CHAPTER 2
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2.1 QUALITY ASPECT AND STATISTICAL APPROACH

2.1.1 Overviews

Patios (2008) has identified the current evaluation processes and experiences among Latin American university libraries by sending questionnaire. It was found that most libraries evaluate some aspect of their services, but the frequency of these actions does not appear to be very consistent. They seem to have an acceptable level of computerization, but some of them neither take advantage of nor make the most of it. Only a few libraries perform an evaluation to improve their management and few libraries have enough historical data sets to permit comparative studies. The paper can aid Latin American university libraries to analyze their evaluation needs in a common forum and to reach agreements as to what are the most appropriate indicators to measure their performance. This will help them in the long term to improve the quality of their services and the value of their role in the performance of the university.

Petr (2007) presented in her paper the proposed methodology for the first scientific project to evaluate Croatian academic and public library services. The paper finds that the possible obstacles to creating a positive climate for performance measurement in the Croatian library and information science community might be, among other things: insufficient number of staff, inexperience and lack of skills needed for data collection and processing, lack of motivation, fear of being made redundant, etc.

Poll (2007) shows the effectiveness of using performance indicators on a national scale and gives an overview of national projects and compares the methods used. The paper finds that groups of libraries have tried to find consensus on a common set of performance indicators for benchmarking purposes. The indicators chosen for such projects differ between countries and types of libraries. The paper shows examples where sets of indicators are used on a national or regional scale on a regular basis and compares the indicators used and the methods of benchmarking. It also indicates practical implications by showing the difficulties of reaching an agreement when starting a common project and points to results and success of the projects and to problems that occurred in the benchmarking process.

Turk (2007) examines measures for assessing library performance from three perspectives: efficiency, effectiveness and service quality. The concepts of the measurement of library performance are discussed in order to identify appropriate research methods for studying the libraries of the University of Ljubljana. This paper fulfils a need for a practical solution of how to improve service quality in university libraries. The libraries of the University of Ljubljana are used as a case study.

Boretti, Elena (2006): No library statistics existed in Italy till the publication of this paper. With no national law or authority governing public library services, it was left to the Official Publications Working Group of the Italian Library Association, in collaboration with the
Central Institute for the Union Catalogue of Italian Libraries and the Italian National Statistics Institute (ISTAT), to carry out a survey. This survey was financed by the University of Perugia to collect information about the presence of official publications in Italian public libraries. A high percentage of answers were collected. Some of the questions, useful for the identification of the main peculiarities of the answering libraries, were able to provide answers about national data on Italian public libraries.

The paper presents the aims and objectives of the survey, the methodology adopted and its unexpected success. The ISTAT stated that the responding libraries constituted a valid sample of Italian public libraries and the results of the survey could be considered to be the first Italian national library statistics. Results, limits, impact and some prospective actions for the future are also presented.

**Wolfgang and Wang (2006):** The authors, in this paper, have reported on the methodological approach adopted in a project which was to create a Facilities Master Plan for the Public Library of Cincinnati and Hamilton County in the United States. The project is a combination of geographic information system (GIS) and building performance evaluation (BPE) methods. This project assigned comprehensive scores for each of the libraries and grouped them into groups of high, medium and low performing libraries. The rankings are based on composite scores made up of eight weighted performance indicators: staff survey, facility evaluation, service area, usage, building, site, staffing output, and capacity. Project data are benchmarked and compared with those of library systems around the USA in similarly sized cities.

**Town (2005)** has covered the history of library performance measurement. These arise from the wave of quality management theory and practices which swept across western industry and public services in the early 80’s. The relatively recent moves in academic library performance measurement, from focus on input and activity counts, through customer satisfaction measures, and now towards developing educational impact and outcome measures, fulfils these predictions.

**Melita and others (2004)** analyse the results of the questionnaire which could turn out to be useful for further work on the project of identification of performance indicators appropriate for European national libraries.

The authors are interested in knowing whether national libraries perform strategic planning and whether they have a written strategic plan. The paper also indicates the important core functions and performance indicators for national libraries.

**Baba and Shukor (2003)** discuss the need for national libraries to evaluate their performance and measure their effectiveness. Although performance indicators for academic and public libraries are well developed and used, little has been done for national libraries. On the recommendation of the IFLA Standing Committee for National Libraries, a survey on the use of performance indicators is being undertaken for national libraries in Asia/Oceania. The findings of the survey will provide a useful contribution towards the development of performance indicators for the national library and add to the corpus of published literature on national libraries in the Asia/Oceania region.
It is a preliminary proposal of performance indicators for national libraries in the Asia/Oceania region.

Laeven and Smit (2003) talk about a small group of Dutch university libraries started working together to develop a set of instruments for performance measurement through benchmarking in 1998-1999. This article gives a short description of the project, the results, and the local implementation of the outcomes of the project at Nijmegen University Library.

The paper deals with performance indicators in a Dutch benchmarking instrument, which includes expenditure, collection, processes and usage.

Mathews (2003) has discussed performance measures for libraries that will indicate the quality of the library and its services. Highlights include a general evaluation model that includes input, process, output, and outcome measures; a balanced scorecard approach that includes financial perspectives; focusing on strategy; strategies for change; user criteria for assessing value; and library-specific strategies. (LRW)

Vara Lakshmi, R.S.R (2003) emphasizes that College libraries have a pivotal role in the transmission of information for higher education. Their evaluation is inevitable if their performance is to be enhanced. A variety of measures are available to evaluate college library functioning. However, standards are more elective to have a valid evaluation.

The paper concludes that there are no authentic standards revised and approved by a body like the UGC to evaluate college libraries in India. It suggests a model set of standards for college libraries in India, keeping in view the technology-based information environment.

Scott (2002) emphasized in this paper that reflection and evaluation are the key to improving the effectiveness of the School Library Resource Centre. He believes that much of the information required is already there, either explicit or implicit, or can be easily extrapolated, and it only needs to be collated, critically evaluated and turned into knowledge about the strengths and the development needs of the LRC. This paper addresses the following issues:

Why performance measurement is for the benefit of the school pupils and staff, of the LRC and of the librarian;

- Identifies some suitable measures to use;
- Considers how the process might be managed within the context of the LRC;
- Looks at how the results can be made to work to the advantage of the LRC;
- It considers both ‘hard’ or quantitative indicators and qualitative measures and begins to look at the crucial question of the impact of the LRC on learning.

Shearer (2002) emphasizes that statistical data about library activities has always provided important information to library managers. Performance and output measures contribute to increasing service quality, making purchasing decisions, as well as benchmarking tools to identify best practices. At the 2001 NISO Forum on Performance Measures and Statistics, attendees identified three management functions that are supported by library statistics and measures.
It provides an idea about different standards available and projects like libecon, e-metrics and equinox, libqual+ and the development of new tools to facilitate analysis of statistical data.

**Nuut (2002)**, in his paper, focused on the following issues:

- Effectiveness of a library’s development activities, based on a collaboration between Estonian libraries and other libraries with international cooperation
- Library performance measurement and librarianship standardization
- Possibilities for applying performance measurement and benchmarking methods in Estonian libraries
- Library performance measurement and benchmarking
- Library statistical measures as a tool for library acquisition development.

The paper shows the possibility of applying performance measurement and benchmarking methods in Estonian libraries.

**Sumssion (2002)** showed changes and additions to ISO 2789, the international standard Information and Documentation – International Library Statistics. These are outlined, along with commentary and explanation of their purpose. Many of these changes relate to new components of libraries’ electronic collections and their networked services. Some of the statistics cited are of the present position of electronic serials. Other related work, recently published, is described briefly.

It describes the process by which ISO 2789 has been revised and describes the most important changes and additions that have been made to this standard.

**Crawford and Riley (2000)** in their paper consider the assessment and enhancement of student feedback within a University Library context. The paper examines the assessment of the overall experience of the student of the university as a whole, and the role that the library plays in this experience. Lessons can be learned from the article about the role of the information service in supporting the mission of the parent organisation.

The paper also describes the existing mechanisms for evaluating the student experience at Glasgow Caledonian University to establish the views of students, staff and significant others (stakeholders) on the effectiveness of the university mechanisms. It also evaluates the mechanisms at Glasgow Caledonian University and proposes new mechanisms where necessary.

**Town (2000)** in his paper reviews whether current UK systems of performance measurement and associated data collection activities are appropriate or not. He suggests some hypotheses from which an improved framework might be developed.

The publication of the effective academic library (hereafter EAL) (jfc, 1995) demonstrated a willingness to contemplate a broader framework. However the prior existence of statistical collection seems to have influenced the final product away from the logic of any new hypothesis towards again counting what we can count or have always counted. The results of this were the area of ‘effectiveness’ being replaced by ‘delivery’, ‘customer satisfaction’ being deemed unworthy of national collection, and ‘integration’ being relegated to a set of qualitative statements.

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Kyrillidou (2001) has discussed the concepts of accountability and quality assessment in higher education in this paper. Topics include performance indicators in academic libraries, including international standards, factors affecting the reliability and validity of data, including consistency, ease versus utility, and values, and recommendations for research libraries.

This study uses non-parametric technique of DEA (Data envelopment analysis) to investigate the efficiency of 168 local government library services. It analyses in detail, the posited linkage between performance indicators and productive performance under different model formulations.

Sumption, John (1997) states that more comprehensive trend data on UK academic libraries' operations and resources are now available. The paper explains the extended scope of annual published statistics - along with a summary of results for 1994/95 and the previous ten years. It also discusses the general statistical approach including the importance of trend analysis over long (ten year) time periods.

This report is mainly in 3 parts. The first part is on the shortcomings in current indicators. The second part provides an outline to improve and initiate particular performance measures and the third part contains some observations on the applicability of these techniques to libraries of different types and sizes.

Spiller (1999) described in the paper some of the particular problems of surveying special libraries, based upon three recent pieces of work involving the Library and Information Statistics Unit. The difficulties of defining and identifying special libraries are described, and there is a discussion about sources of information, and the classification of special library sectors. The reasons for poor returns of postal questionnaires are analysed. There is a section on the advantages and disadvantages of different methodologies, touching on sampling, and ways of eliciting and presenting quantitative data.

Bannister and Rochester (1997) examined the literature of user-oriented performance measures to develop performance measures for New South Wales Technical and Further Education libraries. The accountability and strategic planning nexus for the vocational education and training sector is considered in a framework of four approaches to performance measures - user perspective, qualitative and quantitative measures, validity of comparison between libraries, and improvement of individual library services.

Calvert and Cullen (1996) have reported on the second stage of the New Zealand University Libraries Effectiveness Study, which identified dimensions of effectiveness in New Zealand academic libraries and examined parallels with dimensions of organizational effectiveness in a similar study of public libraries. The staff at each library rated the library’s performance against 99 indicators of effectiveness.

Nitecki (1996) discussed the implications for library management and future explorations of a tool applicable to academic libraries. SERVQUAL is the tool to measure service quality defined as the difference between customer perceptions and expectations of services.

Cotta-Schoenberg (1995) described Copenhagen (Denmark) Business School Library’s (CBSL) use of performance measurement to manage the quality of library services and
facilities. The report covers (1) Librarians and management theories; (2) Performance measurement, evaluation, strategy, corrective action, and the CBSL quality management program; (3) The concept, purpose, and types of performance measurement; (4) A fictional case study measuring performance of an interlibrary loan program; and (5) Problems of performance measurement that affect quality management.

Alston (1995) has described practical set of performance indicators for Bromley libraries. Author has explained:

- What the set was intended to achieve;
- how the indicators were chosen and
- What the selection criteria.

Conclusions indicate that the main values of the indicators are as a practical management tool, as a means of pre-empting problems, and as a platform for further informed questions.

Boekhorst (1995) described criteria and aims of the guidelines for Performance Measurement. The author describes the project undertaken by the IFLA Section of University Libraries and other General Research Libraries to developing guidelines for performance measurement in academic libraries using the following criteria:

1) To concentrate on academic libraries;
2) To include only measures that would be applicable in all countries, developing as well as developed, and to all kinds of academic libraries;
3) To measure effectiveness, not efficiency;
4) To include overall indicators as well as indicators for separate activities; and
5) To concentrate on user-oriented indicators.

The choices of performance indicators were determined by the principle of user-orientation, and include the following: availability, document delivery, collection use, acquisition speed, book processing speed, interlibrary loan speed, and user satisfaction. The goals of the guidelines are to make it possible to obtain comparable results by applying the same indicators in the same way; to help obtain reliable results with a reasonable expenditure of work; and to promote acceptance of performance measurement as an important tool for effective management.

Carbone (1995) gives a very brief idea about a committee draft standard on library performance indicators. The draft standard is not a substitute for existing manuals. Its purpose is to improve existing tools by providing the terminology, methodology, and a descriptive framework that is unique.

It shows that six criteria are proposed for constructing and testing a performance indicator. The paper also provides a list of indicators described in the draft standard.

Sumson and Ward (1995) present a paper which is based on research commissioned by the European Commission and undertaken in 1994 by De Montfort University in partnership with Essex County Libraries and the Library and Information Statistics unit at Loughborough University. The publication of the full report of that work by the E.C. was scheduled for Spring/Summer 1995.
Their purpose is to monitor performance and the results of innovation, to identify problems and opportunities and to evaluate of alternative options and planning.

Cullen and Calvert (1993) reported the study of New Zealand public library effectiveness. This study duplicates the research by Childers and Van House which examined the multiple constituencies’ model of organizational effectiveness. Librarians, users, and councilors rated performance indicators identified from the literature, and similarities and differences between the two studies are reported.

Jurow (1993) explained the need for meaningful performance measures in libraries and the Total Quality Management (TQM) approach to data collection. Five tools representing different stages of a TQM inquiry are covered (i.e., the Shewhart Cycle, flowcharts, cause-and-effect diagrams, Pareto charts, and control charts), and benchmarking is addressed. (Contains seven references.)

Morgan (1993) According to the author there is no much work done on performance assessment for higher education libraries in the 1990s, therefore, to ascertain the commitment of institutions and their libraries to performance assessment, the nature and extent of assessment of three library reader services – document delivery, enquiry services and education – and the dissemination of results and ability to gauge satisfaction levels of library managers with current assessment procedures. In his postal survey in the year 1992, results indicated that 15 per cent of libraries carried out no assessment of their reader services and last only one-third of library managers felt satisfied with their performance assessment procedures.

Sheppard (1990) discussed three aspects of performance indicators: reasons for concern about performance indicators, definition of performance indicators, and examples of performance indicators. The increasing interest which performance indicators are being given in the Australian library profession is noted. Questions regarding users, the funding authority, and the constituency served by a library are also examined.

Van-House and Childers (1990) describes the Public Library Effectiveness Study (PLES), which was designed to apply models and methods of organizational effectiveness research to public libraries. Indicators of public library effectiveness are described, factor analysis results are presented, implications for evaluating library performance are discussed, and further research is suggested.

Wink worth (1990) has reviewed the development of performance indicators specifically within and for polytechnic libraries. A framework of library activities is derived on which performance measurement might be based and six indicators are identified. The practical applicability of the framework is considered in relation to polytechnic libraries and to both institutional and library aims and objectives.

Clemmer tells that measurement can provide vital feedback that shows whether the approaches being used are enabling the organization to move towards its goals. It can assess whether staff training, teamwork, empowerment, process improvement, re-engineering or other trendy ideas are actually producing real results.
Orr (1973) wrote what has been deemed a major paper on the topic of measuring the goodness of library services. In a very complex and theoretical way he explained how the ultimate criteria for evaluating a library service are quality (i.e. how good is the service?) and value (i.e. how much good does it do?).

Piternick (1963) maintained that the absolute size of a university library's holdings and the absolute size of its yearly gross increments and not its current growth rate are the best measures of its quality.

Gelfand (1958) emphasizes the importance of self-evaluation. He recommends that the institution should prepare self-evaluation instrument for the evaluation by analyzing the effectiveness of the library programmes. Evaluation by a team of outsiders would be more meaningful if the team is supplied with the self-assessment instrument.

