

Mapping Information Flows: A Practical Guide

Information mapping based on an organization's goals and objectives can help shift the information professional's natural bottom-up point of view to a top-down, strategic perspective and increase his or her perceived value

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Mapping information flows is a process for analyzing how information is transferred from one point to another within an organization. While the concept is simple, it is important to understand that mapping information flows can also support a ranking system to identify the most valuable potential clients for information resource center (IRC) services, create a picture of the competitive landscape, and help define the necessary actions for short- and long-term budgeting.

In her book *Practical Information Policies*, Elizabeth Orna states, "Experience

Editor's Note: In this article, "information professional" is defined as one who strategically uses information in his/her job to advance the mission of the organization through the development, deployment, and management of information resources and services.

shows that people concerned with information management have no difficulty with the concept [of information mapping], or with deriving knowledge and information needs from the objec-

At the Core

This article

- defines information mapping and explains why it is important to map information flows
- presents the five steps of the information mapping process
- discusses how information mapping can help shift the information professional's natural bottom-up point of view to a top-down, strategic perspective
- examines how information mapping can help increase the information professional's visibility and perceived value

tives of their own organizations. And it usually takes no more than a few hours to produce the answers."

While many information professionals faced with the task would no doubt disagree with her assessment of the time involved, they consider mapping information flows important as a framework for analyzing how information moves within an organization and for understanding the services necessary to match the true needs of their clients.

Orna further notes, "...information flows are helpful in disentangling the reality from strings of words" and says she considers information mapping a method to "visualiz[e] the immediate and wider organizational context and the 'outside world'...." In other words, the outcome of this process produces a deeper understanding of the organization that enables a more direct link to key stakeholders. This can be especially important if the IRC

reports to non-information functions within the organization.

The benefits of mapping information flows are threefold:

1. ***It enables understanding of how information is used and by whom.***
Bill Dietrick, in an article about knowledge mapping, describes it as, "What information exists inside my organization, and where is it located?"

2. ***It pinpoints the ultimate client or key stakeholder for various types of information services, as well as where information touches as it passes through the organization.***

3. ***It helps to focus information services on the highest potential opportunities.***
This last benefit can make the value of the information center even more obvious. Orna tells us that libraries or information centers are undergoing an unexpected development. They are changing from "... a store of information to a source of knowledge and innovation ... a business intelligence service converting information to intelligence by means of expert filtering, editing, archiving, and researching." In order to accomplish this transformation, the information professional uses skills and capabilities uniquely suited to the task. According to the *Information Advisor*, among these skills are the understanding of the organization as a whole and how the parts work together; the ability to comprehend and elaborate on information needs; the ability to identify inefficient or improper uses of information; and the ability to improve the value of the information by evaluating, filtering, abstracting, and providing a broader organizational and/or industry context.

A Five-Step Process

Mapping information flows is a five-step process involving certain tasks.

Step 1: Describe the Current Situation

The initial task is completion of an organization chart for the company,

identifying current clients as well as those who are not clients. Once this high-level chart is complete, drilling down into each department's information needs to see how to better serve them is vital. A simple way to begin this process is to identify current clients by drawing a circle around each one on the

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chart. Then ask the following questions to determine how familiar you are with the clients' needs:

- Do you know the various departments' managers and their individual roles and spheres of influence? To identify those spheres of influence, look for a department manager who frequently not only controls his own department, but also has direct impact on other departments. An example could be strategic marketing, as it may drive the timing of releases of products within the product development department.

- Do you know your client's total information budget?
- Do you know your client's products, services, and markets?
- Do you understand your client's environment or the business influences that determine how they operate?

Some clients are impacted more by external factors, while internal forces may drive others. In her article "Information Needs for Management Decision-Making," Susan Goodman describes the theory of information use environment (IUE) postulated by Robert S. Taylor:

... it is important to understand the nature of the work environment because its characteristics will affect the flow and use of information ... People in specific environments make conscious and sometimes unconscious assumptions about what constitutes problem resolution and what makes information useful and valuable in their contexts. The main function of the unit will often determine the real or perceived availability of information, patterns of dissemination, level of reliability, and access to information.

