

Valuing Special Libraries and Information Services

Report of a Project for the
Special Libraries Association

Based on a Presentation at
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1 Introduction

Acknowledgments

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1.1 Exhibit 1. Acknowledgments

This project was begun several years ago under Ruth Arnold's predecessor Liana Sayer at the SLA. This report is based on a presentation by Paul Kantor, on June 8, 1998 in Indianapolis to the Special Library Association. There are quite a few people and organization who were essential to this project. (Exhibit 1). Ms. Jocelyn Williams did layout editing for this report.

We realize that what every reader of this report would really like is a magic pill labeled "swallow me and increase your budget". We cannot provide that. What we can provide is tools to help you define, and assess, the value of your library in terms that make sense to you, to your users, and to the top management of your corporation.

The issue we address is: "Where do we find the value that libraries and information services provide to corporations?" Many people would like to look for this value at the bottom line because they feel that the bottom line is the only place to measure value in a corporation. We feel that that is not the right place to look. There are several reasons for this. The first reason is that there is enormous difficulty in attributing any particular change in the bottom line to the information that's been used. If you asked physicists or engineers to evaluate the impact, they would say it's really very simple. You just measure corporate profit this year, with the library or information service, and

then you compare that with corporate profit for the same year, without the library or information service. Of course this is an experiment that we can't do. We can't live the same year twice in two different ways.

Where is the Value?

- **Bottom Line?**
 - Difficulty of attribution
 - CorporateProfit(With LIS) *versus* CorporateProfit(Without LIS)
 - We cannot do this experiment to prove the value
 - Inappropriate measure
 - Local police department - asked to generate revenue
 - **issues inspection citations** (produces revenue) rather than **patrolling to prevent crime**.

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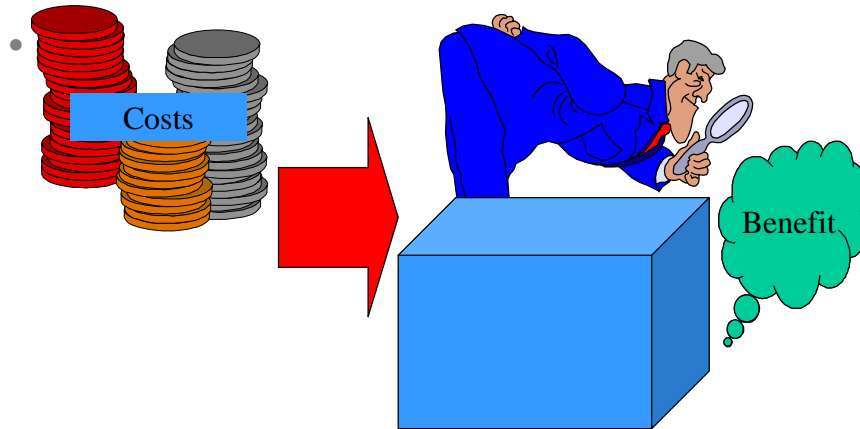
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1.2 Exhibit 2. Why the Bottom line doesn't work

We also feel that looking to the bottom line for an interior service such as the library and information service is really an inappropriate measure. As an analogy, I live in a small town whose town council recently came to the police department and said "You guys are not generating enough revenue for us, what are you going to do about it?" Well, that was no problem for the police department. They set up a trap down on River Road and they issue inspection citations. If your car has been one month past the scheduled inspection date, you get a ticket and that ticket costs \$122. This certainly generates revenue for the town. But the police running that trap, and giving those tickets, are not patrolling the town to prevent crime of other kinds. In other words, because the police department has been asked to measure itself by an inappropriate measure, it winds up doing things that are inappropriate to the overall goals of the town.

Another way of looking at it is in terms of Exhibit 3. The corporation certainly knows that it puts money into the library or information service, but it has a hard time seeing the benefit, which tends to be rather abstract. (That is why we represent it by a cloud in the picture). Thus, the question we come back to is "Where should we look for the contribution that the library or information service makes to the corporation?"

What kind of return is there?



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1.3 Exhibit 3. Intangibility of the product

The Corporate Bottom Line is not suitable because it is just too far away from the actual activities of the library. There are substantial time lags before anything can get to the bottom line. Beyond that, there are all kinds of intervening factors in the transformation of some information into a contribution to bottom line. These factors may enhance or diminish the impact of the library and we don't see any possible way to trace them. (Exhibit 4)

Where Should We Look?

- The Corporate Bottom Line is too far away.
 - Time lags; intervening factors
- Corporate Executives are too far away
 - Global perspective; not the details
- The Library Staff are too close
 - See the interactions, but not the results
- Users are the ideal point of leverage
 - See the interactions, and the purpose, and results

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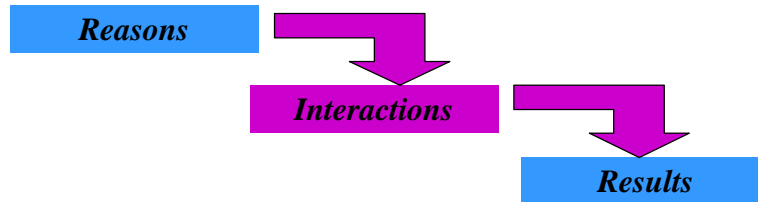
1.4 Exhibit 4. Users as the Balance Point

Corporate executives are too far away from the operation of the library and information service. Many of them don't actually use it themselves. They may, at best, send someone else to get some information. Even if they do use it, directly or indirectly, they deal with only one specific component of the overall corporate mission. So they really cannot have a complete view of the contributions that the library makes. Another way to think of it is that the proper function of corporate executives is to take a global perspective. From the global perspective, the specific contributions that the library makes are just too detailed to be on their radar screens.

On the other hand, the library staff is too *close* to things to be the right basis for evaluation. The members of the library staff can see the interactions that they have with people in the corporation. But they are not in a position to see the reasons for those interactions, and they are not in a position to see the results. Thus, they cannot really judge whether what they did (even if they did it "correctly", that is, according to best practices) is really having an impact on the corporation.

A New Kind of “User Survey”

- Not “satisfaction” - a term which has no meaning in the corporate setting
- Contextually based:



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1.5 Exhibit 5. Understanding the context

2 Users as the basis of describing value

It follows from this analysis that the users are the ideal point of leverage for assessing impact. The users are the only people in the whole corporation who see the interactions with the library, and see the purposes for those interactions, and they see the results of those interactions. That is why our Study of the Value of Special Libraries focuses on interviewing the users of those libraries.

Because we are trying to describe the diversity of impact, and not just its magnitude, this is a new kind of user survey. In particular, we have to be very careful how we address our questions to the users. There are many, many different kinds of studies that can be broadly lumped together under the phrase “user satisfaction”. However, when you take “satisfaction” literally it means “*are the users pleased or happy?*” That is really a narrow concept that doesn’t help us in the corporate setting. The library doesn’t exist to make the users happy, it exists to support their work. In other words, if we were to use a question like “*Are you pleased with the library*” we wouldn’t be getting at what we need to know. We wouldn’t be getting at the dimensions of corporate value that are provided by the library.