2.1.2 Cost Analysis

Sumison, Hawking and Morris (2003) outlined the theory underlying the economic value of library benefits and research (mainly in Australia and New Zealand). A UK research project examined four methods of assessing benefits in economic terms with particular attention to a consensus “market value” model. In developing the “market value” model one key variable is the relationship of book reads to book prices. A prototype value-added schedule gives estimates of value for different library services to compare estimated total benefits with total costs. For UK public libraries, calculations show that the economic value of library benefits exceeds costs incurred, with social and intangible benefits in addition. New performance indicators are suggested by the research. It is shown how the methodology can be extended from public libraries to a parliamentary library and also to the economic and social costs of crime.

Many approaches to assess benefit were identified and four, in particular, were studied. First, one can focus on the typical content of “merit”, “educational value”, “cultural value”, etc., second is to admit defeat in the quest for economists’ formulae and equations and to fall back on what we called the descriptive model. A third approach was to consider the place of libraries in the historical evolution of the whole communication process and the fourth approach, on which this paper concentrates, is to attempt direct quantitative assessment of benefit.

Ellis-Newman, Jennifer and Robinson, Peter (1998) had discussed Activity-Based Costing (ABC), which is a new costing method rapidly gaining favor over traditional costing systems. Of this article discusses the benefits of ABC to library managers and describes the steps involved in implementing ABC in an academic library.

Hawbaker and Wagner (1996) have discussed the case of cost-effectiveness of subscribing to a full-text periodical database (IAC’s Business ASAP) was investigated at the University of Pacific libraries during 1995. It was calculated that the library could provide access to more than twice the number of journals – 513 rather than 242 for a 15% cost increase. As a consequence of this study, UOP libraries ordered a one-year trial subscription to Business ASAP but maintained print subscription.
McClure (1986) reports the result of pilot study to identify the issues and concerns of public service middle managers on costing and use of performance resources. The findings suggest that the librarians who were interviewed had little faith in the usefulness of producing cost data and using performance measures. They believe that such data had rarely any impact on decision making. They felt that in-house data lack reliability and validity. The author suggests that it is necessary to restore the confidence of the librarians in the methodologies for improving library effectiveness. He suggests that strategies at two levels Professional level and administrative level. The professional leadership should clarify the objectives of the methodology and acquire support of the leaders in the academic library community. At the organizational level the librarians should examine their management style so that confidence of the middle managers can be restored.

Dunn (1981) states that library services can contribute in the parent organisation’s endeavor to make profits. She argues that the most effective tool is an efficient and speedy reference service and information service. If the management is aware and make use of this, money invested in the library will be money well-spent.

Axford (1973) reports the application of such unit-cost studies in the technical services functions are a large state university and pre and presents three major tables for labour costs in terms of minutes and dollars per volume.

Hawgood and Morley (1969): The study of the cost analysis of the library services conducted by these two economists. Their contribution to the literature of cost-benefit analysis of library is regarded as valuable. Performance measurement through unit-cost study programme can be the beginning step towards the goal of evaluating the value of the system.

Moriarty (1968) reports on the survey of library research undertaken at Purdue University which studied the attitude measurement, growth measurement, cost evaluation (economic of space utilization), usage measurement and prediction and a cost study. The cost study describes the survey made of 20 library services extended to the postgraduate, graduate and faculty members and the relative use of services by these groups. The costs have been allocated to the user groups on the basis of percentage of use.

Poll (UDK 021.9:657) has shown the method of analysis, actual cost data that were assessed in the project, and the possible effects of cost analysis for management decisions.

2.2 VALUE-ADDED APPROACH

2.2.1 Value Measurement

Missingham (2005) outlined the development of research into the value of libraries over the past decade. The studies do provide valuable information as to the high value placed on library services in general by the public. The direct benefit to users is perceived to be many times that of the actual investment in the service.

Weighman and Williamson (2005) have carried out systematic review of research studies looking at the value and impact of library services on health outcomes for patients and time saved by health professionals. Research studies suggest that professionally led library services have an impact on health outcomes for patients and may lead to time savings for
health-care professionals. The available studies vary greatly in quality but the better quality studies also suggest positive impacts. Good practice can be gathered from these studies to guide the development of a pragmatic survey for library services that includes the direct effects for patients among the outcome measures.

**Steve and Self (2004)** emphasizes that the wise use of data, information, and knowledge in planning, decision-making, and management can improve library performance. While libraries have long collected data, however, it is only recently that they have begun to use it effectively in library management. This article provides an overview of data use in libraries, organizational barriers, and support issues, as well as examples of libraries that have successfully integrated data acquisition, analysis, and application into management.

**Self (2003)** has made an effort to develop a culture of assessment, the University of Virginia Library implemented the balanced scorecard in 2001. The adoption of the scorecard has forced the library to focus its assessment and statistical activities, and to identify and develop those measurements that actually make a difference. This article describes the implementation process and stresses the importance of coordinating the scorecard metrics, or measurements, with the organizational values of the library.

**Steve, Hiller (2002)** has conducted a library survey at The University of Washington Libraries These surveys are sent to all faculty members and a random sample of graduate and undergraduate students. Surveys measure user satisfaction with library services and resources and have also included questions on the reasons faculty and students use (or don’t use) libraries, use and application of electronic information, importance of information resources, and their priorities for library services and resources. Survey results comprise a rich lode of information about library use and needs during a period of rapid change in the information environment. One of the more striking findings of this analysis has been the substantial differences shown in library/information needs and use by those in different subject fields. This paper focused on the differences (and also some similarities) between scientists/engineers and other academic areas in their library use and information needs at a large American research university.

**Cram (2000)** has proposed a conceptual framework for value measurement in a corporate library service. The methodology is described, and models, taxonomies, service business research findings, and behavioural and psychological insights useful to inform performance measurement practice in relation to value are discussed.

There are four important components - the library, the spatial context, the Stakeholders and value measurement. The paper attempts to demonstrate that defining value in the context of a library is extremely complex. Value is a construct that is difficult to explicate and therefore difficult to measure. It is a construct primarily of belief and thought, and only secondarily of evidence.

**Saracevic and Kantor (1998)** presented a report which is derived from a large study sponsored by the Council on Library Resources. Two of the objectives of the study were to develop taxonomy of value-in-use of library and information services based on user’s assessments and to propose methods and instruments for similar studies of library and information services in general. The corresponding results are reported in two parts. In this,
the first part, we discuss underlying concepts related to value that must be clarified in order to proceed with any pragmatic study of value, authors have established a theory of use-oriented value of information and information services. Authors have examined the notion of “value” in philosophy and economics and in relation to library and information services as well as the connection between value and relevance. They have developed two models: One related to use of information and the other to use of library and information services. The second part of this report presents the methodology employed in development of the Taxonomy, the Taxonomy itself, and the results of testing the Taxonomy. Authors have explained that they believe that the Taxonomy covers most dimensions of value related to use of library and information services. Second part also presents suggestions for pragmatic applications of the Taxonomy.

Mosley (1997) emphasized toward active learning techniques and technology tools, many libraries seem to be discontinuing the traditional, guided walking tours. A survey of university students taking non-course related library tours focused on defining the student’s expectations and on assessing the student’s comfort level in the library environment as a result of the tour. The survey sought to identify whether the student had perceived the tour to be time wasted or time well spent. Results showed that most of the respondents felt that the tour was highly informative and significantly increased their overall comfort in the library environment.

Urguhart and Hepworth (1995) examined the effectiveness of NHS information and library services. Clinicians at 11 hospital sites were asked to describe the purposes for which they needed information, the steps they took to obtain it, and to assess the value of the information obtained from inter-library loan requests, mediated searches and end-user searches. Details were obtained of the information-seeking behaviour of both information and library service users and “non-users”, to set the value judgments in context. Follow-up interviews provided illustrations of the ways in which developments aimed at more cost-effective patient care were supported by information obtained. Results from the Value project, together with a supplementary audit survey of activities at over 30 different health information and library services, guided production of a quality assurance toolkit. This toolkit is intended to guide information services in local audit and hence to improve the delivery of information to clinicians.

Oldman and Wills (1974) had conducted a longitudinal study of the costs and benefits of selected library services. They present the concept of ‘subjectively desired value’.

2.2.2 Economic Value

British Library (2003/04) Measuring Our Value, The purpose of the study is to assessing the British Library’s contribution to the national economy is a complex matter, requiring consideration of a number of different dimensions. First, the value added by the Library takes many forms - economic, cultural, social and intellectual. Second, the British Library adds value both to those who use our products and services directly, and to the wider UK population who benefit indirectly from the Library’s existence and the services it provides.
McCallum and Quinn (2004) have reviewed recent publications, focused on the economic value of public and special libraries which are treated separately, since context and organisational objectives differ widely for different types of libraries. Those who wish to further explore this topic will find many studies into the social value of libraries which establish their general ‘worth.’ A good place to start is Roswitha Poll’s examination of ways of assessing economic value, social value, and outcomes for literacy, information retrieval, and academic and professional success (Poll 2003). An extensive bibliography of earlier work is given in Fitch and Warner (1997). Promising methods of evaluating the economic benefits of libraries and expressing them in financial terms are at last emerging.

Morris, Hawkins and Sumson (2001) The main objectives of their research were to find a way or ways of assessing the economic impact of the public library service - its value to the user.

Woldring, (2001) discuss attempts to measure the value of information in monetary terms, the difficulty with making these assessments and the alternative of measuring perceived value in non-monetary terms using the Priority and Performance methodology.

2.3 LIBRARY PROCEDURES

2.3.1 Collection Development and Evaluation

Clayton and Gorman (2002) The authors argue that accountability is an important reason for collection evaluation. Seven essential steps in implementing a collection evaluation are discussed: Setting the objectives, reviewing the earlier research, determining methodology and data to be collected, selecting a population sample, conducting a pilot survey, data analysis and facilitating replication. Authors state that “user-centered approaches are increasingly the methods of choice.” They conclude that the evaluation should focus on five elements: Size, utilisation, access, age and condition.

Dillon (2001) begins the chapter by emphasizing that collection analysis should be “planned and done”, systematic and continuous” instead of a “random events”. He lists number of reasons why collection evaluation is more important for school libraries. He suggests that collection mapping should be preceded by curriculum mapping, which is the use of content analysis to describe what is actually being taught.

Gorman and Miller (2001) emphasised that collection development is important because data is needed to support budgeting, to understand client needs, and to assist selection. They have argued that integrated automated system reports, citation data, and transaction log analysis from We-sites and databases are ‘new measures’. The authors conclude that three questions must constantly asked – (1) What to measure (2) How to measure it and (3) How to use the data.

Evans and Zarnosky (2000) started the chapter noting with 1990s as ‘decade of evaluation.’ They have outlined the reasons for collection evaluation. Separate sections are devoted to list checking, expert opinion, and comparative use of statistics, Inter Library Loan statistics, Circulation studies and citation studies. They offer a state-of-the-art review of collection evaluation methodology at the end of 20th century.

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Nisonger (1998) provided overview of the journal ranking concept. Eight dimensions for classifying journal rankings are outlined, including the ranking method. He has explained differences among a journal ranking, core list and a serials decision models. Specific rankings based on citation data and the subjective perceptions of experts are examined in detail. Author concludes that there is no perfect method exists. Chapter sections are devoted to potential use of rankings in collection management and outside libraries.

Nikereuwem (1997) has discuss the case of Nigerian University, where 200 Nigerian University librarians were sent a list of LIS journals (with a response rate of 81.5%) and asked to rate those journal titles they were familiar with on a 0 (poor) and 10 (outstanding) scale. Total 26 journals are rank ordered in a table according to impact, which is calculated by the formula \( \text{Impact} = \text{evaluation} + (\text{evaluation} \times \text{familiarity}) \).

Lancaster (1993) focused on the purposes of evaluation for serials cancellation. He suggests prioritisation periodicals through ranking, noting that low-ranking titles could be deselected with the 'least disturbance to the library users.' He has outlined seven ranking criteria: 1. Usage in the library, 2. Usage from another library, 3. Opinion, 4. Number of citations received, 5. Impact factor, 6. Cost-effectiveness and 7. Articles contributed to a subject. Lancaster finds inconsistencies in the results among different ranking methods. He concludes that cancellation should be based primarily on ranking journals by cost effectiveness.

Dobson; Khushkowski and Gerhard (1996) address the problems of collection evaluation in interdisciplinary fields. The information resources vary during three stages of interdisciplinary field’s development: ‘pioneering’, ‘elaboration and proliferation’ and ‘establishment’. The authors propose a three level model for interdisciplinary materials: Interdisciplinary core resources; closely related and related resources from traditional disciplines. They told that traditional evaluation methods do not work for interdisciplinary fields because the focus may be on a specific subject. They have recommend familiarity with both the interdisciplinary area it self and the local programme, use of internet & CD-ROM to identify resources, and evaluation beyond the local holdings by investigation of existing cooperative collection development agreements and library’s ability to deliver unowned materials.

Lancaster (1993) focuses on three collection-centered evaluation methods: size and growth rate formulas, expert opinion, and the check-list method. A brief final section addresses the use of overlap studies for comparing collections of different libraries. The final paragraph comments that these techniques do not consider the collection’s use.

Magril (1985) attempts to evaluate the collection by the type of library. According her, there is often a dissimilarity in the approach to evaluation in different types of libraries; the approach may even vary among the libraries of same type. These variations are due to the diversity of motivation for understanding collection evaluation and to different benefits from such process. She elaborates the types: Public libraries, School libraries, Large Academic libraries, small and medium sized academic libraries, Special libraries in academic settings and special libraries in non-academic settings (Govt., professional etc.) Collection evaluation techniques receive varying amount of emphasis from one type of library to another. Techniques of evaluation discussed by her are (1) Collection and manipulation of...
statistics of characteristics of the collection; (2) Checking from standard lists; (3) Asking expert; (4) Analysing circulation data; and (5) Surveying users on their failure, success and expectations etc.

Goldhor (1981) describes an inductive method of evaluating collection and use. The method consists of taking a sample of titles in the library's collection and searching them in each of the several reviewing journals, Book selection tools and retrospective bibliographies. Those that are found in all are accepted as desirable and not found are accepted as low quality or undesirable; and those that are found in any one are border line in quality.

Knightly (1975) found extensive overlapping and duplication in the collection of 22 colleges and universities. But the collection overlapping was found useful in view the reader needs.

Bonn (1974) identifies five reasonably distinct methods for evaluating library collections: (1) Compiling statistics on holdings, use and expenditure; (2) Checking lists, catalogue, bibliographies; (3) Obtaining opinion from regular users; (4) Examining the collection directly; (5) Supplying standards and testing the library's document delivery.

Mostyn (1974) observes that standard ways to discover whether library collection represents adequately the interest of their readers are not accurate enough to provide the information needed to remedy inadequacies in the stock. One possible remedy is to view the use of library resources in terms of a supply–demand equality, while using statistical sampling and testing techniques as a means of setting standards and evaluating adequacy.

Cooper (1968) has shown the criteria for weeding of collections and storage were decided on the basis of age and usage.

Chicorel (1966) mentioned that standards for college library book collections are based on the number of students and the number of courses given and the amount and kind of research being performed. In university Libraries the strength of library services is not indicated by number of books.

Coale (1965) has mentioned that Bibliographic checking seems to be most feasible way to evaluate its holdings.

Burdick (1964) has emphasized on the concept of library's collection has changed from quantity to quality.

Carter and Wallace (1959) has shown in his book "Building library collections" three important factors in evaluating a collection are (1) what kinds of books are in the collection and how valuable each is in relation to other books on the subject which are not in the library; (2) Are the books in the collection are appropriate for the community to be served and (3) What are the purposes which this particular collection is supposed to accomplish?

