
Lecture (5)

Dimensions of Information

Introduction

Information can be said to have a number of different characteristics that can be used to describe its quality. The differences between ‘good’ and ‘bad’ information can be identified by considering whether or not it has some or all of the attributes of information quality. Information can be described in terms of personal or organizational dimension.

1. Personal Dimensions of Information:

Personal dimension of information considering three points of view: time, location, and form.

Time Dimension

Information, like many organizational resources, can become old and obsolete. For example, if you want to make a stock trade today, you need to know the price of the stock right now. If you have to wait a day to view stock prices, you may not survive in the turbulent securities market. It’s no wonder that over one-third of all stock transactions today occur over the Internet.

Your information is useful and relevant only if it describes the appropriate time period. For example, most utility companies provide you with a bill that not only tells you of your current usage and the average temperature but also compares that information to the previous month and perhaps the same month last year. This type of information can help you better manage your utilities or simply understand that this month’s high utility bill was caused by inclement weather. The time dimension describes

the time period that the information deals with and the frequency at which the information is received.

- ◆ **Timeliness:** The information should be available when needed. If information is provided too early, it may no longer be current when used. If the information is supplied too late, it will be of no use.
- ◆ **Currency:** The information should reflect current circumstances when provided. One can go further and suggest that as well as being up-to-date the information should also indicate those areas or circumstances liable to change by the time the information is used.
- ◆ **Frequency:** In addition to being available when needed, information should also be available as often as needed. This normally means that information should be supplied at regular intervals, for example some organizations may require weekly sales reports whilst others need only monthly reports.
- ◆ **Time period:** The information should cover the correct time period. A sales forecast, for example, might include information concerning past performance, current performance and predicted performance so that the recipient has a view of past, present and future circumstances.

Location Dimension

The location dimension of information means that having access to information no matter where you are. Ideally, in other words, your location or the information's location should not matter. You should be able to access information in a hotel room, at home, in the student center of your campus, at work, on the spur of the moment while walking down the street, or even

while traveling on an airplane. This location dimension is closely related to mobile and wireless computing (and also ubiquitous computing) which we'll discuss in an upcoming section.

To keep certain information private and secure while providing remote access for employees, many businesses are creating intranets. An intranet is an internal organizational Internet that is guarded against outside access by a special security feature called a firewall (which can be software, hardware, or a combination of the two). So, if your organization has an intranet and you want to access information on it while away from the office, all you need is Web access and the password that will allow you through the firewall.

For example, Citigroup's Global Corporate uses an intranet to provide the entire IT staff with access to all IT projects under construction. Available information includes project owner, delivery date, and numerous budget metrics. Just by making this information easily and securely available to all IT staffers via an intranet, Citigroup has realized an across-the-board 15 percent improvement in on-time delivery of IT projects.

The content dimension describes the scope and contents of the information and considering the following attributes:

- ◆ **Accuracy:** Information that contains errors has only limited value to an organization.
- ◆ **Relevance:** The information supplied should be relevant to a particular situation and should meet the information needs of the recipient. Extraneous detail can compromise other attributes of information quality, such as conciseness.

- ◆ **Completeness:** All of the information required to meet the information needs of the recipient should be provided. Incomplete information can compromise other attributes of information quality, such as scope and accuracy.
- ◆ **Conciseness:** Only information relevant to the information needs of the recipient should be supplied. In addition, the information should be provided in the most compact form possible. As an example, sales figures are normally provided in the form of a graph or table – it would be unusual for them to be supplied as a descriptive passage of text.
- ◆ **Scope:** The scope of the information supplied should be appropriate to the information needs of the recipient. The recipient's information needs will determine whether the information should concern organizational or external situations and whether it should focus on a specific area or provide a more general overview.

Form Dimension

The form dimension of information has two primary aspects. The first is simply having information in a form that is most usable and understandable by you—audio, text, video, animation, graphical, and others. The second is accuracy. You need information that is free of errors. Think of information as you would think of a physical product. If you buy a product and it's defective, you become an unsatisfied customer. Likewise, if you receive information that is incorrect, you're very unhappy as well. The form dimension describes how the information is presented to the recipient.

