IMARK

Module
Investing in Information for Development

Information Access

Lesson 3: Internal Information

Learner Notes

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This lesson is part of the IMARK Module on "Investing in Information for Development". The Module contains six units. The unit on "Information Access" comprises five lessons:

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This course is available in self-paced e-learning format on CD-ROM and the Internet (www.imarkgroup.org).

Learning objectives

At the end of this lesson, you will:

- be aware of the importance of a process for creating, processing and delivering internal information;

- understand how new approaches to information access are creating a need for new roles and tasks, and new structures.

Introduction

The information that an organization uses comes from two sources:

- **outside** (to be acquired); and
- **inside** (to be mobilized). The organization processes this information and makes new information available to its audience.

In this lesson, we will focus on the mobilization of **internal** information**.**

How can your organization deal in a cost-effective way with the information that it has generated internally, and then make it accessible in formats that the audiences find useful and convenient? First, we have to look at the way information is produced.

Your organization may be generating information (either in printed or digital formats) without storing it systematically and without adequate information describing it (metadata).
Locating and accessing such information can be very difficult. The best solution would be to adapt current working practices to improve the generation of all new information, focusing on approaches that will enhance access. Let's consider what can be done by examining a very common scenario.

A common scenario: introduction

Ms Lee is in charge of publications in an organization.

Her department produces and publishes reports, working papers, newsletters and conference proceedings from three different research teams. The teams are quite active and produce several reports and research papers each year. These documents are usually published in printed form (hardcopy), but recently the department has started to distribute electronic versions by e-mail and via the organization's website.

She says:

> *Our current process is mainly oriented toward printing. My department therefore has many problems when we have to convert documents into formats that are appropriate for e-mail or the Internet…*

Ms Lee has noticed lately that the generation and dissemination of documents in digital formats seems to require new ways of doing things. The "old" procedures that have been followed for many years for publishing in hardcopy are no longer working so well with electronic media.

She has concluded that the organization needs to develop a new **process**, supported by new **roles** and new organizational **structures**, which will allow her department to manage the generation and dissemination of both hardcopy and increasingly electronic documents.

A common scenario; the process for creating and disseminating documents

Ms Lee sees that the process for creating documents to be generated and disseminated through either electronic or print media comprises **five main stages**. Each stage consists of specific tasks (e.g. selection of documents, review, approval and so on).

1. Authoring

Documents are planned, written and edited in formats that facilitate conversion to both electronic and print media.

2. Selection and Approval

The most appropriate documents are selected, reviewed, approved and sent for conversion. Key questions to ask are:

- Who selects documents that will be accessed and stored, and who develops/agrees upon the criteria for their selection?
- What information do we select?
  Do we want to store only “official publications”, or do we want to store internal working papers, notes and memos as well?
- How are the documents mobilized efficiently from internal sources?

3. Conversion

The format(s) into which a document is converted depends on the target user(s) and the available technical infrastructure. Formats may include hardcopy, CD-ROM and/or a website.

4. Storage

Following conversion, documents must be kept in order, in a secure electronic environment and in the most appropriate format(s) for publication, reuse and conservation. Key questions are:

- Who is responsible for storing and maintaining the electronic document collections?
- What information do we want to store (e.g. publications, working papers, travel reports)? For each category of information, do we want to store forever or only for a limited period? Will the documents all be in the same file format, or will they need to be converted?

- How should we organize storage? Documents should be stored with systematic information (metadata) about their contents, in order to facilitate retrieval. Clear data standards need to be applied in the creation of metadata.

5. Dissemination

The final step. If documents have been converted and stored properly, they will be available for publication and continuing use in printed or electronic format. Here, the key questions are:

- Who can access a particular document? Do we want to restrict certain types of information to certain users?
- What information do we want to provide access to and in what way/format?
- How will users access the documents? Will there be an externally available online search facility?

A common scenario; issues involved in developing the process

Ms Lee will have to decide what effect the following aspects will have on the five stages and various tasks associated with them:

1. Medium.

Will the documents be presented in more than one medium (e.g. hardcopy and electronic)?

2. Formats.

Depending on her answer to the first question, in what formats should the electronic documents be ideally stored (e.g. MS-Word, PDF (portable-document-format), or XML (extensible Markup Language))?

3. Channels.

How will staff be able to access the documents (e.g. post, the Local Area Network, the Internet)?

4. Infrastructure.

What kind of Information Technology facilities are in place to perform the tasks in the five stages, and how are they likely to change (e.g. for storage and dissemination)?

Ms Lee will also need to take into account some important technical resources that will support the process and affect the quality of the outputs:

STANDARDS	If Ms Lee wants to automate part of the process, she will need to coordinate the development of organization-wide standards for documents, images and other information (e.g. templates, metadata and formats). She will also need to ensure consistent uptake and application of these standards.