Clapp and Jordan (1965) argue that the size of the book stock can give a measure of the adequacy of an academic library. They have developed formula to identify the principal factors affecting academic library for books and assign suitable weights to each factor. Seven significant variables in determining adequate collection size are (size and characteristics of the student body; (2) Size and research commitment of the faculty; (3) Curriculum; (4)
Methods of instructions; (5) Availability of the study space; (6) Proximity to other libraries; and (7) Intellectual climate.

Hirsch (1959) presents four methods may be used to get a real picture. (1) Impressionistic (Evaluation by knowledgeable persons in terms of the policies and purposes of the library) (2) Check-list method and (3) Use by the readers; and (d) Expenditure incurred on the collection.

2.3.2 Cataloguing

Chapman and Massey (2002) look at the self-assessment audit tool for catalogue quality developed by UKOLN in collaboration with Essex libraries. For the tool, a checklist of errors was drawn up, which could then be used to assess the quality of records within a catalogue using a sample of library stock. The tool can be used to assess the quality of catalogue records for monographs and non-book materials (but not serials), for complete collections or parts of collections and for records created at different periods. This paper describes the tool and the process of making the assessment and reports on the results of the pilot study carried out at the University of Bath library in 2000.

The catalogue audit tool is successful as piloted for evaluating the accuracy of bibliographic records. It should be considered as just part of a toolkit for testing catalogue quality, along with such tools as the collection-to-catalogue test for completeness, focused checks of the validity and appropriateness of assigned name and subject headings, evaluations of serials cataloguing and duplicate detection.

The formulation of performance indicators to measure cataloging quality in the Technical Services Division of the Unisia Library is an ongoing process. By analyzing the definitions of cataloging quality, the different elements that form the basis of broad performance indicators for measuring cataloging quality are established.

2.3.2.1 On-line Cataloguing

Larson and others (2009) explained the Cheshire II project, which was developed next-generation online catalog and full-text information retrieval system using advanced IR techniques. This system is being deployed in a working library environment and its use and acceptance by local library patrons and remote network users are being evaluated. The Cheshire II system was designed to overcome twin problems of topical searching in online catalogs, search failure and information overload. The system incorporates client/server architecture with implementations of current information retrieval standards including Z39.50 and SGML.

The Cheshire II system was being made available for public use in the UC Berkeley Astronomy-Mathematics-Statistics Library (a medium-scale academic branch library, circa 75,000 volumes) using modern workstations, and to the national mathematics research community via network access. Use and acceptance of the system and its features will be evaluated using transaction monitoring and questionnaires.

This paper has also described the system architecture and the user evaluation tools.
Mehtab Alam Ansari, Amita (2008) in their study have established the opinion of users with respect to the awareness and utilisation of, as well as their satisfaction level with, the use of the online public access catalogue (OPAC). The paper deals with the applicability and utility of OPACs in five libraries in New Delhi, namely the Indian Institute of Technology; Jawaharlal Nehru University Library; Dr Zakir Husain Library, Jamia Millia Islamia; National Information System for Communication and Information Resources (NISCAIR); and the Defence Science Information and Documentation Centre (DESIDOC). Research is based on questionnaire method and the result shows that the OPAC system has changed the traditional concept of access to library resources. It allows simple as well as complex searches. Document access is still one of the most important approaches of users to visit the library, and a study of the effectiveness of an OPAC is useful in this respect. Regarding results, sometimes users face problems of recall and precision. However, in some searches users are not able to find relevant documents on account of various factors. Data show that a high percentage of respondents are utilising the OPAC as a search tool for retrieving documents. Also, most of the users handle the OPAC themselves. Significantly, the satisfaction level of users was high with the OPAC facilities. Nevertheless, not many users are aware of the expert searches provided by OPAC.

The paper focuses on many aspects of OPACs, particularly those in India.

Hancock-Beaulieu (1991) describes an investigation of tools, techniques, and methods for the evaluation of interactive library catalogs, with emphasis on diagnostic methods and on use of the catalog in the wider context of user information-seeking behavior. A front-end system (Olive) developed to test various enhancements of traditional transaction lodging as a data-gathering technique for evaluation purposes is also described.

Hancock-Beaulieu (1990) explained how to evaluate the impact of an online catalogue on subject searching behaviour. A holistic approach is adopted encompassing both catalogue use and browsing at the shelves for catalogue users and non-users. Verbal and non-verbal data were elicited from searchers using a combined methodology including talk-aloud technique, observation and a screen logging facility. An extensive qualitative analysis was carried out correlating expressed topics, search formulation strategies and documents retrieved at the shelves. The online catalogue environment does not appear to have increased the extent of subject searching nor the use of the bibliographic tool. The manual precise index supported a contextual approach for broad and more interactive search formulations whereas the OPAC encouraged a matching approach and narrow formulations with fewer but user generated formulations. The success rate of the online catalogue was slightly better than that of the manual tools but fewer items were retrieved at the shelves. Non-users of the bibliographic tools seemed to be just as successful. To improve retrieval effectiveness it is suggested that online catalogues should cater for both matching and contextual approaches to searching. Recent research indicates that a more interactive process could be promoted by providing query expansion through a combination of searching aids for matching, for search formulation assistance and for structured contextual retrieval.

Bluck and McIntosh (1985) has explained about the new OPAC system which was installed from BLCMP in main library at Perry Barr in April 1985 and showed that as the. Library is already uses BLCMP online systems for cataloguing, acquisitions and ordering, as well
as for circulation control, and therefore this library is to be the first library to complete the system by offering online catalogue facilities direct to library users and they are happy with the system.

Maltiby (1971) has emphasized on the value of investigation into the ways in which readers use catalogues and the type of information with which they commence searches. He also made some comments are made on the scope and methodology for such investigation, with reference to a number of surveys that have been carried out or are currently taking place. Attention is drawn to various problems and special circumstances which need to be recognised if final results are to be a reliable signpost for future cataloguing policy.

2.3.3 Classification
The classification standard for the Library Science Group is a point-rating plan consisting of an introduction, definitions of the Scientific and Professional Category and the occupational group, rating scales and bench-mark position descriptions.

It talks about six steps in the application of this classification standard.

Radford (1983) argues that failure of the users of the library to locate the material is one of the major hindrances to effective service. The failure could be locating in locating book in the catalogue, or having located it in the catalogue but the user may not find it on the shelve. Failure of any nature is dangerous for the librarian who wants to make library effective.

2.3.4 Circulation and Library Usage
Amosford (2007) has discussed how to create and disseminate a learning outcome assessment tool for all public library authorities in the South West of England to inform future policy and research decisions of the South West Museums, Libraries and Archives Council. The paper explores the use of in book questionnaires to illicit learning experiences from readers as a cost effective method of data collection. It outlines work carried out by to consider the assessment of learning outcomes from book loans to adults within the South West of England. The paper finds that it is clear that an assessment tool for learning outcomes can be developed for use within public libraries, and that there is scope for further research on the learning processes to inform policy and the end users. Alongside the theoretical approach to surveying learning outcomes, there are practical outcomes to be explored by public libraries in studying this data. The willingness of the public to engage with library services in this way was in itself positive and the comments made have been used to inform service changes and reaffirm what libraries are currently doing well, or not. Originality/value. This type of study can inform managers of the requirements of service delivery and strategic overview of learning within libraries.

Carter and Best (2006) have analysed, in their study, the circulation patterns for electronic books in the fields of Political Science, Public Administration and Law to see if favorable choice reviews can be used to predict usage of electronic books. A comparison of the circulation between print and electronic books was also conducted to determine whether the format of the books (print vs. electronic) had a discernible impact on circulation patterns.
The study provides predictable information on circulation patterns for the books in electronic format. Studies on print collections have shown that there is no correlation between a book receiving a favorable review and the frequency of its circulation.

**Whitmire (2002)** has investigated the relationship between an institution’s academic library performance measures and undergraduates’ library use and educational outcomes. The sample consisted of 7,958 undergraduates attending 36 colleges and universities representing four institutional types. Regression analyses determined the relationship between academic library performance measures and library use and self-reported gains in critical thinking while controlling for undergraduates’ background characteristics and college experiences. Greater utilization of academic library services had a negative relationship with undergraduate library use at two institutional types.

Undergraduates attending research universities with greater academic library resources had higher self-reported gains in critical thinking. Regressions for the four institutional types explained 25% to 32% of the variance for library use and 22% to 27% of the variance for self-reported gains in critical thinking. The results provide a better understanding of how academic library resources and services affect both library usage and educational outcomes. An important implication of this study is the creation of a new model of academic library quality.

**Wynne and Clarke (2000)** introduce the background of the EQLIPSE (Evaluation and Quality in Library Performance: System for Europe) project, and describe the work done in compiling a core set of performance indicators for evaluating libraries. The paper describes the collection of in-house library use data at the University of Central Lancashire Library test site, where EQLIPSE staff gathered data as part of the data collection exercise to test the feasibility of the indicators and to accumulate data in the EQLIPSE system. Results suggest that users consulting items at the shelf would change every ten minutes on average, and that the number of users would fall or rise gradually during the two hours between counts. The paper also discusses future developments to the EQLIPSE methodology.

**Poll (2000)** explained that since the 1970s, the number of journal use studies has been increasing, especially in the Anglo-American countries, and nearly every article states the same: It is price inflation that forces us to check our subscriptions. The same applies today. For a long time, libraries have tried to cling to their journal collection because it was thought wrong to produce gaps in the series that might not be repairable. But in the meantime, yearly cancellations are the rule.

There is no exact method of measuring journal use. But several methods have been tested and are applied widely, of which ‘reshelving’ is probably the most used and – with respect to resources needed – the most effective one. In any case the effort will be useful - use data are the most important criteria for subscriptions, and transparency of data will help to obtain consensus for necessary actions. The same applies to electronic journals.

**Oke (1989)** has discussed the place of circulation among other library functions and it is asserted that the reader’s sole interest is the immediate satisfaction of his/her reading need. The problems of collection development in Nigeria are analysed and it is concluded that
economic difficulties and certain government fiscal measures have combined to make it impossible for Nigerian university libraries to keep their collections up to date. It is argued that as economic conditions seem unlikely to improve, the librarian's major concern should be to preserve existing stocks and ensure their continued availability for use.

**Shridhar (1982)** observes that artificial barrier exist between the users and the library. But they are significant because there is no strong desire for information felt by the users. Motivational factors are responsible for the strong desire for information. Motivation for seeking information can overcome barriers between the users and the library.

**D'Ellis (1980)** has designed a model to study the user behaviour in the public library. In study conducted to test the model he found that frequency and intensity of library use of the library is directly related to special library programmes.

**Kent and others (1979)** observed in their study of use study is the Pittsburgh Study that it is necessary to have a continued tracking of the use of library material within libraries at the university level. Some of the conclusions of the study are:

1. Usage rate of 56-60% of books is more or less acceptable;
2. Better method of access to literature than the card catalogue is used to increase the use of library;
3. Better acquisition policies need to be adopted to increase use;
4. The books added during the year 40% are never used; 14% are used once; 8% are used twice and 9% are used thrice;
5. Library does not have techniques for forecasting the use of books;

**Roberts (1975)** had shown that for a variety of reasons (work, recreation, expectation, etc.) an individual develops a mental image of the demands he could make upon a specific library/information system. This, the first step in the demand sequence, is Individual Potential Demand. For any individual it is composed of specific demands of varying priorities sometimes based upon misinformation and misunderstanding. The Individual Potential Demand of library users and potential users may be summed, at least theoretically, to give Total Potential Demand. Only a fraction of Total Potential Demand is transformed into the concrete action of Expressed Demand (complement = Latent Demand); only a fraction of this demand is transformed into Satisfied Demand (complement = Non-Satisfied Demand) and only a fraction of Satisfied Demand finally results in Individual Use.

**Morse (1972)** in his study presents mathematical models of library operations to enable managers to estimate effectiveness measures. These describe the amount of use made of resources by a user in a visit; the distribution of book circulation on time; and the effect of multiple copies on user satisfaction.

**Roger and Wber (1971)** states that the use if statistics is a primitive method. Circulation and reference figures are ridiculous as absolute measures of use and are faulty even as comparisons from one year to the next. They would however be useful to convey the growth of the library, future plans, its problems and service to the community.
Davis (1971) categories two ways of measuring the library use. (1) Compilation of circulation statistics and (2) Analysis of reference questions. Davis explains five methods of measuring use. They are (1) Questionnaire; (2) Interview; (3) Observation; (4) Diaries; and (5) Critical incidental studies.

2.3.5 Planning and Budgeting

Ackermann (2008) examines the techniques to take advantage of library surveys to supply practical results. Effect size meta-analysis is a statistical method used to combine such disparate results. This method and other statistical tools were used to extract significant findings from the survey results, looking at such library constructs as physical access, analysis (the ability to determine information quality and relevance), collection quality and quantity, retrieval, hours and staff. The paper describes the meta-analysis of three separate surveys which contained library-related data responses, and conclusions subsequently drawn from that analysis.

Hiller and Self (2004) emphasized on the wise use of data, information, and knowledge in planning, decision making, and management can improve library performance. While libraries have long collected data, however, it is only recently that they have begun to use it effectively in library management. This article provides an overview of data use in libraries, organizational barriers, and support issues, as well as examples of libraries that have successfully integrated data acquisition, analysis, and application into management.

Saunders (2008) describes the development of reliable assessment data to support strategic planning among Purdue University Libraries. LibQUAL survey was designed to enable the data gathered to be drilled down into by subgroup. Radar charts demonstrated both consistent themes as well as differences in use patterns between the different colleges, and between undergraduates, graduates and faculty. Detailed analysis of the resultant data was then used to support the strategic planning process. The survey had a major impact on the process. This paper shows the practical applicability of LibQUAL data to support strategic planning.

Midwinter and McVicar (1999) discussed the political background in the United Kingdom leading to the development of performance indicators for public libraries. Corporate planning and value for money models are examined. Also it is reported survey of Scottish public library authorities and their use of performance indicators in relation to planning, budgeting and evaluation, and the development of public library objectives in Scotland. The major problems in applying performance measures to public libraries are considered.

Magson (1973) has used modern management techniques to generate numerical data to qualify the value and profitability of information services. In this approach, programme budgeting derived from management by objectives exercises is used as a basis for preparing cost-activity and cost-function analyses, whilst alternative costs for maintenance of the programme are derived by applying some basic critical examination, activity sampling and work study principles. By difference, cost-related benefits are obtained for specific activities and functions. The procedure does not indicate the true value of units of information per se,
but ranking of the benefits immediately highlights economic and uneconomic operations. Model analyses are described in detail, supported by a number of factual results. The dynamic nature of the system and its use as a management device are illustrated by a practical application in a real-life change situation.

2.4 LIBRARY SERVICES

2.4.1 General overviews

Bawden, Petuchovaite and Vilar (2005) have compared the methods for evaluating the performance of library services in three European countries — Lithuania, Slovenia and the United Kingdom, with an emphasis on developing trends and novel methods. Design/methodology/approach — The published and unpublished literature is analysed and evaluated, to bring out themes and comparisons.

Common themes are identified, and suggestions made, as to how the competencies of the library profession can be improved, and practitioners supported.

McCord and Nofsinger (2002) compare the results of the surveys, and provide an analysis of how each survey differs in representing user needs and priorities. The rationale for the libraries’ decision to continue participation in LibQUAL+TM is also discussed.

Since 1996, when a first comprehensive use survey was conducted, librarians at the Washington State University (WSU) Libraries have worked to build a culture of continuous assessment. Using information obtained from surveys and other sources, library administrators focus limited resources on priorities identified by users. In 2000, an Assessment Working Group was formed to initiate and coordinate assessment projects throughout the WSU Libraries. The group conducted a local survey of library users to help determine specific areas of strength and weakness in the fall of 2000. In 2001, the libraries participated in the second pilot of LibQUAL+TM.

Strengths and weaknesses and priorities for future improvement were identified by the library.