Another way to look at it is to say that our user survey is contextually based. The context is provided by the original reasons for which a person consults the library information service. Those reasons lead to the interactions with the library and those

Reasons

- Why did you use the library?
- A.1 For a **TASK** or project
- A.2 For **PERSONAL** reasons* (*Academic*)
- A.3 To get an **OBJECT, or INFORMATION** or to perform an **ACTIVITY**

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2.1 Exhibit 6 Taxonomy of Reasons for using a library

interactions eventually contribute to the results. This is a framework that we used in a very successful study of academic and research libraries, in which we interviewed over 500 users of those libraries. [Kantor et al., 1994; Saracevic & Kantor, 1997] The results of those studies showed us that we could develop a taxonomy, or classification scheme, for the reasons, for the interactions, and for the results. The taxonomy developed is what's called in sociological theory a "grounded theory". This means that the theoretical framework we present here is grounded in our actual observations. In other words, it wasn't developed by some kind of deduction from other theories about human behavior or about libraries or information.

3 A Taxonomy of Value

The taxonomy that we developed is quite complex and if you are interested in a very thorough academic presentation of it we refer you to a pair of papers that we published in the Journal of the American Society for Information Science (Saracevic & Kantor 1997a, 1997b). For conciseness and presentation here, we are going to show you only the very highest levels of taxonomic outline.

3.1 We begin with a three-facet taxonomy of the value obtained in using the library. The first facet relate to reasons. The first level in this facet is expressed in terms of doing some particular task or project. The second is a category, which we call, very broadly, "personal reasons." This turned out to be quite important in the academic setting because many things that people do in that setting are

Interactions

- B.1 **RESOURCES** - availability, accessibility
- B.2 **USE** of resources, services
- B.3 **OPERATIONS and ENVIRONMENT**

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Exhibit 7 Taxonomy of interactions with the library

intended to contribute to their own personal growth, improvement, or education. For example, if a student comes to a library and gets lost and spends an hour learning his way around the place, that's counted as certain amount of growth in his knowledge and understanding of the library. Of course in the corporate setting that would simply be counted as expensive wasted time. The third category in the top-level facet of the taxonomy for reasons is a kind of catch-all, which includes "get an object or get some information or perform some activity". We tried to resolve this category into some more satisfactory subpieces, but I have to admit that we have not yet been able to do that.

The second top-level facet in the taxonomy deals with Interactions. Again we find three headings. The first has to do with the value that people attach to the resources at the library, and particularly to their availability and accessibility. We make a very clear distinction between those two concepts. We say that the service or resource is available if indeed you can get it at the library. On the other hand, accessibility is not a "yes or no" issue, but has to do with how difficult it is to get to the resource. You can read more about this in (Kantor 1984). The second category in the Interactions part of the taxonomy is described in terms of the use of particular resources and services. The third category deals very broadly with what we called operations and environment. This is the category where we code statements such as "*The library staff are very competent*", or "*They always seem to know what I'm looking for almost before I tell them*". In other words, these are value statements that users have made about the way the library operates, or about the library as an environment.

Results

- C.1 **COGNITIVE** results
- C.2 **AFFECTIVE** results
- C.3 **ACCOMPLISHMENTS** in relation to tasks
- C.4 **EXPECTATIONS** met
- C.5 **TIME** aspects
- C.6 **MONEY** estimates

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3.2 **Exhibit 8 Taxonomy of results of using the library**

The third top-level classification in the taxonomy has to do with Results and it's not quite so neat as the first two. When we completed our study of academic research libraries we found that it had grown to six different subcategories. The first of these has to do with cognitive results. These are results in which the person says, "*Now I know more than I did*". Those results are very common in the academic setting but don't show up nearly as often in the corporate setting. The second category is affective results. These have to do with how a person feels after having used the library. Typical such feelings are "*Relieved*". Again, these show up much more commonly in the academic setting, where users are much more focused on themselves and their personal development than they are on corporate goals.

The third category in the Results taxonomy is the first one that really makes good contact with the corporate setting, and this is "*accomplishments in relation to tasks*". However, even more important, as we describe a little later, is the fourth category, "*Expectations met*". If you must stop reading at this point, we would say that the most significant finding of our study is that the key dimension of value expressed by users of a corporate library is in terms of whether their expectations are met.

We feel, in fact, that this is a very reasonable way to measure the library. We believe that the people working in the corporation have sufficiently internalized the goals and objectives of the organization so that those goals shape their expectations when they come to the library. They are expecting that the library will help them get the job done. Therefore, when they talk about their expectations having been met, they are in fact talking about contribution to the corporate goals.¹

The fifth category in our study of academic and research libraries was ideas related to time. These are expressions such as “It saved me a lot of time”, or “It was certainly worth the time”.

The sixth category is money estimates. One of the most significant findings of all of our studies is that people do not spontaneously offer money estimates of the value of using the library. This underscores our overall argument that the fiscal or monetary impact of information is too far away from the information itself to be a generally useful dimension of value. In fact, nearly all of the expressions involving money that we have observed in our studies occur not because someone spontaneously offered it, but because we probed or pressed and asked for money value.

4 A New Class of Taxons

In our current study of Special Libraries and Information Services in the corporate setting we have developed six new categories or “Taxons” that are necessary in describing value. For historical reasons we include the in the facet describing "results". We will discuss this issue again below.

(continued on next page)

¹ *At our presentation to the Special Libraries Association, one librarian in the audience pointed out that this is not strictly true for newcomers to the corporation. These people arrive, typically from an academic setting, and have expectations for the library and for their own behavior which are inappropriate. They may come from a very large academic setting and expect the library to own copies of every single journal in which they are interested. Similarly, being fresh from the academy, they may be expecting to spend their own time looking for materials in the library rather than being helped by the librarian. We regard these as transition problems, which eventually iron themselves out.*

The first of these categories relates to Customers, the people who buy whatever it is that the corporation produces or provides. The second category has to do with products and services: what the corporation does. The third category has to do with costs, profits and other fiscal aspects of the corporation. The fourth has to do with markets. We're interested to see this arise, because logically we know that markets are just made of customers and what goes on in markets is that you buy or sell products and services. But apparently the concept of markets is firmly enough planted in people's minds that it comes up as a separate category. The fifth category is human resources. The sixth category, not surprisingly, is management, which is of concern directly or indirectly to many of the people who use libraries and information services.

