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Forms Analysis Series:
Selecting Information Elements for a Form

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Selecting Information Elements for A Form

Introduction

There have long been standards established for the mechanics of layout and design for both paper and electronic forms. What the forms industry lacks are standards for the selection of information to be used on a form. It is a tenet that information can be the most labor-intensive element of a form. This is because reaction to information is continuous and causes an ongoing cost. If information is inaccurate or unneeded, the organization will continue to pay for the processing regardless of a lack of value or benefit.

The purpose of this paper is to first present a traditional look at the industry concept of information. Next we look at an informational model that shows the changing of data into information. The third part covers a basic framework for measuring the cost of individual information elements. Last is a method developed for actual selection of information elements.

Information – A Traditional View

The forms industry has long held that there are three types of information: *need to know*, *nice to know*, and *unnecessary*. None of the three were explained, but were loosely defined. Each type was left to the analyst to classify.

Need to know information was specific information and had a definite systems purpose. It was agreed that processing only this essential information could reduce labor costs. *Need to know* information was action oriented; something could be done with it. It was essential to management in the decision making process. And finally, without this *need to know* information, the affected information system would not work properly.

Nice to know information has always been information that may be needed in an information system. However analysts were never sure of the benefit to the system. When this information is introduced into a system it may be of value or it may be labor intensive. That is, the cost of processing may be greater than the final value of knowing (using) that information. Use of *nice to know* information has been a gray area. The decision of what is and what is not has always been perplexing.

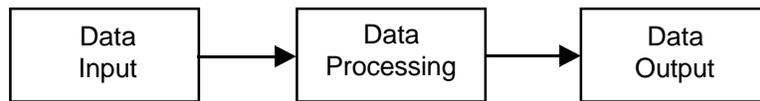
Identifying *unnecessary* information has always seemed easy. The analyst simply established that the information never had or no longer provided a value. Or possibly, there was a different, better source for that information. This rendered the information unnecessary in a particular system (on a particular form).

The major difficulty in achieving an easier method for classification is that the industry has not properly defined the problem. The problem is not how do we classify information but what information actually is. The analyst can solve a system's problem only after they understand and define the most basic element(s). In this case, information.

What is Information?

Webster's Dictionary, Third International Edition, offers six different definitions for information. They range from a "act of informing" to a "numeric measure". These definitions are too general to adequately describe information and its function(s) for forms analysis purposes. The following graphic models are presented to help explain basic information theory.

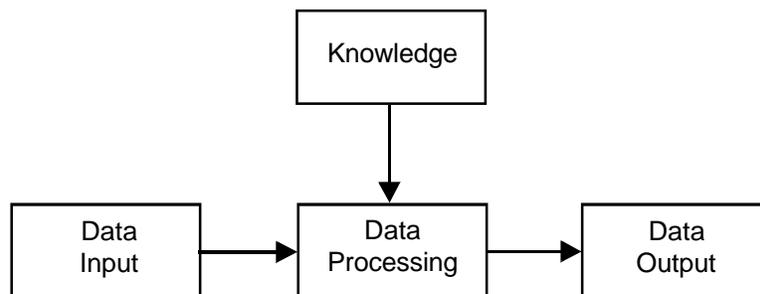
The three basic components of a data system are:



Many of us have a tendency to use the terms data and information interchangeably, but there is a difference. Data, for the analyst's purposes, represents a random arrangement of alphanumeric characters and symbols. In the example below, r. 5v 2/0e are only data. Identifiable as individual letters, numbers, and symbols but as a group they have no utility. The input of these elements into an information system (or on a form) has no usefulness.

r. 5v 2/0e

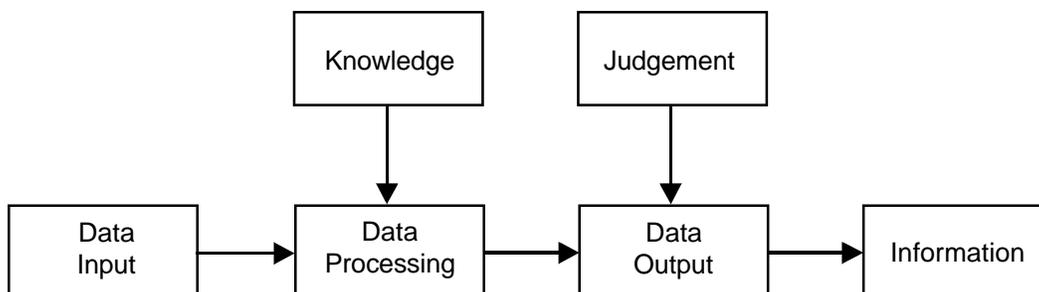
To process data into information the analyst must first add specific *knowledge* to determine how the data can be brought together.



