Information Audit as A Holistic Approach: 
A Case Study

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ABSTRACT

An information audit provides the framework to examine the ways in which a business creates, gathers, disseminates, stores and shares one of its greatest assets—information. The objective of the audit was to understand what information is necessary to support the business operations, what information people currently use, where people obtain this information and any gaps. The audit allowed us to analyze what information people need, the resources used to procure the information and any challenges faced in accessing information. The combined methodologies proved successful for collecting the data necessary for a strategic overview the issues surrounding information needs, general recommendations to improve information management and a plan to address the tactical issues involved.

People do not put their information needs into categories and draw boundary lines around who owns them. As librarians it is essential that we provide customer service by understanding the complete needs of our customers and working across all areas of our organizations to provide for those needs. An information audit is one means of enhancing customer service, which translates into the librarian being viewed as a value-added segment of the business.

INTRODUCTION

In today’s fast-paced business world, success is so often a function of how effectively and quickly an organization can employ one of its greatest assets –
information. The role of information professionals within organizations has become ever so complex especially when one considers the fact that the lines between information technology, information science, information service, and library science have become blurred beyond recognition. The information contained in a company library pales in comparison to the wealth of information available from diverse sources ranging from their desktop workstations to filing cabinets. An abundance of information doesn’t translate into business success, however. In too many instances, the way information has been categorized and stored unknowingly complicates its retrieval. An information audit provides the framework for a holistic examination of the ways in which a business creates, gathers, disseminates, stores and shares information. Additionally, it provides the opportunity to understand the information requirements of individuals and business units throughout the organization. And finally, it provides a basis for an improved understanding of the business. With this understanding the information professional is able to more quickly assist individuals with the retrieval of information from a diverse number of sources. This ultimately leads to the librarian being viewed as a value-added resource for the business.

At the end of 2001 Miller Brewing Company’s Brewing Research and Quality Assurance division assembled a cross-functional task team to investigate ways to improve “information warehousing and communication” to maximize the effectiveness of our organization. Several people approached me about joining the team. They felt my expertise in Library and Information Science provided the broad perspective necessary to enhance the division’s information management practices and processes for communication. Through these discussions I realized I could provide value to the company beyond my routine functions of providing and managing library materials. Specifically, my knowledge and expertise gained through exhaustive studies of library and information science would provide a perspective for examining organizational information in a systematic, holistic way. The holistic approach to information management would benefit the organization by encouraging streamlining and properly leveraging information resources and services.

**OBJECTIVE**

The objectives of the Information Warehousing and Communication team were defined through an examination of the perceptions of division personnel pertaining to current information management practices. Team members solicited input from division personnel. Additionally, the team produced its own list of perceived barriers to information access. I used my understanding of the science underlying information-seeking behavior, information organization and user-focused information system design to lead the team through an examination of these perceptions.

Not long after beginning the examination process, we determined that further examination of the feedback would be pointless without understanding the division’s approach to information creation, seeking, organization, storage, retrieval and dissemination.
“It would be convenient and elegant if one could separate cleanly an inquiry as a pure reflection of an individual’s need and a search statement phrased in terms of some particular source of information…. Such a separation is unrealistic, however, because people tend to express their inquiries in a manner influenced by the source they use.” (Buckland 1991, 88)

The team agreed that it didn’t need a technical or segmented approach such as a focus on library services, information systems, or communication of information, but rather a holistic approach designed to explore all the information issues within the division. An audit of the division’s information resources, systems and requirements would provide the required understanding of the division’s information needs.

“By discovering what knowledge is possessed, it is possible to find the most effective method of storage and dissemination. It can then be used as the basis for evaluating the extent to which change needs to be introduced to the organization.” (Liebowitz, et. al 2000, 3)

The objectives of the information audits were as follows:

- To inventory existing information available to the division.
- To gain an understanding of information necessary to support strategic operations and tasks of individuals, work groups and departments.
- To understand what functions, tasks and business processes are supported by the systems currently in place.
- To analyze the importance of data/information generated to support information requirements.
- To understand the relationships between data and information and systems for data and information transfer.
- To discover any gaps in quality information necessary to support functions and decisions.
- To discover any gaps in systems needed to manage data and information for support of tasks and activities.
- To map information flows.

