Measurement in Academic Libraries*, Saur, Munich.
- [6] Barnard, S. (1993) Implementing total quality management. A model for research libraries, in Jurow, S. and Barnard, S. (eds) *Integrating Total Quality Management in a Library Setting*, Harworth Press, New York.
- [7] Total Quality Management (1993) *Total Quality Management: The Information Business: Key Issue '92*, based on the papers given at a one day conference on total quality management (TQM) in library and information services with additional material held at University of Hertfordshire on 9 September at the International Library Technology Fair (Information Business: Key Issue Series).

Slides

Slide 1:

Agenda

1. Introduction
2. The history of not-for-profit quality management
3. The quality management of library services
 - 3.1 Library crisis: the reasons
 - 3.2 Library crisis: the consequences
 - 3.3 Quality criteria for electronic library services
 - 3.4 Quality criteria for ejournals
4. An assurance concept for electronic journals
5. Summary

Slide 2:

The history of not-for-profit quality management

- The quality of services was not a matter of interest, especially in non-profit organizations.
- Radical change: funding bodies of the non-profit service providers (government establishments, organisations, associations) and customers no longer accepted low-quality services.
 - the concept of quality assurance and quality management, including TQM and ISO 9000 certification, was introduced in many non-profit organisations – also in publicly funded libraries

Slide 3:

Library crisis – the reasons

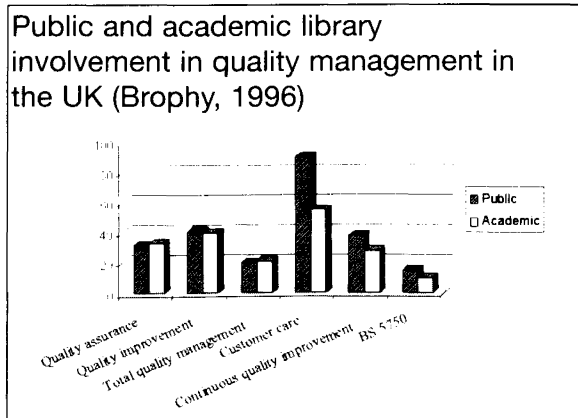
- underfunding of government-supported libraries and information organisations
- lack of acceptance of library services by the general public and a perceptible drop in take-up of these services
- structural modifications of library services by integration of modern, electronic digital media in the existing traditional holdings
- the medial and technological revolution in the information sector

Slide 4:

Library crisis – the consequences

- diversification of media and technology in the past five to ten years
- number of new services on the basis of digital data
 - traditional quality standards and quality assurance measures are no longer applicable to these new services
 - need for the development and definition of quality standards for new electronic library services

Slide 5:



Slide 6:

- Quality standards for a traditional library
- Silence
 - Neatness
 - Slowness
 - Discipline
 - Tidiness

Slide 7:

- Library as a business
- Electronic/virtual library
- Digital holdings
 - Electronic information resources
 - CD-ROM
 - DVD
 - Diskettes
 - Online information
 - Multimedia applications

Slide 8:

- Demands on modern academic libraries
- Speed: fast acquisition of the information required
 - Usability: provision of full texts, graphics etc. (electronically, if possible)
 - Innovation: application of modern means of information and communication
 - Publicity: support in publishing scientific papers

Slide 9:

- Core quality criteria for electronic library services
- Topicality
 - Precision and relevance
 - Reliability
 - Completeness
 - Speed
 - Distribution flexibility

Slide 10:

- Core quality criteria for ejournals (I)
- Topicality
 - faster or slower than the print issue (depending on the production process of the electronic journal)
 - electronic journals should fulfil this quality feature particularly well
 - Precision and relevance of information
 - comparable to that of print journals
 - even superior due to the addition of further information and added value functionalities

Slide 11:

- Core quality criteria for ejournals (II)
- Reliability
 - permanent distribution due to data networks
 - long-term archiving of electronic media uncertain
 - Completeness
 - electronic issues not always complete (editorial sections, advertisements, illustrations often missing)
 - no completeness concerning back issues

Slide 12:

- Core quality criteria for ejournals (III)
- Relevance
 - better and more focused than the comparable output of a traditional print journal
 - search engines and retrieval software help to access the contents
 - Speed
 - much higher than for the distribution of comparable print issues
 - interlinked with topicality
 - Distribution flexibility
 - great flexibility by selecting various formats

Slide 13:

The Central Library of the Research Centre Juelich, Germany

- is a special library for scientific and technical information
- is responsible for the acquisition and provision of all kinds of media and information required at the Research Centre
- provides a lot of add-on services:
 - scientific publications for the Research Centre
 - a press clipping service

Slide 14:

Collection profile and dimensions

- Structure of matter and materials research
- Information technology
- Life sciences
- Environmental precaution research
- Energy technology
- 400,000 printed books
- 1400 printed scientific journals
- >1000 electronic journal titles
- Staff: 40 people

Slide 15:

Example of best practice — An assurance concept for electronic journals (I)

- establishing an extensive working group of 4 specialists
- a three-stage quality assurance system for 800 electronic journals
- standardised complaints procedure
- standardised error documentation via EDP

Slide 16:

An assurance concept for electronic journals (II)

- three relevance-based categories:
 1. journal titles as core journals of the highest relevance
 2. journals of medium relevance which can be accessed by
 - cross-access within the framework of a syndicated subscription
 - quarterly review of the link availability
 - review of the completeness of all volumes and issues
 3. journals of low relevance available free of charge
 - annual review of availability/completeness

Slide 17:

Summary (I)

- The facts
 - structural crisis
 - tight resources
 - technological revolution
 - electronic media
- What's to be done?
 - quality optimization of all library services, especially of electronic services

Slide 18:

Summary (II)

- What we have done:
 - established quality criteria
 - implemented quality circles
 - ensured the quality of the new electronic services

Rafael Ball
Head of Central Library
Research Centre Jülich
Germany
Fax: +49 2461 61 6103
Email: r.ball@fz-juelich.de