C.7 ACCOMPLISHMENTS in relation to CORPORATE OBJECTIVES

- C.7.1 Customers
- C.7.2 Products, services
- C.7.3 Costs, profits
- C.7.4 Markets
- C.7.5 Human resources
- C.7.6 Management

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4.1 Exhibit 9 Taxonomy of Corporate Objectives

5 Our Study Method

How did we approach the problem of finding out these new facts and ideas? We have to begin by telling you a method that won't work. We discovered that it didn't work in the early days of our study of research libraries. What *doesn't* work is to

Study Method

- Ineffective: “*why did you use the library today?*” Produces answers like “*to photocopy an article.*”
- Effective: Modified Critical Incident. Two phase approach:
 - Phase I. Contact card: *At time of use.* “*What was the project or purpose of your use of the LIS today?*”

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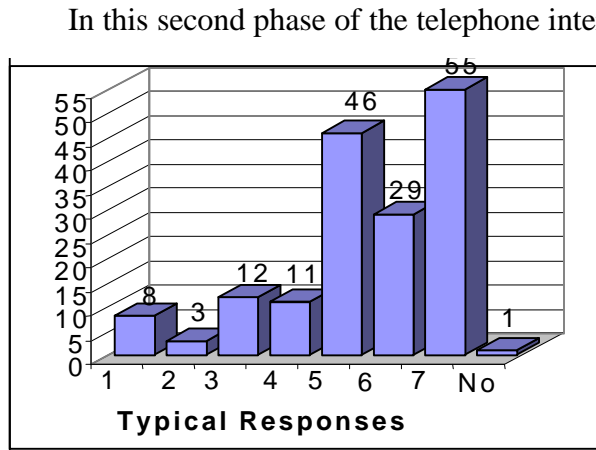
5.1 Exhibit 10. Two-phase Modified Critical Incident Method

ask people the question “*Why did you use the library today?*” When we ask people this question, they give answers like “*To photocopy an article*”. Once they’ve said that it seems practically impossible to get their minds back on track so that they’re talking about the real reasons for coming to the library. Whatever we ask them, they focus again and again on that photocopying event, or maybe on the article itself. But once they’ve started talking that way they won’t talk about the real reasons and the real results.

What we have found to be effective is a kind of modified critical incident method with a two-phase approach. In the first phase people using the library (or contacting the library by email or by fax) are offered a contact card. That contact card includes a question asking “*What was the project or purpose of your use of the library or information service today?*” Of course if they don’t come to the library they’re not handed a card, but they are sent a fax or an email with the same question. It is distributed to them in precisely the same mode that they use to approach the library.

The second part of the procedure is a follow-up interview done at least two weeks later and often more. The interview begins with the interviewer referring to the contact card and reminding the respondent about the use of the library, asking, “*Could you tell me more in your own words about ...*”. There is a blank on the interviewer’s form and exactly the reason that was given on the contact card is copied in there. In this way we tried to get the respondent to think back about that visit and to think about it in terms of the reasons for doing it.

5.2 Figure 1: Contribution to Task



not the real purpose of this study. The purpose of our study, which is aimed at developing a taxonomy, is to set the stage for the following very important question: “Why did you choose that score?”

The heart of our work is detailed study of all the open-ended responses that people gave to questions like this one. These have all been tape recorded and transcribed and then analyzed by trained judges, using a computer program that we developed, to build a table of more than 2000 verbatim coded utterances provided by library users.

Framing the Interview

- **A. Could you tell me more, in your own words, about the reason for** (What is said on the contact card)?
- (*Note: If the respondent mentions a reason that is; A.1 task/project oriented, A.2 designed to obtain a specific object, A.3 related to a corporate objective and/or A.4 personal check the appropriate box .*)

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5.3 Exhibit 11. Phase 2 Initial Question

Typical Questions

- Phase 2. Telephone Interview. Many questions in the form of:
 - A:1.e. Using a scale from 1 to 7 where 1 means the information obtained did not contribute to or facilitate the accomplishment of the task at hand, and 7 means that the information did significantly contribute, how would you rate the information that you obtained?
 - A:1.e.1. *"Why did you choose that score?"*
- Not a statistical study. Libraries (10 in all) and users (223) are self-selected.

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5.4 Exhibit 12. Scale Questions Used as Basis for a Probe

Study Size

- 10 Participating libraries
- 223 completed, transcribed telephone interviews.
- Scaled (closed response) and unscaled (open-ended) responses.
- 2,075 selected and coded utterances.

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5.5 Exhibit 13. Number of Libraries and Interviews

6 Not a Random Study

A few words are in order here about why we can't make too much out of the numerical results that we obtain. Our study was, by design, not a statistical study. The libraries, 10 of them in all, and the users (223) have been self-selected.

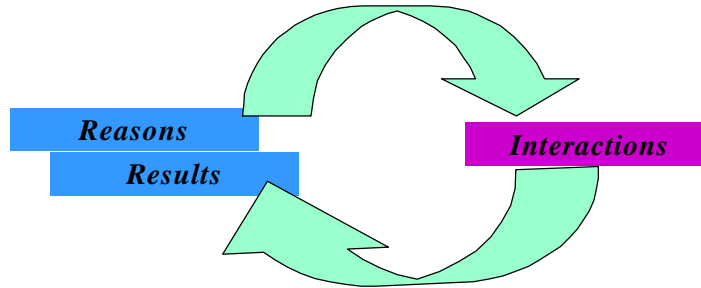
Common sense tells us that the situation will probably be better at these libraries than at libraries which are chosen at random. After all, the library which feels that it's having trouble in meeting its customers needs, or its corporate goals, would probably not volunteer to enter the study. Similarly, if a particular library patron is known to be an impossible curmudgeon, then it's unlikely that the librarian would hand that particular individual a contact card. Therefore, in this report whenever we present numerical data in some kind of chart or table, we're doing it in order to show how such data can be presented, and not with a claim that these represent results of general validity.

7 Significant Findings

Our first significant finding is the corporate library users "close the loop". Recall that in our original diagram of reasons, interactions and results there was a kind of open line from one to the next to the next. This was appropriate in the academic setting, where the results are often unexpected and not closely tied to the reasons for using the library. This is the phenomenon of serendipity. On the other hand, in the corporate setting we find that the users close the loop. The results that they talk about are very close to the reasons that they discussed for using the library. In other words, reasons are the motivation, interactions are something they do to accomplish their goals and the results are tied back to those reasons.

Significant findings

- Corporate Library Users “Close the Loop”



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7.1 Exhibit 14. Corporate Users Close the Loop

Corporate users are results-oriented. The themes or taxons that come up in discussing results are the same ones present in the reasons. In addition, they know that they are results oriented. When we ask them “*Can you link this project/task to one or more corporate goals or objectives*” 190 out of 216 said yes. Of course, in our study this was just to set the stage for the open-ended question “*Can you articulate the corporate goals or objectives?*” We didn’t expect them to give a yes or no answer to this follow-up and, in general, they talked quite a lot about those goals and objectives.

Corporate Users are Results Oriented

- The themes (“*taxons*”) that come up in discussing Results are the same ones present in the Reasons.
 - A:3.a. Can you link this project/task to one or more corporate goals or objectives?
- YES NO N Valid N Missing
- 190 26 216 7
- A:3.b. Can you articulate the corporate goal(s) or objective(s)?