**METHODOLOGY**

Having agreed on the objectives of the audit, the team turned its attention to who would conduct the audit. Two alternatives were examined; 1) an external consultant, or 2) the team itself. The external consultant would have the advantage of lacking bias whereas, the team was part of the system being analyzed. The consultant would bring experience from other projects of this nature while the team would have to learn how to conduct this type of research. We also considered the possibly that the recommendations of an external consultant might be viewed as more credible. On the other hand, it would take time to bring an external consultant up to speed on the nature of the division’s work. And finally the use of an external consultant would be very costly. In the end it was
agreed that the team would perform the audit. An external expert would be consulted to ensure that the tools the team designed would meet our objectives.

Next the team had to assess the best means to collect the required data. We researched information audit methodologies and data collection techniques. We concluded that several methodologies were suitable for our purpose. We also discovered that there seemed to be no agreed upon definition of an information audit, despite the fact that the literature contained examples of what we wanted to accomplish.

“Semantics get in the way of a true definition, with some people using interchangeable the terms information audit, needs assessment, survey and other designations.” (DiMattia and Blumenstein 2000, 48)

The team defined the audit for our purposes as the methodology used to collect the data necessary to accomplish our objectives. The methods that we reviewed for data collection included observation, focus groups, monitoring information systems usage, interviews and questionnaires.

The first method, observation, entails one or several people spending hours, days or weeks watching people do their jobs, asking questions and taking notes. Observers note the tasks of the workers, what information is necessary to accomplish these tasks and how the worker acquires this information. Observation allows for a true, detailed account of the work of individuals and groups. However, observation requires trained, skilled observers who understand how to translate what is observed into usable data for the audit. The major disadvantage is the time and number of observers that it takes to get a representative sample of the diverse tasks performed by individuals within a group.

The second method, focus groups, involves interviewing groups of people. The groups typically engage in unstructured discussion. As with observation, this process requires trained interviewers to ensure the validity of the data collected during the discussion. One advantage of the focus group method is the fact that the unstructured nature of conversation often brings to light issues that would probably not be uncovered during interviews with individuals.

A third method is to monitor information system usage. This method typically reveals who uses which systems, how often the system is accessed and the length of time the users is logged into the system. Furthermore, it can disclose systems that are unused and need to be discontinued or systems that are overused and need additional resources. System usage analysis must be used in conjunction with other methods to obtain a complete picture because it can’t provide the reasons why or why not the systems are used. This method also requires that the systems to be analyzed have the functionality to collect this type of data or the additional expense of adding the capability.

The fourth method is the questionnaire. The questionnaire can be used to collect a variety of data. It is inexpensive and can be made such that it will be easy for the respondent to fill out. The difficulty with this method is designing questions that can be
easily interpreted by people with little or no explanation who have diverse information needs and systems knowledge.

The fifth and final method considered was the interview. The structure and format of the interview can be varied to suit a number of purposes. The interaction between the interviewer and the respondent may provide the opportunity to gather additional, unsolicited feedback. However, interviews can be time consuming and require either a professional interviewer or specialized training for best results.

After reviewing the advantages and disadvantages of each of the methods of data collection, the team decided on a questionnaire to be followed up by a short interview. The questionnaire would provide the opportunity to collect the most data by using targeted questions. The interview would provide an opportunity to not only follow up on and validate questionnaire responses, but also to ask questions that couldn’t be adequately addressed in the questionnaire.

**DESIGNING THE DATA COLLECTION TOOLS**

The next significant challenge for the team was the design of the questionnaire and the interview guide. Careful examination of the audit project objectives defined the data required to understand the issues involved with particular aspects of information management. Once we developed a sense of what data we needed to collect, the questions to be asked were more easily written.

The team took advantage of the great deal of research has been done on survey design in the fields of social science, marketing, and library science. The cross-functional make-up of our team heightened our understanding of the fact that people have different interpretations of the wording and that vast differences existed not only from person to person, but also from department to department despite a singular business focus.

Additionally, Susan Henczel’s new book, *Information Audit: A Practical Guide*, provided invaluable insights into the information auditing process as well as providing a means of validating the process.

The questionnaire was formatted to make it easy for the respondent to use. Instructions and examples were provided to ensure respondents could complete the questionnaire. However, care was taken to ensure the wording didn’t bias the respondent’s answers.

The questionnaire was piloted with five individuals, one from each department within the division, before rolling it out to the entire division. A review of the pilot results revealed several cases where responses to questions indicated the interpretation of the question was different than intended by the team. In a few cases, the respondent did not
understand the question at all or the respondents found the question format difficult. The questionnaire was revised to address these issues.