- ◆ **Clarity:** The information should be presented in a form that is appropriate to the Intended recipient. The recipient should be able to locate specific items quickly and should be able to understand the information easily.
- ◆ **Detail:** The information should contain the correct level of detail in order to meet the recipient's information needs. For example, in some cases highly detailed information will be required whilst in others only a summary will be necessary.
- ◆ **Order:** Information should be provided in the correct order. As an example, management reports normally contain a brief summary at the beginning. This allows a manager to locate and understand the most important aspects of the report before examining it at a higher level of detail.
- ◆ **Presentation:** The information should be presented in a form that is appropriate to the intended recipient. Different methods can be used to make information clearer and more accessible to the recipient, for example it is common to present numerical information in the form of a graph or table.
- ◆ **Media:** Information should be presented using the correct medium. Formal information, for example, is often presented in the form of a printed report, whereas a presentation might make use of a slide projector.

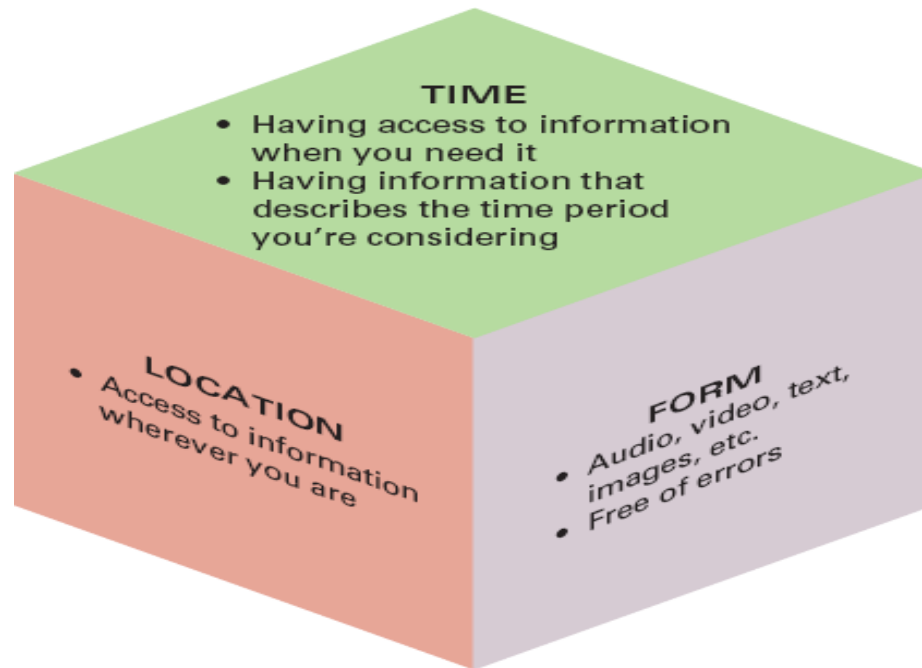


Figure 10: Personal Dimensions of Information

Additional Characteristics

In addition to the attributes described above, one might also add several others. Of particular importance is *confidence* in the source of the information received. Recipients are more likely to accept and trust the information they obtain if it is received from a source that has been accurate and reliable in the past.

A further attribute of information quality is that of *reliability*. It can be argued that recipients should be confident that they can rely upon information being available when required and that the information will be of a consistent quality in terms of other attributes of information quality, such as accuracy and conciseness.

The widespread use of computer-based information systems raises a number of issues related to the sheer quantity of information that is freely

available via sources such as the Internet. In addition, the use of computer-based information systems also raises concerns in relation to security. In view of this, one might suggest that a further attribute of information quality is that the information provided should be *appropriate* to the recipient's activities. This might restrict information from being supplied if it is of a confidential nature or beyond the duties or responsibilities of a person's role.

It also seems natural to suggest that some confirmation that the information has been *received by the correct person* is required. Unless the information has been received and acted upon, then it is of no value. Thus, it can be suggested that an additional attribute of information quality is that it can be verified that the information has been received and understood.

Finally, it can be argued that another attribute of information quality is that that information should be capable of being *transmitted via the correct channels*. Most organizations have formal policies and procedures for dealing with particular situations. For example, a complaint against a member of staff is normally presented in a written form and travels upwards through the management hierarchy until it is received by the correct person. If the information were to be sent in any other way, for example by word of mouth, it might not reach its destination or might become garbled during the journey.

Table-3 summarizes information characteristics that can be used to assess quality. Note that each column is independent; reading down each column lists the attributes associated with a particular factor.

Table 3: Summary of attributes of information quality

Time	Content	Form	Additional characteristics
Timeliness	Accuracy	Clarity	Confidence in source
Currency	Relevance	Detail	Reliability
Frequency	Completeness	Order	Appropriateness
Time period	Conciseness	Presentation	Received by correct person
	Scope	Media	Sent by correct channels