The Eight Factors of Information Quality

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This is a map that lists and explains the factors that determine the quality or accuracy of information, communication, and thinking. It is fully Perspectives-stage, based on Information Theory and Communication Theory. Since information is of such a fundamental level, this map is also very fundamental. Hence, it applies to almost everything.

Uses for This Map

This map can be used with great advantage in any information or communication context, including the informing or communicating processes, as follows:

- To distinguish various degrees of quality and accuracy in information
- To discriminate wisely among competing ideas and theories
- To evaluate the quality and accuracy of any oral or written information
- To improve the quality and accuracy of any oral or written information
- To express yourself more effectively, orally and in writing
- To be candid in sensitive situations, without arousing defensiveness
- To understand others more easily and accurately
- To improve your cognitive (thinking) skills—“critical thinking”
It applies equally to individual elements within a message, a whole message or piece of information, “threads” of messages, or larger chunks of information.

For managers and consultants, the quality of the information they send and receive is critical to their performance and success. Deficiencies in information quality often cause mistakes, misunderstandings, and conflicts. They result in poor-quality decisions, plans, and solutions to problems. The list is endless.

Papers on This Website That Apply This Map

This is one of the few maps we use in nearly every aspect of our work. It underlies and informs many other maps that we use. It will be found explicitly in the Information & Communication AuditSM and Strategic Aims ServiceSM in the Consulting Services section of the website. In addition, Library Articles with information about this map and its applications are

- “The Truth about Feedback & its Applications in Organizations”
- “The Dirty Dozen: Twelve Disasters in Listening”
- “The Foundations of Interpersonal Communication”

Preliminaries to Using this Map

Before you use this map for any reason, you first have to get clear about the purpose of the piece of information you are examining. This can be the answer to one of several questions:

- What is the purpose of this piece of information?
- Why is it written here?
- Why is this message being sent?
- Why is this person telling me about this?
- What is the context for this information (meta to its content)
- What category or type of information is this?
The answer to whichever of these questions applies to the information being examined must include a selection within each of the following four variables or dimensions (usually just one selection for each):

1. **Direction**
   a. Get help
   b. Give help

2. **Target (whom or what you want to help or get help from)**

3. **Form**
   a. Goal
   b. Problem
   c. Decision

4. **Step**
   a. Define
   b. Plan/Solve/Decide
   c. Implement
   d. Monitor

As an example, a piece of information might be for the sake of asking a manager for help in clarifying a problem. Another could be offering help to an employee to make a decision. Another could be to ask a team for help in planning how to achieve a goal.

The above cognitive map for *purpose of information* is also very useful in itself. It is essential, however, to using the Eight Factors for Information Quality.

**Brief Outline of This Map**

We believe that this map contains all necessary factors to determine the quality of any piece of information. “Pieces of information” include thinking plus oral and written communications. It includes data, facts, interpretations, points of
view, perspectives, propositions, conclusions, theories, logic, reason, and all other cognitive forms.

The map consists of eight factors, grouped into logical classes, from highest to lowest. That is, the first is meta to all the others: it is where you begin. The second group is about the quantity of content: neither too little nor too much. The third group is about the relationship among the parts (elements) of the piece of information. The last group is about the details of the content itself.

1. Stance
2. Sufficiency
3. Relevance
4. Organization
5. Coherence
6. Logical Class
7. Language
8. Degree

Explanation of the Eight Factors

The following explanations are written as though you yourself have produced the sample piece of information to be evaluated according to the Eight Factors. This will simplify the explanations of the meaning of each factor and the questions to ask to evaluate how well the information treats it. However, the map works just as well for cases where you are trying to understand, evaluate or improve information produced by someone else.

First, each factor is explained. Then comes a list of questions to ask to use this factor in evaluating the piece of information. These questions reflect the forms the factor can take in different informational contexts.

A reminder: before you use this map for any reason, you first have to get clear about the purpose of the piece of information you are examining. This results in
your knowing its Direction, Target, Form, and Step (see “Preliminaries” part of this paper, above.)