The departments not circled or without answers to these questions become possible new clients or a site where new services may be offered; in other words, these are opportunities to improve the IRC service and show additional value.

When identifying information flows within an organization, an often-overlooked aspect is the strategic significance of the information, or how the mission of the organization is supported by information and how it can flow through the organization. Susan Henczel's *The Information Audit: A Practical Guide* clarifies this point by using a hierarchical chart showing the mission, goals, and objectives of an organization and how various business units support these goals by creating

objectives, critical success factors, and tasks that then require information resources to become successful. (See sample chart below.)

For example:

- I. An organization begins with a mission statement.
- II. It then forms goals (1, 2, and 3) to support that mission.
- III. The goals are further broken down into objectives. In the chart there are three objectives for Goal 1.

The numbering system displayed in the chart – much like that used in project management – organizes the tasks, critical success factors, objectives, functional units, and goals. While not really necessary in this simplified version, using the numbering system in more complex charts will make them much clearer in their final form. For instance, for goals that are supported cross-organizationally, the numbering helps to determine which functional unit is assigned to which objectives supporting a single goal.

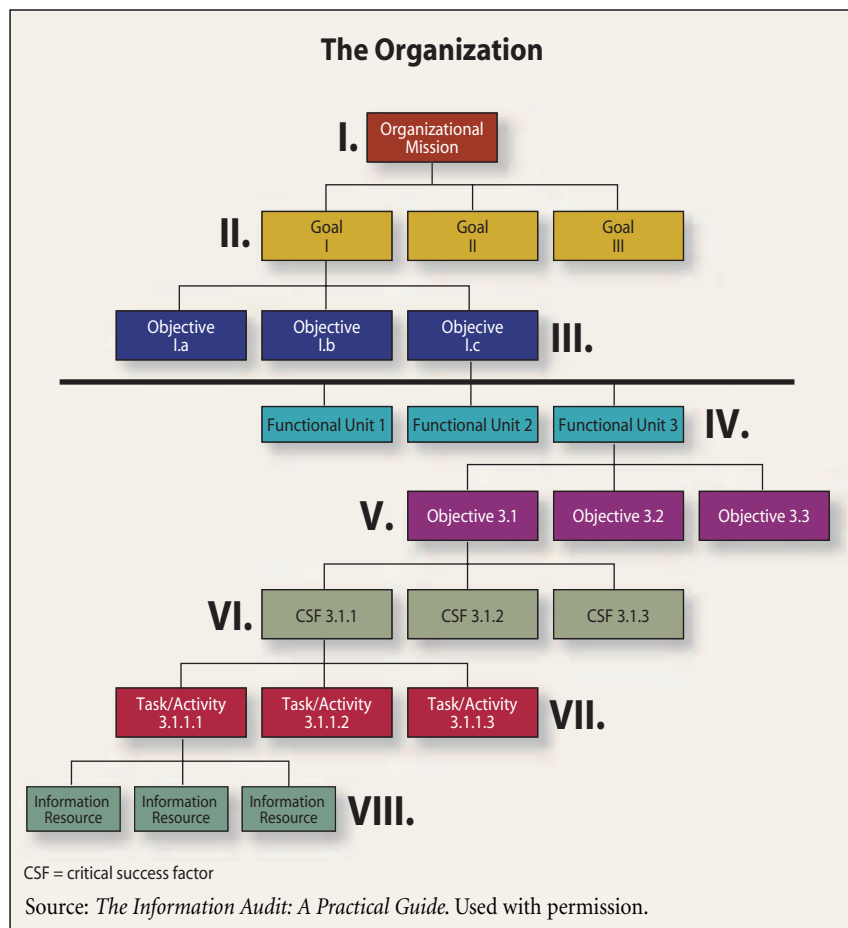
- IV. In this sample, three functional units or departments are responsible for Objective 1.c.
- V. Following Functional Unit 3, they have identified three objectives of their own to satisfy the organizational objective, numbered 3.1 (unit number and objective number), 3.2, and 3.3.
- VI. For Objective 3.1, the department team has named three critical success factors (3.1.1, 3.1.2, and 3.1.3).
- VII. For CSF 3.1.1, there are three tasks or activities, numbered 3.1.1.1, 3.1.1.2, and 3.1.1.3.
- VIII. At the lowest level are the three information resources necessary to support the first task of the first critical success factor.