At this point, those processing the information must reach a common understanding of terms and their use. The addition of *knowledge* to the processing phase does not render true information. It only allows us to restructure the characters and symbols into an understandable form (i.e., words). Let's go back to the example above: r. 5v 2/0e is now rev. 5/02. We recognize it as a revision date. But this data is not true information because while we may know that something was revised in May of 2002, we do not know what was revised.

r. 5v 2/0e = rev. 5/02

To develop information we must apply our *judgment* to the data output process.



We must judge what is the identification and classification of the various blocks or groups of data, and what is the interrelationship of the data to a specific job task. We must create a taxonomy, a classification of like elements, in order to process with judgment.

For example, consider the elements of an “INVOICE/SHIPPING LIST”. The document might detail such elements as customer name, shipping address, billing address, delivery date, item number, quantity ordered, quantity shipped, item cost, and so on. Now as we classify like elements to specific job tasks, we find the following.

The shipping clerk needs to know:

- Customer name,
- Shipping address,
- Delivery date,
- Stock number of each item,
- Elements related to number of packages to be shipped, and
- Total weight and individual weight.

The billing clerk is concerned with:

- Customer name,
- Billing address,
- Items shipped and price extensions, and
- Statement of terms.

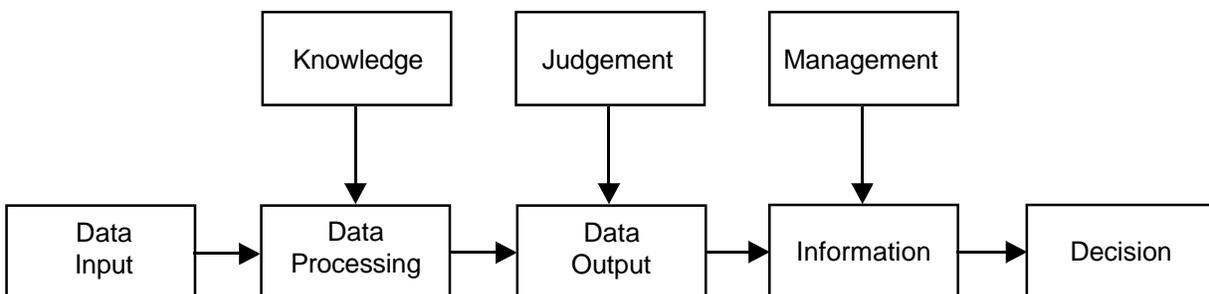
The inventory clerk is concerned with:

- Stock number of each item,
- Quantity of each item shipped,
- Back ordered items, and
- Quantity left in stock.

Each has need for only those elements relative to their job tasks, thereby giving utility to the data.

To continue our example, let us say that the INVOICE/SHIPPING STATEMENT is Form 3126 rev. 5/02. Now we know that Form 3126 was what was revised in May of 2002.

For forms management purposes we have not yet reached “true information”. The intent of rearranging and classifying data is so that management will have a tool (information) to use in the decision making process.



Following this logic, we may conclude that if *information* cannot be used in the decision making process, it is really only data.

The Hidden Cost of Information

There is an obvious cost related to forms that presents no special problems in measurement. These are the production (printing of paper forms and development of e-forms) price and storage costs. Production costs are the yardstick usually used by management to determine the value of a form. But forms analysts realize that a major part of staff time is spent in processing forms. It has been estimated that as much as seventy-three percent of clerical time is devoted to processing forms (actually processing information).

This section deals with measuring the cost of individual information elements. The measurements will be discussed in degrees of time consumption, not in an actual dollar value. This time consumption framework states that information elements can fall into four categories. Processing information elements from each category presents a different degree of work intensity.

Elements of Classification

1. Standard Information, (SI)
2. Semi-Standard Information, (SSI)
3. Limited Access Information, (LAI)
4. Other (O)

Standard information, (SI) are those elements of information which require no collection time and no assistance. These elements are provided or filled-in “off the top of your head” by the forms respondent. Examples of SI are “Your Name”, “Mailing Address”, or “Describe how the Accident Occurred”.