Creaser (2001) examines how the statistics available can be made useful to a very large English public library service. It describes a methodology that will identify benchmarks and which could be used to extend examples of best practice available to the authority itself. Extensions of this methodology could be applied to other public library services.

The aim of the research was to identify individual service points within a single public library authority that were performing well or poorly in relation to their levels of resources.

Thompson (2000) and others experimented with various measurement models and suggested that they may be employed to obtain attitude or perception data. Some protocols employ a ‘gap measurement model’ to frame perceptions. One important benefit of using a gap measurement model is that tools such as LibQUAL inherently incorporate a natural lie or random-response scale. The present study investigates the performance of scores on the scale for the 4407 LibQUAL Phase One participants.

Cram (1996) emphasized that in a climate of information-centred change libraries, are at a risk of being marginalised. In order to survive and thrive, libraries and librarians must develop a competitive edge relative to competing services, and demonstrate a level of competence that stresses adaptability. Managing personal and library performance for customer value involves taking a holistic view and a systems approach. The implementation of an integrated hierarchical performance measurement model is proposed and the benefits of moving reporting practices from an efficiency/usage focus to a value focus are discussed.

To achieve positive results, library managers must have detailed and comprehensive performance information, and must involve the staff and other stakeholders. Empowering the stakeholders means that the library manager is less central to every decision and therefore in that narrow sense the manager is less 'in control', but at the same time, more in control of what counts - the results - and the results will close the gaps in the services model and ensure continuing stakeholder satisfaction.

Hernon and Calvert (1996) Outlines the development and subsequent testing of a questionnaire (based on Hernon and Altman's conceptual framework Service Quality in Academic Libraries) designed to measure service quality at seven academic libraries in New Zealand. Includes the survey instrument and the recommendation that the instrument should be tailored to fit specific library environments—'service quality is a local issue'.

Redfern (1990) reviewed the nature, use and limitations of performance indicators and their application to library and information services.

2.4.2 Library Access

Bjarno (1994) reports on a technique developed for measuring the cost and performance of activities related to interlibrary loan service. These include:

- Details of the demonstration of the ILL computer model
- Characterization of inherent performance measurement relevant to the project
- Accounts for the operational performance indicators

The aim is to determine the cost and speed of delivery when sending requests without shelfmarks, divided into types of materials, periodicals and conferences. The purpose of this project was to develop a technique for measuring the cost and performance of activities related to the interlibrary loan service, in order to assist managers when they are deciding which of several alternative methods or sources to use.

Van Borm, Corthouts and Philips (2000) deal with performance measures and performance indicators in the Impala (Instant Mailing Procedure for Automated Lending Activities) electronic document ordering system for research libraries in Belgium. The performance measurement system of Impala aims to create a claim of continuous improvement by informing suppliers and requesters about the quantity, quality and costs of Inter Library Loan.
Jackson (1999) has emphasized the quality of interlibrary loan and document delivery services and the fact that they are crucial for maintaining access to information. For many years, ILL has been a secondary service that received scant attention from administrators and users. However, as library resources, and therefore library collections, have been decreasing over the years, libraries are increasingly meeting user needs through ILL.

Willemse (1998) in his study found that less than one third of surveyed libraries in 1996 and 1991 had policies in place relating to performance measures or indicators, and less than a quarter were using indicators to evaluate services on a regular basis in relation user/document delivery services. Less than 40% evaluated enquiry services, and less than fifty evaluated user education. Of those with results, less than half disseminated these outside the library. The IFLA study was based on a 1993 survey by Morgan of British higher education libraries.

Blagden (1996) This is very interesting case. Biotechnology Centre of Cranfield University, U.K. has cancelled all its journal subscriptions and substituted the UnCover table of contents service. After one year, ILL request increased 166% and costs to the library increased 30% even the savings from the serial cancellations were taken into account.


Kurosman and Durnaik (1994) have evaluated traditional ILL and four commercial document delivery suppliers. The study was based on 52 randomly selected requests between particular time periods. The authors found that the potential fill rate (defined as proportion of requests theoretically available) was 100% for ILL and from 23 to 100 percent for the four document suppliers, while the actual rate (the proportion of theoretically available articles actually provided) stood at 83% for ILL and 83 to 100 percent for four vendors. The average delivery time was 13 days for ILL. Authors conclude “conventional ILL compares favourably with the services of commercial suppliers.”

Jackson has summarised the key findings of the ARL Study, particularly best practices in ILL/DD and the characteristics of high-performing organisations. Issues such as performance standards, charging and use of technology were discussed, as well as the work of the ILL Protocol Implementers Group.

Revill (1987) has advocated ‘availability’ as performance indicators for libraries within higher education and for purposes of interlibrary comparison. Previous work on such measures is discussed. The method adopted by Liverpool Polytechnic Library Service in studying the availability of stock is described.

Iowa State University (ISU) Library has been involved in all three national surveys of interlibrary loan (ILL) service since the early 1990’s. These surveys were conducted by The Association of Research Libraries (ARL). The first study was based upon fiscal year (FY)
The study methodology, sampling approach and statistical measures have evolved over the years, but there are some basic measures of service at Iowa State that can be traced across all three studies. Comparisons can be also be made between Iowa State and the other surveyed libraries. Table 1 highlights the results of these three studies.

The ISU Library offers three basic services - ILL borrowing, ILL lending, and document delivery - and all three services have been evaluated by ARL. Interlibrary Loan Borrowing and Lending services have been evaluated in all three of the ARL studies, but the document delivery service has only been evaluated in the 2002 study.

The three ARL studies clearly showed that more attention needed to be paid to the lending service.

Ruthven and Magnay (2001) presented the results of the major study of interlibrary loan and document delivery (ILL/DD) operations in Australia. The study has identified what makes these operations effective in delivering services to users in Australia and how to make these operations efficient. It is the largest ever study of interlibrary loan and document delivery operations in Australia. It provides data on which services need to be rapidly improved. The paper is divided into four parts. First is a description of the benchmarking study. Second, there is a brief examination of the Australian library scene. Next, the results for requesting operations are discussed, and finally an outline is given of how the results will be used to improve services in Australia.

The paper reports on the following findings and implications for Australian libraries:

- What distinguishes high performing document delivery operations in 2000;
- What the costs are; whether there are differences between sectors;
- How the study will be applied to improve Australia’s national resource sharing system.

This article is based on a paper delivered at the 7th International Interlending and Document Supply Conference: Providing Access through Co-operation, Ljubljana, 1-5 October 2001.

Stein (2001) surveys literature in the years 1987 through 1997 from published research in all English-speaking countries. There is general agreement that fill rate, turnaround time, cost and user satisfaction are the four primary criteria for evaluating ILL and document supply. Although there has been increased emphasis on quantifying the performance of ILL and document supply in recent years, this research has been hindered by the lack of standardisation of measurement devices and definitions of terms. Following a discussion of theoretical considerations, recent studies in each of the four main criteria will be examined in separate sections. A supplement to this article, covering the years 1998 through 2000, is in preparation and will be published in the near future.

This review includes reports of research related to the widely accepted ILL performance criteria of fill rate, turnaround time, and cost and user satisfaction. It also analyses failed requests, request transmission and delivery methods for supplied items.
Jackson (1999) shows the findings emerging from the Interlibrary Loan and Document Delivery performance measurement study of ILL Departments in North American Research and college libraries.

As the performance measures of ILL/DD operations in research and college libraries are sufficiently different and participants are interested in comparing their own performance with peer institutions, findings of each group were reported separately. The objective of this study was to isolate and understand the characteristics of best practices of ILL/DD lending and borrowing operations.

Jackson (1997) has summarised the key findings of the ARL Study, particularly best practices in ILL/DD and the characteristics of high-performing organisations. Issues such as performance standards, charging and use of technology were discussed, as well as the work of the ILL Protocol Implementers Group.

Orr, Pings, Olson, and Pizer (1968) conducted a major study on objective testing and measurement of library services. His methodological tools have been applied to the evaluation of the document delivery capabilities of libraries, inter-library-loan service and basic reference service.

Association of Research Libraries. Access and Technology Program/ILL/DD Related Resources Measuring the Performance of Interlibrary Loan and Document Delivery Services
http://www.arl.org/access/illdd/illss.shtml

This valuable site includes the March 1998 Executive Summary of the study results, an article which also appeared in the ARL Bimonthly Newsletter of Research Library Issues and Actions, and information from two subsequent symposiums and workshops on strategies to redesign ILL/DD services using the identified characteristics of low cost high performing ILL operations. Four performance measures were covered:

• Direct Cost;
• Fill-Rate;
• Turn Around Time
• User Satisfaction

Site visits to the ‘best practice’ organisations to interview staff about their workflows will form part of the final report.

2.4.3 Information Services and Information Retrieval

Klug (2000) has established a few indicators on the basis of annual comparison. In October 1999, a new project of performance measurement in German public libraries was launched under the title ‘BIX - The Library Index’, with the co-operation of the Bertelsmann Foundation and the German Libraries’ Association (DBV).

The objective of this annual comparison is to describe the performance of libraries in a meaningful way, and to contribute to improving communication between the library, the administration and politicians by making its performance transparent.
D’Avigdor (1997) has discussed practical aspects of measuring service performance in academic libraries. The paper outlines the local indicators developed and used in a library at the University of New South Wales. It lists quantitative and qualitative measures of information service used and proposes a meta-indicator that relates the resources needed to develop and maintain these indicators, to the overall library effort in producing the services measured.

Hoffman (1997) has described international standards and recent Australian work on performance indicators in the technical services area. Current projects in Victorian academic libraries highlight some of the problems involved.

Garrod and Kinnel (1996) have evaluated research, which assessed the relevance and potential of benchmarking to the Library and Information Services (LIS) sector in the UK. The methodologies used are detailed, and the results of the research are used to explore what benchmarking is and the extent of its use in the commercial and public sectors. Current levels of benchmarking activity in LIS are explored, together with alternative methods of measuring and evaluating performance. Benchmarking techniques were tested in a variety of LIS, and both the process and the model used for this exercise are described. The importance of training for all staff is highlighted.

It includes the context of evaluation, forms and levels of evaluation and evaluation methods. It discusses the case study of such hospital library and information services.

Kempson, Elaine (1990) reported about the IFLA section of public libraries to convene a small Working Group which met at the 1987 IFLA Conference in Brighton. The group recommended that a project should be set up which would promote and assist the development of such community information services. The first stage of the project was a literature review to establish the state of the art and provide guidelines on the development of rural community information services. This paper summarizes the guidelines in three main areas: 1) analyzing unity needs; 2) establishing appropriate services; and 3) monitoring and evaluating performance.

Berkowitz (1993) has discussed how school library media specialists can fulfill the mission stated in “Information Power: Guidelines for School Library Media Programs” and focused on responsiveness to the concerns of school administrators. Topics addressed include:

- Impact on student learning;
- Learner outcomes and performance objectives;
- Measures of effectiveness;
- Implementation strategies; and
- Performance indicators.

Cram (1993) outlines findings of research on reference performance, explores the factors that affect performance of the individual and the organization, and challenges reference libraries to take responsibility for managing their own performance in a holistic manner.

The paper includes performance management adoption, the motivation for performance management, need and dimensions of performance measures.
Ailerd (1979) provides a basic text on measurement of library services, taking overall review of the problems of measurement.

Lancaster (1979) maintains that widespread interest in evaluation of information retrieval systems, particularly mechanized systems, appears to have simulated a concern for the evaluation of library service in general.

Chen (1978) presents the papers read at a workshop held at Simons College which describes basic statistical methods and some of the concepts of systems approaches used in evaluating library services; Papers using quantification of the following areas are described: Reference service. Space utilization, journal use, document exposure (Circulation and Library use), book detection system and use of books in certain subject areas.

Musselam and Talavage (1978) point out that evaluation should be based on three attributes of service itself: (1) Quality from the user's point of view; (2) Value to organisation; and (3) Effectiveness from performance stand-point. These attributes are further divided into such factors as accessibility, applicability, technical quality, timeliness, recall-ratio and precision ratio. The authors conclude that application of this evaluation methodology will help librarians to find out whether library is responding needs of the users.

Swanson (1975) identifies and describes seven major evaluation methodologies – System analysis, Operations research, Cost-benefit analysis, Planning-programming-budgeting Value analysis, Management audit and evaluation. These techniques six professional features

(1) A conceptual phase in which the desired objectives and targets are defined and criticized;
(2) A Criteria formulation phase in which the performance measures that constitute decision of judgment, factors are identified and made specific;
(3) An alternative description phase in which two or more means of achieving the objectives are established;
(4) A data collection phase in which all the information needed for decision-making is acquired;
(5) A data-analysis phase in which the required data is assembled, aggregated and compared to the criteria measures; and
(6) Decision-making phase in which one or more alternative are chosen or a judgment is reached on actual or anticipated performance.

Davis and Rush (1974) suggest evaluation of retrieval systems by establishing separate criteria for selection, storage, document presentation, search-request formulation and processing, formulation and issuance of search and cost-benefit performance.

King and Palmour (1972) assert that generally the ultimate value of any information communication system of in terms of user that is made of the information and the subsequent impact on user's scientific and technical activities. The way information affects the conduct of these activities is probably the most important function of the system.
Lancaster (1972) contributed an article on evaluation of information retrieval systems, in Vol. 8 of Encyclopedia of Library and Information Science. He argues that evaluation of information retrieval systems should answer the three questions: (1) How well is the system functioning? (2) Can it be improved? and (3) How may it best be improved? According to him evaluation has to be done in three levels. System effectiveness is the first, next is cost-effectiveness and the third level is cost-benefit evaluation to determine the worth of the system.

Layzill (1972) presents a brief account of some more promising methods of investigation useful for evaluating the library services. The methods described by her are: Comparative statistics, collection of data by sample method, interview method, case study method, checklist systems analysis and bibliographic methods.

King and Brayant (1971) draw an important distinction between macro-evaluation and micro-evaluation. Macro evaluations answer the question “How well is the system performing?” The result of such evaluation may be purely quantitative. Micro-level evaluation, on other hand, is concerned with reasons behind the results and with the identification of ways in which performance of the system might be improved.

Rose (1971) stresses the need for revised manner in which the data is currently collected, and describes five major frameworks within which quantitative data may be collected and analysed: (1) Experiments; (2) Models; (3) Case studies; (4) Comparative Statistics; and (5) Surveys.

Morse (1968) study has the credit of being first systematic and well conducted study of the library effectiveness. It aims to help both librarians and systems analysis or operations research experts in the setting up of information storage and retrieval systems. The first half of the book deals with theoretical models, the second half deals with its application to a specific library. The emphasis is on the pattern of book use, change in it with the time and problem of evaluating degree to which library satisfy the seeker of information. He has also discussed the estimation of circulation demand, book retirement and book duplication policies.

Carnovsky (1959) has examined in his study the American Library Association standards of 1956 which emphasized the educational and informational functions of the library and importance of appropriate reading matter, He does not find circulation count as an important measure.

2.4.4 Net-worked Services and Internet

Pickard (2006) has studied the impact of using Electronic Information Service (EIS) on a small homogeneous group of undergraduate students during their entire undergraduate education, a period spanning three years. This research uses a constructivist approach, focusing on 19 in-depth, holistic case studies to produce “rich pictures”. Data collection is achieved using interviews, focus groups, student diaries, bibliography analysis and observation. The fieldwork lasted three years in order to investigate changing behaviour over time, and measure impact.
Research has indicated that learning and cognitive development are intricately linked to opportunities to process and interact with relevant information and the medium used to deliver this information may well have an impact on these opportunities. This paper focuses on the cross-case analysis of the change in perceptions and use of EIS over a period of three years and the nature of the intervention that impacted upon this perception and use.