Careful examination of the functional unit is also necessary. Dietrick suggests identifying communities within the organization with common business objectives, whether they are functional, as in a single department, or cross-functional, such as a project team. Given that a common organizational objective (e.g. “entering one new drug market for the company”) is supported by multiple departments, it is highly likely the information supplied should be shared with these other functional units/communities to optimize the use of that information. If, during this process, it becomes evident other units are acquiring the same information from another resource, a decision can be made as to which resource is most appropriate for the need. This can lead to recommendations that positively affect the organization’s bottom line.

Mapping information flows in this way creates a structure based on objectives that are common across several departments. Demonstrating this strategic link to other department managers portrays an information professional who can view the organization’s information needs from a top-down, or strategic, point of view, a skill highly sought by top management.

Step 2: Describe Potential Clients

After completing this map for the functional units the IRC currently serves, the next step is to identify potential clients in other business units. Discussing information needs with each department encourages the discovery of new resources that help complete this flow for each unit. Even though some of this information may never emanate from the IRC, this



process supports a better grasp of information flows, sources for information, and what information needs are – and are not – being met.

To aid in the quest to uncover potential clients, as well as locating new areas for development of services with existing clients, there are three additional questions to consider:

- Who are senior executives not in your direct chain of report?
- Who are individuals with broad influence?
- Who is someone you can work with to identify the needs of the target unit?

Answers to these questions will pinpoint potential targets for interviews. The first task is determining the organizational goals and objectives attached to each unit – the approach is a top-down rather than bottom-up movement through the chart. Initially, this means gathering base information to further refine with interviews. Questions to the target interviewee that may help identify potential solutions that the IRC can provide might be:

- What are the organizational goals?
- What are the various objectives assigned to your department?
- What are the tasks and activities associated with the objective?
- What information is necessary to complete each task?
- What *current* resource/solution is meeting the requirement?
- Is this solution satisfactory?

Instead of assuming that all the information needed is what happens to be in our libraries, records centers, or archives, asking interviewees what they really need is the order of the day. In an article on information audits, Mary Ellen Bates further cautions that all formats, not only digital, should be required when asking about information sources.

In the first step of identifying current clients and their objectives, using the

information resources supplied by the IRC was a logical starting point. Now, however, the new information needs discovered will flow from the top down. Beginning with the organizational mission and using a goal and objective supporting that goal, look for possible clients by choosing a functional unit that has been assigned the selected organizational objective. Using the answers to the questions from the interview with the department head, complete the objectives, CSFs, and tasks/activities discovered. To this add the information resources the department currently uses.

The next task is to determine whether the IRC currently offers or can create a product to meet the identified information requirements. Is there an information resource available to support those tasks and activities? Is it a better solution that is perhaps more authoritative or less expensive? Can it save time?

Now examine other functional units supporting this same goal and objective. It is likely that because these units have a common objective they would need the same information, though perhaps in a different form. For example, a complete market report, including an analysis of how this information affects the organization, would be invaluable to market development, while human resources might prefer the information as a five-bullet summary with access to the entire report if necessary. This type of service demonstrates the value-added so often required of today's information professional.

Another point of analysis and possible opportunity is the refinement of a current information resource that supports the goals and objectives of a department. For instance, does current awareness for the department arrive in the form of batches of articles that must be filtered within the department? A time-saving solution might be a summary of the necessary information, filtered by IRC staff experts, and a backup of individual articles offered upon request.