Semi-Standard Information, (SSI) are those elements of information which would require some amount of collection time, but require no collection assistance. The individual submitting this information has direct access to the information, but there is a physical act and a collection time required to assemble the information. An example of SSI might be a manager’s requirement for monthly production reports. The manager has direct access to the information (third drawer, middle file cabinet), but he/she must physically assemble the daily or weekly production reports into a monthly report. Once again, the manager required no assistance.

Limited Access Information, (LAI) are those information elements which require both time and the assistance of another person to collect. Additionally, for an element to be considered LAI it must meet at least one of the following criteria:

- It must be technical information that can only be provided by an individual with certain specific technical or professional skills such as medical information, operating systems information, or records information. An example would be asking your mechanic why your engine goes “PING-PING” when you shift into second gear.
- It may also be restricted information that is available only to individuals in certain positions. Only those individuals have access to the information. An example; only the student may receive a copy of grade transcripts from any college in Ohio.

Other Information, (O) are those elements that are not classified in any of the above.

Whether an element is SI, SSI, or LAI depends on the circumstance of the information collection, not on the information itself. As an example, a records manager must complete a “Survey of Records”. The elements might be SI, because the manager can answer the questions “off the top of their head”. Or, it might be SSI; because collection and assembly time is required, but without assistance from others. But, a purchasing manager who completes the same report may need the assistance of the records manager. For the purchasing manager the elements are LAI. Principle among these factors is the availability of the information.

Selecting Information Elements

We have reviewed the traditional view of information, the difference between data and information, and how to classify information by work intensity. Now we will decide exactly what information elements should appear on a form. The method presented here has been tried and tested for several years by the state of Ohio Forms Management Center. This method requires only a four column accounting sheet (see Attachment A). The sheet should have the following headings: Title, Need, Location, Item, Use, Source/Source Requirement, Required, Approval, and Spacing.

Title

List the (proposed) form title of the form at the top of the sheet. This is a simple reference as to what form is being analyzed. The form number may also be listed.

Need – Set a Goal

In order to adequately analyze any system, you must first set a goal. Specifically, what do you want to accomplish. For this method the goal is called a *statement of need*. Nationally known consultant, Bill Smith, said that this statement "... is a concise definition of what action can be taken after the form is received that could not be taken before". Action is the key word.

For example, we defined our action needs for the COBRA Eligibility/Enrollment Notification form as follows:

1. Notify benefits administration of intent to enroll,
2. Specify/verify eligibility, and
3. Inputting information into the database.

These are the actions that may be taken after the form is completed. In setting a goal one must keep in mind that if the goal is too broad, it may be difficult or impossible to accomplish because of the amount of work necessary and the complexity. If the goal is too narrow, the effort will fall short of the system requirements.

Item – Brainstorm

As used in this method *item* refers to those elements of information appearing on a form, which require information (i.e., Name, Date, Shoe Size, etc.) or make a statement (i.e., instructions).

To determine what these *items* should request or state, we need the assistance of those involved in the use of the form. When the group is assembled remind them of the *statement of need* (the goal). Explain that you need to establish all of the questions and statements that will appear on the form. Then each member will give a single item suggestion. This should be done in a "round robin" fashion. Each member should know that they should give only one brief suggestion each turn. Also, it should be established that throughout this brainstorm session no suggestion would be qualified or disqualified. This will allow for a more free flow of ideas. Finally, it is best to have someone who is not a participant act as a recorder.

Use

Now the group may begin to qualify *items* by determining if there is an actual systemic *use* for the item. *Use* should always imply a required action and these actions should be in line with the *statement of need*.

As an example:

- Social security number is used as a file reference to find a certain application,
- Beneficiary phone number is used as a communication reference, and
- The date of a qualifying event is used as part of the approval process.

Some *items* may have more than one *use* in the system. It is your discretion whether it is listed with duplicate *use*.

Source/Source Requirement

In this area the actual *source* of the information is listed. As an example:

- The *source* for beneficiary social security number is the beneficiary,
- The *source* for the beneficiary phone number is the beneficiary, and
- The *source* for the qualifying event is Human Resources, Personnel.

A major cost factor in forms systems is where the information is gathered. The person completing the form should be considered when looking at the information source. The form might be routed to another person if the responder does not have the information, or the element might have to be eliminated from the form. To help in this determination you should always list the *source requirement* next to the *source*. This will provide an immediate answer as to the legal or procedural requirement of the information

Approval

The approval process is simple. The analyst (or group) must verify that *use* is justified and that *source* is available. If the *item* is an essential part of the system and it is available, it should be approved for inclusion in the form.

