IBM DATA PROCESSING DIVISION
Customer Executive Program - San Jose, California
Information Retrieval Workshop - Class #4901
March 25 thru March 27, 1963

PICTURE IDENTIFICATION
(reading from left to right)

| Row I | Row II | Row III |
|---|---|---|
| Jim B. Reidy | Pete Suarez | Michael Barnett |
| John P. Roach | John F. Tinker | Willard L. Myers |
| Stanley C. Schroeder | Merv E. Muller | Ed Cossum |
| I. A. Warheit | Pete Luhn | Roger K. Summit |
| Jane Olmer | Ascher Opler | Don Robbins |
| John Tauchi | Charles P. Bourne | Tom Gallagher |
| Lloyd R. Bunnow | Bill J. Elliott | Jean O. Fauver |
| E. M. McCormick | Dwight Buettell | Steve E. Furth |
| Leigh Hendricks | James H. Kennedy | Fred G. Stockton |
| Martin Kosakoff | John A. Postley | N. D. Gold |
| Martin Snyderman | Lee Dudley | Dick H. Stanwood |
| Maureen Kane | Hugh C. Fallon | Bob R. Freeman |
| Fred S. Zusman | Bob R. Williams | Jim S. Morison |
| | | J. L. Zaharias |

Many of these people are mentioned or cited in the Topic.

IBM DATA PROCESSING DIVISION
SPECIAL PROGRAMS
SAN JOSE, CALIFORNIA

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WESTERN REGION OFFICE
Manufacturing Industries

June 24, 1963

TO: Information Retrieval Workshop Attendees

Attached is the address list and bibliography of material handed out at the March 25-27, 1963 IR Workshop.

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| Title | Author | Corp. Source | Doc. Number |
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| Special Bibliography on Catalysis - 1962 | ---------- | Chemical Abstracts Service | ---------- |
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STANFORD RESEARCH INSTITUTE
MENLO PARK, CALIFORNIA


File OS Projects
1963 - Dec

November 1963

# AN APPROACH TOWARD DEVELOPING METHODS OF LIBRARY EVALUATION

by

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Paper presented at a "Symposium on the Analysis of Library Systems" at the Joint Annual Meeting of the California Chapters of the Special Libraries Association and the California Library Association. December 14, 1963. San Francisco, California.

# AN APPROACH TOWARD DEVELOPING METHODS OF LIBRARY EVALUATION


## ABSTRACT

An approach is suggested for developing methods for the evaluation of libraries. It consists of three basic steps: (1) state the library's primary objectives; (2) determine user requirements; (3) establish criteria for evaluation. Comments are made regarding each of these steps as they are practiced today. Suggestions are made as to what libraries can do today to improve their evaluation procedures.


## INTRODUCTION

As long as there have been libraries efforts have been made to evaluate their performance. This is a difficult task. Such evaluations in earlier times may have been done by a relatively simple process, such as counting the number of volumes, or checking to see if particular standard works were in the collection. Current practice is such that more comprehensive evaluation procedures can be used, if desired; however, the fact seems to be that few, if any, current libraries undergo anything that approaches a realistic evaluation, either on an occasional or continuing basis. Few industrial or university libraries, for example, receive the same degree of performance audit as other units in the same organizations. However, there are more systematic procedures that <u>can</u> be employed for library evaluation. The intent of this paper is to note some of the procedures that might be used, and to suggest what the libraries can do at this time to help their evaluation. In general, these remarks are applicable to all types of libraries, but they will be discussed in this paper in the context of technical libraries.

NEED TO STATE THE LIBRARY'S BASIC OBJECTIVES

Fundamental to the evaluation process is the library's stated objectives. That is, what is the intent and purpose of this library? (For example: To make a profit? To serve the faculty rather than the students? To be used for historical rather than current research?) Few libraries state anything more than a few broad generalities, and some perhaps have never taken the time to consider and state exactly what it is that they are supposed to do. As an example of some of the very general objectives that have been stated by individual libraries, let me quote some of their public statements:

Library #1 "Its purpose is to supply you as much pertinent information as possible for your job . . . , whether it be manufacturing, administration, accounting, or engineering."

Library #2 ". . . The engineering library is organized to provide for the technical information needs of (the) employees."

Library #3 ". . . The purpose of the Library is to make available to (the) staff the scientific literature of the world."