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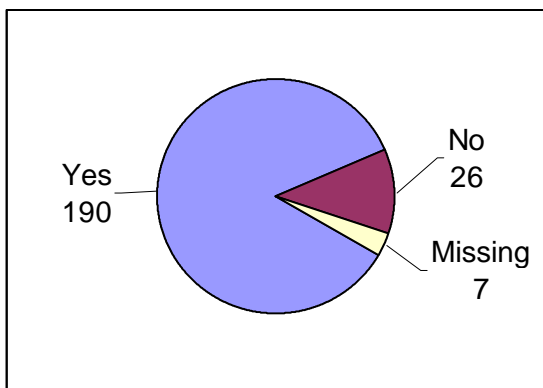
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7.2 Exhibit 15. Most Corporate Users See a Corporate Goal

8 Generalizing the Corporate Dimensions

8.1 Figure 2 Linkage to Goals



We are dealing with a sample of more than 200 users of some 10 different libraries. In doing this we have come up with a set of several corporate dimensions. However we are very much aware that these may be peculiar to the particular places that we happen to study. So we looked for a general taxonomy of the dimensions of corporate objectives. We believe that the best one for dealing with this is a concept called the balanced scorecard as presented by Kaplan and Norton in a pair of papers in the

Harvard Business Review. The balanced scorecard addresses four points: 1. How do customers view the company? 2. In what must the company excel? 3. Can the company continue to improve and create value? 4. How does the company look to shareholders?

These represent dimensions of excellence that everyone who's ever been in business knows are important, but they are often not articulated clearly enough to shape tactical and strategic planning. It is really important to know how customers view the company in order to know that next year you will have a bottom line, and not be on a bread line. In order to be in business any company must excel at something. So, it must

Dimensions of Corporate Objectives

- The *Balanced Scorecard* (Kaplan and Norton. Harvard Business Review.)
 - 1. *How do customers view the company?*
 - 2. *What must the company excel at?*
 - 3. *Can the company continue to improve and create value?*
 - 4. *How does the company look to shareholders?*

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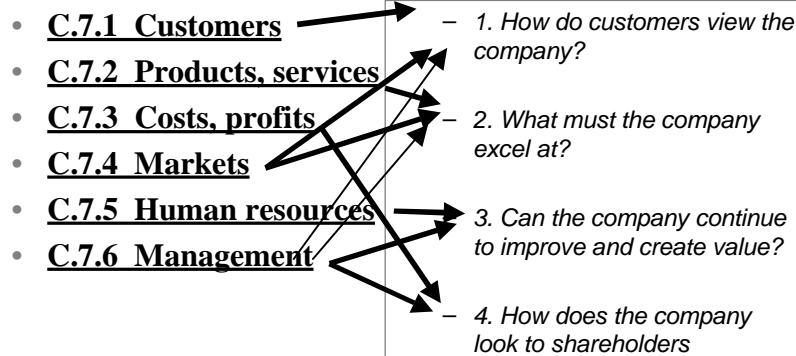
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be finding its areas of excellence and focusing on them. In addition, in today's highly competitive

8.2 Exhibit 16 The Balanced Scorecard Concept

environments, no company can survive unless it continues to improve and to create value. These three goals are the practical working goals that must be pursued in order to insure that a company will look good to its shareholders. In reviewing more than 2000 coded utterances we found many that dealt with the first three categories here and only one rather amusing one that seemed to specifically target the fourth. This was an interview with someone who wanted to know whether the company could adopt particular accounting rules that will cause its profit to look larger to the shareholders.

Relating Taxons to Scorecard



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8.3 Exhibit 17. Corporate Taxons versus Balanced Scorecard

We can draw some arrows to relate the taxons that we developed in those six corporate objectives to the balanced scorecard. This is shown in Exhibit 17. Clearly, “customers” is related to customers; “products and services” is related to the issue of corporate excellence; “costs and profits” is related to the shareholders; “markets” seems to us to be most related to customers and also to the areas of excellence. We have some problems with knowing what human resources do exactly, but presumably they get the best people into the right places and help the company to continue to improve and create value. Finally, management is responsible for everything.

Where does the L/IS Fit in?

- *1. How do customers view the company?*
 - *Support for marketing; competitive intelligence*
- *2. What must the company excel at?*
- *3. Can the company continue to improve and create value?*
 - *New product development; continuous improvement*

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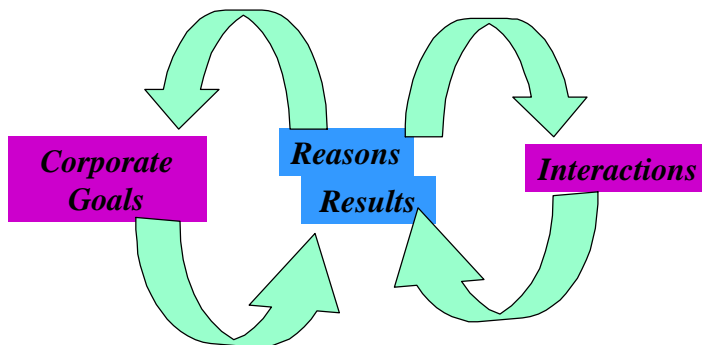
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9 The Corporate Library on the Balanced Scorecard

9.1 Exhibit 18. Place of the LIS on the Corporate Scorecard

In this framework, where does the library and information service fit in? First, definitely in support for how the customers view the company, through support for marketing and support for competitive intelligence. Second, the library certainly contributes to issues of corporate excellence. Again, this can be in the area of competitive intelligence, or it can be in the development of new products and services. Third, the library surely contributes to improving and creating value. As already mentioned, it contributes to the development of new products and services. In addition, it plays a role in other kinds of continuous improvement and corporate learning, which may range from individual growth to development of new markets.

The Full Picture



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9.2 Exhibit 19. Corporate Goals Drive and Benefit from Use

We can assemble this new understanding, together with our earlier three-fold taxonomy, into a diagram like the one shown in Exhibit 19. The Reasons, and the Results, both stand between the corporate goals and Interaction with the library or information service. The corporate goals provide the initial motivation behind the reason. And they provide the final realization of the results. The users of the library, internalizing those corporate goals, interact with the library or information service, and that interaction is what is visible from the library side. The Taxonomy helps us to trace back, from the interactions as we see them, to the reasons and results, and ultimately, to the corporate goals. These goals may be expressed according to the balanced scorecard, or in any of a hundred other ways. The work reported here provides a foundation for beginning to discuss the value of the library, in a way that spans all four key dimensions of the value: Corporate Goals, Reasons, Results, and Interactions.

Principal Findings

• Code	Count	Meaning
• C.4	358	Expectations Met
• B.2	254	Use of Resources and Services
• B.3	218	Operations and Environment
• A.3	213	Get Object, Information; Activity
• C.5	164	Time Aspects
• A.1	140	For a task or a project
• B.1	135	Resources - availability; accessibility
• C.2	130	Affective Results
• C.3	102	Accomplishments in relation to tasks
• A.2	87	For personal reasons
• C.6	86	Money estimates (prompted by question)
• X.I	60	Corporate Internal Process Excellence
• C.1	36	Cognitive Results
• C.7	22	Utility of Information received
• X.C	21	Corporate: Customer Orientation
• Total	2026	

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9.3 Exhibit 20. Most Prevalent Taxons in Our Analysis

In Exhibit 20, we have a rather dense array of “Principal Findings.” When we classified the things that people said, we found a number of taxons or classifications that occurred very frequently. As already mentioned, the one that occurred most often is the category “Expectations Met”. This occurred in 358 of the coded responses, which is something like 17 or 18 percent. It belongs to area C of our taxonomy in that it deals with Results.