The interview process presented another set of challenges the most significant of which was the decision as to who should conduct the interviews. Since we didn’t have the budget to hire professional interviewers, it was necessary for the team to conduct the interviews. Given their lack of experience, we decided to use a structured format for the interview. There is little need for extemporization in this style of interview, so the role of the interviewer is one of recording the responses to a standard set of questions. The team was trained on interviewing fundamentals and practice sessions within the team allowed each of us each to develop a feel for the process, get an idea of our own style, and get feedback from the interviewee on our style.

Since a response rate near 100% was required for the comprehensive data collection to meet our objective, we asked the division head to provide an overview of the project to emphasize the need for everyone’s participation. A cover letter reinforcing the importance of the project and providing contact information was distributed with the survey. The division was given a short period in which to respond and the team devoted an extensive amount of time to personal follow up with members of their respective departments to ensure the highest possible response rate. The emphasis provided by the division head coupled with our follow up resulted in a 96% response rate.

DATA ANALYSIS

Once data collection was complete, the team began the exhaustive task of data analysis. Fortunately, some members of the team had strengths in statistical analysis, some in graphical representation of data, and others in the organization of information each of which proved invaluable during the data analysis process.

Analysis of the closed-ended questions was straightforward, whereas analysis of the open-ended questions proved more difficult. However, the additional work on data analysis proved worthwhile as it revealed each respondent’s ideas about information usage as it related to their work.

Prior to drawing any conclusions from the data or making recommendations, I provided the team with some understanding of information and knowledge management best practices. Given an understanding of these practices, the team created their vision of a future state in which the information needs of the division were satisfied at every level. The team used its newly acquired knowledge to assess the current situation and make information management recommendations consistent with their vision.

RESULTS & RECOMMENDATIONS

Data analysis revealed additional information requirements as well as the need to enhance information management practices. For example, the respondents wanted standardized, user-friendly processes and technology to capture, organize, house and
retrieve internal information. Respondents also expressed a need for additional external information sources such as industry and market trends and new and emerging technologies as well as increased library services.

Recommendations resulting from our analysis of the data included:

1) Increasing IT capability to build the infrastructure to house our internal information, make information easily accessible, and facilitate collaborative processes.
2) Develop processes and procedures to capture and organize and to better disseminate internal information where necessary.
3) Increase Information Center services and resources to provide more access to external information to reduce the time people spend searching the Internet for information that is more readily accessed from fee-based databases such as Dialog, STN or Current Contents.
4) Better promotion of and training for information resources and systems.

**BENEFITS REALIZED**

The results have provided insights that have allowed me to tailor library services for current customers and attract others who are unaware of the resources within the information center. I am also able to follow-up directly with those who identified themselves on the audit questionnaires to promote services specific to their individual needs.

The information audit also proved beneficial to several enterprise-wide, strategic initiatives. We collaborated with an enterprise team working on evaluating the value provided through the Intranet. The design of our questionnaire helped an enterprise team with the development of a survey they intended to use to collect data regarding company-wide Intranet usage. This team was also able to couple the detail from our audit with their survey results to develop an improved understanding of information needs across the company. The audit data helped justify the investment in enterprise-level technology to support improved information management across the business. And finally the information audit provided areas of focus for both the enterprise and our division’s Knowledge Management strategies and recommendations. Most importantly the team delivered our objectives to the division and its leadership.

**CRITICAL SUCCESS FACTORS**

The team learned some lessons during the process that should be valuable to anyone considering an information audit.

1. Visible support from executive management significantly contributes to success of the audit. Their support not only increases participation, but also ensures recommendations are adequately resourced.
2. Clear communication of objectives and benefits to everyone will increase support and participation.
3. Representation from all stakeholder groups increases the quality of the audit tools and the results.
4. Understanding design principles associated with the data collection tools contributes significantly to the quality of the data.
5. Piloting the questionnaire and interview saves the larger respondent group significant time and frustration by ensuring the quality of the data collection tools.
6. Considering people in every step of the process. This was probably the most important factor of the information audit.

CONCLUSION

Overall the information audit provides a methodology for examining the current state of information management practices and information requirements in an organization. The knowledge and skills of the librarian or information professional can greatly enhance the benefits derived from an audit. A holistic approach improves the quality of the results that could not be achieved with a technical or segmented approach. An information audit provides the opportunity to examine information needs and availability from a customer perspective.
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