In order to obtain any meaningful results, the library must be evaluated in terms of how well it fulfills its objectives. Consequently, a clear statement of objectives is a prerequisite to any attempt at evaluation. But even if you have a statement of objectives such as the ones just mentioned, how can you evaluate whether or not the library ". . . provides for the technical information needs of (the) employees," or ". . . makes available to the staff the scientific literature of the world?" The answer seems to lie in getting both a more specific statement of the objectives, as well as translating these general objectives into some more specific requirements. Presumably, these general objectives and the specific requirements are stated with some reference

to, or consideration of, user requirements, another subject that is often treated with casual interest.

## NEED TO DETERMINE USER REQUIREMENTS

At this point it is relatively easy to make some general statements about user requirements. For example:

1. The user has a need for a reference (or document, or fact) retrieval service that will provide a rapid response to his queries.

2. The user has a need for a timely current-awareness reporting service that will keep him informed of information of interest to him.

However, these generalities do not provide enough guidance unless one can define and state more specifically each of the elements in the statement. In the case of the first statement above, for example, who is the user, and are there users with different needs? How much of a need is there--enough to pay X dollars for the service? What is meant by service--self-service, red-carpet service, on-call service, local or national service? Retrieval of what--citations, abstracts, full documents? In what order should the answers be presented to the user--by relevancy, by author, by intellectual level? In microform, hard copy, or cathode ray tube display? What kind of queries are of interest--what time span, what level of intellectual difficulty, how exhaustive? The same kind of critical questions can be posed to the second statement. It is the answers to these more critical questions that will provide the information necessary for a more comprehensive library system design or evaluation.

At present, we do not have a complete understanding of user needs. We have made some educated guesses and extrapolations, but the picture is still incomplete. There are still many simple and fundamental questions that we cannot answer at this time. For example, is it worth the extra cost to have inter-library loan material between distant libraries sent airmail in order to reduce the delay in providing the user with the

information? Does the value of requested information (or material) change with delay time as a continuous function, or is it some other type of step-function so that there is no value in reducing a delay from 14 days to 13 days, and that benefits occur only when there are large improvements in response times? It might be possible, for example, to obtain great improvements in the researcher's information system by relatively simple means such as using airmail for all traffic between libraries--but you can't be sure unless you have more knowledge of user needs and the values placed on timely deliveries of information and materials. At present, library evaluations must be based in part on best guesses and assumptions regarding user needs.

## NEED TO ESTABLISH CRITERIA FOR EVALUATION

One point that must be faced by the evaluator is, "What criteria or measures are to be used to describe the performance of the library?" Is it meaningful to evaluate a library in terms of the size of its holdings or speed of service? The answer seems to be "Yes, to some degree." However, a number of other criteria have also been suggested. For example:

> Quality of the holdings (e.g., file size, coverage of specific fields, quality and condition of the file items, storage media, time span, and type of material in the collection)
>
> Number of items furnished in response to an inquiry
>
> Recall (i.e., degree to which relevant items were located and obtained)
>
> Relevancy of the search products
>
> Response time to satisfy user requests
>
> Operating costs for various aspects (e.g. acquisition, processing, service)
>
> Reliability and accuracy of the response
>
> Form of products and service provided

Amount of user traffic that can be accommodated

Ease of user communication with the system

Ease of modification of the system.

Many of these factors cannot be measured quantitatively, and we must rely somewhat on expressions of judgment or opinion. Although some criteria can be stated in terms of a numeric measure (e.g., "For this type of library, the collection must consist of at least X volumes.") the ability to state a criterion in numeric terms does not necessarily make it a good test.

CURRENT PRACTICE

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STANFORD RESEARCH INSTITUTE
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November 1963

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## INTRODUCTION

As long as there have been libraries efforts have been made to evaluate their performance. This is a difficult task. Such evaluations in earlier times may have been done by a relatively simple process, such as counting the number of volumes, or checking to see if particular standard works were in the collection. Current practice is such that more comprehensive evaluation procedures can be used, if desired; however, the fact seems to be that few, if any, current libraries undergo anything that approaches a realistic evaluation, either on an occasional or continuing basis. Few industrial or university libraries, for example, receive the same degree of performance audit as other units in the same organizations. However, there are more systematic procedures that can be employed for library evaluation. The intent of this paper is to note some of the procedures that might be used, and to suggest what the libraries can do at this time to help their evaluation. In general, these remarks are applicable to all types of libraries, but they will be discussed in this paper in the context of technical libraries.