The next two important codes deal with Interactions. The first is uses of resources and services, and the second is the very important area of operations and environment. The fourth leading taxon is the first one related to “reasons” and it is that embarrassing catch-all, “to get an object or information or to perform an activity”. Just below it is the fifth ranked taxon, which deals with time aspects and the results. This does show that of all the measures usually developed in TQM or in other corporate metric schemes, time is the one that is most likely to be meaningful to patrons of the library. You have to look quite far down the list to find money estimates which, as we mentioned, were really prompted by a question and still came up in only 86 of the more than 2000 coded utterances.

To reiterate then, the major taxonomic finding of this particular study: the users are already focused on the reasons for using the library and on the anticipated results. They have internalized the corporate goal. The library or information service demonstrates its value simply by meeting their expectations.

To quote from our technical report “Users of special libraries discuss value in terms of whether, and to what extent the library or information service meets, or does not meet their expectations of it.”

Expectations Met

- The users are already focussed on the reasons for using the library, and on the anticipated results. They have *internalized* the corporate goal.
- The library/information service shows its value by *meeting their expectations*.

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9.4 Exhibit 21. Role of Meeting Expectations

Meeting Expectations

- From Kantor and Saracevic
 - *Users of special libraries discuss value in terms of whether, and to what extent the library or information service meets, or does not meet, their expectations of it.*

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9.5 Exhibit 22. Principal Finding

Consistently across libraries

Code	1	2	4	5	6	7	8	9	10	11
C.4	1	1	1	1	1	1	1	1	1	1
B.2	3	2	3	3	4	2	4	3	2	3
B.3	1	5	8	4	2	5	3	2	3	6
A.3	5	9	2	2	6	3	2	4	5	2

Code B.2 is the 3rd most common code at library 1, but ranks 2nd at library 2.

While there is variation in the lower ranks, taxon C.4 ranks first at every one of the libraries studied.

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9.6 Exhibit 23. Meeting Expectations Important at All Libraries

This result occurs very consistently across all the libraries. As Exhibit 23 shows, while there is variation in the lower ranking codes, the taxon having to do with meeting expectations is ranked first at all 10 of the libraries studied. Even though our study was not based on statistical sampling, we still feel that this consistency, across all 10 libraries, suggests that this taxon would rank very high, if not first, in any study of the value of corporate and special libraries.

10 Presenting Numerical Results

In the next few pages we discuss and present some of the numerical results of our study. As mentioned, these do not represent claims of universal or general validity. You should rather think of them as illustrations of how to present the reports of a study done at your own library in terms that will be effective. In most cases, when we discuss a representative number we use the median. The median is the number such that half the responses were above it and half the responses were below. There is another frequently used typical measure, which is the mean. The mean is defined as the average. In studying libraries we generally find that the median is more useful in cases where someone might give an outrageously large answer to a question. For example, if most people who use the library say that the service was worth \$100 and one person says it was worth a million dollars, the mean will be several thousand dollars, even though no one said that. The median, on the other hand, would be \$100.

Levels of Performance are Very High

- *(With the usual caveats about sample selection - volunteer libraries and volunteer users of the libraries) (Medians)*
- *Used the library 20 min (1 - 150)*
- *Expect to use info in 1 day (0-70)*
- *Recognized Need 1 day ago (0 -years)*
- *Task 70% completed*

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10.1 Exhibit 24 Representative Results on Scale Questions

The users we studied typically used the library for 20 minutes. Values ranged from a low of one minute to a high of 2 ½ hours.

The users typically expect to use the information in about one day, with a low of much less than a day and a high of ten weeks.

Users typically recognized the need for the information just one day ago, although some recognized it even more recently and others had known of it for years. Notice the interesting thing here that there's a kind of very quick turnaround — people are coming to the corporate library to get information that they need in the rapid flow of their work.

Typically users indicated that the task they were working on was about 70% completed.

The tasks that brought them to the library were important. The median value is that it consumed 30% of their working days. These are not small or short projects. Typically the patron has been working on the project for 12 weeks and expects to continue for 8 weeks more.

Summary Results

- *Portion of day it consumes: 30%*
- *Been working on it 12 weeks*
- *Expect to continue 8 weeks more*
- *Contact advanced project: 86%*
- *By about 40% of project*
- *Had what I wanted 83%*
- *Easy to use: 1.56 on a 7-point scale*

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10.2 Exhibit 25. Importance of the project and the Library

86% of the patrons report that contact with the library advanced the project. They report that typically it was about a 40% advance in the project. We have to admit that we don't exactly know what this means; if they'd been working 12 weeks and they have 8 weeks to go and they've just made a 40% advance, it's a little hard to understand how all the time gets taken up. Would three visits to the library lead to 120% completion?

83% of them felt that the library had what they wanted. They found that it was easy to use, averaging 1.56 on a 7-point scale.

Users estimated that they had pretty good knowledge of the library, a little bit above 4 on a 7-point scale. Three quarters of them knew of some alternative in the corporation to which they could turn to get the information. 90% of those who knew of an alternative have used it at sometime in the past, but 2/3rds of those report that it costs extra to use that alternative source. The median cost is \$250. In addition, about 2/3rds of them reported that it took extra time to use the alternative.

If you must talk to people who are "bottom line conscious," here is some evidence that alternative means of getting the information within the corporation not only cost more but they take longer too.

Summary Results

- *Knowledge of the library: 4.12 on 7-point scale*
- *There is an alternative in the corp. 75%*
- *I have used it: 90% of those who said yes*
- *It cost extra 66% of the time: Median \$250.*
- *It took extra time: 78/134*

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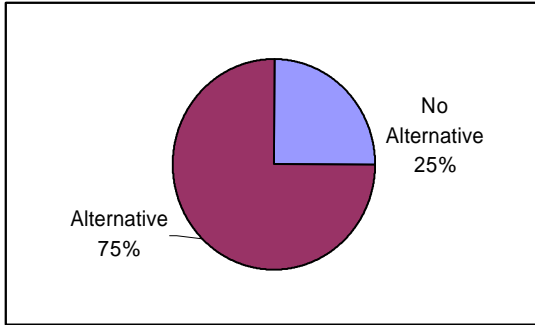
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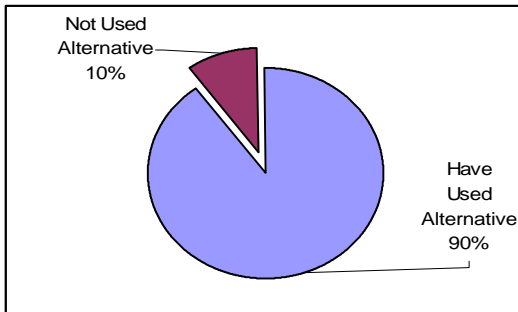
10.3 Exhibit 26 Knowledge and Alternatives

People are enormously satisfied with the library — just below 6 on a 7-point scale is the median. If they were asked to put a dollar value on the library service the median dollar value was \$100, although the mean, as we discussed earlier was a good deal higher — over \$400.