1. **Stance.** This means your assumptions (examined or unexamined, of which you may be aware or unaware), your point of view or perspective, and your attitudes. Although they are usually not made explicit in the information itself, they are often implied (between the lines, or from the context of the information). The stance is meta to the information (message) itself. When composing a message or information yourself, it is very helpful to get clear about taking the right stance before you start, and checking to see that you maintain this stance throughout.

   a. Whose problem, goal, or decision is it?

      1) If it’s yours, the purpose of the information or communication can only be to get help with it. This requires that you express it yourself.

      2) If it’s someone else’s, the purpose of the information or communication can only be to give help to them. In order to help, you first need to understand their problem, goal, or decision. This requires that you let them express it and try to understand them.

   b. Is the grammatical “person” (1st, 2nd, or 3rd) the right one for the information or message?

      1) Usually, use first person for self-expression. This is called “staying on your own side of the fence,” or sometimes (but less accurately) sending “I-messages.” In the Perspectivist stage, it is taking the “observer” into account. When you stray from 1st person in self-expression, it implies that it is not your perception, idea, feeling, desire, or behavior—it is either someone else’s (2nd person) or just impersonal fact (3rd person, sometimes called “distancing” when you should use 1st person). These can easily provoke defensiveness, and are just inaccurate. Also, do not use the colloquial “you” (2nd person)
or “one” or “it” (3rd person) when you mean “I,” for the same reasons. Nor should you use “we” when you mean “I.” Don’t assume others share your view, unless they’ve said so. Example of a 1st person message: “I see a, I think b, I feel c, I want d, I did e.”

2) Use second person for reflexive understanding of someone else. Examples: “When you see a, you think b, feel c, want d, and do e.”

3) Third person should usually be restricted to settings where there is little chance of disagreement or controversy, because it connotes settled fact. Example: “It is a, so it must be b, it feels c, the desire is d, and action is e.” This is rarely appropriate for conveying your experience. It is often fine for uncontroversial perceptions and ideas.

c. Is the grammatical “voice” appropriate for the information or message? Usually should be active, not passive, which can suggest “victim posture.”

d. Is the Developmental Stage adequate for the purpose of the information?

1) Considering each Developmental Stage as a kind of language of its own, with distinctive terminology, assumptions, values, ways of thinking about things, and so on.

2) The Developmental Stage needs to be adequate to the purpose of the information. To solve a simple problem, the Pragmatic stage can be fine. For harder ones, you need the Principled stage. For complex ones (very common in human affairs, including management and organizations), you usually need the Perspectivist stage.

e. If you want to get help, is the information based on accurate assumptions that make it most likely other people will want to help you?

1) Defending yourself or counter-attacking someone else only reveals your own self-image concerns, and is counter-productive in trying to get someone’s help. They just get defensive.
2) Just because you want something doesn’t oblige anyone else to do it. Avoid “shoulds” and “oughts.” Use “I would like” instead.

3) Ambivalence is extremely normal. Express it directly with phrases like “one the one hand ..., while at the same time ... .”

4) Aim at being candid without provoking defensiveness. You cannot always succeed, because the result depends on the recipient of the message as well as on you, but you can greatly reduce the risk.

5) Don’t blame other people or circumstances for your feelings. They are the result of thinking/interpretation, which is under your own control.

f. If you want to give help, is the information based on accurate assumptions that facilitate understanding? These tend to put the other person in the most favorable light possible under the circumstances.

1) Change-Agency. Must convey
   a) Acceptance
   b) Understanding
   c) Understandability
   d) Skillfulness/Helpfulness

2) People are basically well-intentioned, if often misguided

3) Senders of messages are the final authority on their own experience: their perceptions, thoughts, feelings, and desires. This is not to say that these are true or even a good idea. Just that only they are privy to their own interior experience.

4) Do not assume that whatever people do is intended to produce particular results (the “conative error”).