Young (2006), has, in this paper, made recommendations for incorporating diversity collections and diversity information on the Web. The Committee on Institutional Cooperation (CIC) examined the library web sites to determine how diversity related to collections was represented. As diversity in collection development is frequently highlighted by broader diversity initiatives, other diversity pages on these sites were explored as well. In the majority of cases, neither diversity collection development nor diversity was represented under a particular heading or site.

Diversity is an important issue for universities in the new millennium. While frequently varied in its definitions, diversity can broadly be defined to include race, gender, national origin, ethnicity, religion, social class, age, sexual orientation, and physical and learning abilities. Diversity elements could be found on all the library sites examined, only two have a link labeled "diversity" on the top level.

Bertot (2004) emphasizes that in meeting the challenges, particularly when engaging in evaluation activities, libraries have to consider a variety of issues and strategies. The Internet is an integral part of library service that can take many forms - an extension of library collections and resources through licensed and/or digitized content, a gateway service through public access workstations, or as a means through which customers can interact with the library through such services as digital reference. Information professionals, and those relying on information professionals, face a number of challenges in the networked information resources and services environment. Meeting these challenges requires a variety of issues and strategies for libraries to consider, particularly when engaging in evaluation activities.

The paper also focuses on selected issues that libraries face regarding the assessment of electronic services and resources. Libraries have to learn about library involvement with, and use of, network-based resources, and need to engage multiple assessment techniques, as no one technique provides a comprehensive view of library services.

Bertot and McCure (2003) have identified a number of research topics related broadly to outcomes assessment in a networked environment and discuss issues affecting these research topics. The paper also proposes a framework to relate traditional evaluation components and terminology to the networked environment and identifies a number of factors in the networked environment that affect outcomes and other assessment methods. The paper suggests that outcomes assessment has the potential to complement other assessment techniques to better assist libraries and related information organizations enhance their decisions in the provision of information services and resources. Given the increased rate at which libraries are using the networked environment to provide services and resources, however, much work remains to be done, before most libraries can implement outcomes assessment efforts successfully.
The purpose of this research is to identify selected research questions regarding outcomes assessment; review a number of issues affecting outcomes assessment in general and outcomes assessment in a networked environment in particular; and to propose a framework to relate and better understand traditional evaluation components and terminology.

Cram (2003) has discussed the extent to which library technicians have control over the quality of service delivery and demonstrates that tools useful for systemic analysis of service design and delivery can be usefully and extremely effectively applied at the individual level. The paper concludes that library technicians can make a significant contribution to the quality of a library's service delivery, both face-to-face and online, if their personal approach to their work is sophisticated and multi-dimensional, and their personal performance measurement regime is focused on value and impact.

It is also necessary to understand the role of personal knowledge in our perception of library service quality and alignment with user needs, to put the content back into library practice and to understand that the precise nature of the environmental and technical variables applying in a particular library impacts on service quality. We cannot achieve those goals without tools and a framework within which to systematically identify and address quality issues.

Williams and Waliters (2003) discuss popular information services such as online reference desk and online or virtual transaction, and how they operate at academic institutions like the Hazelton Library in Atlanta. Electronic outreach programs enable libraries to connect their users to pertinent information via customized, Web-based research portals.

The paper describes current projects that seek to highlight new methods for assessing library performance, and show how these new measures will help libraries to demonstrate efficiency and effectiveness. A total of 17 measures were grouped into five categories. The objective was to measure networked electronic services.

Novak (2002) showed how to create a new market for library service with a new type of client, as, from the global environment to the local, information and communication technologies are changing our lives and changing the way libraries do business. No longer are libraries an arcane world of their own. Every major trend impacting on today's society is also impacting on libraries. Today's environment is one of paradoxes: there is decentralisation within globalize, fragmentation within mass culture, and customisation within mass manufacturing. Boundaries are breaking down: between disciplines, among industries, and between suppliers and customers. Dominant functions and processes in the information age are increasingly organised around networks, and this enables virtual services to come together in partnerships and alliances. Process has become as important as product, as the knowledge era increases emphasis on abstraction; it is an age dominated by ideas, concepts, and experience - and services are a form of process.

Brophy (2001) presents an overview of EQUINOX, a two-year R&D project funded under the European Commission's 4th framework program with the primary focus on developing a core set of performance indicators for e-library services and a software-based decision-support tool for library managers. In developing a set of performance indicators for the electronic library, the EQUINOX project has also developed a decision support software
product, a quality management framework, and an XML Data Type Definition (DTD) to assist inter-operability of management data. Work continues on developing the model that underlies the performance indicators.

There is considerable interest across all library and information service (ILIS) sectors in methods of measuring the performance of digital, networked services. In achieving these two objectives, EQUINOX has also developed a quality management framework and an extensible markup language (XML) data type definition (DTD) to assist inter-operability of management data. Work continues on developing the model that underlies the performance indicators. (This paragraph seems to have been repeated).

Thebridge (2002) discusses the HEFCE-funded valued project which is now moving towards setting up its online toolkit that aims to help managers evaluate their services, most particularly the use of their electronic resources. A survey of library and information services in all UK higher education institutions was completed in May and a follow-up interview with some of the respondents is now complete. This paper reports on the findings of these two exercises, their implications for development of the toolkit and future directions which the project will take.

This project also aims to develop tools for evaluating electronic information services. The response is grouped under 14 major indicators.

Suarez-Balseiro and Sanz-Cascado (2001) have identified and analysed the usage indicators for the Carlos III University of Madrid database access service, and discuss their usefulness as a criterion for assessing the academic networked environment and its impact on research in university departments. The processes involved in accessing information are essential to the continuous acquisition of knowledge in university environments. Hence the vital importance of studies on the use of the information resources available in academic institutions to enable them to reach their objectives, thereby contributing to the ongoing enhancement of the quality of higher education. A number of statistical techniques, including mapping techniques with multivariate analyses, are used in this paper to identify and highlight the features that characterise the use of the Carlos III University of Madrid Library’s Database Access Services on the campus network from 1997 to 2000. Trends in the use of databases are evaluated and the indicators that typify tendencies and patterns by kind of user are analysed. Certain criteria on the interaction between users, new technologies and electronic information services in the academic networked environment are likewise discussed.

Sweetland (2000) investigates whether a consensus actually exists among library and information professionals regarding Web evaluation criteria. The evaluation criteria used in a systematic random sample of forty-eight web site reviews from the 1998 choice magazine were compared with three consensus lists. The author perceives “lack of consensus”. This is a significant contribution by comparing theoretical criteria with those actually used.

Poll (2001) has presented performance indicators for the library’s electronic services. Traditional performance indicators were meant for libraries with print collections and lending services. In several projects with international cooperation, indicators have been
developed for library networked resources and services. The paper describes the problems of data collection and provides definitions for electronic collection, and the different steps involved in using electronic services.

White (2001) has presented a framework for analysing and evaluating Digital Reference Services (DRSs). Based on systems analysis, the framework consists of about 110 questions related to 18 categories in four broad areas: mission and purpose, structure and responsibilities to client, core functions, and quality control. To illustrate the framework's usefulness, the study applies the framework's archive segment to a selective sample of 20 DRSs. This analysis focuses on the existence of a public archive, content, selectivity, safeguards for privacy, access, browsability and searchability, and relationship to frequently asked questions and other site content. Results of the analysis demonstrate the framework's ability to develop descriptive models of DRS functions, identify most common practices as a first step to identifying best practices, reveal gaps in coverage or implementation, and support comparisons across individual services.

Whitlach (2001) believes that in an electronic era, the evaluation of reference and related information services should still be based on the same principles used to evaluate traditional face-to-face reference services and printed reference tools. Traditional research methods - which are surveys and questionnaires, observation, individual and focus group interviews, and case studies - can be utilized very effectively in an electronic environment. However, electronic technologies offer interesting research opportunities not present in the traditional reference environment.

Many of the criteria used for evaluating printed reference resources have analogs in the digital world: for example, authority, accuracy, level or audience, and content. Standards and methods used for evaluating traditional reference services also have many analogs in the world of digital reference. Standards and criteria related to economic considerations, the reference process, reference resources, or products or service outcomes will still be important in an electronic world. Traditional methods of survey, observation, interview, and case study remain useful.

Young (2001) believes that performance measurement of libraries requires librarians to transform quantitative input and output data collection concepts and structures into a qualitative outcome assessment framework. This complex transition is central to understanding the rapid pace of library change within the commercial realm of Web/network services development.

This paper intends to provide librarians with some guidance on managing the e-metrics collection process within their libraries. The appendix is not comprehensive, but rather selective in its presentation of e-metrics, issues and assistance. Each library is different in its implementation of electronic services and resources; thus, librarians should view this appendix's contents as general guidance that will likely require changes for application in a specific library setting.
The paper also discusses the annual count of total number of library owned public access graphical workstations that connect to the internet for a dedicated purpose to access an OPAC or specific database of multi-purpose.

In his interim report of an ongoing study in the USA, Carlo (2000) and others work on developing a core set of national statistics and performance measures that librarians, researchers, and policy-makers can use to describe public library and library-based statewide network use of Internet and Web-based services and resources.

The report describes a number of models for developing such statistics and performance measures. It also offers a number of preliminary statistics and performance measures that are being field-tested to describe information resources and services in the networked environment. The authors expect to have a final set of such statistics and performance measures.

Larson (1998) has introduced the concept of Service Level Agreements (SLAs) in IT service provision, especially in the case of outsourced service provision. The paper reports the experience of several consulting engagements and surveys to substantiate suggested frameworks and checklists. It differentiates between SLAs negotiated for internal versus external service providers, and describes the structure of good service level agreements. It also outlines the most important elements of measurement for monitoring service level performance, and concludes with the importance of SLAs to the management of commercial relationships in which services are provided.

In managing any commercial relationship, particularly outsourcing, information is critical for understanding the success or failure of the contracted arrangements. Without defining and measuring the services to be delivered, the information one needs to manage the relationship will be difficult or impossible to obtain. Service measures must reflect user requirements and have a clearly-defined scope, because there is no “standard service” one can rely on the service provider to divine.

Young (1998) has explored issues related to library measurement of electronic media and network services and describes the difficulties in the measurement of these media and services. The paper shows how libraries should measure electronic services and media. It also explores the following questions:

- How should libraries track Internet/World Wide Web usage?
- What is needed to support library access to electronic information?
- What defines an electronic Session?
- Should libraries be counting “hits” or “clicks” each time a patron accesses a file, visits a Web site, displays an image, or downloads a page or a document?
- What statistics should libraries collect on electronic access to remote resources not owned by the library?
Cram (1997) has examined the positive and negative impacts of the Internet on costs and productivity in libraries. The Internet can simultaneously have positive and negative impacts in both areas. It is necessary to identify both actual and opportunity costs. The nature of these costs is explored, and the significant savings which can be achieved are detailed. The impact of use and misuse on staff productivity is discussed. The origins of questionable beliefs are examined and careful and management is recommended.

Nitecki (1997) talks about five SERVQUAL dimensions, and on the basis of these, researchers also developed a survey instrument to measure the gap between customers’ expectation for excellence and their perception of actual service delivered. The SERVQUAL instrument helps service providers understand both customer expectations and perceptions of specific services, as well as quality improvements over time. New ways to conceive of and measure quality in libraries are needed—and alternate approaches emerge in the business sector where organizations are increasingly evaluated in terms of their service quality.

This paper mainly addresses the issues of assessment tools of service quality namely SERVQUAL, an instrument designed by the marketing research team.


Pratt, Flannery and Perkins (1996) provided guidelines for evaluation and selection of internet resources. Six general criteria, with supporting points under each are outlined: 1. Quality and content, 2. relevancy, 3. ease of use, 4. reliability and stability, 5. Cost and copyright and 6. hardware and software. The authors conclude that basic evaluation criteria are “still issues”, but they “must be viewed in new ways.”

2.4.5 Reference Services

Hervik (2003) provides a study of current patterns and trends in reference services based on an analysis of data derived from Ask the Library, a national references desk that has been operated by Oslo Public Library since 1995.

Murfin (1987) has designed an instrument to assess the reference outcome in terms of patron report of success. It was theorized that patrons were capable of separating reports of success in finding what was wanted from reports of general overall satisfaction, if given a suitably constructed instrument.

A survey was conducted in fifteen academic libraries. It was found that patron report of succession factual questions did not differ significantly from results obtained from unobtrusive observation.
2.5 ELECTRONIC RESOURCES AND ELECTRONIC LIBRARY

2.5.1 E-Resources

Franklin and Plum (2006): MINES for Libraries is a web-based survey methodology that is proving to be a valid and reliable method for assessing networked electronic resources usage. The methodology has collected usage data on the libraries’ electronic resources, including electronic journals, electronic books, databases, the online catalog, and services such as interlibrary loan. It can also integrate data on non-subscription resources such as digital collections, open access journals, pre-print and post-print servers, and institutional repositories. This web survey method is more successful in libraries that have implemented a network assessment infrastructure. To illustrate its utility, an overview of the methodology, a discussion of assessment infrastructures and recent results from MINES for Libraries surveys at more than 30 North American universities during the last 2 years is presented, including health sciences libraries, main academic libraries, and a Canadian library consortium of colleges and universities.

Mundt (2004) explained that as electronic resources have established their place beside traditional media, the statistics of library collections and their use have become increasingly complex, partially incomplete and even inconsistent. In this environment, many libraries are facing difficulties in collecting and making use of the data for management decisions and planning. By analysing the environment and its practical, formal and technical obstructions, this contribution tries to identify issues and perspectives for future standardization of library statistics.

The quest for quality, accountability and justification of service is demanding increasing attention around the world, both in those countries which are deprived of resources and in those which are relatively rich and could be described as having a sophisticated information and technology base. Within this economic climate, during the rest of the century and into the next, library and information professionals will face considerable challenges both in meeting and satisfying the requirements of individual institutions and states.

Town (2004) has provided a critique, some sources of data, and a broader conception for informing development of e-measures frameworks for use in academic library services. The author holds that this paper is valuable to library directors and managers and library researchers interested in the field of performance measurement and evaluation of e-resources.

Blixrud (2003) has described some current projects that seek to highlight new methods for assessing library performance and show how these new measures will help libraries demonstrate their efficiency and effectiveness. Size has been a traditional measure of a library for many years. How many books were held, how many people were served, and how much money was spent, were all ways to determine if a library was successful. That has changed recently. University administrations and public officials are looking more closely at how well libraries serve their users and how well libraries manage their resources.

It discusses the “new measures initiative” which was established by ARL in 1999 and a recent measurement tool, LIBQAL+ that is being developed by ARL for use in a variety of
library settings worldwide. As a result of the field-testing, the project investigators came up with a recommended set of 17 measures that were grouped into five categories for electronic resources.

**Hahn and Faulkner (2002)** described three metrics for evaluation of licensed e-journals.

1. Average cost per access - the subscription price / annual number of full-text accesses
2. Average cost per article - the subscription price / number of articles online
3. Content-adjusted usage - the number of full-text access / number of articles online.

Also they have recommended three additional metrics for benchmarking purpose: 1. Cost-based usage bench mark, 2. Content-based usage bench mark and 3. Cost per access at the content-based usage benchmark.

The practical application of these six metrics is illustrated by using Science online site as a peer for evaluation of the Nature site. Authors have made commendable attempt to address the challenges dilemmas associated with e-journals metrics.

**Herring (2002)** has included in his research for citation study 175 peer-reviewed research articles, published between summer 1999 and spring 2000 in 12 free web-based free e-journals from a variety of disciplines. The investigator found that from this 16% unique references were electronic resources. 24.7% were self-citations to the same journal. A comparative breakdown of the cited print items revealed that 45.3% were books and 43.4% were articles. It is also interesting that 18% of the cited web resources were inaccessible. Herring speculates that the electronic format promotes interdisciplinary and use of nontraditional resources and concludes that online resources are 'increasingly important' to scholars.

**Kidd (2002)** has reflected on the growing importance of usage statistics, citing increased provision of electronic journals, their increasing use, and in particular, their increasing cost. The paper also discusses the need to selectively promote particular services and titles and the place of performance indicators. Specific examples of the value of usage statistics in relation to budget allocation, collection management and collection development, and marketing of journal availability to users are shown.