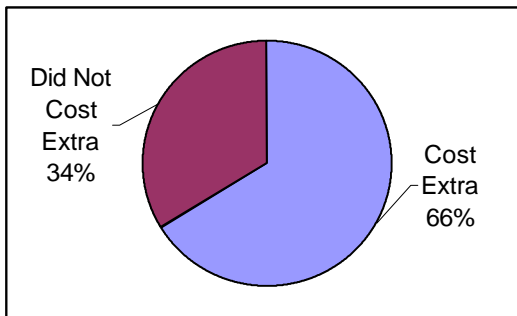
We present here some typical results in the discussion of alternatives.



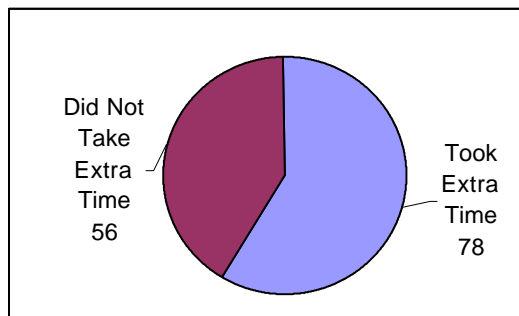
10.4 Figure 3. Library Alternatives



10.5 Figure 4. Use of Alternatives



10.6 Figure 5. Cost of Alternatives



10.7 Figure 6. Time for Alternatives

More results

- *Satisfied. 5.95 on a 7-point scale*
- *Dollar value: Median \$100; Mean 420*
- *On a scale of 100: Score for library 90%*
- *Worth the time: 6.6 on 7-point*
- *Would you pay: 127/167*

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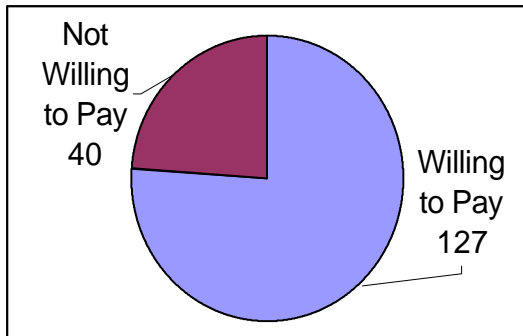
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10.8 Exhibit 27 Satisfaction, dollar value estimates

When we asked people to give an overall score to the library on the basis of 0 to 100, the median score for the library was 90%. When we asked them whether what they got from the library was worth the time that it took, the mean was 6.6 on the 7-point scale. When asked if they would pay for the information that they received $\frac{3}{4}$ of them said “yes”. We didn’t ask whether they would pay with their own money, or corporate money, or client money, or “funny money”, so we don’t know exactly what this response means.



10.9 Figure 7 Users Willingness to Pay

11 Planning a Study

What are the implications of all this for measuring and evaluating corporate libraries? First, we see that satisfaction is very high. Because satisfaction is high, if we want to measure how well a library is doing, one might take a kind of “total defects” approach. That is, we might count the fraction of all users who do *not* give the library a 6 or a 7 on a 7-point scale, or who do *not* rate it at better than 85% on a 100-point scale. Then we could focus on those people who give a lower score, count them and in addition explore their reasons for dissatisfaction.

Implications

- Satisfaction is high==>
 - Adopt a “defects” approach
 - Count fraction of users who do not give a 6,7
 - Explore the reasons for the service failure
- Value is clear to the users
 - Use this as a basis for describing value
 - Identify the “balanced scorecard” components

11.1 Exhibit 28 Total Quality Approach and Balanced Scorecard

A second clear implication of this study is that the dimensions of value are very clear to the users. This means that we should use these dimensions, which the users perceive, as the basis for describing the value of the library. In each particular corporation this means mapping what the users say into the recognized corporate objectives. If your corporation has adopted the balanced scorecard, then the remarks in this report will be immediately useful. If not, you will have to make the translation yourself, in discussion and negotiation with managers. One good way to do this is to select promising user statements having to do with value, and discuss these with managers to see how they resonate with the corporate goals.

Can you do this yourself? There are some arguments for not doing it yourself. If you hire an outside consulting firm they will be very familiar with issues having to do with statistical significance, uniformity of questions, and other little traps that can change the meaning of the study even when we didn't intend to. On the other hand, if you do it yourself, then you have hands-on contact with the data and you are very likely to discover some things that your outside consulting firm is not looking for. Sometimes a very good compromise is to hire outsiders to do the interviews and to transcribe them if you can budget for that (it costs close to \$10 per interview to get them transcribed; it cost us \$10 per interview to actually get the telephone calls made); then you can really guarantee your respondents anonymity. After all, if you call them yourself, they know who you are and they know that you know who they are and you have a very different conversation. So, the ideal breakdown is to have the interviewing and transcription done by an outside service but then to examine and look over the results yourself.

11.2 Exhibit 29 Overview of a Self-Study

Doing it yourself

- Select a subset of the questions
- Conduct the interviews
- Tally the scale data
- Review the interview data
- Place responses onto the taxonomy
 - adapt it as needed
 - prune the unneeded branches

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Now what should you actually do? Our questionnaire, included in the appendices of our technical report, is enormous. We were on a gigantic fishing expedition trying to understand the shape of this whale that is the value of the corporate library. Since you are concerned only with one particular library in one particular corporation you should begin by selecting what seem to you to be a reasonable subset of the questions. You may want to try these out on a few patrons to see if they generate the kind of results that you need. But we are quite confident that the number of questions we used is a good deal larger than you will need in order to gather useful meaningful user dimensions of value.

The second step is to conduct the interviews. The next step is to tally the scale data and try to summarize it in terms that will be meaningful to corporate executives.

Next, you should review the interview data carefully. On the first pass through, keep the taxonomy in the Appendix at hand. Place as many of the utterances onto that taxonomy as you can. You will almost surely find that there are some that just don't fit anywhere no matter how you squeeze them. Don't throw away those utterances. Add one or two, or possibly a few more, new categories to the taxonomy to take care of these problems. They represent important evidence that was expensive to obtain and you want to get everything you can out of it. When you have finished this you will surely find that the taxonomy has many unneeded branches, categories, subcategories and sub-subcategories that simply never occurred. Like a good gardener you should prune these branches off the tree so that it is as concise as possible.

Reporting results

- Qualitative
 - use the extracted texts
 - relate to corporate goals
- Quantitative
 - use a TQM defect elimination approach
 - use several scales to assess aspects of excellence

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11.3 Exhibit 30 How to report results

Now, the final step is reporting the results. There are two kinds of results: the qualitative results and the quantitative results.