To complete the chart, each goal and its attendant objectives must be linked

to the supporting functional units, CSFs, and tasks to determine all the current and possible information solutions within the organization. Goodman notes that information professionals possess competencies to understand how information is used, how it should be organized and structured, and how it is best sourced – all key to mapping information flows. And by understanding information flows, even though the IRC may not provide the information directly, the knowledge of how to facilitate the best use of information coming into the organization will become a key service feature. This environment of facilitation can enhance the value of the information center, making it an indispensable link in the information chain.

The final task of this step is listing potential clients' needs, resources, number of users, and costs. One objective of mapping information flows is to be able to make suggestions to optimize budgets for information purchases; therefore, knowledge of costs and number of users is imperative.

Step 3. Map Potential Clients

Listing the units, needs, and resources allows you to visualize the potential areas of overlap. Now add the data for the potential clients and their information needs to the map of current clients. Using colors and/or patterns (stripes, checks, etc.) for departments and numbers for each information need currently supplied by that department will help clarify the map. (An example can be found at <http://quantum.dialog.com/workshops> in the description of the information mapping presentation.)

When working through the various departments, overlap and redundancies in information resources become apparent. The goal is to consolidate as many resources as possible and bring them into the IRC for administration. The map should be completed with suggestions for reallocation of resources, products, and services the IRC can better supply, new solutions for optimum information flow, and identification of

all cost savings. This will enhance the value of the IRC as a unit with the capability to view organizational information resources from a top-down rather than bottom up-view.

Step 4. Rank Solutions for Prioritization

Says Goodman, "Managers today must make decisions in highly complex, competitive, and dynamic environments. This makes effective decision-making more difficult as well as more critical than in the past." Additionally, in identifying possible solutions for the IRC to offer, it is necessary to consider which solutions will have the highest impact and benefit, particularly when resources are strained. By considering the difficulty of decision-making and matching the various levels of risk activity within the organization, a method for prioritizing the provision of information services emerges.

Goodman says research has found that "decisions made using more relevant information positively impact the quality of the decision made." By dividing levels of risk activity within the organization into low, moderate, and high and assigning various characteristics to each level, you can create a ranking system for IRC service definition.

The lowest risk level occurs where the organization is not making a mission-critical decision. An instance of this could be a user deciding to search the Web for preliminary product ideas. As the results of the searches are not critical at this stage of the development process, the organization would incur little risk. Technically, if the individual makes an error searching, only he or she loses both time and effort. From an information solutions perspective, having an end user search the Web for answers is probably safe enough. However, a better resource might be a desktop solution from a trusted online resource. Other than initial training, such a solution would require little product or search knowledge on the part of the user, as well as little use of the IRC staff resources.

From a moderate risk perspective, an organizational activity would involve a complete department and its budget. At this point, concern for the value of the information retrieved should be higher on the scale. From a solutions standpoint, relying only on an end user's own search skills could be much more detrimental. Therefore, the IRC should intervene with its expertise by offering current awareness products or competitive intelligence services, for example.

At the highest end of the scale and, therefore, correspondingly having the highest risk attached, are points at which the organization has invested significant revenue and the decision is mission-critical. In the product-development process, this could be a new product launch. Another mission-critical decision would be a merger or acquisition. At this point, the IRC solution has the highest value. The organization should only trust expert information seekers to analyze information and provide value-added synthesis, such as that found in an executive report.

Step 5. Create an Information Map

Mapping the final solutions to show each department and the suggestions for their information needs creates an understanding of each subset of the organization, highlights the ultimate client, and results in information solution recommendations for each. It becomes a focus of who has what information and uncovers gaps in information needed by the organization. Finally, it creates a shift in the information professional's point of view of information use within the organization from bottom-up to a top-down or strategic perspective.

It is important to note that this proactive approach to discovering new business has two additional outcomes: the first is that as departments change, the information map will require updating; the second is that this process will offer contact with those people who have the most influence in the organization. While the former may seem daunting, the perception of increased value of the information center due to the latter can only be considered an apt reward. ■

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Editor's Note: This article was based on a presentation that is part of Dialog's leadership development program for information professionals, Quantum2. For more information, visit <http://quantum.dialog.com>.

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