TOOLS	Then Ms Lee will need to select software tools and applications that can best support the new process and standards. For some functions, such as word processing, she may be able to adopt tools without modification (e.g. MS-Word). For other functions, such as database management, she may have to customize tools to fit her organization's specific requirements.

Management issues: new tasks and roles

We have seen that mobilizing internal information involves three management issues:

- process;
- people; and
- organization.

In Ms Lee's scenario, we examined aspects of the **process**. We will now consider the remaining two management issues:

- **people** (new tasks and roles); and
- **organization** (new structures).

First, let's take a look at some of the new tasks and roles.
The new digital environment has brought about changes in the work of information staff in several ways:

New jobs may be created, such as Webmaster, Chief Information Officer and Information Management Specialist. These new jobs may be undertaken by persons with traditional information management and/or IT backgrounds (librarian, software developer, etc.) or by persons who are already managing information electronically in their field of expertise.

Some jobs differentiate. Previously, computer specialists used to do many things, from repairing printers to analysing information flows. The growing range and complexity of computer-related tasks has led to differentiation, especially in larger organizations, into hardware specialists, software application managers, data analysts, etc.

Some job titles remain the same, such as the librarian. They still do essentially the same tasks, i.e. making information accessible to their users. They used to do so by providing physical access to books and periodicals. Nowadays, they may also be selecting relevant resources on the Internet or on CD-ROMs and providing their users with links or downloaded documents.

Let's look at some of the people and roles involved with providing and managing information, and find out how their jobs are changing.

Joan, AUTHOR
"I'm used to writing my documents directly on my computer."

The author is responsible for the intellectual content of a publication. Before the introduction of PCs in the office environment, the 'manuscript' would often literally be written by hand. Now most authors type their 'manuscripts' on their computers, and scientists who publish frequently may be advanced users of PCs and word processing software. In addition to intellectual content, authors often need to be concerned about layout choices.

The use of a consistent style by the author is an essential first step in creating a standardized document format for an organizational workflow. Stylesheets, often considered an advanced feature in word processing software, in fact offer a simple way to obtain a standard format and consistent visual effect throughout a document, rather that formatting each paragraph, document or page individually. At the same time, documents created using a standard format can be converted into other electronic formats, or distributed "as is".

Authors need to be convinced, and then trained, to use a standard stylesheet. They may also need training on how to manipulate and format their illustrations for a digital environment.

Gertrud, LIBRARIAN

"I'm doing things that I could not have imagined five years ago!"

Some traditional librarians may see electronic documents as a threat, since they worry that fewer people will come to their library if most of the literature they need is available through their desktop PC.

Many institutions can no longer afford to spend enough to keep their library up –to date. This results in users, and especially scientists, not having access to the information they require for their jobs.

Librarians may not be able to give users access to all the external publications they require, for several reasons including cost, but **they should always be able to provide access to the information and publications produced by their own organization.**

Librarians are well positioned to play a major role in the new digital environment, because they are familiar with:

- the development and use of electronic catalogues, including subject indexing and metadata;
- the use of thesauri and maintenance of vocabularies of keywords; and
- the development of electronic information services for users.

Paul, COMPUTER SYSTEM OFFICER

"I'm always looking for the best technical solutions to optimize our workflows and provide better access to our users."

Users are becoming ever more familiar with computers. Computer system officers may perceive this increased awareness as a threat, as they may worry that users will start to develop systems on their own.

A computer systems officer needs to go beyond his/her technical background to understand the roles of the different players in the process. By the same token, these other players need to be aware of the limits of their understanding of the technical options, and to seek advice when required from computer system officers.

Computer system officers need to look towards the development of an integrated process which includes and involves the other players.

Aisha, PUBLICATIONS OFFICER

"Automated tools help me a lot, but the human element of the process is essential!"

Publications officers are traditionally responsible for preparing manuscripts for printing, and managing the distribution of printed publications. Most of these tasks are still required if publications are produced and distributed electronically.

The publications officer will normally take care of a number of tasks:

- **Check the consistency of the text**: text processing software offers facilities to check spelling, and also some basic functions for checking grammar. However, consistency in terminology, grammar and writing style require intervention by an experienced editor and/or subject expert.

- **Layout of the texts** (page size, fonts, etc.) and **quality of illustrations**: this responsibility is shared with the author, but a final check needs to be done by an experienced editor. Standards for the style of publications need to be adopted, and authors must be trained in their use.

- **Distribution**: although in theory anybody can access a document on the web, people must be informed that the document exists. Announcements of new publications can be made by e-mail or by other more traditional mechanisms. Publications on CD-ROM require the same distribution process as printed publications.

Ming, WEBMASTER

"I'm always focusing on how users will access our information."

Many organizations create the position of webmaster when they realize that their website has become one of the most important channels of external communication and is here to stay.