You will wind up with a great deal of quantitative data, whether you want it or not. This is the data that results from all those Yes/No or scaled questions that you ask in order to get people talking. Our advice is that you analyze this data in the privacy of your own home, rather than on corporate property. If you find some results that are useful, then by all means write them up. But be wary, because every fact that is written down acquires a life of its own and can be used by a critic, well outside of context. To give an example which would be ridiculous if it were not tragic, you might find that patrons assign an average value of \$100 to a reference query answered. That is a pretty reasonable value; it probably cost somewhere between \$30 and \$60 to answer that query, and in fact it's worth more than it cost. But it could be taken out of context and someone could say "well look, this library cost us \$400,000 a year to run and what do we get out it. We get an answer to a reference query that's worth \$100. "Where is the return on our investment?"

11.4 Exhibit 31 Reporting Results Continued

Reporting results

- Qualitative
 - use the extracted texts
 - relate to corporate goals
- Quantitative
 - use a TQM defect elimination approach
 - use several scales to assess aspects of excellence

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This seems laughable, because we know that the \$100 should be multiplied by the total number of reference queries, and in any case represents only a fraction of all your service. But this is the kind of difficulty that can arise if someone takes the library as a target and finds numbers lying around. In dealing with these quantitative data we think that it might be best to take a kind of TQM (Total Quality Management) defect elimination approach. In other words, you can think of every person who rates the library as less than wondrous (say 5 or below on the 7-point scale) as a kind of “defect in service”. You can tally the number of those defects, try to drive them down over time, and pursue them in greater detail to try to understand what went wrong.

Profile of Excellence

- Confidence in the information
- Ease of getting/using the library or information service
- Worth the time it took to use the library or information service
- The library or information service made a difference to the project

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11.5 Exhibit 32 Typical Indicators of Library Excellence

On the basis of our results here we think that several different scales should be used at once to assess aspects of excellence in the library or information service. Among the dimensions that you might want to attend to are these:

- The user's confidence in the information that is obtained.
- The ease of getting the information or using the library or information service.
- Was the service received or the information received worth the time it took to use the library or information service.
- Did the library or information service make a difference to the project?

People giving positive or high responses to these questions are indicators of success in the library service, as these are various dimensions of meeting the users' expectations.

In Conclusion

- The taxonomy is a tool
- You use it to learn the “value language” of your organization
- You use that language to gather quantitative information about your service.

11.6 Exhibit 33 Taxonomy as a Communication Tool

For the qualitative results, the key steps are to use verbatim the extracted texts, and to relate them to the corporate goals. This is really the step at which you must exercise your best managerial judgment, and it is the step that you want to review and think about most carefully. This is the place at which you define those aspects of the corporate goals against which you propose that your library should be measured. It is also the step at which you define the language that you are going to use in future questionnaires or interviews in order to assess your contribution to that goal. So it's important to get it right.

In conclusion, the taxonomy as we have developed it here is a tool. It is a starting point. You can use it to learn about the “value language” of your organization. When you have got that language down, then you can use that language to gather quantitative information about the service that you provide.

12 Appendix A: Figure 1. Derived Taxonomy ... General classes

DERIVED TAXONOMY OF VALUE IN USING LIBRARY AND INFORMATION SERVICES IN CORPORATE ENVIRONMENTS

General classes and subclasses

A. REASONS for using a library or information service

A.1 For a TASK or problem

A.1.1 Project work

A.1.2 Market, customers

A.1.3 Management

A.1.4 Communication

A.2 For PERSONAL reasons

A.2.1 Cognitive reasons

A.2.2 Affective reasons

A.2.3 Reasons for substitute choice

A.3 To get an OBJECT, INFORMATION or perform an ACTIVITY

A.3.1 Physical (tangible) objects

A.3.2 Intangible objects

A.3.3 Perform an activity or work

B. INTERACTION with a library and information service

B.1 RESOURCES, SERVICES

B.2 USE of resources, services

B.3 OPERATIONS AND ENVIRONMENT

B.3.1 Policies, procedures

B.3.2 Facilities, organization

B.3.3 Staff performance

C. RESULTS of using a library and information service

C.1 COGNITIVE results

C.2 AFFECTIVE results

C.3 ACCOMPLISHMENTS in relation to TASK(S)

C.4 Meeting EXPECTATIONS

C.5 TIME aspects

C.6 MONEY estimates

C.7 ACCOMPLISHMENTS in relation to CORPORATE OBJECTIVES (all in terms of degree of)

C.7.1 Customers

C.7.2 Products, services

C.7.3 Costs, profits

C.7.4 Markets

C.7.5 Human resources

C.7.6 Management

Figure 2. Derived Taxonomy ... General classes and specific categories

DERIVED TAXONOMY OF VALUE IN USING LIBRARY AND INFORMATION SERVICES IN CORPORATE ENVIRONMENTS	
General classes and specific categories: Class A. REASONS	
A. REASONS for using a library or information service	
<u>A.1</u>	For a TASK or problem
<u>A.1.1</u>	Project work
A.1.1.1	Product or process – development, control, quality, improvement, sales
1.1.2	Research, testing, modeling, designing
1.1.3	Professional and other occupational work
1.1.4	Proposal for a project, funding
1.1.5	Review, assessment, appraisal, evaluation of applications, materials, software, technology, databases, proposals
<u>A.1.2</u>	Market, customers
A.1.2.1	Market research or analysis – clients, customers, distribution
1.2.2	Competitive, strategic intelligence – gathering, analyzing
1.2.3	Patents – search, coverage examination, confirmation
<u>A.1.3</u>	Management
A.1.3.1	Economic, financial, business research or analysis– internal, external, costs, savings, improvement, budgeting
1.3.2	Planning, goal or policy setting, - for some activity, work
1.3.3	Legal, regulatory, environmental research – compliance, registration
<u>A.1.4</u>	Communication
A.1.4.1	Paper, report, article , briefing document, brochure, news release, manual-writing, preparing, distributing
1.4.2	Training, demonstration, teaching, instruction, workshop - preparing, gathering materials
1.4.3	Meeting – preparing, presentation, gathering background materials, reporting
1.4.4	Employment - job search, position or job application, interview
1.4.5	Educational assignment
1.4.6	Delegated work - doing it on behalf of somebody else

DERIVED TAXONOMY OF VALUE...

General classes and specific categories: Class A. REASONS ... (cont.)