NEED TO STATE THE LIBRARY'S BASIC OBJECTIVES

Fundamental to the evaluation process is the library's stated objectives. That is, what is the intent and purpose of this library? (For example: To make a profit? To serve the faculty rather than the students? To be used ~~for~~ to support historical rather than current research?) To stimulate the intellectual activity & interest of the community? Few libraries state anything more than a few broad generalities, and some perhaps have never taken the time to consider and state exactly what it is that they are supposed to do. And you can't evaluate the system until you know what it's supposed to do! As an example of some of the very general objectives that have been stated by individual libraries, let me quote some of their public statements:

Library #1 "Its purpose is to supply you as much pertinent information as possible for your job . . . , whether it be manufacturing, administration, accounting, or engineering."

Library #2 ". . . The engineering library is organized to provide for the technical information needs of (the) employees."

Library #3 ". . . The purpose of the Library is to make available to (the) staff the scientific literature of the world."

~~How~~ Can you cite your objectives?

In order to obtain any meaningful results, the library must be evaluated in terms of how well it fulfills its objectives. Consequently, a clear statement of objectives is a prerequisite to any attempt at evaluation. But even if you have a statement of objectives such as the ones just mentioned, how can you evaluate whether or not the library ". . . provides for the technical information needs of (the) employees," or ". . . makes available to the staff the scientific literature of the world?" The answer seems to lie in getting both a more specific statement of the objectives, as well as translating these general objectives into some more specific requirements. Presumably, these general objectives and the specific requirements are stated with some reference

to, or consideration of, user requirements, another subject that is often treated with casual interest.

NEED TO DETERMINE USER REQUIREMENTS

At this point it is relatively easy to make some general statements about user requirements. For example:

1. The user has a need for a reference (or document, or fact) retrieval service that will provide a rapid response to his queries.

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However, these generalities do not provide enough guidance unless one can define and state more specifically each of the elements in the statement. In the case of the first statement above, for example, who is the user, and are there users with different needs? How much of a need is there--enough to pay X dollars for the service? What is meant by service--self-service, red-carpet service, on-call service, local or national service? Retrieval of what--citations, abstracts, full documents? In what order should the answers be presented to the user--by relevancy, by author, by intellectual level? In microform, hard copy, or cathode ray tube display? What kind of queries are of interest--what time span, what level of intellectual difficulty, how exhaustive? The same kind of critical questions can be posed to the second statement. It is the answers to these more critical questions that will provide the information necessary for a more comprehensive library system design or evaluation.

At present, we do not have a complete understanding of user needs. We have made some educated guesses and extrapolations, but the picture is still incomplete. There are still many simple and fundamental questions that we cannot answer at this time. For example, is it worth the extra cost to have inter-library loan material between distant libraries sent airmail in order to reduce the delay in providing the user with the

information? Does the value of requested information (or material) change with delay time as a continuous function, or is it some other type of step-function so that there is no value in reducing a delay from 14 days to 13 days, and that benefits occur only when there are large improvements in response times? It might be possible, for example, to obtain great improvements in the researcher's information system by relatively simple means such as using airmail for all traffic between libraries--but you can't be sure unless you have more knowledge of user needs and the values placed on timely deliveries of information and materials. At present, library evaluations must be based in part on best guesses and assumptions regarding user needs.

## NEED TO ESTABLISH CRITERIA FOR EVALUATION

One point that must be faced by the evaluator is, "What criteria or measures are to be used to describe the performance of the library?" Is it meaningful to evaluate a library in terms of the ~~size~~ completeness of its holdings or speed of service? The answer seems to be "Yes, to some degree." However, a number of other criteria have also been suggested. For example:

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>
> Number of items furnished in response to an inquiry
>
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>
> Relevancy of the search products
>
> Response time to satisfy user requests
>
> Operating costs for various aspects (e.g. acquisition, processing, service)
>
> Reliability and accuracy of the response
>
> Form of products and service provided

Amount of user traffic that can be accommodated

Ease of user communication with the system

Ease of modification of the system.

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* Write to Ted Hines (now at Columbia Library School) for the syllabus to a Rutgers course he taught which included this sort of thing.

over

There was a fad about 10 - 15 years ago in library schools to have students work on library surveys. The standard text to follow was McDiarmid The Library Survey. This might be worth looking at.

Suggest a few readings on subject of ~~plots~~ performance evaluation