Precise job descriptions do vary, but usually webmasters perform tasks like:

- prompting authors to create 'content' to be displayed on the website;
- ensuring that this content is converted into web pages;
- instructing others how to create web pages;
- loading web pages on a server as part of the website;
- managing the navigation structure of the website;
- ensuring the timeliness of information.

A webmaster's main responsibilities and tasks relate to organizing and ensuring easy access to the content of a Website. This includes determining the file formats to use for documents and graphics, the navigation structure and the search tools to incorporate. In addition to the technical issues related to the delivery of content, special attention should be given to the design and layout of a website to ensure that an attractive and usable design is obtained. Webmasters do not necessarily have the artistic talent and graphic skills required to develop an attractive design and layout for their website. Many webmasters would benefit from formal training in the design of web-based and electronic publications. Many organizations have opted

to seek advice from, or hire, graphic designers to help them create and manage the design of their website.

What new skills will be useful for performing new tasks in an electronic environment?

Table I: New roles

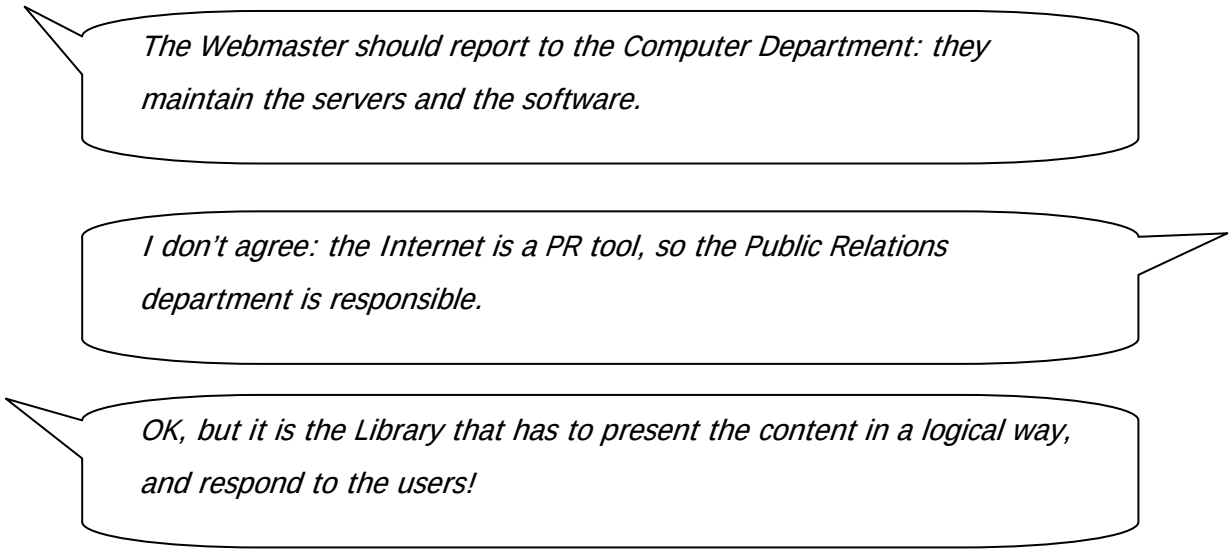
Role	Description
Author	Word processing, including use of templates and stylesheets. Management of digital images in various formats.
Librarian	Subject indexing and associated creation of metadata supported by use of thesauri.
Computer systems officer	Development of processes and systems for electronic document storage. Database management.
Publications officer	Assessment of and selection between various document and image formats in different types of publications.
Webmaster	Assessment of costs and benefits of different options for providing access to different types of document collections.

Note: In some cases, it is advisable that all members of a team have basic knowledge of all the steps in the process in which they are involved. This becomes an important consideration in small organizations when a single person can have more than one role.

Management issues: new structures

Usually, organizations start developing their websites in an improvised way. There is a lot of enthusiasm and creativity in the initial phase. The hard task is to **institutionalize these activities to ensure continuity,** while **keeping the creativity and spontaneity**.

This can sometimes lead to disputes between different departments. For example, let's have a look at the following debate:



Each organization is different, and there is no "best" approach that will suit all organizations. But a general principle is the following:

In a considering new directions in which players are trying to define (and re-define) their tasks, it is better to choose ***participation over hierarchy****.*

Committees and **working groups** may be appropriate mechanisms for building consensus in the early planning stages. However, senior management would need to provide the members of such groups with sufficient time and resources to complete the tasks in hand.

After agreement is reached on how things should be done (for example, regarding the development and management of a website), management can act to put in place more permanent organizational structures and procedures.

Summary

The information that an organization uses comes from two sources: outside (to be acquired) and inside (to be mobilized).

Because internal information is increasingly in electronic formats, an organization will need a process that describes how electronic documents will be mobilized, i.e. generated, processed, stored and disseminated.

In developing this process, the organization must take account of issues and options concerned with alternative media, formats, access procedures, Information Technologies, and data standards.

Implementation of the process will involve new tasks and roles, new structures, and new technologies.