A.2 For **PERSONAL** reasons

A.2.1 **Cognitive reasons**

- A.2.1.1 Learning something new; confirming, validating something; expanding own knowledge base
- 2.1.2 Staying current, catching up, keeping up to date, orienting oneself as to an area, topic, subject, practice, company
- 2.1.3 Generating ideas, looking for new things
- 2.1.4 Orienting oneself to the information resources, leads to resources

A.2.2 **Affective reasons**

- A.2.2.1 Improving personal performance, management skills, job training; self-improvement
- 2.2.2 Personal , professional development, growth
- 2.2.3 Meeting job expectations

A.2.3 **Reasons for substitute choice**

- A.2.3.1 Using this library service instead of other choices - other information resources, services, contacts, the Internet
- 2.3.2 Saving in time, costs - over outside information sources, other activities, own searching

A.3 To get an **OBJECT, INFORMATION** or perform an **ACTIVITY**

A.3.1 **Physical (tangible) objects**

- A.3.1.1 Getting documents - report, study, book, periodical, article, patent, advertising, specification, illustration, video, image, bibliography
- 3.1.2 Using interlibrary loan or materials delivery service to get a document from the outside or from another location

A.3.2 **Intangible objects**

- A.3.2.1 Obtaining specific information – facts, data; citation, standard, news item, background, clarify something
- 3.2.2 Finding information on contacts – people, addresses, other information sources

A.3.3 **Perform an activity or work**

- A.3.3.1 Reading, writing in the library
- 3.3.2 Browsing, scanning
- 3.3.3 Photocopying
- 3.3.4 Ordering information resources, requesting purchase
- 3.3.5 Searching information resources – databases, indexes, catalogs, reference sources, microfiche collections
- 3.3.6 Requesting a search to be done by information professionals

DERIVED TAXONOMY OF VALUE ...

General classes and specific categories: Class B. INTERACTION

B. INTERACTION with a library and information service

B.1 RESOURCES, SERVICES

- B.1.1 Availability of desired information resources – documents, journals, books, databases - degree of
- 1.2 Completeness of given resource, collection, relation to tasks - degree of
- 1.3 Currency, timeliness of information resources- degree of
- 1.4 Accessibility, ability to use a given resource, service - degree of

B.2 USE of resources, services

- B.2.1 Convenience, ease in using the resource or service - degree of
- 2.2 Effort required in using it, ease of use - degree of
- 2.3 Efficiency, timeliness, promptness, in obtaining a service, a result – low to high
- 2.4 Frustration, confusion in using it or getting what desired - degree of
- 2.5 User performance - degree of perceived ability

B.3 OPERATIONS AND ENVIRONMENT

B.3.1 Policies, procedures

- B.3.1.1 Availability of information or explanation about the services, resources - degree of
- 3.1.2 Clearness of explanations, instructions – degree of

B.3.2 Facilities, organization

- B.3.2.1 Work space - degree of adequacy
- 3.2.2 Conducive for ease, convenience, effectiveness of access, use - degree of
- 3.2.3 Adequacy, quality of organization of resources, materials, services - degree of

B.3.3 Staff performance

- B.3.3.1 Professional knowledge, expertise - degree of
- 3.3.2 Professional handling of requests, services – degree of
- 3.3.3 Responsiveness, helpfulness, empathy, sensitivity - degree of
- 3.3.4 Staff efficiency - degree of

DERIVED TAXONOMY OF VALUE ...

General classes and specific categories: Class C. RESULTS

C. RESULTS of using a library and information service

C.1 COGNITIVE results

- C.1.1 Learning something, extending, enhancing, complementing knowledge
- 1.2 Reinforcing confirming knowledge, facts
- 1.3 Getting ideas, perspective, conceptualization on how to proceed
- 1.4 Getting no new ideas; did not learn anything
- 1.5 Serendipity - getting unexpected ideas about different, or other things, sources

C.2 AFFECTIVE results

- C.2.1 Sense of satisfaction, success, accomplishment - degree of
- 2.2 Sense of failure - degree of
- 2.3 Sense of confidence, reliability, certainty, trust in what gotten - degree of
- 2.4 Sense of comfort, pleasure happiness in relation to service or results - degree of
- 2.5 Sense of frustration, stress - degree of
- 2.6 Sense of personal, professional improvement, - degree of

C.3 ACCOMPLISHMENTS in relation to TASK(S)

- C.3.1 Accomplishment, fulfillment of goals - degree of
- 3.2 Contribution to progress, proceeding with, or completing the project or task at hand - degree of
- 3.3 Changing things - degree of
- 3.4 Improving quality of work, facilitation of or help with work, making work easier or more efficient - degree of
- 3.5 Providing access or leading to other sources of or routes for information
- 3.6 Providing for a direction - next step or task, or future information seeking activity - degree of

C.4 Meeting EXPECTATIONS

- C.4.1 Yield - getting, obtaining what expected, needed, sought, requested - degree of
- 4.2 Usefulness, appropriateness, helpfulness of obtained information, or information sources - degree of
- 4.3 Exceeding expectations - getting more than expected, getting additional information or sources
- 4.4 Completeness of information or sources received - degree of
- 4.5 Preciseness or specificity of information received - degree of
- 4.6 Confidence in, certainty, reliability, accuracy of information or sources received - degree of
- 4.7 Getting to little or nothing, not finding what needed

C.5 TIME aspects

- C.5.1 Worth the time spent in using the service - degree of
- 5.3 Saving time as a result of using the service - amount, comparison
- 5.4 Wasting, losing time in using the service - amount, comparison
- 5.5 Time efficiency, speed, quickness, turnaround of service - comparison

DERIVED TAXONOMY OF VALUE...

General classes and specific categories: Class C. RESULTS ... (cont.)

C.6 MONEY estimates

- C.6.1 Estimate of a dollar value of results obtained from a given service, or of information obtained
- 6.2 Estimate of the amount of money saved because of use of the service
- 6.3 Economy or cost-effectiveness of service in relation to alternatives for similar results – amount, comparison
- 6.4 Estimate of what may be spent on a substitute service or activity for similar results, if the service was not available

C.7 ACCOMPLISHMENTS in relation to corporate objectives (all in terms of degree of)

C.7.1 Customers

- C.7.1.1 Providing for higher customer, consumer focus, understanding experiences
- 7.1.2 Increasing consumer satisfaction, answering needs, requests

C.7.2 Products, services

- C.7.2.1 .Increasing quality of products, services
- 7.2.2 Assessing products, processes, services, technologies
- 7.2.3 Developing new products, services, diversifying products, product planing
- 7.2.4 Increasing service orientation
- 7.2.5 Incorporating new technology

C.7.3 Costs, profits

- C.7.3.1 Maximizing profits, increase revenues
- 7.3.2 Reducing costs
- 7.3.3 Enhancing productivity, increasing efficiency
- 7.3.4 Costing of products, services, purchases

C.7.4 Markets

- C.7.4.1 Developing, enlarging markets for products, services
- 7.4.2 Contributing to growth, developing or bringing in new business, increasing market penetration
- 7.4.3 Understanding the business, industry, competition, globalization, right choices
- 7.4.4 Providing competitive advantage
- 7.4.5 Providing for marketing, advertising, selling

C.7.5 Human resources

- C.7.5.1 Recruiting, orienting and retaining quality work force, diversifying the work force
- 7.5.2 Training for new practices, quality performance, collaboration
- 7.5.3 Facilitating access to and distribution of collective knowledge

C.7.6 Management

- C.7.6.1 Setting of goals, priorities
- 7.6.2 Managing, controlling, assessing, running projects, departments, tasks
- 7.6.3 Solving problems, making decisions, trouble shooting
- 7.6.4 Building effective relationships with partners
- 7.6.5 Identifying opportunities
- 7.6.6 Complying with laws and regulations

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