Spacing

While you have the resource available (the group), you can verify how much spacing each element will take on the form. This might be either the linear space each element might take on a paper form or character spacing on an e-form. This will aid in the design phase of the project.

Location

A continuation of the design process is separating the established items into logical groups. These groups should be selected by specific job tasks. Examples of these groups of information are:

- Questions answered by the Beneficiary,
- Questions answered by the Human Resources Department, and
- Questions answered by the Employee Benefits Department.

The elements are gathered into groups to help those who have to respond to or process the information. By grouping all like information, it is easier to find.

Finally, arrange each element in each group, in an acceptable sequence. Remember, items that are key input from a paper form must follow in the same sequence as the input screen.

The Final Product

Review the selected elements to verify that it does accomplish what was set down in the Statement of Need.

The finished form usually does not exactly match the analysis. This is because the elements analysis process is a guideline. It is designed to ensure that only essential information is gathered on the form. Often you will have to deviate from the analysis sheet as more information becomes available during the initial layout and design of the form. However, this elements analysis process will ensure that you have a workable form the first time the form is used.

COBRA Eligibility /Enrollment

1. Notify agency benefit officer/Insurers intent to enroll
2. Specify/Verify eligibility
3. Computer input document

Loc		Item	Use	Source	Source (Req.)	Apv	Spacing
1.	A	1	Beneficiary Name	file ref	user	ORC	y 30-40
2.	A	2	Ben SS# Qualifying Event	computer	user	ORC	y 11
3.	B	1	QE (voluntary termination)	Approval/C	Agen Pers	ORC	y 1 + text
4.	B	2	QE (involuntary termin.)	Approval/C	Agen Pers	ORC	y 1 + text
5.	-		QE Join Military (5)	-	-	-	n -
6.	-		QE Marriage	-	-	-	n -
7.	B	3	QE Retired	Approval/C	Agen Pers	ORC	y 1 + text
8.	-		QE Forced Out (6)	-	-	-	n -
9.	B	5	QE Death	Approval/C	Agen Pers	ORC	y 1 + text
10.	B	4	QE Change health stat	Approval/C	User	-	y 1 + text
11.	B	9	Employee Name	Verify	User	ORC	y 30 – 40
12.	B	10	Employee SSN	Verify	Agn Pers	Admin	y 11
13.	B	6	QE Divorce	Approval/C	User	ORC	y 1 + text
14.	B	7	QE Separation	Approval/C	User	ORC	y 1 + text
15.	-		Verify Sep/Div	Approval/C	User	-	n -
16.	B	8	QE Child Ineligible	Approval/C	User	(30-31)	y 1 + text
17.	A	3	Date of QE	Approval/C	User	ORC	y 8
18.	A	4	Benef Home Phone	Comm Ref	User	Admin	y 14
19.	C		Type of Coverage	Plan ID	Agn Ben	Admin	y * below
20.	C	2	Cover Code	Plan ID	Agn Ben	Admin	y 3
21.	D	1	Benefit Waived	Approval	User	ORC	y 1 line
22.	D	3	Benefit Enroll	Approval	User	ORC	y 1 line
23.	C	4	Premium	Plan ID	Agn Ben	Admin	y 6
24.	D	2	Signature Waive	Approval	User	ORC	y 1 line
25.	D	5	Signature Enroll	Approval	User	ORC	y 1 line
26.	E	1	Other eligible	Coverage	Agn Ben/user	Admin	y 1 line
27.	A	5	Type-Print Instruction	Read ease	Designer	-	y 1 line
28.	B	9	Ineligible by age	Approval	user	ORC	y 1 + text
29.	B	10	Other	Approval	user	ORC	y 1 + text
30.	C	3	Plan Name	Plan ID	Agn Ben	Admin	y 25
31.	C	1	* Type Plan (Med/Den/Vis)	Plan ID	Agn Ben	Admin	y 14 (x3)
33.	C	5	Coverage (Fam/Sing)	Plan ID	Agn Ben	Admin	y 35
34.	E	2	Other Names	Coverage	User/Agn Ben	Admin	y 30
35.	E	3	Relationship	Coverage	User/Agn Ben	Admin	y 6
36.	E	4	Date of Birth	Eligible	User/Agn Ben	Admin	y 8
37.	E	5	Benefit Officer ID (sign)	Approval/Ver	Agn Ben Off	Admin	y 4”
38.	E	6	“ “ “ Phone	Comm Ref	Agn Ben Off	Admin	y 1.5”
39.							
40.							

C = Computer input COBRA – Consolidated Omnibus Budget Reconciliation Act