This is an important summary of the state of research in this area as it was early in 1998 and outlines European and US work yet carries this work forward another step. Brophy asks what quality is in the electronic context; suggests a model of comprehensive service and specific ways to measure the quality of products and services and assure quality and summarises US/Europe and on-going work. He also includes an eight part functional map for electronic library services covering:

- Access negotiation (selection, contract review);
- Resource capture, storage & access (local storage, universal accessibility, metadata provision);
- Advisory services (Help desk, subject advice, information skills);
- Resource discovery (resource identification, location identification);
- Resource delivery (request, acquire, deliver to user);
• Resource utilisation (exploitation, tools);
• Infrastructure provision (space, equipment, software, networks, support services); and
• Resource preservation (identification, selection, conservation, renewal).

This is mapped against a product quality criteria framework to give a possible map of what quality electronic services might look like. Some of the indicators proposed were:

• PC hours pa/FTE student;
• FTE student per networked PC;
• Queuing time;
• Down time (as % of total time);
• Availability (as % of attempted access);
• Proportion of a notional number of data-sets available; and
• User satisfaction services/infrastructure.

McCarthy, Krausse and Little (2002) have identified students' preferences and effectiveness using CD-ROMs and assess the whole CD-ROM environment at one university library. As academic libraries wrestle with how to provide more CD-ROMs and more online remote access to databases to keep pace with demands, they first need to evaluate the effectiveness of their current services. A questionnaire was used to ask students their preferences, confidence levels, skills and training in searching CD-ROM databases, as well as their satisfaction with CD-ROM services.

The paper shows the users' preferences and needs, their confidence in searching, the effectiveness of their training, and their overall satisfaction with CD-ROM services.

Bertot; McClure and Ryan (2001) explain that his work's objective is to assist public libraries in measuring the use of online databases, web sites and online reference. The second chapter defines basic statistics and shows procedures for collecting them. Chapter 3 illustrates potential use of these statistics to create performance measures. The book offers a practical guide how-to-do approach for output measures for public libraries.

Brier and Lebbin (1998) explained a method for evaluating full-text database periodical content, developed by the University of Hawaii at Manoa library. Three measures were created:

1. Full text value – the number of titles in the database not subscribed to by the library but listed in magazine for libraries
2. Abstract value – For titles abstract in the database, the number in the collection in proportion to the number of titles not in the collection
3. Interlibrary Loan value – For abstracted titles not in the collection, the number in Magazines for libraries in proportion to the number not included.

The authors conclude that "full-text databases are highly used due to their convenience, evaluation of their quality is 'necessary.'"
International Coalition of Library Consortia (ICOLC, November, 1998) has suggested guidelines for e-resources. The use of licensed electronic information resources will continue to expand and in some cases become the sole or dominant means of access to content. The electronic environment, as manifested by the World Wide Web, provides an opportunity to improve the measurement of the use of these resources. In the electronic arena we can more accurately determine which information is being accessed and used. Without violating any issues of privacy or confidentiality, we can dramatically enhance our understanding of information use.

These ICOLC guidelines were developed by JSTOR web statistics task force. These measure the technical performance of web based services for reporting of system related parameters (e.g. down-time, response-time).

Pavlesek (1994) has provide eleven criteria for evaluation of electronic journals as, Ease of use, Archival issues, Future electronic availability, Type of access, Copyright and licensing restrictions, Single or Multiple publisher, Completeness of electronic version, User report, Are individual titles separately available and Possible future enhancements. These criteria are used for JSTOR (Journal Storage) and then Project Muse (A bundle of Johns Hopkins University Press Journals). This article serves dual purposes: outlining e-journal evaluation guideline and offering in-depth analysis of two major electronic products.

Stebelman (1994) evaluates the retrieval performance of the three databases mentioned in the title plus GENL, a locally mounted database at George Washington University Library. The number of items published between 1990 and 1993 retrieved in searches from 30 subject areas from the basis of the study which was conducted in January 1994. The number of journals indexed the four databases ranged from 2200 to 14000, the number of retrieved articles ranged from 219 to 724 and number of different periodical titles from 189 to 467. Twelve subject experts judged whether each retrieved citation in their are germane to the search topic. The relevancy ratio for the four databases varied from 45 % to 62%. The authors’ notes that when selecting the databases libraries should also consider user-friendliness cost and document delivery features. Although focus falls on performance retrieval, this entry has considerable relevance for database evaluation.

Cargnelutti, D’Avigdor, R, and Ury, (1996) The authors have initially reported and described a range of key indicators of database and electronic resource usage at the 1996 VALA conference. This paper focuses on the difficulties associated with measuring electronic resource use and delivery, in particular web based resources, and outlines additional key indicators based on changes to the type and delivery of information now available.

Conyers (1988) has focused on the e-measures project. Libraries in universities and colleges of higher education are now spending a significant proportion of their budgets on electronic resources. The aims of the e-measures project are to assist libraries in higher education with decision making and user support and to provide a sound statistical base on which to develop a series of performance indicators relating to the holdings, usage and costs of electronic information services.
Association of Research Libraries (ARL) has established the E-Metrics working group to focus on issues related to the measurement and assessment related to electronically delivered content and services. This report focuses on the measures taken by library organizations for the measurement and assessment of electronic use in Europe.

2.5.2 Digital Library

Tammaro (2008) described the findings of a survey of users’ perceptions of digital libraries in Italy. The primary objective of the survey was to obtain feedback from users on their perceptions of digital library services and to give them an opportunity to make suggestions. A secondary objective was to establish and test a collaborative methodology with which to evaluate best practice for digital libraries.

The results of the survey indicated that users have different perceptions with regard to digital libraries and that they tend to use the services of more than one cultural institution. Overall, there is a positive attitude towards digital libraries, but the survey also underlines that users often do not know how to use the libraries and are unaware of all of the services offered. The accessibility of the interface was considered important, but as it becomes more sophisticated offering more services more staff assistance will be required.

Research limitations/implications the results of the survey have identified user priorities, but users are rarely involved in the design of digital libraries. The aim was to stimulate a culture of excellence in the different cultural institutions involved, focusing on users' expectations. This paper considers the implications of these results for digital libraries in general, and the value of a cooperative approach to the identification and evaluation of digital library users in particular.

Kahl and William (2006) assessed, in their study, the ideal vision through data gathered on ARL digital library projects. The study also answers the following questions:

- How are digital library projects accessed from library Websites?
- What tools and browsing/searching features are available to access the content of digital library projects?
- How frequently is metadata provided in digital library projects?
- What types of digital library projects have been completed?

The result shows that only one-third (33.3 percent) of the digital library projects were available in the library catalog. Over one-quarter of projects (27.1 percent), typically exhibits did not contain metadata. less than half (43.6 percent) allowed metadata to be searched. Digital library projects overwhelmingly consisted of both image or text content—60.8 percent for image and 57.5 percent for text. The remaining types of content occurred much less frequently—-atlas or maps (6.5 percent), finding aids (4.9 percent), audio (4.3 percent), and video (3.6 percent).

Mathur (2005) attempts to define a digital library; lists the advantages offered by digital libraries; gives the importance of measuring the performance of libraries against their objectives; gives the progress in developing performance indicators for digital libraries; and lists the difficulties that may be faced in implementing a system of performance indicators.
Developments in the field of information technology, like increased capacities of digital storage media, growth of the World Wide Web and access to internet, sophisticated search engines, fast processing power and reduced computer costs have clinched the case for digital libraries.

Barton (2004) explained that the need for meaningful assessment of traditional library services is well established, the development of metrics and standards for performance measurement in the digital library is less well advanced – it is fair to say that proven approaches to the assessment of the digital library are still relatively new. However, progress has been made through initiatives such as the ARL Statistics and Measurement Program and projects such as the EQUINOX project, COUNTER, the ARL’s LIBQUAL+initiative, the JUBILEE project, and most recently the valued project. Currently, we are at a stage where evaluative tools are available to present a library's traditional and digital contributions to the strategic aims of its parent institution in a coherent and effective fashion. Nevertheless, for such performance assessment to fulfill its potential as a management tool, it must be embedded within the management culture of the library and its parent organisation.

Heath, Kyrillidou, Webster, Choudhury, Hobbs, Lorie and Flares (2003) integration, and others have described ways to examine how digital libraries are valued by their users, and explore ways of permitting the allocation of resources to areas of user-identified need. Pertinent models from marketing, economics, and library assessment and evaluation are reviewed, focusing on the application of the LibQUAL+TM and CAPM methodologies. Each methodology, which was developed independently, provides a useful framework for evaluating digital library services. The paper discusses the benefits of a combined methodology that would provide potential for evaluation of digital library services.

Bollen and Luce (2002) have proposed a quantitative approach to DL evaluation that analyzes the retrieval habits of users, to assess the impact of a collection of documents and to determine the structure of a given DL user community, and discussed a system that they have developed, to automatically generate extensive journal and document networks from an efficient and simple analysis of user retrieval sequences registered in a particular DL’s server logs.

At present, digital library (DL) policy is largely informed by management intuition and coarse measures of user satisfaction. Most DLs, however, maintain extensive server logs of user retrieval requests that contain a wealth of information on user preferences and the structure of user retrieval patterns.

The paper outlines a methodology for the generation of networks of document links from user retrieval patterns recorded in DL server logs. The generated networks can be analyzed to assess document and collection impact, and analyze the properties of a specific DL user community.

Poll (2001) has emphasized that, for fast developing electronic library services, new and special indicators are needed, in order to assess the effectiveness of services and to justify expenditure and resource allocation to that sector. In several projects on a national and international scale, such indicators have been developed and tested.
2.5.3 Electronic Library

Ling-Feng (2004) and others have established an appropriate model of university electronic library performance indicators to evaluate the electronic libraries in Taiwan. Resources referred to in the process of establishing an initial model of performance indicators include the performance indicators for electronic libraries found in the EQUINOX system; the balanced scorecard concept, designed and implemented in Germany, to evaluate the performance of the three largest university and research libraries; and the approach outlined in the ALA's standard for college libraries.

Brophy (2001) has described the background, processes, and outcomes of the European Commission-funded EQUINOX project, which recommended a set of 14 performance indicators for electronic library services. The paper states that further work will be needed to link performance indicators to new models of libraries, which fully describe their roles and functions in a networked information environment.

Clarke (1999) explained that the aim of EQUINOX is to address the need for all libraries to develop and utilize performance measures for the new networked, electronic environment, alongside traditional measures, and to operate these within a framework of quality management.

The Centre for Research in Library and Information Management (CERLIM), based in the Department of Information and Communications at Manchester Metropolitan University, has been active in the research of performance measurement and quality management since 1995. CERLIM is currently the coordinating partner in the EQUINOX Project, which is funded by the European Commission and involves seven partner institutions from the UK, Ireland, Germany, Sweden, and Spain.

Brophy and Wynne (1997) review current trends in library development, with particular attention to emerging understanding of the electronic library's role in institutions. The concepts of Resource Discovery, Resource Delivery, Resource Utilisation, Infrastructure Provision and Resource Management have taken as new concepts and emphasis given to access to the global information networks and content. It has proved possible to adapt many existing indicators to the needs of the electronic library, it has been necessary to adopt different approaches in some situations.

The Report ends with conclusions and recommendations for further work. In particular it is important that empirical work is undertaken to test and validate indicators in the context of operational electronic academic libraries.

McClure and Lopata, (1996) report on a recently completed study designed to address these and other questions related to assessing network technologies and services at academic institutions. It also introduces a manual that resulted from the study, assessing the Academic Networked Environment Strategies and Options -CBL, Carnegie Mellon University, Pittsburgh, Pennsylvania. As academic institutions increasingly spend large amount of money to network their campuses and provide network connections to sources outside their campuses.
Use of computing and network access continues to grow intensively and campus authorities have started raising serious questions concerning the selection and configuration of appropriate network technologies, the costs of these networks, and the appropriate types and levels of services to provide. Indeed, academic administrators are asking questions about the benefits of networking expenditures and what measurable impact they have on the central missions of higher education—teaching and research. This report is the result of these questions raised.


This document is summarised in the Sumsion work and the indicators appear in the indicator chart. Brophy’s work takes the EAL indicators as the starting point for his translation to equivalent measures in an electronic context. Produced by senior academic librarians in 1995 as a response to the Follett report. The content of this includes 21 indicators with debts to CEC Toolbox, the ISO Draft Standard and existing SCONUL statistics. Jane Barton and John Blagden have just reported to SCONUL the findings of a project to test and refine these.

2.5.4 AUTOMATED LIBRARY AND MANAGEMENT INFORMATION SYSTEMS

O’Farrell (2000) has investigated the capability of three library automated systems to generate some of the datasets necessary to form the ISO (International Standards Organization) standard on performance measurement within libraries, based on research in Liverpool John Moores University (United Kingdom).

Cullen (1992) described a bottom-up approach to a library MIS that uses data generated by reports available from most library automated systems, and shows how these data can be turned into information for decision making. The data, relevant performance indicators, and decision types are discussed for five areas in MIS—Automated library. Automated library systems in academic libraries have the potential to provide the basis for a management information system.

West and Butler (1977) discuss the management techniques relate to programme management, describing three areas to be considered during programme development: “hard” evaluation data, (e.g. costs) “Soft” evaluation data (e.g. user’s satisfaction) and definition of local environment. The first steps in implementing a system are the make or buy decision. Some general guidelines for choosing between these options are discussed. The authors advocate using of library staff, parent organization, and user groups to evaluate automation projects.

2.6 INTERNATIONAL COMPETITIVENESS

Cram (2004) has examined the inter-relationship between stakeholder perspectives and accountability and the Australian context is used to highlight issues as seen from the viewpoint of a society coming to terms with the perceived insolubility of social problems. Methodologies designed to force some cognitive rigour and provide cognitive frameworks for strategic design and delivery of library services in a global environment are suggested.

To achieve in the 21st century the social outcomes envisioned by progressive librarians in the 20th century, some fundamental changes in approach are required.
2.7 HUMAN DEVELOPMENT AND INDIVIDUAL PERFORMANCE

O’Conor (2006) has emphasized in his research on the performance of the individual within a team. The results of the performance of such teams from the disciplines of psychology, sociology, business, and library science were analyzed and synthesized. Five online aggregators and a combination of keyword/subject terms were used to locate the research, originating primarily from journal literature. After exploring the research, 12 different performance factors emerged in two primary categories: extrinsic and intrinsic. Extrinsic factors included collective efficacy, social rewards and sanctions, social dilemmas, social loafing, future interdependence, and social identity. Intrinsic factors included individual identity, desire to achieve, member role differences, team size, individual status attainment, and member commitment. This review is useful for library administrators currently working with teams in their organizations or for those considering it.

Cram and Shine (2004) have described a case study on designing; modifying and using a transaction based multi-faceted performance measurement mechanism. Traditionally, school libraries, in common with other libraries, have judged their effectiveness on flows, which are more a measure of workload than of library effectiveness. The rarity of linking personal performance evaluation to organisational performance is discussed and methods of doing so are proposed. The paper also provided insights and ideas about performance measurement for school libraries. The authors have linked personal performance evaluation to organisational performance.

Cram (1995) outlined methods of assessing and reporting value in relation to both budget-based and fee-based services, and stresses the importance to both libraries and librarians of being able to measure and quantify the value of what they do.

While performance measurement has improved in the past decade, the tendency is still to gather information about process and to report in a way that obscures the value of the library to the parent organisation. Where fee-based services are introduced, the choice of which service to apply fees to and the pricing strategy for that service is likely to be made without adequate information. Personal performance evaluation is rarely linked to organisational performance.

Dougherty (1972): emphasizes the human side of library effectiveness and argues for the participation of library staff in determining the goals to be reached.