5) Distinguish between person and actions. Actions can be changed; people (in the sense of “who they really are, intrinsically”) cannot.
2. **Sufficiency.** This means enough information for its purpose, nothing essential left out (“ellipses”).

   a. Are all 5 Functions of Living (Perceiving, Thinking, Evaluating/Feeling, Wanting, and Acting) clear to the listener/reader that are relevant to the purpose of the information? Or does the reader/listener have to guess or fill in the blanks? They’ll often get it wrong.

   b. Given the context and what you can safely assume the reader/listener knows, is anything essential left out? Does it include all the differences that make a difference to the reader/listener?

   c. Is the message too terse? Does it require extremely careful, repeated study to ferret out its meaning?

3. **Relevance.** This means that all of the information is necessary for its purpose.

   a. Is anything unnecessary or extraneous to the information’s purpose thrown in? This will often be distracting and sometimes confusing.

   b. Is it as simple as possible, without falling into simplistic?

   c. More isn’t usually better in information. It’s just noise.

4. **Organization.** Just order of elements, for a single message or small piece of information. For larger chunks of information, organizational problems get more complex. The purpose of organization is to make it easy to understand the relationships among elements or pieces of information, and how they fit into the whole. Examples of types of organization include sequence (chronological, logical, causal, etc.), part-whole, general-specific, and context-content.

   a. Is it organized at all, or it is just a jumble or laundry list of items?

   b. Can you follow the chain of reasoning?

   c. Is the organizational pattern or arrangement clear?

   d. Is how the elements are related to each other and to the whole clear?
5. **Coherence.** This means that the elements of the information are well integrated—they “hang together.” Often, it means consistency or lack of contradiction, either internal to the message or between it and other relevant pieces of information. The opposite of coherence is “dissonance.”

   a. Does it “hang together” well (integrated), or is it disconnected?
   
   b. Is it all “of a piece,” or is it a mixed bag?
   
   c. Do its elements fit together well? Is anything out of place?
   
   d. Are there any internal contradictions or inconsistencies?
   
   e. Are there any external contradictions or inconsistencies with other relevant information?
   
   f. For whichever of the Five Functions of Living are expressed, are they all coherent with each other?
   
   g. For whichever of the Five Functions of Living are expressed, are they all labeled or identified as the correct function? A common mistake in this area is mislabeling thoughts as feelings: “I feel that this idea is wrong.”
   
   h. Is it all in a single developmental stage, or mixed stages?
   
   i. Is it reasonable, logical, rational, sensible?
   
   j. Is it coherent in time? For example, is the thought in the past, when the rest of the message is in the present? Does it inaccurately suggest that you no longer have this problem or goal? Is it counterproductively a search for causes instead of solutions?

6. **Logical Class.** Primarily the level of specificity or generality of the information. Too general and it may be vague, abstract, hard to relate to the purpose. Too specific and you may lose sight of the forest for the trees. Also includes avoiding mixing logical classes in the message, horizontal-class errors, and vertical collapses. This is a big subject. Please see the Glossary for a bit more.
a. Is the whole message in the right logical class (specificity) for its purpose?

b. Does it avoid category errors (wrong class of same level)? “How far is it from the Golden Gate Bridge to Easter?” confuses the two classes “distance” and “calendrical time.”

c. Does it avoid holonarchy collapses (wrongly flattening a holonarchy)? Does it treat a whole as at the same level as its parts, for example, such as a list like this: tire, wheel, car, gear shifter, and fender.

7. **Language.** This requires that the terminology, wording, metaphors, analogies, and other linguistic features used be appropriate for the information they are intended to express.

   a. Does it consistently use language that fits its stance, developmental stage, and purpose?

   b. Does it avoid terms likely to be misunderstood?

   c. Does it use ordinary language, as much as the subject permits?

   d. Is it clear and easy to understand?