2.8 READER DEVELOPMENT

Darling (2008) reports the findings and conclusions of a survey investigating the veracity of this assumption in public library services throughout New Zealand. It is concluded that New Zealand lacks directed strategic thinking about reader development, and that there should be a focus on it to ensure a consistently high level of service throughout the country’s public libraries. Edited version of a paper presented at the Reading Critical conference, State Library of Victoria 11-12 April 2008.

Sherry (2008) tells that reading for pleasure is core business for public libraries, and library staff needs to be equipped to talk with readers about books, to promote the pleasures of
reading, to take a proactive role in suggesting reading materials, and in making the books and reading material in their libraries more accessible and appealing. A statewide reader's advisory (RA) training program commenced in New South Wales in 2004. Rewarding Reading is a train the trainer program for public library staff involved in the delivery of readers advisory/reader development services. The program is designed to develop and upgrade the skills needed to answer the timeless question 'What's a good book to read next?' Rewarding Reading courses have been delivered in NSW, ACT, Queensland, Victoria, South Australia and New Zealand.

**Bundy (2008)** reported the recognition of the importance of reading in Australia in the fifth annual Report to the Nation by Friends of Libraries Australia surveys. It concludes that increased political awareness of public libraries, funding of their collections, and the recognition of reader development as core strategic business throughout the Australian public library system, are required.

**Peoples and Ward (2007)** describe a major reader development initiative delivered by a cross-border partnership, involving two public library authorities (one in Ireland and one in the UK). It aims to outline the strategies and activities developed to support the wider political agenda of building a peaceful and stable society provides an introduction to the context within which the project was developed and an overview of the project delivery. It focuses on the development of project activities to address the peace and reconciliation agenda and draws on the external evaluation report findings. This paper is based on the experience of two public library services, operating in different countries, in communities divided by physical borders and sectarian divisions. It shows how libraries can capitalise on their local presence and the imaginative space provided by books and reading, to move from their traditional role as a neutral space to a more dynamic role, in which the promotion of reading supports inclusion and diversity.

**Tootill (2007)** presents an overview of reader development programming at Worcestershire, England public libraries in 2006 and 2007. It describes the structure of the county-wide Marketing and Reader Development team which operates within the Cultural Services Development Unit. It lists specific promotional units including Health Information Week programming, a summer adult reading program titled “Mission Possible,” Poetry Day, a Valentine’s day event featuring author Sarah Harrison, and an event featuring author Katie Fförde. The importance of attracting readers and increasing active borrowing levels is presented.

**Benstead (2006)** highlights the discussions in the concluded ReadEast Conference in Bedfordshire, England, where members of the Eastern region reader development network met to explore ways of marketing reading and libraries, discuss how to attract new readers and to look at ways of re-inspiring those who have lost the reading habit. Keynote speaker Andrew Stevens of the Modern Language Association discussed developments in national marketing campaigns for public libraries.

**Mathieson (2006)** discusses the Time to Read program, a reader development program in the north-west of England, sponsored by the Public Libraries Challenge Fund, in concert
with the Arts Council England North West and the Society of Chief Librarians North West. The program is designed to encourage the use of libraries and the reading of books by persons who would otherwise be disinclined to do so, in order to help them become more employable, independent, and imaginative. Particular methods used toward this goal are described, including posters promoting poetry, websites, organized reading days, and speed-dating events involving library staff and regional authors.

Prescott (2006) discusses an Australian perspective on reader development in Great Britain. It is suggested by the author that reading seems to have a much higher profile in Great Britain than it does in Australia. The high profile of reading in the British media is reflected in the success of the Richard and Judy Book Club, which promoted great reading ideas to the mainstream. A background of the works of The Reading Agency (TRA) and Opening the Book in the promotion of reading is presented.

Buckingham and McNicol (2005) look at a follow-up research project to investigate how the promotion of reading and literacy in schools can develop students’ reading habits for both educational and recreational purposes. The collaborative research extended into reader development in schools and public libraries in Great Britain. School and public libraries have different emphases for their work. This means that there are likely to be benefits for both in working together and drawing on each other’s strengths. The most important issue, however, is the need for school and public librarians to develop a greater understanding of each other’s roles and strengths. They will then be able to draw on expertise and resources and promote reading in a way which engages a greater number of eleven to 16-year-old children.

Wilson and Train (2005) focus on the findings of the evaluation of Give Me a Break, the first national public library book promotion in Wales. The evaluation was conducted by researchers from the Centre for the Public Library and Information in Society at the University of Sheffield. It reveals the positive and encouraging results in terms of the impact of the program to library users and their reading experiences. Debate and concerns are raised involving the language of reader development.

Bird and Tedd (2004) focuses on the role of Welsh public libraries in encouraging reading and using information and communication technologies (ICT) in the reading development process. Public libraries have a longstanding role in promoting books and encouraging reading and such activity has been given added impetus with a number of national and international developments. Funds were made available for the technological infrastructure, development of appropriate information sources and for the training of staff working in public libraries. The use of ICT for reader development was included in the training programme developed for all public library staff in Great Britain for the People’s Network. A number of books are selected to meet the specified criteria and links can be made from the Website to catalogues in certain libraries to ascertain the local availability of a title. In a report on initial findings from the People’s Network it is claimed that 40 percent of non-members who come to the libraries to use the computers went on to become member.

Spencer and Mathieson (2003) describes in some detail reader development project work targeting 16-25 year old young people carried out in 18 library authorities in the North
West of England during 2000-2002. The context of the project is set, focusing on the aim of increasing library use by young people. Key national reading agencies are briefly described, as well as the regional Time To Read Partnership. The project description is detailed, including aims and objectives, delivery, training, new partnerships and the impact of the work locally and nationally. Some key conclusions are of significant practical value for future reader centred projects. The article concludes by describing a new co-ordinator’s post which is taking reader development work forward in the region and offers a model for future cross-authority working.

Train and Elkin (2001) investigate the potential to measure the impact on staff and users of reader development, currently a key concern to the public library sector. Uses examples as the best value inspection process, a current form of performance measurement, and Branching Out, an ongoing national reader development initiative. Concludes that the qualitative, person-centered evaluation methodologies developed via projects such as Branching Out could support any local authority preparing its own service evaluation, and could arguably enhance any evaluative documentation, for example the Best Value Performance Plan.

Urquhart and Schofield (1972) reports the Unit’s work on a method of investigating how often readers fail to find what they are looking for on the shelves, why they fail, and what particular books they fail to find. The method used is a slight modification of the earlier one—readers were asked to record on a slip provided the details of the book or periodical they were looking for, or subject area they were looking in, their academic status, and the date, and then to place the slip in an adjoining box. From analysis of these ‘failure’ slips it was possible to determine the cause of the reader’s failure, the individual book the reader was looking for, and the pattern of failure for different groups of volumes. A new development was surveys of samples of readers, carried out during the fortnight of peak demand. Answers to these surveys provided information on the effect of failure on a reader’s work, what action he took after failing, whether he found adequate substitutes, how many books he found by browsing, and what proportion of the books he consulted he borrowed. Some of these answers could be checked by a direct count of the books used in, and borrowed from, the library. The investigations were carried out in three University libraries, each with its own characteristic library structure and teaching patterns. These differences were reflected in the results obtained. It is hoped that the methods of investigation used can be employed by librarians to investigate the effectiveness of some of the services in their own libraries.

2.9 INFORMATION LITERACY PROGRAMMES

Bruce (2003) shows the importance of information literacy and illustrate the student’s experience that “understand that education is about being empowered to learn rather than about being dependent on the teacher for acquiring knowledge and skills” and suggests the learning outcomes based on whole experiences and real life practice.

Powell (2003) The purpose of this study is to assess whether recent graduates of the Ohio State University’s Occupational Therapy division are applying information-seeking skills they learned as undergraduates, and to seek their advice on ways to improve information-literacy instruction for current and future occupational therapy students.
Young (2003) has discussed how research libraries participate in the learning outcomes at the institutional level.

Kyrillidou, Martha (2002) discusses library models and user roles in relation to the transformative effects of technology. It explores how these models are changing our conceptualization of library assessment models from a linear to a more cyclical and dynamic perspective shaping relations among input, output, quality and outcome indicators.

Orr, Appleton and Walin (2001) emphasize that despite the growing recognition of the importance of information literacy education; there are few working models for curriculum integration within the Australian higher education sector. Librarians, in conjunction with faculty at Central Queensland University, developed a framework that assist in the planning and evaluation of information literacy programs.

Limberg and others (1999) reports the design and findings of a research project for a doctoral thesis on information seeking and use in a learning context. Theoretical frames were found in LIS use and user studies and in phenomenographic learning theory. The empirical study was conducted in a naturalistic setting with a group of 25 high school seniors. Phenomenographic method, designed to investigate variation in people's ways of experiencing phenomena in the world, was used. Three major ways of experiencing information seeking and use were identified; (a) fact-finding, (b) balancing information in order to make correct choices, (c) scrutinizing and analysing. The variation in information seeking and use interacted closely with variation in learning outcomes. These findings form a basis for further research on variation in users' ways of experiencing the content of information. They also provide a basis for didactic development of information literacy instruction.

Haybes (1992) examines the impact of telecommunications media upon learning outcomes designed on level of learning and instructional strategy. Course objectives were identified by type of learning using a model based upon Gagne and Briggs. A nonequivalent control group design was used to measure differences in learning outcomes. The data gathering techniques include content analyses of written exams, observations, interviews, an analysis of interactions, and examination of student attitudes using a questionnaire. Analysis of covariance measured differences between sites, controlling for entering knowledge as measured by the pretext. These analyses showed no significant differences on six of the evaluations.

Fiegen, Cherry, and Watson, Kathleen (1991) developed a model whereby information literacy competencies are formally adopted as learning outcomes for an undergraduate business curriculum. The information competencies are some of the mission driven competencies developed by a College of Business Administration at a regional university in keeping with the Association to Advance Collegiate Schools of Business standards. In one class, develops an assessment instrument to measure student learning of information literacy competencies tied to the course objectives. The performance measures and learning outcomes in the Association of College and Research Libraries' Information Literacy Competency Standards for Higher Education were used to plan an information literacy curriculum within an upper division discipline program. Provides an example of how the learning outcomes
can offer guidance to course instructors when designing activities and assignments that seek to measure information competence in business courses.

Greer (1991) describes a survey instrument developed at the University of Northern Colorado library that compared students' self-assessed library skills with a test component. Findings are reported that indicated no dramatic trend of higher proficiency with increasing academic status, although self-assessed skills showed such a trend.

2.10 USERS' SURVEY

Satoh (2006) has clarified the indicators and measures that correspond to the dimensions of users' evaluation of university library service. This article addresses considerations important to the service quality assessment in university libraries.

Siess and Medford (2006) has suggested the key performance indicators for solo libraries. The satisfaction measures include the percentage of library users who were satisfied with the library - overall or by service. Some of the financial measures include:

- Hours spent doing chargeable/billable research;
- Chargeable research time as a percentage of total hours;
- Market value of services rendered;
- Hours spent on requests multiplied by an hourly rate for commercial research services; and
- Cost per document or entry (record) viewed for each electronic library service or Cost per information request.

Hiller and Self (2004) showed the process of community assessment and indicated that it must be carried out repeatedly. It is a tool that every library needs to use and is an essential part of the reference librarian's duties.

Customer-centered libraries understand the information needs, behaviors, and cultures of their communities, and they provide services to support them. Relatively few reference librarians possess the skills or experience necessary to perform effective community assessment. Regardless of the size of the library or the technological infrastructure, community assessment should be an integral part of the reference librarian's toolkit for the 21st Century. This paper describes the reasons for doing community assessment, the various methods and techniques librarians can employ to assess and analyze their communities, and the importance of incorporating community assessment data into the development, evaluation and marketing of library and reference services.

Crowley and Gilreath (2003) This survey is based on the information gathered from user surveys. The library has undertaken several measures to improve service quality.

In the last several years, many research studies have focused on how people use electronic resources or on their feelings about electronic and print resources in the library. These usage studies draw many conclusions about the behavior and preferences of library users, this report for the Council on Library and Information Resources (CLIR) summarizes and analyzes more than 200 recent research publications that focus on the use of electronic library resources and were published between 1995 and 2003.
De, Jager (2003) has conducted a study at the University of Cape Town. From the study, emerges the fact that students who do well in their exams, tend to borrow more books from the library than students who do poorly.

One of the most important products of the academic endeavor is students’ success in their courses of study. However, despite various attempts over the years, it has seldom been possible to demonstrate conclusively that undergraduate library use significantly contributes to student success. Four studies which document improvement in academic performance as outcome measures of library services are discussed.

Mundt (2003) by means of a factor analysed the questionnaire items, which were grouped into mutually independent sets. It was then applied to determine the contribution of each factor to the overall satisfaction of the users.

Customer satisfaction and service quality have so far been evaluated mostly from a local perspective, although the quality element has been firmly established in academic library management for at least a decade. Critics of inter-institutional comparisons often object that different preconditions are not considered adequately. Examples from a joint user satisfaction survey conducted by 15 German university libraries in 2001 suggest that comparative data are a suitable means to identify cases of “best practice” and can effectively initialize processes of customer-focused improvement. Furthermore, if compared with corresponding statistical data or performance measures, satisfaction ratings can reveal possible structural strengths and deficits relative to other libraries. On the other hand, follow-up telephone interviews with participating libraries showed that the survey results substantially challenged the institutions’ internal communication and public relations organization, and underlined that even in a well-developed culture of assessment the need for professional mediation and coordination of comparative analyses may not be underestimated.

Walters (2003) has emphasized that the assessment of library service quality requires both expertise and objectivity. Undergraduate students are neither expert nor objective, and assessment methods that rely heavily on students’ perceptions are likely to be inadequate in several respects. Students’ needs are not necessarily consistent with their preferences, for example, and the limited experiences of most undergraduates give them only a partial understanding of library collections and services. Although user surveys provide valuable information about patrons’ perceptions, that information is no substitute for objective standards based on professional knowledge.

Cullen (2001) has explored the relationship between service quality and user satisfaction and examines how user surveys have been employed in a number previously published data sets. A model which demonstrates how satisfaction can be seen as both - a micro-level response to individual transactions, and at the macro-level as an outcome of service quality - is proposed. Using an evidence-based approach, gaps between user expectations and perceptions as well as the gap between user expectations and managers perceptions of these are explored.

The paper analysed that urgent remedial action is required in some of the areas to increase user satisfaction. The expectations of users are likely to change in the electronic environment and it will impact on service quality and overall satisfaction ratings.
Jackson (2001) has focused on the Hybrid Library of the Future. The (HyLiFe) project was funded by the Joint Information Services Council (JISC) for higher education in the UK and it focused on the users of the hybrid library. This article outlines the user-centric approach used in evaluating the project. While the evaluation of HyLiFe diverged from much standard practice in performance measurement, the work of researchers into performance measures for the electronic library proved invaluable to the HyLiFe evaluation officer.

The HyLiFe project did not use standard performance measures; the available research on performance measurement was invaluable to the project. The work of the evaluation officer in devising an evaluation strategy was informed by performance measurement literature. The exposition of the issues involved assessing the performance of the electronic library.

Kyrillidou (2001) discussed performance measurement initiatives in higher-education academic libraries and research libraries in the United States. There are three major issues that need to be taken into account in assessing the reliability and validity of data generally and of academic library data in particular: consistency across institutions and through time; ease versus utility in gathering data; and values, meaning and measurements.

Andaleeb and Simmons (1998) tried an alternative model of customer satisfaction with academic libraries. The results of the study suggest that academic librarians focus on two major elements — resources and demeanor. The findings of this study also suggest that library users, especially students, accord significant importance to the demeanor of the library staff.

Competitive pressures, information availability, rising costs, and an increasingly aware and selective student population mandate that academic libraries become more user focused. This calls for a better understanding of the specific needs of library users in order to provide the appropriate type and level of service that meets those needs. This study proposes and tests a five-factor model to explain user satisfaction with academic libraries. Students availing of the services of three academic libraries in Erie, Pennsylvania, were surveyed over a period of three semesters. The model explained 64 per cent of the variation in the dependent variable. Strategic implications of the proposed model are also discussed.

Crawford and McLelland (1998) have reported on a project which aimed to design a set of user performance measures, using the stakeholder method, which could be used in British academic libraries to improve customer services. A questionnaire consisting of 91 performance measures, each of which had to be graded on a scale of 1 to 7, was distributed to 15 participating institutions. The results were collated and analysed, showing the rankings of measures by total stakeholders and by individual groups. General issues generated by the project are discussed, and also comparisons made with recent reports on academic library evaluation.

Bundy (1997) has tried to show that because government funding to Australia's universities is being cut, university libraries must publicize newly developed approaches to strategic planning and client-focused performance to ensure institutional investment. This article examines university library clients and the extent to which Australian universities have clients in mind when developing vision and mission statements, core values, strategic plans, performance indicators, and client charters.
Cullen and Calvert (1996) researched in New Zealand based on multiple constituencies model and identified key performance indicators in university libraries by stakeholder groups and ranked the lists and correlations between the lists which shows the similarities, but confirm that groups have different perspectives on library effectiveness.

Millson-Martula and Menon (1995) explained possible strategies for narrowing the gaps. These include enhanced communication between the library and its customers and improved management. As academic libraries continue to evolve as service organizations, they should focus on their users as customers and develop programs of service that meet or exceed user expectations. The overriding goal will become customer satisfaction. This article deals with the elements that determine expectations as well as the existing gaps that relate to customer expectations and service performance. Possible strategies for narrowing these gaps include enhanced communication between the library and its customers and improved management.

Hearing complaints and other inputs directly from customers provides library managers with a more compelling reason to work with other staff for the modification of the service delivery process.

Of the 91 issues included in the questionnaire, 18 were rated as “very important” by at least 40% of the combined stakeholders and could be regarded as the key performance issues.

The aim of this research project was to design a set of user performance measures using the stakeholder method.

Van House and Childers (1990) have discussed public library roles and examined roles from the Public Library Association’s planning and measurement tools for their usefulness in evaluating public library effectiveness, based on data from the Public Library Effectiveness Study. Indicators of library effectiveness are discussed, and a cluster analysis of libraries with similar role profiles is examined.

Rout (1982) discusses evaluation of library services in terms of user satisfaction, cost-effectiveness, finding out how efficiently the system is satisfying its objectives and cost-benefit analysis, i.e. whether the expense of providing the services are justified by the benefits derived from it. Rout presented the findings of user satisfaction as the library of Sambalpur University.

Axford (1980) deals with the self-study. This self-study is called Management Review and Analysis programme – MRAP. The significance of MRAP lies in the methodology by which it attacks the problems of improving the management of academic libraries. MRAP has two sets of internal goals defined as those involving process and their having to do with content and overreaching public relations objective related to the library’s image within the parent organization. Beyond the internal goals the programme strive to secure for the library a more favourable image within the parent organization by understanding its willingness to change and accountable for the use of resources. MRAP advocates collection use studies as a means of improving the management of library service.

Taylor (1970) reports on a survey depicting the user view of library services. He argues that libraries will not improve unless the public makes its wants known.
Tauber (1964) mentioned the use of check-lists and sampling for evaluation of libraries. He has given broad coverage to self-survey.

2.11 INFORMATION TECHNOLOGY IMPACT ASSESSMENT

Beard, Dalie and Hutchins (2007) have studied the impact of electronic resources on the learning and teaching community of Bournemouth University through survey. Action researches as used over a two-year period, with the results from one academic school were compared the following year with the results from two other schools. The findings in the paper show how the use of, and enthusiasm for, electronic resources is widespread amongst students and staff.

Creaser and others (2007) describe the first phase of the SCONUL Value and Impact Programme (VAMP), carried out in 2006. This paper is a critical review of some of the major tools and methodologies available to measure the value and impact of, particularly academic, libraries, was supplemented by a survey of SCONUL members to ascertain the state of current practice in the UK. The findings in the paper were synthesised by gap analysis, which found that, although there were some gaps in overall provision, a greater problem was a lack of knowledge and understanding of the tools available, and how they could be applied to demonstrate value and impact.

This paper is a brief description of follow-up activity and the resulting SCONUL Performance Portal is given.

Poll (2003) emphasizes that when resources are gradually decreasing libraries have to show the results of the funding spent on their services. Such results can on the one hand be documented by output data like number of issues or reference answers, or on the other hand, by qualitative indicators those assess the speed, correctness, or cost effectiveness of service delivery and the users' satisfaction with the services.

Assessing the outcome of libraries means assessing the effect of library services on individual users or user groups. Satisfaction certainly indicates that the library has been effective in transporting the idea. It is worthwhile to visit/use this library. But does that indicate that users indeed benefited, that library use led to a change in skills, attitudes, behaviour, and knowledge? User satisfaction might be seen as a foundation for such changes, furthering the receptiveness of users and therewith their ability to benefit from the libraries services.

Markless and Streetfield (2001) showed the changes in the idea of evaluating performance in British education and public libraries and examines some of the differences in impact assessment between the two fields. Areas in which further education libraries can become more effective in supporting teaching and learning, characteristics of process performance indicators, assessing impact in public libraries, are the other issues discussed.

Thronton (2000) measured the effectiveness and impact of information resources (IR)'s major services on a major group of customers. The annual impact survey has provided Defense Evaluation and Research Agency (DERA) IR (information resources) with a useful tool, which, when used in conjunction with conventional user satisfaction surveys and
management statistics, allows a far deeper assessment of which services are seen by its customers as critical to the success of the organisation.

This paper has been updated from the article ‘The use of an impact survey as a measure of special library performance’, which appeared in the ‘Proceedings of the 3rd Northumbria International Conference on Performance Measurement in Libraries and Information Services 1999’. It describes an electronic survey of authors at a major research agency, and presents an analysis of their assessments of the impact a special library’s services has on their ability to carry out and report on scientific research.

Lindauer (1998) has identified important institutional outcomes to which academic libraries contribute. Specific performance indicators whose measures of impacts and outputs provide evidence about progress and achievement and a conceptual framework of assessment domains for the teaching-learning.

The paper summarises findings derived from reviews and analyses of a variety of authoritative sources that identify contemporary and emerging campus-wide performance expectations for academic libraries and identifies specific key institutional outcomes and outputs along with corresponding performance indicators.

Powell (1992) has reviewed research on impact assessment of libraries and considers potentially useful methodologies for measuring the impact of university libraries, i.e., how library use affects students’ academic performance. Topics discussed include categories of library use, purposes of library use, and indicators of library impact.

Behling and Cudd (1967) describe the evaluation made by Ohio State University Libraries with the help of questionnaire to find out characteristics of library users, the way they used the services and their opinion about them. They found that questionnaire method is very effective for measurement of library-campus relations.

The Joint Information Systems Committee- JISC: Evaluation is a central element of the JISC Digitisation Programme. JISC is carrying out an evaluation of the current Phase Two Digitisation programme (2007-2009) and the outcome will be available in spring 2009. The evaluation report of Phase One of the programme (2004-2007) is available below. JISC is also conducting a study on the use and impact of digital resources funded under Phase one.

The study intends to investigate the level of impact, usage and take-up that such resources have had, since going live, on teaching, learning and research within relevant subject areas and the degree to which they respond to users’ needs. In particular the study aims to:

- assess the use and usage patterns of the five online digital resources
- assess the level of impact of resources on their target audiences, primarily researchers, teachers and learners in UK HE and FE Institutions
- assess the quality of the digital resources
- devise a methodological framework for the JISC Digitisation Programme to adopt for assessing the use and impact of the outputs of current and future funded digitisation projects

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Brophy and Woodhouse outline approaches to the measurement of the impact of resources created as part of the NOF-digitise programme. The section explores the concept of ‘impact’ and examines different approaches that may be taken to assessing it. Different stakeholder perspectives are considered, in particular the differences between demonstrating impact to politicians and using impact measures to manage services. There is a particular focus on the impact of NOF-digitise on learning, reflecting the overall objective of the programme.

2.12 STAFF MANUAL AND STANDARDS

Poll (2008) provides an overview of the new Technical Report ISO 28118 “Performance measures for national libraries”. The paper reports on the mission and main tasks of national libraries as defined by the technical report, and describes some 30 performance indicators including indicators that are specifically relevant to national libraries. The paper also explains the process by which indicators were selected and tested. The principles for the establishment of a new standard are examined and perspectives offered on its envisaged application and further development.

This paper gives an informative preview of the Technical Report which, at the time of writing, is in the process of being published. It serves as a useful introduction to the report for those who may wish to adopt the standard in future, and whilst primarily aimed at national libraries.

Poll (2008) aims to present the new edition of the IFLA handbook Measuring Quality that since its publication in 1996 has influenced performance measurement in many countries. The approach used is to make familiar the librarians and information professionals with the present state of performance measurement and the different ways of assessing quality in specified library services. Based on the research for the handbook, the paper presents an overview of today’s performance measuring worldwide, as well in individual libraries as in joint library projects. The new edition widens the perspective to public libraries and adds indicators for electronic services and cost-effectiveness. The 40 performance indicators in the handbook follow the structure of the Balanced Scorecard is also included each indicator shows examples of results obtained in libraries and information about other possible methods.

Kuruc (2004) discuss the ISO 2789:2003 standards related to “Information and Documentation – International Library Statistics” and provide definitions and specifications for the collection and reporting of statistics regarding both traditional and electronic library services. In recent years, a new emphasis has been put on the quality measurement of library services as well as on the usage statistics of library resources. The ISO 11620:1998 “Information and Documentation: performance indicators for libraries” and its recent amendment aim to support these requirements. The new ISO 2789:2003 specifies data provision as requested in ISO 11620. The standards are now available in Hungarian language, together with ISO/TR 20983:2003 “Information and Documentation: performance indicators for electronic library services.”

O’Farrell (1998) carried out research in Liverpool John Moores University, and investigated the capability of three library automated systems to generate datasets necessary to form the ISO 11620 draft standard on performance measurement in libraries. The paper gives the background to the standard and details how the Talis, Dynix Classic and Innopac systems...
can generate the datasets. It concludes that the systems are weak in generating the necessary management data.


The indicators listed have to meet the criteria of being already tested, in common use, and applicable to almost any type of library. Hence the 29 indicators are conservative and cover only traditional services. Coverage includes:

- User satisfaction;
- General (4 indicators on use/cost);
- Providing documents (6 indicators on availability/use);
- Retrieving documents (2 indicators on retrieval times);
- Lending documents (and document delivery) (6 indicators on use/cost);
- Enquiry & reference services (1 indicator on ‘correct answer’ fill rate);
- Information searching (2 indicators on cataloguing searching success);
- Facilities (4 indicators on availability/use);
- Acquiring and processing documents (2 indicators on median times); and
- Cataloguing (1 indicator on cost per title).

The inclusion of definitions, scope and methods of producing and interpreting each indicator is useful.

**Poll, and Boekhorst (1996)** Concentrate on user oriented and effectiveness measures for academic libraries of all types. Describes in some detail definitions, methods of data gathering and interpretation. Limits itself to around 16 indicators and is strong on catalogue information effectiveness. It covers the following:

- User satisfaction (including services for remote use);
- General (market penetration, opening hours compared with demand);
- Providing & retrieving documents (expert checklists, collection use,
  subject collection use, documents not used);
- Enquiry and reference services (correct answer fill rate);
- Information searching (Known-item-search, subject search);
- Acquiring and processing documents (acquisition, processing);
- Lending and document delivery (time); and
- Availability (proportion of documents available almost immediately).

**Cassery (1986)** reports on the self-study documents of four academic libraries prepared for regional accreditation. These reports adopt the input-output analysis and treat use of material as the output of the library. They lead to more descriptive and less quantitative measurements.

**Planning**

**Morein (1979)** describes the continued use of self-study approach for improving academic library effectiveness. This is based on Office Management Studies of the Association of Research Libraries.
Veath (1982) reviews the manual published by Goals, Guidelines and Standards for Public Library committee of the U.S. Public Library Association entitled “Output measures for public libraries; a manual of standard procedures”. The manual is designed to assist all the public libraries in the collection of certain types of data in a standard manner. The manual is useful for a local library to determine the level of its services.

Van House; Lynch, McCular; Zweizig, and Roger (1982) have recommended collection of twelve types of data for American Library Association. They are: Circulation per capita, In-library material use per capita, Library visits per capita, Programme attendance per capita, Reference fill rate, Title fill rate, Subject and Author fill rate, Browser’s fill rate, Registration as percentage of population, Turnover rate and Document Delivery.

Johnson (1981) states that the self-assessment method is very useful in the days of cuts of library budgets. He states that the technology of self-study has been utilized by academic institution as a way of planning for the future. He suggests if the parent institution is involved in a bottom up planning process, the librarians can employ self-evaluation to cope with their internal problems as well as the changing needs of their institutions. A comparison of such programmes demonstrates that self-evaluation is a proven method for academic librarians who are interested in management review and planning.

Mucci (1976) describes the experiment in video-tape self-evaluation at Orland Public Library, Florida, and USA. The advantages and limitations of the method are discussed. Beginning in 1975, reference librarians in the Orlando (Florida) Public Library system volunteered to take part in individual videotaping sessions to see, (1) whether videotape self-evaluation could be done without disruption of service, and (2) whether videotape self-evaluation could improve public service.

Downs and Heussman (1970) has shown the efforts of Association of College and Research Libraries and the Association of Research Libraries to formulate standards by choosing fifty U.S. and Canadian Institutions as a control Group.

Wiley and Branch (1968) have elaborately dealt with the self-study method for the librarians, in the manual prepared by them for self-assessment in Indian Universities and colleges. The manual is basically based on the report of the Education Commission set up by Govt. of India in 1964 under the chairmanship of D.C. Kothari. This manual was prepared under the Ford Foundation. The authors felt Indian Universities and colleges were not able to carry on the teaching, research and service with full effectiveness. There were problems in making effective use of libraries also. Therefore, they have provided guidelines to assist universities and colleges to evaluate their libraries. They have recommended that a planning group be formed to review the entire work of the university and college libraries on an ongoing basis. The University librarian must be a full-fledged member of the planning group. Planning group should watch the resources provided in the library and the administration of the library and the use of library by the teachers. The authors have suggested that planning group to compare the data thus collected with the recommendations and guidelines provided by the Education Commission. This is a very useful tool for collecting data for measuring the effectiveness of the library.
Randall (1965) had given the details of Special Library standards. Norris (1960) showed the base for set of standards for a special library is the organization’s objectives.

2.13 DISCUSSION

From the literature search, we can conclude that Performance measurement is concerned with the achievement of objectives but add the ideas of effectiveness, decision-making and resource. To determine the quality of library services and/or their effectiveness have taken at least two major approaches. One approach has focused on user studies and second important approach is measuring the quality of library services has concentrated on measuring library performances.

In 1970s, has given major boost of the area of performance measurement and considerable support been found within library profession for the consideration of performances. A review of the literature search suggests that one of the important sources of performance data is the library user. It is observed from the literature search that the librarians have not been able to agree on a meaning for “Library Performance Measurements”. Words such as “goodness”, “evaluation”, “assessment”, ‘Performance measures’, ‘outcomes’ were often used to implement measurements in the library. A variety of different topics is addressed throughout the book, from user satisfaction and the impact of services on users to processes and outputs etc. are found in literature search, but there is there is no dearth of literature that the librarian can turn to regarding measuring the performance of a range of services, from outreach services to electronic resources and related services. Library statistics and performance measurements as a part of management process and decision-making support system have along history in USA, Canada, Newzeland and Australia and other countries, but in India this not the scenario. However, now some efforts have started in this area.

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