8. **Degree.** Matters of degree in a piece of information can include degree of probability, confidence, certainty, emotion, importance, determination, and others. The degree of whichever of these are relevant to the information should be appropriate to the stance and purpose of the message.

   a. Does it avoid absolute, rigid, doctrinaire pronouncements? These often generate disputes and emotional heat.

   b. Does it imply an absolute dichotomy? An example is to say, “I want x, but the situation is y.” “But” suggests that x and y are absolutely opposed to or dichotomous with each other, which is rarely the case.

   c. Is it appropriately tentative, provisional, open-minded? If not, it often provokes argument or defensiveness.
d. Does it make clear the sender’s relevant probability estimates? If not, it will usually be assumed to be 100% probability.

e. Does it make clear the sender’s confidence level? If this isn’t clear, it will usually be assumed to be 100% certainty.

f. Are the strengths of feelings or evaluations clear? If not, they may be taken to be maximal.

g. Are the degrees of importance and determination of desires and intentions clear? If not, they may be assumed to be maximal.

Skills Involved in Using This Map

As pointed out in the paper, “How to Evaluate Cognitive Maps,” the value of any cognitive map depends on not only its quality and its fit for a given application, but also on the skill with which it is used.

However, this particular cognitive map is so fundamental—so high in logical class—that the skills involved in using it are exactly the skills of the Eight Factors themselves. That is, skill in adopting the right stance to send a message, or recognizing the stance of a piece of information, or evaluating or improving its stance, is just this “stance skill” itself. Ditto with the other seven factors.

Therefore, you become more skillful in the use of this map only by using it. As with all skills, such improvement is greatly facilitated by working with a coach who is more skillful in these areas than you are.

Where This Map Comes From

This cognitive map is really just an expansion of the root definition of information: encoded news of a difference of value to someone, with signature, address, and feedback. This comes from Information Theory (Shannon and Weaver, with additions by Bateson).
Another way of seeing that these are the factors that determine information and communication quality is to play the game of Charades. You realize that in trying to get the group to understand your message accurately, you make use of all these factors. For example, you discourage their irrelevant suggestions and encourage the relevant ones. You prompt them for more when their guesses are insufficient. You gesture to get them to move the degree up or down. They make use of the coherence factor when trying to guess what you mean. And so on.

Alternatives & Their Limitations

The main alternatives to this map are the endless lists of tips and tricks in communication books, tapes, and seminars. Unfortunately, they are not rigorously derived from anything, much less Information Theory, which is the most sophisticated discipline for this area. They tend to be Pragmatic stage in their development. They are also usually not organized at all—just a laundry list. They are very hard to remember, so not too useful in practice.

They are also typically mixed bags, with some good ideas and some bad ones. They are a mixture of logical classes, with some very general guidelines and some very specific tips. Most people find they aren’t very helpful in accomplishing any of the purposes enumerated at the beginning of this paper.

Our Evaluation of Its Quality

We would give this map a grade of “A-.” The qualities we would like to improve (although we do not presently see how to do it) are mainly its organization and coherence, which would make it easier to remember and use. We have used it (and its predecessors—this is about version seven of this map) for many years to great effect. We cannot recommend it too highly.

We invite you to check it out for yourself, first by using the Quality Criteria in the “How to Evaluate Cognitive Maps” paper, and then by trying it yourself.
Talks, Workshops, & Skill-Building Programs

We offer a Talk and a Workshop on “Information Quality.” The Talk is an introduction to this map and explains the Eight Factors of Information Quality in brief. The Workshop includes a broader and deeper treatment of this subject. It also includes many exercises and participatory activities designed to give you an opportunity to start to work with the Eight Factors, apply them to the Five Functions of Living, and practice composing and improving pieces of information by using the Eight Factors.

In addition to this Talk and Workshop, the Workshop called “Introduction to the Art of Communication” and the Skill-Building Program called “The Art of Communication” include applications of this cognitive map to communicating. In particular, the Skill-Building Program offers the most extensive work with this map and a great deal of practice in using it in your thinking and communicating, both in self-expression and in understanding others.

Please see the Talks, Workshops, and Skill-Building Programs papers in the Talks, Workshops, & Coaching section of this website for complete descriptions.

Your comments and questions would be most welcome. We’d be very interested to hear how you liked this paper, whether you found it to be valuable, or any other reactions. We’d also be happy to answer any questions you might have or discuss the ideas in this paper or how they apply to your management or organizational interests. Please e-mail us at info@developmentalconsulting.com or call (303) 468-1510. This paper is from our website, www.developmentalconsulting.com.